EN+ GROUP IPJSC
(formerly EN+ GROUP PLC)

Consolidated Financial Statements for the year ended 31 December 2019

Contents

Statement of Management's Responsibilities for the Preparation and Approval of the Consolidated Financial Statements for the year ended 31 December 2019

The following statement, which should be read in conjunction with the auditors' responsibilities stated in the auditors' report on the audit of the consolidated financial statements set out on pages 4-9, is made with a view to distinguishing the respective responsibilities of management and those of the auditors in relation to the consolidated financial statements of EN+ GROUP IPJSC and its subsidiaries.

Management is responsible for the preparation of the consolidated financial statements for the year ended 31 December 2019 in accordance with International Financial Reporting Standards ("IFRS").

In preparing the consolidated financial statements, management is responsible for:

- selecting suitable accounting principles and applying them consistently;
- making judgements and estimates that are reasonable and prudent;
- stating whether International Financial Reporting Standards have been followed, subject to any material departures disclosed and explained in the consolidated financial statements; and
- preparing the consolidated financial statements on a going concern basis, unless it is inappropriate to presume that the Group will continue in the business for the foreseeable future.

Management, within its competencies, is also responsible for:

- designing, implementing and maintaining an effective system of internal controls throughout the Group;
- maintaining statutory accounting records in compliance with local legislation and accounting standards in the respective jurisdictions in which the Group operates;
- taking steps to safeguard the assets of the Group; and
- detecting and preventing fraud and other irregularities.

These consolidated financial statements were approved by the Board of Directors on 26 March 2020 and were signed on its behalf by:

General Director of
EN+ GROUP IPJSC

Vladimir Kiriukhin

KPMG

Independent Auditors' Report

To the Shareholders of EN+ GROUP IPJSC (formerly EN+ GROUP PLC)

Opinion

We have audited the consolidated financial statements of EN+ GROUP IPJSC (formerly EN+ GROUP PLC) (the "Company") and its subsidiaries (the "Group"), which comprise the consolidated statement of financial position as at 31 December 2019, the consolidated statements of profit or loss and other comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at 31 December 2019, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Group in accordance with the independence requirements that are relevant to our audit of the consolidated financial statements in the Russian Federation and with the International Code of Ethics for Professional Accountants (including International Independence Standards), and we have fulfilled our other ethical responsibilities in accordance with the requirements in the Russian Federation and the International Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Valuation of property, plant and equipment

Please refer to the Note 11 in the consolidated financial statements.

The key audit matter	How the matter was addressed in our audit
The Group has significant property, plant and equipment balance which is material to the consolidated financial statements as at 31 December 2019. Current global market conditions, including fluctuations in LME aluminium prices, coal prices, market premiums and alumina purchase prices, uncertainty regarding volumes and tariffs for electricity transmission, may indicate that some property, plant and equipment items may be subject to either impairment loss or reversal of previously recognised impairment loss. This is in particular related to such cash generating units (CGUs) as aluminium and alumina plants, bauxite mines, coal mines and Irkutsk GridCo. As at the reporting date management performs valuation of the recoverable amount of the Group's assets and cash generating units as their value in use. Due to the inherent uncertainty involved in forecasting and discounting future cash flows, which are the basis of the assessment of recoverability, this is one of the key judgmental areas that our audit is concentrated on.	For aluminium, alumina, bauxite, coal and Irkutsk GridCo CGUs we evaluated the reasonableness of the expected cash flow forecasts by comparing them with the latest budgets approved by the Board of Directors, externally derived data as well as our own assessments in relation to key inputs such as production levels, forecasted aluminium sales prices, forecasted coal sales prices, forecasted volumes and tariffs of electricity transmission, forecasted alumina purchase prices, costs inflation, foreign currency exchange rates, discount rates and terminal growth rates. We also considered the historic accuracy of management's forecasts by comparing prior year forecasts to actual results. We used our own valuation specialists to assist us in evaluating the assumptions and methodology used by the Group. In particular, we challenged: - aluminium and alumina smelters and bauxite mines costs projections by comparing them with historical results and industry peers; - coal prices and tariffs for electricity transmission by comparing them with historical data, economic and industry forecasts; - volumes of electricity transmission by comparing them with historical volumes and potential Taishet aluminium smelter demand; - the key assumptions for long term revenue growth rates in the forecasts by comparing them with historical results, economic and industry forecasts; and

	- the discount rates used. Specifically, we recalculated the Group's weighted average cost of capital using market comparable information. We also performed sensitivity analysis on the discounted cash flow forecasts and assessed whether the Group's disclosures about the sensitivity of the outcome of the impairment assessment to changes in key assumptions, including forecasted aluminium, alumina, coal prices and transmission tariffs, coal sales and electricity transmission volumes, terminal growth and discount rates, reflected the risks inherent in the valuation of property, plant and equipment.

Other Information

Management is responsible for the other information. The other information comprises the information included in the Group's Annual Report but does not include the consolidated financial statements and our auditors' report thereon. The Annual Report is expected to be made available to us after the date of this auditors' report.

Our opinion on the consolidated financial statements does not cover the other information and we will not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

— Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

— Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

— Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

— Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.

— Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

— Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditors' report is:

Yerkozha Akylbek

JSC "KPMG"

Moscow, Russia

26 March 2020

		Year ended 31 December	
		2019	**2018**
	Note	**USD million**	**USD million**
Revenues	5	11,752	12,378
Cost of sales		(8,873)	(8,209)
Gross profit		**2,879**	**4,169**
Distribution expenses		(632)	(629)
General and administrative expenses		(839)	(880)
Impairment of non-current assets		(321)	(244)
Net other operating expenses	6	(111)	(136)
Results from operating activities		**976**	**2,280**
Share of profits of associates and joint ventures	13	1,669	948
Finance income	8	83	216
Finance costs	8	(1,148)	(1,176)
Profit before taxation		**1,580**	**2,268**
Income tax expense	10	(276)	(406)
Profit for the year		**1,304**	**1,862**
Attributable to:			
Shareholders of the Parent Company		860	967
Non-controlling interests	16(f)	444	895
Profit for the year		**1,304**	**1,862**
Earnings per share			
Basic and diluted earnings per share (USD)	9	**1.356**	**1.692**

The consolidated statement of profit or loss and other comprehensive income is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 15 to 99.

		Year ended 31 December	
		2019	2018
	Note	USD million	USD million
Profit for the year		1,304	1,862
Other comprehensive income			
Items that will never be reclassified subsequently to profit or loss:			
Actuarial (loss)/gain on post-retirement benefit plans	18(b)	(17)	10
Revaluation of non-current assets	11(e)	-	301
Taxation	10(c)	-	(60)
		(17)	251
Items that are or may be reclassified subsequently to profit or loss:			
Foreign currency translation differences on foreign operations		202	(222)
Foreign currency translation differences for equity-accounted investees	13	450	(811)
Disposal of subsidiary		4	-
Share of other comprehensive income of associates	13	-	10
Change in fair value of cash flow hedge	19	34	-
Change in fair value of financial assets		(2)	(2)
		688	(1,025)
Other comprehensive income for the year, net of tax		671	(774)
Total comprehensive income for the year		**1,975**	**1,088**
Attributable to:			
Shareholders of the Parent Company		1,236	741
Non-controlling interests	16(f)	739	347
Total comprehensive income for the year		**1,975**	**1,088**

The consolidated statement of profit or loss and other comprehensive income is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 15 to 99.

	Note	31 December 2019 USD million	31 December 2018 USD million
ASSETS			
Non-current assets			
Property, plant and equipment	11	9,883	9,322
Goodwill and intangible assets	12	2,376	2,195
Interests in associates and joint ventures	13	4,248	3,701
Deferred tax assets	10(b)	165	125
Derivative financial assets	19	33	33
Other non-current assets		108	77
Total non-current assets		**16,813**	**15,453**
Current assets			
Inventories	14	2,542	3,037
Trade and other receivables	15(b)	2,082	1,389
Short-term investments		241	211
Derivative financial assets	19	75	9
Cash and cash equivalents	15(d)	2,278	1,183
Total current assets		**7,218**	**5,829**
Total assets		**24,031**	**21,282**
EQUITY AND LIABILITIES			
Equity	16		
Share capital		-	-
Share premium		1,516	973
Additional paid-in capital		9,193	9,193
Revaluation reserve		2,722	2,718
Other reserves		198	(62)
Foreign currency translation reserve		(5,493)	(5,024)
Accumulated losses		(3,806)	(5,143)
Total equity attributable to shareholders of the Parent Company		**4,330**	**2,655**
Non-controlling interests	16(f)	3,042	2,747
Total equity		**7,372**	**5,402**
Non-current liabilities			
Loans and borrowings	17	11,258	10,007
Deferred tax liabilities	10(b)	1,243	1,219
Provisions – non-current portion	18	536	459
Derivative financial liabilities	19	27	24
Other non-current liabilities		121	208
Total non-current liabilities		**13,185**	**11,917**
Current liabilities			
Loans and borrowings	17	1,224	2,270
Provisions – current portion	18	71	71
Trade and other payables	15(c)	2,152	1,615
Derivative financial liabilities	19	27	7
Total current liabilities		**3,474**	**3,963**
Total equity and liabilities		**24,031**	**21,282**

The consolidated statement of financial position is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 15 to 99.

	Note	**Year ended 31 December**	
		2019	**2018**
		USD million	**USD million**
OPERATING ACTIVITIES			
Profit for the year		**1,304**	**1,862**
Adjustments for:			
Depreciation and amortisation		806	752
Impairment of non-current assets		321	244
Net foreign exchange loss	8	114	253
Loss on disposal of property, plant and equipment	6	24	11
Share of profits of associates and joint ventures	13	(1,669)	(948)
Interest expense	8	1,000	917
Interest income	8	(82)	(44)
Income tax expense	10	276	406
Dividend income	8	(1)	(1)
Reversal of impairment of inventories		(18)	(22)
Impairment of trade and other receivables	6	2	65
Provision for legal claims	6	22	5
Change in fair value of derivative financial instruments	8	21	(171)
Operating profit before changes in working capital		**2,120**	**3,329**
Decrease/ (increase) in inventories		535	(468)
Increase in trade and other receivables		(238)	(201)
Increase/ (decrease) in trade and other payables		588	(701)
Cash flows from operations before income tax		**3,005**	**1,959**
Income taxes paid	10(f)	(444)	(251)
Cash flows from operating activities		**2,561**	**1,708**

The consolidated statement of cash flows is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 15 to 99.

	Note	Year ended 31 December 2019 USD million	2018 USD million
INVESTING ACTIVITIES			
Proceeds from disposal of property, plant and equipment		46	23
Acquisition of property, plant and equipment		(1,024)	(982)
Acquisition of intangible assets		(37)	(22)
Other investments		(77)	(345)
Return of prepayment for investment in associate		44	-
Interest received		62	39
Dividends from associates and joint ventures		1,141	909
Dividends from financial assets		5	4
Proceeds from disposal of financial assets		15	1
Contribution to joint venture		(78)	-
Acquisition of subsidiaries		(35)	(53)
Change in restricted cash		30	(26)
Cash flows from/(used in) investing activities		**92**	**(452)**
FINANCING ACTIVITIES			
Proceeds from borrowings		5,872	4,431
Repayment of borrowings		(6,366)	(4,445)
Acquisition of non-controlling interest		(5)	(103)
Interest paid		(1,021)	(881)
Restructuring fees and expenses related to issuance of shares		(42)	(19)
Settlement of derivative financial instruments		(26)	125
Dividends to shareholders	16(d)	-	(68)
Cash flows used in financing activities		**(1,588)**	**(960)**
Net increase in cash and cash equivalents		**1,065**	**296**
Cash and cash equivalents at beginning of the year, excluding restricted cash		1,140	957
Effect of exchange rate changes on cash and cash equivalents		60	(113)
Cash and cash equivalents at end of the year, excluding restricted cash	15(d)	**2,265**	**1,140**

Restricted cash amounted to USD 13 million and USD 43 million at 31 December 2019 and 31 December 2018, respectively.

The consolidated statement of cash flows is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 15 to 99.

USD million	Attributable to shareholders of the Parent Company								
	Share premium	**Additional paid-in capital**	**Revaluation reserve**	**Other reserves**	**Foreign currency translation reserve**	**Accumulated losses**	**Total**	**Non-controlling interests**	**Total equity**
Balance at 1 January 2018	**973**	**9,193**	**2,471**	**(72)**	**(4,544)**	**(6,030)**	**1,991**	**2,394**	**4,385**
Comprehensive income									
Profit for the year	-	-	-	-	-	967	967	895	1,862
Revaluation of hydro assets as at 31 December 2018 (16(e),11(e))	-	-	305	-	-	-	305	(4)	301
Taxation (10(c))	-	-	(61)	-	-	-	(61)	1	(60)
Other comprehensive income for the year	-	-	-	10	(480)	-	(470)	(545)	(1,015)
Total comprehensive income for the year	**-**	**-**	**244**	**10**	**(480)**	**967**	**741**	**347**	**1,088**
Transactions with owners									
Change in effective interest in subsidiaries (16(a))	-	-	3	-	-	(12)	(9)	6	(3)
Dividends to shareholders (16(d))	-	-	-	-	-	(68)	(68)	-	(68)
Total transactions with owners	**-**	**-**	**3**	**-**	**-**	**(80)**	**(77)**	**6**	**(71)**
Balance 31 December 2018	**973**	**9,193**	**2,718**	**(62)**	**(5,024)**	**(5,143)**	**2,655**	**2,747**	**5,402**
Balance at 1 January 2019	**973**	**9,193**	**2,718**	**(62)**	**(5,024)**	**(5,143)**	**2,655**	**2,747**	**5,402**
Comprehensive income									
Profit for the year	-	-	-	-	-	860	860	444	1,304
Other comprehensive income for the year	-	-	-	9	367	-	376	295	671
Total comprehensive income for the year	**-**	**-**	**-**	**9**	**367**	**860**	**1,236**	**739**	**1,975**
Transactions with owners									
Change in effective interest in subsidiaries (16(a))	543	-	4	251	(836)	477	439	(444)	(5)
Total transactions with owners	**543**	**-**	**4**	**251**	**(836)**	**477**	**439**	**(444)**	**(5)**
Balance 31 December 2019	**1,516**	**9,193**	**2,722**	**198**	**(5,493)**	**(3,806)**	**4,330**	**3,042**	**7,372**

The consolidated statement of changes in equity is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 15 to 99.

1. Background

(a) Organisation

EN+ GROUP IPJSC (the "Parent Company") was established as a limited liability company according to the legislation of the British Virgin Islands on 30 April 2002 under the name of Baufinanz Limited. On 18 March 2004 the Parent Company registered a change of its legal name to Eagle Capital Group Limited. On 25 August 2005 the Parent Company changed its domicile to Jersey and was renamed to En+ Group Limited. On 1 June 2017 the Parent Company changed its status to a public company and was renamed to EN+ GROUP PLC. On 9 July 2019 the Parent Company changed its domicile to the Russian Federation with a registration as EN+ GROUP International public joint-stock company (EN+GROUP IPJSC). As at the reporting date the Parent Company's registered office is Oktyabrskaya st. 8, office 34, Kaliningrad, Kaliningrad Region, 236006, Russian Federation.

On 8 November 2017 the Parent Company successfully completed an initial public offering of global depositary receipts on the London Stock Exchange and the Moscow Exchange.

EN+ GROUP IPJSC is the parent company for a vertically integrated aluminium and power group, engaged in aluminium production and energy generation (together with the Parent Company referred to as "the Group").

Based on the information at the Group's disposal at the reporting date, there is no individual that has an indirect prevailing ownership interest in the Parent Company exceeding 50%, who could exercise voting rights in respect of more than 35% of the Parent Company's issued share capital or has an opportunity to exercise control over the Parent Company.

As at 31 December 2019 Mr. Oleg Deripaska beneficially controls and exercises voting rights in respect of 35% of the voting shares of the Company and cannot exceed his direct or indirect shareholding over 44.95% of the shares of the Company.

The other significant holders as at 31 December 2019 were as follows:

	Shareholding	**Voting rights**
VTB	21.37%	7.04%
Citi (Nominees), including	15.47%	15.47%
Glencore Group Funding Limited	*10.55%*	*10.55%*
Other shareholders	18.21%	4.81%
Independent trustees	-	37.68%

Glencore Group Funding Limited is a subsidiary of Glencore Plc.

Related party transactions are detailed in note 23.

In February 2020 subsequent to the reporting date the Group acquired 21.37% of its shares from VTB for cash at a price of $11.57 per share (note 17(a)). The voting rights in respect of acquired shares representing 14.33% of En+ Group's issued share capital are retained with independent trustees. Votes attaching to the remaining 7.04% of shares will be voted by the Chairman of the Parent Company's Board at the Board's direction.

(b) Operations

The Group is a leading vertically integrated aluminium and power producer, which combines the assets and results of its Metals and Power segments.

The Metals segment operates in the aluminium industry primarily in the Russian Federation, Ukraine, Guinea, Jamaica, Ireland, Italy, Nigeria and Sweden and is principally engaged in the mining and refining of bauxite and nepheline ore into alumina, the smelting of primary aluminium from alumina and the fabrication of aluminium and aluminium alloys into semi-fabricated and finished products.

The Power segment engages in all aspects of the power industry, including electric power generation, power trading and supply. It also includes supporting operations engaged in the supply of logistics services and coal resources to the Group. The Group's principal power plants are located in East Siberia, Russia.

(c) Business environment in emerging economies

The Russian Federation, Ukraine, Jamaica, Nigeria and Guinea have been experiencing political and economic changes that have affected, and may continue to affect, the activities of enterprises operating in these environments. Consequently, operations in these countries involve risks that typically do not exist in other markets, including reconsideration of privatisation terms in certain countries where the Group operates following changes in governing political powers.

Starting in 2014, the United States of America, the European Union and some other countries have imposed and gradually expanded economic sanctions against a number of Russian individuals and legal entities. The imposition of the sanctions has led to increased economic uncertainty, including more volatile equity markets, a depreciation of the Russian rouble, a reduction in both local and foreign direct investment inflows and a significant tightening in the availability of credit. As a result, some Russian entities may experience difficulties accessing the international equity and debt markets and may become increasingly dependent on state support for their operations. The longer-term effects of the imposed and possible additional sanctions are difficult to determine.

The first months of 2020 have seen significant global market turmoil triggered by the outbreak of the COVID-19. Together with other factors, including a sharp decrease in the oil price, this has resulted in significant stock market volatility with a considerable drop in market indices, as well as a depreciation of the Russian Rouble. The Group is assessing the impact of these market developments for its financial position, financial performance and future cash flows.

The consolidated financial statements reflect management's assessment of the impact of the Russian, Ukrainian, Jamaican, Nigerian and Guinean business environments on the operations and the financial position of the Group. The future business environment may differ from management's assessment.

(d) OFAC sanctions

On 6 April 2018, the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC") designated, amongst others, the Parent Company, JSC EuroSibEnergo ("EuroSibEnergo") and UC RUSAL Plc ("UC RUSAL") as Specially Designated Nationals ("SDN") (the "OFAC Sanctions").

As a result, all property or interests in property of the Parent Company and its subsidiaries located in the United States or in the possession of U.S. Persons were blocked, frozen, and could not have been transferred, paid, exported, withdrawn, or otherwise dealt in. Several general licenses were issued at the time of the designation and subsequently certain transactions were authorised with the Parent Company, EuroSibEnergo and UC RUSAL, and with their respective debt and equity.

On 27 January 2019, OFAC announced the removal of the Parent Company and its subsidiaries, including UC RUSAL and EuroSibEnergo, from OFAC's SDN list and Blocked Persons with immediate effect. The removal was subject to and conditional upon the satisfaction of a number of conditions including, but not limited to:

- ending Mr Oleg Deripaska's control of the Group, through the reduction of his direct and indirect ownership interest in the Group to below 50%;
- establishing independent voting arrangements for the Parent Company's shares held by certain shareholders;
- making changes in the corporate governance framework, including, inter alia, overhauling the composition of the EN+ Board to ensure that independent directors constitute the majority of the Board, and ongoing transparency through auditing, reporting and certifications by the Parent Company and UC RUSAL to OFAC concerning compliance with the conditions for sanctions' removal.

2. Basis of preparation

(a) Statement of compliance

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRSs"), which collective term includes all International Accounting Standards and related interpretations promulgated by the International Accounting Standards Board ("IASB").

This is the first set of the Group's annual financial statements in which IFRS 16 Leases has been applied. Changes to significant accounting policies are described in note 3(c). A number of other new standards are also effective from 1 January 2019 but they do not have a material effect on the Group's financial statements.

Due to the transition method chosen by the Group in applying this standard, comparative information throughout these financial statements has not been restated to reflect the requirements of the new standards.

A number of new standards are effective for annual periods beginning after 1 January 2020 and earlier application is permitted; however, the Group has not early adopted the new or amended standards in preparing these consolidated financial statements.

The following amended standards and interpretations are not expected to have a significant impact on the Group's consolidated financial statements.

- *Amendments to References to Conceptual Framework in IFRS Standards.*
- *Definition of a Business (Amendments to IFRS 3).*
- *Definition of Material (Amendments to IAS 1 and IAS 8).*
- *IFRS 17 Insurance Contracts.*
- *Interest Rate Benchmarking Reform (Amendments to IFRS 9, IAS 39 and IFRS 7).*

(b) Basis of measurement

The consolidated financial statements have been prepared in accordance with the historical cost basis except as set out in the significant accounting policies in notes 11 and 19.

(c) Functional and presentation currency

The Parent Company's functional currency is the United States Dollar ("USD") because it reflects the economic substance of the underlying events and circumstances of the Parent Company. The functional currencies of the Group's significant subsidiaries are the currencies of the primary economic environment and key business processes of these subsidiaries and include USD, Russian Roubles ("RUB"), Ukrainian Hryvna and Euros ("EUR"). The consolidated financial statements are presented in USD, rounded to the nearest million, except as otherwise stated herein.

(d) Use of judgements, estimates and assumptions

The preparation of consolidated financial statements in conformity with IFRSs requires management to make judgements, estimates and assumptions that affect the application of accounting policies and reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the consolidated financial statements, and the reported revenue and costs during the relevant period.

Management bases its judgements and estimates on historical experience and various other factors that are believed to be appropriate and reasonable under the circumstances, the results of which form the basis of making the judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions and conditions.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Judgements made by management in the application of IFRSs that have a significant effect on the consolidated financial statements and estimates with a significant risk of material adjustment in the next year are discussed in note 25.

(e) Consolidation of OJSC Irkutsk Electric Grid Company ("Irkutsk GridCo")

In December 2009, the Group sold to third parties under share purchase contracts all the shares in two Cypriot companies of the Group controlling 34.16% of the shares in Irkutsk GridCo; subsequently the Group purchased 19.9% of the shares in Irkutsk GridCo. The arrangements attached to the share purchase contracts enable the Group to retain certain rights with respect to the disposed shares and the sale did not result in deconsolidation. As at 31 December 2019, the effective interest in Irkutsk GridCo held by the Group is 52.4% (31 December 2018: 52.3%).

As laws and regulations in the electricity sector in Russia are continuing to develop there is uncertainty with respect to the legal interpretation of the existing arrangements which enables the Group to control Irkutsk GridCo and, consequently, these may be interpreted by the Russian regulatory authorities as noncompliant with applicable legislation upon enforcement. Management believes that such arrangements are compliant with the legislation and therefore the Group has the ability to control Irkutsk GridCo as described above. Should the arrangements be found non-compliant upon their enforcement, the Group may be required to unwind the arrangements subsequent to their enforcement and sell Irkutsk GridCo to a third party at that time.

3. Significant accounting policies

Significant accounting policies are described in the related notes to the consolidated financial statements captions and in this note.

The accounting policies and judgements applied by the Group in these consolidated financial statements are the same as those applied by the Group in its consolidated financial statements as at and for the year ended 31 December 2018, except for those disclosed in 3(c), and have been consistently applied to all periods presented in these consolidated financial statements.

(a) Basis of consolidation

(i) Subsidiaries and non-controlling interests

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing control, potential voting rights that presently are exercisable are taken into account.

The consolidated financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. The accounting policies of subsidiaries have been changed when necessary to align them with the policies adopted by the Group.

Non-controlling interests represent the portion of the net assets of subsidiaries attributable to interests that are not owned by the Group, whether directly or indirectly through subsidiaries, and in respect of which the Group has not agreed any additional terms with the holders of those interests which would result in the Group as a whole having a contractual obligation in respect of those interests that meets the definition of a financial liability.

Non-controlling interests are presented in the consolidated statement of financial position within equity, separately from equity attributable to the equity shareholders of the Group. Non-controlling interests in the results of the Group are presented on the face of the consolidated statement of profit or loss and other comprehensive income as an allocation of the total profit or loss and total comprehensive income for the year between non-controlling interests and the equity shareholders of the Group.

Losses applicable to the non-controlling interests in a subsidiary are allocated to the non-controlling interests even if doing so causes the non-controlling interests to have a deficit balance.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions, whereby adjustments are made to the amounts of controlling and non-controlling-interests within consolidated equity to reflect the change in relative interests, but no adjustments are made to goodwill and no gain or loss is recognised.

When the Group loses control of a subsidiary, it is accounted for as a disposal of the entire interest in that subsidiary, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former subsidiary at the date when control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (refer to notes 15 and 20) or, when appropriate, the cost on initial recognition of an investment in an associate or joint venture (refer to note 13).

(ii) Acquisitions of non-controlling interests

The acquisition of an additional non-controlling interest in an existing subsidiary after control has been obtained is accounted for as an equity transaction with any difference between the cost of the additional investment and the carrying amount of the net assets acquired at the date of exchange recognised directly in equity.

The issue of a put option (a mandatory offer) to acquire a non-controlling interest in subsidiary, after control has been obtained and accounted for by the Group as an equity transaction, results in the recognition of a liability for the present value of the expected exercise price and the derecognition of non-controlling interests within consolidated equity. Subsequent to initial recognition, changes in the carrying amount of the put liability are recognised within equity. If the put option expires unexercised then the put liability is derecognised and non-controlling interests are recognised.

For a written put or forward option with the non-controlling shareholders in an existing subsidiary on their equity interest in that subsidiary, if the non-controlling shareholders do not have present access to the returns associated with the underlying ownership interest, the contract is accounted for as an anticipated acquisition of the underlying non-controlling interests, as if the put option had been exercised already or the forward had been satisfied by the non-controlling shareholders.

(iii) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. Unrealised gains arising from transactions with equity accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Foreign currencies

(i) Foreign currency transactions

Transactions in foreign currencies are translated into the respective functional currencies of Group entities at the exchange rates ruling at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the exchange rate at that date. The foreign currency gain or loss on monetary items is the difference between the amortised cost in the functional currency at the beginning of the period, adjusted for effective interest and payments during the period, and the amortised cost in foreign currency translated at the exchange rate at the end of the reporting period. Non-monetary items in a foreign currency are measured based on historical cost and are translated using the exchange rate at the date of transaction. Foreign currency differences arising on retranslation are recognised in profit or loss, except for differences arising on the retranslation of qualifying cash flow hedges to the extent the hedge is effective, which is recognised in other comprehensive income.

(ii) Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition, are translated from their functional currencies to USD at the exchange rates ruling at the reporting date. The income and expenses of foreign operations are translated to USD at exchange rates approximating exchange rates at the dates of the transactions.

Foreign currency differences arising on translation are recognised in other comprehensive income and presented in the currency translation reserve in equity. For the purposes of foreign currency translation, the net investment in a foreign operation includes foreign currency intra-group balances for which settlement is neither planned nor likely in the foreseeable future and foreign currency differences arising from such a monetary item are recognised in the statement of profit or loss and other comprehensive income.

When a foreign operation is disposed of, such that control, significant influence or joint control is lost, the cumulative amount of the currency translation reserve is transferred to profit or loss as part of the gain or loss on disposal. When the Group disposes of only part of its interest in a subsidiary that includes a foreign operation while retaining control, the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of its investment in an associate or joint venture that includes a foreign operation while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

When the settlement of a monetary item receivable from or payable to a foreign operation is neither planned nor likely in the foreseeable future, foreign exchange gains and losses arising from such a monetary item are considered to form part of a net investment in a foreign operation and are recognised in other comprehensive income, and presented in the translation reserve in equity.

(c) Adoption of IFRS 16 Leases

IFRS 16 introduced a single, on-balance sheet accounting model for lessees. As a result, the Group, as a lessee, has recognised right-of-use assets representing its rights to use the underlying assets and lease liabilities representing its obligation to make lease payments. Lessor accounting remains similar to previous accounting policies.

The Group has applied IFRS 16 using the modified retrospective approach, under which the cumulative effect of initial application is recognised in retained earnings at 1 January 2019. Accordingly, the comparative information presented for 2018 has not been restated – i. e. it is presented, as previously reported, under IAS 17 and related interpretations. The details of the changes in accounting policies are disclosed below.

(i) Definition of a lease

Previously, the Group determined at contract inception whether the arrangement was or contained a lease under IFRIC 4 *Determining Whether an Arrangement contains a Lease*. The Group now assesses whether a contract is or contains a lease based on the new definition of a lease. Under IFRS 16, a contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration.

On transition to IFRS 16, the Group elected to apply the practical expedient to grandfather the assessment of which transactions are leases. It applied IFRS 16 only to contracts that were previously identified as leases. Contracts that were not identified as leases under IAS 17 and IFRIC 4 have not been reassessed. Therefore, the definition of a lease under IFRS 16 has been applied only to contracts entered into or modified on or after 1 January 2019.

At inception or on reassessment of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease and non-lease component on the basis of their relative stand-alone prices. However, for the leases of properties in which Group acts as a lessee, the Group has elected not to separate non-lease components and will instead account for the lease and non-lease components as a single lease component.

(ii) As a lessee

The Group leases many assets, including land, properties and production equipment.

As a lessee, the Group previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under IFRS 16, the Group recognises right-of-use assets and lease liabilities for most leases – i. e. these leases are on-balance sheet.

However, the Group has elected not to recognise right-of-use assets and lease liabilities for some leases of low-value assets and short-term leases. The Group recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

The group presents right-of-use assets as part of property plant and equipment, the same line item as it presents underlying assets of the same nature that it owns. The carrying amounts of right-of-use assets are presented below.

	Property, plant and equipment		
USD million	**Land and buildings**	**Machinery and equipment**	**Total**
Balance at 1 January 2019	38	12	50
Balance at 31 December 2019	**34**	**7**	**41**

The Group presents lease liabilities as part of other payables and other non-current liabilities in the statement of financial position depending on the period to which future lease payments relate.

Accounting policy

The Group recognises a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, and subsequently measured at cost less any accumulated depreciation and impairment losses, and adjusted for certain remeasurements of the lease liability as required by IFRS 16.

The cost comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. Generally, the Group uses its incremental borrowing rate as the discount rate.

The lease liability is subsequently increased by the interest cost on the lease liability and decreased by lease payments made. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, a change in the estimate of the amount expected to be payable under a residual value guarantee, or as appropriate, changes in the assessment of whether a purchase or extension option is reasonably certain to be exercised or a termination option is reasonably certain not to be exercised.

The Group has applied judgement to determine the lease term for some lease contracts in which it is a lessee that include renewal options. The assessment of whether the Group is reasonably certain to exercise such options impacts the lease term, which significantly affects the amount of lease liabilities and right-of-use assets recognised.

In determining the enforceable period (i.e. the maximum lease term), the Group considers whether both it and the lessor have a right to terminate the lease without permission from the other party and, if so, whether that termination would result in more than an insignificant penalty. If a more than insignificant penalty exists, then the enforceable period extends until the point at which a no more than an insignificant penalty exists.

In accordance with IFRS 16, variable payments which do not depend on index or rate, e. g. which do not reflect changes in market rental rates, should not be included in the measurement of lease liability. In respect of municipal or federal land leases where lease payments are based on cadastral value of the land plot and do not change until the next revision of that value or the applicable rates (or both) by the authorities, the Group has determined that, under the current revision mechanism, the land lease payments cannot be considered as either variable that depend on index or rate or in-substance fixed, and therefore these payments are not included in the measurement of the lease liability.

Transition

Previously, the Group classified property and equipment leases as operating leases under IAS 17. These mainly include land plots, office spaces and items of machinery and equipment. The leases run for different periods of time, with longer periods for land plots. Some leases include an option to renew the lease for an additional period after the end of the non-cancellable period. Some leases provide for additional rent payments that are based on changes in various indices.

At transition, for leases classified as operating leases under IAS 17, lease liabilities were measured at the present value of the remaining lease payments, discounted at the Group's incremental borrowing rate as at 1 January 2019. Right-of-use assets are measured at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments.

The Group used the following practical expedients when applying IFRS 16 to leases previously classified as operating leases under IAS 17:

- Applied the exemption not to recognise right-of-use assets and liabilities for leases with less than 12 months of lease term.

- Excluded initial direct costs from measuring the right-of-use asset at the date of initial application.

- Used hindsight when determining the lease term if the contract contains options to extend or terminate the lease.

For the leases that were classified as finance leases under IAS 17, the carrying amount of the right-of-use asset and the lease liability at 1 January 2019 were determined at the carrying amount of the lease asset and lease liability under IAS 17 immediately before that date.

As a lessor

The accounting policies applicable to the Group as a lessor are not different from those under IAS 17. However, when the Group is an intermediate lessor the sub-leases are classified with reference to the right-of the use asset arising from the head lease, not with reference to the underlying asset.

(iii) Impacts on financial statements

Impacts on transition

On transition to IFRS 16, the Group recognised additional right-of-use assets and additional lease liabilities in equal amounts. The impact on transition is summarised below.

USD million	**1 January 2019**
Right-of-use assets presented in property, plant and equipment less impairment losses	50
Lease liabilities	50

When measuring lease liabilities for leases that were classified as operating leases, the Group discounted lease payments using its incremental borrowing rate at 1 January 2019. The weighted average rate applied is 10%.

USD Million	**1 January 2019**
Discounted using incremental borrowing rate at 1 January 2019	80
- Recognition exemption for leases with less than 12 month of lease term at transition	(21)
- Termination options reasonably certain to be exercised	(9)
Lease liabilities recognised at 1 January 2019	50

Impacts for the period

As a result of initially applying IFRS 16, in relation to the leases that were previously classified as operating leases, the Group recognised USD 41 million of right-of-use assets and USD 49 million of lease liabilities as at 31 December 2019. USD 33 million of lease liabilities are long-term and included in other non-current liabilities, USD 16 million of lease liabilities are short-term and included in other payables.

Also in relation to these leases under IFRS 16, the Group has recognised USD 11 million of depreciation charges, and USD 6 million of interest costs from these leases for the reporting period. USD 8 million of right-of-use assets have been impaired during the year ended 31 December 2019. The Group’s total cash outflow for leases was in the amount of USD 15 million.

The expense relating to short-term leases in the amount of USD 34 million and is included in cost of sales or administrative expenses depending on type of underlying asset. Future cash outflows to which the Group is potentially exposed that are not recognised in right-to-use assets and are not reflected in the measurement of lease liabilities and which arise from variable lease payments not linked to index or rate are in the amount of USD 145 million.

4. Segment reporting

(a) Reportable segments

An operating segment is a component of the Group that engages in business activities from which it may earn revenue and incur expenses, including revenue and expenses that relate to transactions with any of the Group’s other components. All operating segments’ operating results are reviewed regularly by the Group’s key executive management to make decisions about resources to be allocated to the segment and assess its performance and for which discrete consolidated financial statements are available.

Individually material operating segments are not aggregated for financial reporting purposes unless the segments have similar economic characteristics and are similar in respect of the nature of products and services, the nature of production processes, the type or class of customers, the methods used to distribute the products or provide the services and the nature of the regulatory environment. Operating segments which are not individually material may be aggregated if they share a majority of these criteria.

Based on the current management structure and internal reporting the Group has identified two operating segments:

a) *Metals.* The Metals segment comprises UC RUSAL with disclosures being based on the public financial statements of UC RUSAL. All adjustments made to UC RUSAL, including any adjustments arising from different timing of IFRS first time adoption, are included in “Adjustments” column.

The Power assets of UC RUSAL are included within the Metals segment.

b) Power. The Power segment mainly comprises the power assets, as described in note 1(b).

These business units are managed separately and the results of their operations are reviewed by the key executive management personnel and Board of Directors on a regular basis.

The Board of Directors has commissioned a full review of strategic options with respect to the Irkutsk-region coal and coal-fired power assets as part of the Group’s commitment to minimizing its carbon footprint. As the first step the Group have started the spin-off of Irkutsk region coal-fired heat business unit into 100% Irkutskenergo subsidiary. As at the date of these financial statements and the reporting date the first step is still in process.

(b) Segment results, assets and liabilities

For the purposes of assessing segment performance and allocating resources between segments, the Group’s senior executive management monitor the results, assets and liabilities and cash flows attributable to each reportable segment on the following bases:

- Total segment assets include all tangible, intangible assets and current assets.
- Total segment liabilities include all current and non-current liabilities.
- Revenue and expenses are allocated to the reportable segments with reference to sales generated by those segments and the expenses incurred by those segments or which otherwise arise from the depreciation or amortisation of assets attributable to those segments.
- The measure used for reporting segment results is the net profit and Adjusted EBITDA (key non-IFRS financial measure used by the Group as reference for assessing operating effectiveness). Segment profit or loss and Adjusted EBITDA are used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.
- Adjusted EBITDA for any period represents the results from operating activities adjusted for amortisation and depreciation, impairment charges and gain/(losses) on disposal of property, plant and equipment for the relevant period.

In addition to receiving segment information concerning segment results, management is provided with segment information concerning revenue (including inter-segment revenue), the carrying value of investments and share of profits/(losses) of associates and joint ventures, depreciation, amortisation, interest income and expenses, other finance income and costs, income tax, gains/(losses) on disposal of property, plant and equipment, impairment of non-current assets and additions of non-current segment assets used by the segments in their operations. Inter-segment pricing is determined primarily on a consistent basis using market benchmarks.

Year ended 31 December 2019

USD million **Statement of profit or loss and other comprehensive income**	Metals	Power	Adjustments	Total
Revenue from external customers	*9,593*	*2,159*	-	*11,752*
Primary aluminium and alloys	7,906	-	-	7,906
Alumina and bauxite	668	-	-	668
Semi-finished products and foil	410	153	-	563
Electricity	61	1,239	-	1,300
Heat	44	418	-	462
Other	504	349	-	853
Inter-segment revenue	*118*	*830*	*(948)*	-
Total segment revenue	**9,711**	**2,989**	**(948)**	**11,752**
Operating expenses (excluding depreciation and loss on disposal of PPE)	(8,745)	(1,862)	982	(9,625)
Adjusted EBITDA	**966**	**1,127**	**34**	**2,127**
Depreciation and amortisation	(566)	(240)	-	(806)
Loss on disposal of PPE	(22)	(2)	-	(24)
Impairment of non-current assets	(291)	(30)	-	(321)
Results from operating activities	**87**	**855**	**34**	**976**
Share of profits of associates and joint ventures	1,669	-	-	1,669
Interest expense, net	(557)	(361)	-	(918)
Other finance costs, net	(145)	(2)	-	(147)
Profit before tax	**1,054**	**492**	**34**	**1,580**
Income tax expense	(94)	(181)	(1)	(276)
Profit for the year	**960**	**311**	**33**	**1,304**
Additions to non-current segment assets during the year	(887)	(327)	23	(1,191)

USD million **Statement of financial position**	**Metals**	**Power**	**Adjustments**	**Total**
Segment assets, excluding cash and cash equivalents and interests in associates and jointly ventures	11,793	6,409	(697)	17,505
Investment in Metals segment	-	4,595	(4,595)	-
Cash and cash equivalents	1,781	497	-	2,278
Interests in associates and jointly ventures	4,240	8	-	4,248
Total segment assets	**17,814**	**11,509**	**(5,292)**	**24,031**
Segment liabilities, excluding loans and borrowings and bonds payable	2,820	1,534	(177)	4,177
Loans and borrowings	8,247	4,235	-	12,482
Total segment liabilities	**11,067**	**5,769**	**(177)**	**16,659**
Total segment equity	6,747	5,740	(5,115)	7,372
Total segment equity and liabilities	**17,814**	**11,509**	**(5,292)**	**24,031**
Statement of cash flows				
Cash flows from operating activities	**1,652**	**932**	**(23)**	**2,561**
Cash flows from/(used in) investing activities	**246**	**(177)**	**23**	**92**
Acquisition of property, plant and equipment, intangible assets	(848)	(236)	23	(1,061)
Other investments	(85)	8	-	(77)
Dividends from the jointly controlled entities and other associates	1,141	-	-	1,141
Interest received	31	31	-	62
Other investing activities	7	20	-	27

USD million	**Metals**	**Power**	**Adjustments**	**Total**
Cash flows used in financing activities	**(949)**	**(639)**	**-**	**(1,588)**
Interest paid	(553)	(468)	-	(1,021)
Restructuring fee and expenses related to issuance of shares	(33)	(9)	-	(42)
Settlements of derivative financial instruments	(26)	-	-	(26)
Other financing activities	(337)	(162)	-	(499)
Net change in cash and cash equivalents	**949**	**116**	**-**	**1,065**

Year ended 31 December 2018

USD million **Statement of profit or loss and other comprehensive income**	**Metals**	**Power**	**Adjustments**	**Total**
Revenue from external customers	*10,145*	*2,233*	-	*12,378*
Primary aluminium and alloys	8,165	-	-	8,165
Alumina and bauxite	984	-	-	984
Semi-finished products and foil	346	181	-	527
Electricity	77	1,252	-	1,329
Heat	44	417	-	461
Other	529	383	-	912
Inter-segment revenue	*135*	*914*	*(1,049)*	-
Total segment revenue	**10,280**	**3,147**	**(1,049)**	**12,378**
Operating expenses (excluding depreciation and loss on disposal of PPE)	(8,117)	(1,973)	999	(9,091)
Adjusted EBITDA	**2,163**	**1,174**	**(50)**	**3,287**
Depreciation and amortisation	(513)	(239)	-	(752)
Loss on disposal of PPE	(12)	1	-	(11)
Impairment of non-current assets	(157)	(87)	-	(244)
Results from operating activities	**1,481**	**849**	**(50)**	**2,280**
Share of profits/(loss) of associates and joint ventures	955	(7)	-	948
Interest expense, net	(471)	(408)	-	(879)
Other finance income/(costs), net	(12)	(69)	-	(81)
Profit before tax	**1,953**	**365**	**(50)**	**2,268**
Income tax expense	(255)	(154)	3	(406)
Profit for the year	**1,698**	**211**	**(47)**	**1,862**
Additions to non-current segment assets during the year	(837)	(197)	11	(1,023)

USD million	Metals	Power	Adjustments	Total
Statement of financial position				
Segment assets, excluding cash and cash equivalents and interests in associates and jointly ventures	11,235	5,842	(679)	16,398
Investment in Metals segment	-	4,053	(4,053)	-
Cash and cash equivalents	844	339	-	1,183
Interests in associates and jointly ventures	3,698	3	-	3,701
Total segment assets	**15,777**	**10,237**	**(4,732)**	**21,282**
Segment liabilities, excluding loans and borrowings and bonds payable	2,282	1,445	(124)	3,603
Loans and borrowings	8,286	3,991	-	12,277
Total segment liabilities	**10,568**	**5,436**	**(124)**	**15,880**
Total segment equity	5,209	4,801	(4,608)	5,402
Total segment equity and liabilities	**15,777**	**10,237**	**(4,732)**	**21,282**
Statement of cash flows				
Cash flows from operating activities	**680**	**1,039**	**(11)**	**1,708**
Cash flows (used in)/from investing activities	**(106)**	**(357)**	**11**	**(452)**
Acquisition of property, plant and equipment, intangible assets	(834)	(181)	11	(1,004)
Other investments	(153)	(192)	-	(345)
Dividends from the jointly controlled entities and other associates	909	-	-	909
Interest received	29	10	-	39
Other investing activities	(57)	6	-	(51)

USD million	**Metals**	**Power**	**Adjustments**	**Total**
Cash flows used in financing activities	**(517)**	**(443)**		**(960)**
Interest paid	(490)	(391)	-	(881)
Restructuring fee and expenses related to Offering	(6)	(13)	-	(19)
Settlements of derivative financial instruments	125	-	-	125
Dividends to shareholders	-	(68)	-	(68)
Other financing activities	(146)	29	-	(117)
Net change in cash and cash equivalents	**57**	**239**	**-**	**296**

(i) Geographic information

The Group's operating segments are managed on a worldwide basis, but operate in four principal geographical areas: the CIS, Europe, Africa and the Americas. In the CIS, production facilities operate in Russia, Ukraine and Armenia. In Europe, production facilities are located in Italy, Ireland and Sweden. African production facilities are represented by the bauxite mines and an alumina refinery in Guinea and an aluminium plant in Nigeria. In the Americas the Group operates one production facility in Jamaica, one in Guyana and a trading subsidiary in the United States of America.

The following table sets out information about the geographical location of the Group's revenue from external customers and the Group's property, plant and equipment, intangible assets, interests in associates and joint ventures and goodwill ("specified non-current assets"). The geographical location of customers is based on the location at which the services were provided or the goods delivered. The geographical location of the specified non-current assets is based on the physical location of the asset. Unallocated specified non-current assets comprise mainly goodwill and interests in associates and joint ventures.

Revenue from external customers	**Year ended 31 December**	
	2019	**2018**
	USD million	**USD million**
Russia	4,235	4,441
Turkey	1,052	751
Netherlands	985	1,122
USA	652	890
South Korea	577	282
Italy	573	364
Poland	457	335
Japan	440	806
Germany	235	249
France	209	311
Norway	203	372
Greece	188	262
Sweden	162	337
China	119	77
Other countries	1,665	1,779
	11,752	**12,378**

Specified non-current assets	**31 December**	
	2019	**2018**
	USD million	**USD million**
Russia	12,587	11,754
Ireland	655	376
Guinea	230	152
Ukraine	158	158
Sweden	-	126
Unallocated	3,183	2,887
	16,813	**15,453**

5. Revenues

IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognised.

The details of significant accounting policies in relation to the Group's various goods and services are set out below:

Sales of goods: comprise sale of primary aluminium, alloys, alumina, bauxite and other products. Customers obtain control of the goods supplied when the goods are delivered to the point when risks are transferred based on Incoterms delivery terms stated in the contract. Invoices are generated and revenue is recognised at that point in time. Invoices are usually payable within 60 days or in advance. Under certain Group sale contracts, the final price for the goods shipped is determined a few months later than the delivery took place. Under current requirements the Group determines the amount of revenue at the moment of recognition based on estimated selling price at the date of the invoice issued. At price finalisation the difference between estimated price and actual one is recognised as other revenue.

Rendering of transportation services: as part of sales of goods the Group also performs transportation to the customer under contract terms. In certain cases, the control of goods delivered is transferred to customers prior to transportation being completed. In these cases rendering of transportation services from when the control of goods has been transferred is considered as a separate performance obligation.

Rendering of electricity supply services: The Group is involved in sales of energy to third and related parties. Invoices are issued once a month at the end of month and paid within 30 days. Revenue is recognised over time during the month of energy supply.

	Year ended 31 December	
	2019	**2018**
	USD million	**USD million**
Sales of primary aluminium and alloys	**7,906**	**8,165**
Third parties	5,338	4,706
Related parties – companies capable of exerting significant influence	2,554	3,443
Related parties – other	13	16
Related parties – associates and joint ventures	1	-

	Year ended 31 December	
	2019	2018
	USD million	USD million
Sales of alumina and bauxite	**668**	**984**
Third parties	301	601
Related parties – companies capable of exerting significant influence	161	218
Related parties – associates and joint ventures	206	165
Sales of semi-finished products and foil	**563**	**527**
Third parties	563	525
Related parties – associates and joint ventures	-	2
Sales of electricity	**1,300**	**1,329**
Third parties	1,259	1,268
Related parties – companies capable of exerting significant influence	1	-
Related parties – other	6	28
Related parties – associates and joint ventures	34	33
Sales of heat	**462**	**461**
Third parties	438	430
Related parties – companies capable of exerting significant influence	2	4
Related parties – other	22	27
Other revenues	**853**	**912**
Third parties	711	741
Related parties – companies capable of exerting significant influence	9	8
Related parties – other	16	27
Related parties – associates and joint ventures	117	136
	11,752	**12,378**

The Group’s customer base is diversified and includes only one major customer - Glencore International AG (a member of Glencore International Plc Group which is a shareholder of the Parent Company and UC RUSAL Plc with nominal shareholding of 10.55% and 6.78% at the reporting date) with whom transactions have exceeded 10% of the Group’s revenue. In 2019 revenues from sales of primary aluminium and alloys to this customer amounted to USD 2,325 million (2018: USD 3,115 million). All revenue of the Group relates to revenue from contracts with customers.

6. Net other operating expenses

	Year ended 31 December	
	2019	2018
	USD million	USD million
Impairment of trade and other receivables	(2)	(65)
Charity	(41)	(31)
Loss on disposal of property, plant and equipment	(24)	(11)
Provision for legal claims	(22)	(5)
Other operating expenses, net	(22)	(24)
	(111)	**(136)**

7. Personnel costs

Personnel costs comprise salaries, annual bonuses, annual leave and cost of non-monetary benefits. Salaries, annual bonuses, paid annual leave and cost of non-monetary benefits are accrued in the year in which the associated services are rendered by employees. Where payment or settlement is deferred and the effect would be material, these amounts are stated at their present values.

The employees of the Group are also members of retirement schemes operated by local authorities. The Group is required to contribute a certain percentage of their payroll to these schemes to fund the benefits.

The Group's total contribution to those schemes charged to profit or loss during the years presented is shown below.

The Group's net obligation in respect of defined benefit pension and other post-retirement plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value and the fair value of any plan assets are deducted. The discount rate is the yield at the reporting date on government bonds that have maturity dates approximating the terms of the Group's obligations. The calculation is performed using the projected unit credit method. When the calculation results in a benefit to the Group, the recognised asset is limited to the present value of any future refunds from the plan or reductions in future contributions to the plan.

Where there is a change in actuarial assumptions, the resulting actuarial gains and losses are recognised directly in other comprehensive income.

When the benefits of a plan are improved, the portion of the increased benefit relating to past service by employees is recognised in profit or loss immediately.

The Group recognises gains and losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on curtailment comprises any resulting change in the fair value of plan assets, any change in the present value of the defined benefit obligation, any related actuarial gains and losses.

The Group also makes contributions for the benefit of employees to Russia's and the Ukrainian State's pension funds. The contributions are expensed as incurred.

	Year ended 31 December	
	2019	**2018**
	USD million	**USD million**
Contributions to defined contribution retirement plans	(254)	(247)
Contributions to defined benefit retirement plans	(4)	(1)
Total retirement costs	(258)	(248)
Wages and salaries	(1,058)	(1,135)
	(1,316)	**(1,383)**

8. Finance income and costs

Finance income comprises interest income on funds invested, dividend income, changes in the fair value of financial assets at fair value through profit or loss and foreign currency gains. Interest income is recognised as it accrues, using the effective interest method.

Finance costs comprise interest expense on borrowings, unwinding of the discount on provisions, foreign currency losses and changes in the fair value of financial assets at fair value through profit or loss. All borrowing costs are recognised in profit or loss using the effective interest method, except for borrowing costs related to the acquisition, construction and production of qualifying assets which are recognised as part of the cost of such assets.

Foreign currency gains and losses are reported on a net basis. Foreign exchange loss on loans and borrowing for the year ended 31 December 2019 amounted to USD 213 million.

	Year ended 31 December	
	2019	**2018**
	USD million	**USD million**
Finance income		
Interest income	82	44
Dividend income	1	1
Change in fair value of derivative financial instruments (refer to note 19)	-	171
	83	**216**
Finance costs		
Interest expense – *third parties*	(987)	(915)
Interest expenses on company loans from related parties – *companies capable of exerting significant influence*	(13)	(2)
Net foreign exchange loss	(114)	(253)
Change in fair value of derivative financial instruments (refer to note 19)	(21)	-
Other finance costs	(13)	(6)
	(1,148)	**(1,176)**

9. Earnings per share

The calculation of basic earnings per share is based on the profit attributable to ordinary equity shareholders for the years ended 31 December 2019 and 31 December 2018.

	Year ended 31 December	
	2019	**2018**
Weighted average number of shares at the beginning of the period	571,428,572	571,428,572
Issuance of shares (note 16(a)(i))	67,420,324	-
Weighted average number of shares	634,231,066	571,428,572
Profit for the year attributable to the shareholders of the Parent Company, USD million	860	967
Basic and diluted earnings per share, USD	**1.356**	**1.692**

There were no outstanding dilutive instruments during the years ended 31 December 2019 and 31 December 2018.

10. Income tax expense

Income tax expense comprises current and deferred tax. Income tax expense is recognised in the statement of profit or loss and other comprehensive income except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for the following temporary differences: the initial recognition of goodwill, the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit, and differences relating to investments in subsidiaries to the extent that they probably will not reverse in the foreseeable future. New information may become available that causes the Company to change its judgement regarding the adequacy of existing tax liabilities. Such changes to tax liabilities will impact tax expenses in the period that such a determination is made. Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, based on the laws that have been enacted or substantively enacted by the reporting date. Deferred tax assets and liabilities are offset when they relate to income taxes levied by the same taxation authority and the Group has both the right and the intention to settle its current tax assets and liabilities on a net or simultaneous basis.

A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which temporary differences can be utilised. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

Additional income taxes that arise from the distribution of dividends are recognised at the same time as the liability to pay the related dividends is recognised.

(a) Income tax expense

	Year ended 31 December	
	2019	**2018**
	USD million	**USD million**
Current tax expense		
Current tax for the year	(369)	(462)
Deferred tax expense		
Origination and reversal of temporary differences	93	56
	(276)	**(406)**

On 9 July 2019 the Parent Company redomiciled to Russia's SAR (special administrative region) and became a Russian tax resident. Companies which register in the SAR as part of the continuance out of a foreign jurisdiction (such as the Parent Company) may have a number of tax benefits, subject to certain conditions. Before redomiciliation, the Parent Company was a tax resident of Cyprus.

The Parent Company and subsidiaries pay income taxes in accordance with the legislative requirements of their respective tax jurisdictions. For companies domiciled in Russia the applicable tax rate is 20%; in Ukraine of 18%; Guinea of 0%; China of 25%; Kazakhstan of 20%; Australia of 30%; Jamaica of 25%; Ireland of 12.5% and Sweden of 21.4%. For the Group’s subsidiaries domiciled in Switzerland the applicable tax rate for the year is the corporate income tax rate in the Canton of Zug, Switzerland, which differs depending on the company’s tax status. The rate consists of a federal income tax and a cantonal/communal income and capital taxes. The latter includes a base rate and a multiplier, which may change from year to year. Applicable income tax rates are 9.55% and 14.35% for different subsidiaries. For the UC RUSAL’s significant trading companies, the applicable tax rate is 0%. The applicable tax rates for the period ended 31 December 2018 were the same as for the period ended 31 December 2019 except for tax rates for subsidiaries domiciled in Sweden which amounted to 22% and tax rates for subsidiaries domiciled in Switzerland which amounted to 9.6% and 14.51% accordingly.

Reconciliation of effective tax rate

	Year ended 31 December			
	2019		2018	
	USD million	%	USD million	%
Profit before taxation	**1,580**	**(100)**	**2,268**	**(100)**
Income tax at tax rate applicable for the Parent Company	(316)	20	(454)	20
Other non-deductible/taxable items, net	(27)	2	(65)	3
Effect of changes in investment in Norilsk Nickel	154	(10)	63	(3)
Change in unrecognised deferred tax assets	(49)	3	(30)	1
Effect of reversal of impairment	(79)	5	35	(2)
Income tax related to prior periods, including provision	(2)	-	(117)	5
Effect of different income tax rates	43	(3)	162	(7)
Income tax	**(276)**	**17**	**(406)**	**17**

(b) Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following items:

USD million	**Assets**		**Liabilities**		**Net**	
	31 December		**31 December**		**31 December**	
	2019	**2018**	**2019**	**2018**	**2019**	**2018**
Property, plant and equipment	84	61	(1,391)	(1,315)	(1,307)	(1,254)
Inventories	100	58	(13)	(15)	87	43
Trade and other receivables	34	22	(19)	(9)	15	13
Financial instruments	7	6	(8)	(8)	(1)	(2)
Tax losses carried-forward	78	52	-	-	78	52
Others	368	255	(318)	(201)	50	54
Tax assets/(liabilities)	671	454	(1,749)	(1,548)	(1,078)	(1,094)
Set off of tax	(506)	(329)	506	329	-	-
Net deferred tax assets/(liabilities)	**165**	**125**	**(1,243)**	**(1,219)**	**(1,078)**	**(1,094)**

(c) Movement in temporary differences during the year

USD million	1 January 2019	Recognised in profit or loss	Currency translation	31 December 2019
Property, plant and equipment	(1,254)	30	(83)	(1,307)
Inventories	43	44	-	87
Trade and other receivables	13	1	1	15
Financial instruments	(2)	1	-	(1)
Tax loss carry-forwards	52	25	1	78
Others	54	(8)	4	50
	(1,094)	**93**	**(77)**	**(1,078)**

USD million	1 January 2018	Recognised in profit or loss	Recognised in equity	Currency translation	31 December 2018
Property, plant and equipment	(1,384)	50	(60)	140	(1,254)
Inventories	36	5	-	2	43
Trade and other receivables	10	9	-	(6)	13
Financial instruments	9	(11)	-	-	(2)
Tax loss carry-forwards	62	(5)	-	(5)	52
Others	48	8	-	(2)	54
	(1,219)	**56**	**(60)**	**129**	**(1,094)**

Recognised tax losses expire in the following years:

	31 December 2019	31 December 2018
Year of expiry	**USD million**	**USD million**
Without expiry	78	52
	78	**52**

(d) Unrecognised deferred tax assets

Deferred tax assets have not been recognised in respect of the following items:

	31 December 2019 USD million	31 December 2018 USD million
Deductible temporary differences	855	808
Tax loss carry-forwards	337	331
	1,192	**1,139**

Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profits will be available against which the Group can utilise the benefits therefrom. Tax losses expire in the following years:

	31 December 2019	31 December 2018
Year of expiry	**USD million**	**USD million**
Without expiry	335	330
From 2 to 5 years	2	1
Up to 1 year	-	-
	337	**331**

(e) Unrecognised deferred tax liabilities

The Group's subsidiaries have retained earnings where dividend distributions are subject to taxation, for which deferred taxation has not been provided because remittance of the earnings has been indefinitely postponed through reinvestment and, as a result, such amounts are considered to be permanently invested. It was not practicable to determine the amount of temporary differences relating to investments in subsidiaries where the Group is able to control the timing of reversal of the difference. Reversal is not expected in the foreseeable future.

(f) Current taxation in the consolidated statement of financial position represents:

	31 December 2019 USD million	31 December 2018 USD million
Net income tax payable/ (receivable) at the beginning of the year	116	(33)
Income tax for the year	369	462
Income tax paid	(424)	(251)
Dividend withholding tax	(57)	(47)
Income tax provision (note 18)	-	(20)
Translation difference	6	5
	10	**116**
Represented by:		
Income tax payable (note 15(c))	38	146
Income tax receivable (note 15(b))	(28)	(30)
Net income tax payable/(receivable)	**10**	**116**

11. Property, plant and equipment

(a) Accounting policy

(i) Recognition and measurement

Until 1 January 2016 all items of property, plant and equipment were measured at cost less accumulated depreciation and impairment losses. The cost of property, plant and equipment at 1 January 2004, the date of transition to IFRSs, was determined by reference to its fair value at that date.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the asset to a working condition for its intended use, the costs of dismantling and removing the items and restoring the site on which they are located and capitalised borrowing costs. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

The cost of periodic relining of electrolysers is capitalised and depreciated over the expected production period.

Gains or losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and are recognised net within gain/(loss) on disposal of property, plant and equipment in profit or loss.

Most of the hydro assets have long useful lives (up to 100 years) and their performance does not deteriorate significantly. Considering recent changes in the regulation of the Russian power sector (100% liberalisation) and the fact that hydropower is one of the most efficient sectors of the electric power industry, management believes that hydropower assets were significantly undervalued prior to 1 January 2016.

On 1 January 2016 the Group identified a separate class of assets – hydro assets – and changed its accounting policy for this class from the cost to the revaluation model to provide users with more relevant information on the Group's financial position.

Hydro assets are a class of property, plant and equipment with unique nature and use in their hydropower plants. Since 1 January 2016 hydro assets are measured at a revalued amount, being their fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluations are made based on periodic valuation by an external independent valuer.

A class of assets may be revalued on a rolling basis provided that revaluations of the class of assets are completed within a short period and provided the revaluations are kept up to date.

After an item of property, plant and equipment is revalued, any accumulated depreciation at the date of the revaluation is eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount of the asset.

A revaluation increase on hydro assets is recognised directly under the heading of revaluation surplus in other comprehensive income. However, the increase is recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss. A revaluation decrease on hydro assets is recognised in profit or loss. However, the decrease is recognised in other comprehensive income to the extent of any credit balance existing in the revaluation surplus.

(ii) Subsequent costs

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

(iii) Exploration and evaluation assets

Exploration and evaluation activities involve the search for mineral resources, the determination of technical feasibility and the assessment of commercial viability of an identified resource. Exploration and evaluation activities include:

- researching and analysing historical exploration data;
- gathering exploration data through topographical, geochemical and geophysical studies;
- exploratory drilling, trenching and sampling;
- determining and examining the volume and grade of the resource;
- surveying transportation and infrastructure requirements; and

- conducting market and finance studies.

Administration costs that are not directly attributable to a specific exploration area are charged to profit or loss.

License costs paid in connection with a right to explore in an existing exploration area are capitalised and amortised over the term of the permit.

Exploration and evaluation expenditure is capitalised as exploration and evaluation assets when it is expected that expenditure related to an area of interest will be recouped by future exploitation, sale, or, at the reporting date, the exploration and evaluation activities have not reached a stage that permits a reasonable assessment of the existence of commercially recoverable ore reserves. Capitalised exploration and evaluation expenditure is recorded as a component of property, plant and equipment at cost less impairment losses. As the asset is not available for use, it is not depreciated. All capitalised exploration and evaluation expenditure is monitored for indications of impairment. Where there are indicators of potential impairment, an assessment is performed for each area of interest in conjunction with the group of operating assets (representing a cash-generating unit) to which the exploration is attributed. Exploration areas at which reserves have been discovered but which require major capital expenditure before production can begin are continually evaluated to ensure that commercial quantities of reserves exist or to ensure that additional exploration work is underway or planned. To the extent that capitalised expenditure is not expected to be recovered it is charged to profit or loss.

Exploration and evaluation assets are transferred to mining property, plant and equipment or intangible assets when development is sanctioned.

(iv) Stripping costs

Expenditure relating to the stripping of overburden layers of ore, including estimated site restoration costs, is included in the cost of production in the period in which it is incurred.

(v) Mining assets

Mining assets are recorded as construction in progress and transferred to mining property, plant and equipment when a new mine reaches commercial production.

Mining assets include expenditure incurred for acquiring mineral and development rights and developing new mining operations.

Mining assets include interest capitalised during the construction period, when financed by borrowings.

(vi) Depreciation

The carrying amounts of property, plant and equipment (including initial and any subsequent capital expenditure) are depreciated to their estimated residual value over the estimated useful lives of the specific assets concerned, or the estimated life of the associated mine or mineral lease, if shorter. Estimates of residual values and useful lives are reassessed annually and any change in estimate is taken into account in the determination of remaining depreciation charges. Leased assets are depreciated over the shorter of the lease term and their useful lives. Land is not depreciated.

Any accumulated depreciation at the date of the revaluation is eliminated against the gross amount of the assets, and the net amount is restated to the revalued amount of the asset.

The property, plant and equipment is depreciated on a straight-line or units of production basis over the respective estimated useful lives as follows:

- Hydro assets — predominantly 49 to 62 years;
- Buildings and constructions — predominantly 15 to 50 years;

- Machinery and equipment 4 to 50 years;
- Electrolysers 4 to 15 years;
- Mining assets units of production on proven and probable reserves;
- Other 1 to 30 years.

(b) Disclosure

USD million	Land and buildings	Machinery and equipment	Electrolysers	Hydroassets	Mining assets	Construction in progress	Other	Total
Cost/Deemed cost								
1 January 2018	4,582	7,526	2,340	4,151	684	2,048	361	21,692
Additions	20	23	101	-	7	872	-	1,023
Acquired through business combinations	-	3	-	-	-	1	16	20
Disposals	(12)	(69)	-	-	(4)	(92)	(5)	(182)
Transfers	150	329	118	13	8	(635)	17	-
Reclassification to other assets	(6)	-	-		-	(16)	(4)	(26)
Revaluation of hydro assets as at 31.12.2018	-	-	-	120	-	-	-	120
Change in estimate of site restoration provision	-	-	-	-	(4)	-	-	(4)
Translation difference	(266)	(302)	(15)	(706)	(101)	(106)	(27)	(1,523)
At 31 December 2018	**4,468**	**7,510**	**2,544**	**3,578**	**590**	**2,072**	**358**	**21,120**
IFRS 16 “Leases” application	38	12	-	-	-	-	-	50
At 1 January 2019	**4,506**	**7,522**	**2,544**	**3,578**	**590**	**2,072**	**358**	**21,170**
Additions	25	56	131	-	13	964	2	1,191
Acquired through business combinations	4	-	-	-	-	2	-	6
Disposals	(24)	(312)	(8)	-	(2)	(28)	(56)	(430)
Transfers	171	331	42	10	4	(575)	17	-
Change in estimate of site restoration provision	-	-	-	-	14	-	-	14
Translation difference	164	182	4	438	54	83	20	945
At 31 December 2019	**4,846**	**7,779**	**2,713**	**4,026**	**673**	**2,518**	**341**	**22,896**

USD million	Land and buildings	Machinery and equipment	Electrolysers	Hydro assets	Mining assets	Construction in progress	Other	Total
Depreciation and impairment losses								
1 January 2018	**(2,415)**	**(5,148)**	**(2,025)**	**(102)**	**(578)**	**(1,214)**	**(270)**	**(11,752)**
Depreciation charge	(136)	(357)	(151)	(94)	(8)	-	(17)	(763)
Reversal of impairment/(impairment losses)	42	(20)	-	(12)	30	(116)	(2)	(78)
Disposals	4	56	-	-	-	7	5	72
Transfers	(14)	60	(46)	-	-	1	(1)	-
Reclassification to other assets	-	-	-	-	-	8	1	9
Revaluation of hydro assets as at 31.12.2018	-	-	-	181	-	-	-	181
Translation difference	159	196	12	27	83	38	18	533
At 31 December 2018	**(2,360)**	**(5,213)**	**(2,210)**	**-**	**(473)**	**(1,276)**	**(266)**	**(11,798)**
Depreciation charge	(152)	(384)	(144)	(95)	(10)	-	(17)	(802)
(Impairment losses)/ reversal of impairment/	(106)	(76)	(32)	-	(39)	(11)	5	(259)
Disposals	4	106	5	-	1	-	7	123
Transfers	5	8	-	-	-	-	-	13
Translation difference	(83)	(106)	(4)	(4)	(46)	(36)	(11)	(290)
At 31 December 2019	**(2,692)**	**(5,665)**	**(2,385)**	**(99)**	**(567)**	**(1,323)**	**(282)**	**(13,013)**
Net book value								
At 1 January 2018	2,167	2,378	315	4,049	106	834	91	9,940
At 31 December 2018	**2,108**	**2,297**	**334**	**3,578**	**117**	**796**	**92**	**9,322**
At 31 December 2019	**2,154**	**2,114**	**328**	**3,927**	**106**	**1,195**	**59**	**9,883**

Disposals of property, plant and equipment with net book value of USD 153 million represent cancellation of lease agreements

Depreciation expense of USD 775 million (2018: USD 721 million) has been charged to cost of goods sold, USD 10 million (2018: USD 12 million) to distribution expenses and USD 17 million (2018: USD 14 million) to administrative expenses.

Interest capitalised for the years ended 31 December 2019 and 31 December 2018 was USD 28 million and USD 21 million, respectively.

Included in construction in progress at 31 December 2019 and 31 December 2018 are advances to suppliers of property, plant and equipment of USD 102 million and USD 34 million, respectively.

(c) Impairment

Management reviewed the carrying amount of the Group's non-financial assets at the reporting date to determine whether there were any indicators of impairment or reversal of impairment.

Management identified several factors that indicated that for a number of the Group's cash-generating units previously recognised impairment losses may require reversal and for a number of cash-generating units impairment losses may need to be recognised. These include a significant decrease of aluminium and alumina prices during the year as a result of LME and overall market instability, fluctuations of coal sale prices and additional volumes of electricity transmission set in further periods. In aluminium production, the Group benefited from decreases in cash costs due to decreases in alumina costs. For alumina cash generating units, the major influences were a decrease in alumina prices and favourable dynamics in energy prices being a significant part of cash cost. For bauxite cash generating units, bauxite sales prices were generally stable. For Irkutsk GridCo cash generating unit the regulated tariffs were set for additional volumes of electricity transmission from 2021.

For the purposes of impairment testing, value in use of each cash generating unit was determined by discounting expected future net cash flows of the cash generating unit.

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At 31 December 2019 and 31 December 2018 management identified several indicators that a number of the Group's cash-generating units may be impaired or that previously recognised impairment losses may need to be reversed.

Based on results of impairment testing as at 31 December 2019, management concluded that a reversal of previously recognised impairment losses relating to property, plant and equipment should be recognised in respect of Aughinish and Cobad cash generating units in the amount of USD 363 million. Additionally, management concluded that impairment losses in respect of KAZ, VgAZ, BAZ and UAZ, Kubal, Kremny and Windalco cash generating units, in the amount of USD 545 million should be recognised.

Based on results of impairment testing as at 31 December 2018, management concluded that a reversal of previously recognised impairment losses relating to property, plant and equipment should be recognised in respect of the BAZ and UAZ cash generating units in the amount of USD 177 million. Additionally, management concluded that an impairment loss in respect of the Cobad cash generating unit in the amount of USD 78 million should be recognised.

The pre-tax discount rates applied to the above mentioned cash generating units, estimated in nominal terms based on an industry weighted average cost of capital, are presented in the table below.

	Year ended 31 December	
	2019	**2018**
Kubikenborg Aluminium (Kubal)	11.1%	11.1%
Windalco	18.6%	21.0%
BAZ and UAZ (Bogoslovsk and Ural aluminium smelters)	12.5%	19.2%
KAZ (Kandalaksha aluminium smelter)	12.5%	14.0%
VgAZ (Volgograd aluminium smelter)	12.0%	13.0%
Compagnie de Bauxites de Dian-Dian (Cobad)	20.0%	22.0%
Kremny	13.0%	13.0%
Aughinish Alumina	12.0%	13.4%

The recoverable amount of a number of the cash generating units tested for impairment are particularly sensitive to changes in forecast aluminium and alumina prices, foreign exchange rates and applicable discount rates.

Additionally, management identified specific items of property, plant and equipment that are no longer in use and therefore are not considered to be recoverable amounting to USD 49 million at 31 December 2019 (2018: USD 146 million). These assets have been impaired in full. No further impairment of property, plant and equipment or reversal of previously recorded impairment was identified.

POWER

At 31 December 2019 and 2018 management identified several indicators that property, plant and equipment of the Coal and Irkutsk GridCo cash-generating units may be impaired or that previously recognised impairment losses may need to be reversed.

Based on results of impairment testing as at 31 December 2019, management concluded that no impairment losses or reversal of previously recognized impairment losses should be recognised.

Based on results of impairment testing as at 31 December 2018, management concluded that a reversal of previously recognised impairment losses relating to property, plant and equipment should be recognised in respect of the Coal cash generating unit in the amount of USD 36 million.

The following key assumptions were used to determine the recoverable amount of the Coal cash-generating unit:

	Year ended 31 December	
	2019	**2018**
Sales volumes of coal in 2020/2019	14,825 ths tonnes	14,951 ths tonnes
Expected growth of sales volumes of coal till 2029/2028	2%	2%
Weighted average price for coal in 2020/2019	USD 14 (RUB 929)	USD 14 (RUB 974)
Weighted average price growth after 2020/2019	4%	9%
Post-tax discount rate	13%	15%

The recoverable amount of the Coal cash-generating unit is particularly sensitive to changes in forecast of sales volumes, coal prices and applicable discount rates.

The following key assumptions were used to determine the recoverable amount of the Irkutsk GridCo cash-generating unit:

	Year ended 31 December	
	2019	**2018**
Sales volumes of electricity transmission in 2020/2019	46 mln MWh	45 mln MWh
Expected growth of sales volumes till 2029/2028	15,7%	19.9%
Tariffs for electricity transmission in 2020/2019	USD 6 -10 (RUB 393-628)	USD 6-9 (RUB 385-605)
Tariffs growth after 2020/2019	40%	42%
Post-tax discount rate	12.3%	12.3%

The anticipated price/tariffs growth included in the cash flow projections for the years from 2021 to 2029 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation.

The recoverable amounts estimated at 31 December 2019 and 31 December 2018 includes cash flows from sales of electricity transmission to Taishet aluminium smelter starting from 2021. If the Taishet aluminium smelter is not commissioned, a significant impairment of property, plant and equipment may need to be recognised.

The recoverable amount of the Irkutsk GridCo cash-generating unit is also particularly sensitive to changes in forecast electricity transmission volumes and tariffs, as well as applicable discount rates.

Additionally, management identified specific items of property, plant and equipment that are no longer in use and therefore are not considered to be recoverable amounting to USD 30 million (2018: USD 56 million). No further impairment of property, plant and equipment or reversal of previously recorded impairments was identified.

(d) Security

The carrying value of property, plant and equipment which subject to lien under loan agreements was USD 1,262 million at 31 December 2019 (31 December 2018: USD 1,112 million) (note 17).

(e) Hydro assets

As disclosed in note 11(a)(i), the Group regularly performs an independent valuation of its hydro assets. As at 31 December 2018 the independent appraiser estimated the fair value of hydro assets at USD 3,578 million with an equity effect of USD 301 million and revaluation loss of USD 11 million recognised in profit or loss.

The valuation analysis was primarily based on the cost approach to determine depreciated replacement cost as it is the most reliable method to estimate value for assets that do not have an active market and do not generate an identifiable revenue stream by asset. This method considers the cost to reproduce or replace the property, plant and equipment, adjusted for physical depreciation, functional and economic obsolescence.

Depreciated replacement cost was estimated based on internal sources and, where available, analysis of the Russian and international markets for similar property, plant and equipment. Various market data were collected from published information, catalogues, statistical data etc.

In addition, cash flow testing was conducted to identify if there is any economic obsolescence of the hydro assets. Forecasts of net cash flows were determined based on the actual results for the preceding years and approved budgets. Based on the analysis results, there was no economic obsolescence as at 31 December 2019 or 2018.

The fair value measurement for hydro assets have been categorised as Level 3 fair values based on the inputs to the valuation techniques used.

As at 31 December 2019 a valuation by external independent appraiser was not performed because based on management's analysis, the fair value of hydro assets approximated their carrying amount at that date.

Net book value as at 31 December 2019 according to the cost model amounted to USD 404 million (31 December 2018: USD 358 million).

12. Goodwill and intangible assets

(a) Accounting policy

(i) Goodwill

On the acquisition of a subsidiary, an interest in a joint venture or an associate or an interest in a joint arrangement that comprises a business, the identifiable assets, liabilities and contingent liabilities of the acquired business (or interest in a business) are recognised at their fair values unless the fair values cannot be measured reliably. Where the fair values of assumed contingent liabilities cannot be measured reliably, no liability is recognised but the contingent liability is disclosed in the same manner as for other contingent liabilities.

Goodwill arises when the cost of acquisition exceeds the fair value of the Group's interest in the net fair value of identifiable net assets acquired. Goodwill is not amortised but is tested for impairment annually. For this purpose, goodwill arising on a business combination is allocated to the cash-generating units expected to benefit from the acquisition and any impairment loss recognised is not reversed even where circumstances indicate a recovery in value.

In respect of associates or joint ventures, the carrying amount of goodwill is included in the carrying amount of the interest in the associate and joint venture and the investment as a whole is tested for impairment whenever there is objective evidence of impairment. Any impairment loss is allocated to the carrying amount of the interest in the associate and joint venture.

When the fair value of the Group's share of identifiable net assets acquired exceeds the cost of acquisition, the difference is recognised immediately in profit or loss.

(ii) Research and development

Expenditure on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in profit or loss when incurred.

Development activities involve a plan or design for the production of new or substantially improved products and processes. Development expenditure is capitalised only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable and the Group intends to and has sufficient resources to complete development and to use or sell the asset. The expenditure capitalised includes the cost of materials, direct labour and overhead costs that are directly attributable to preparing the asset for its intended use and capitalised borrowing costs. Other development expenditure is recognised in profit or loss when incurred.

Capitalised development expenditure is measured at cost less accumulated amortisation and accumulated impairment losses (refer to note 11(c)).

(iii) Other intangible assets

Other intangible assets that are acquired by the Group, which have finite useful lives, are measured at cost less accumulated amortisation and accumulated impairment losses (refer to note 11(c)).

(iv) Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in profit or loss when incurred.

(v) Amortisation

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill, from the date that they are available for use. The estimated useful lives are as follows:

- software 5 years;
- other intangible assets 2-8 years.

The amortisation method, useful lives and residual values are reviewed at each financial year end and adjusted if appropriate.

(b) Disclosure

USD million	**Goodwill**	**Other intangible assets**	**Total**
Cost			
Balance at 1 January 2018	**2,745**	**590**	**3,335**
Additions	48	40	88
Disposals	-	(9)	(9)
Foreign currency translation	(265)	(9)	(274)
Balance at 31 December 2018	**2,528**	**612**	**3,140**
Additions	-	43	43
Disposals	-	(22)	(22)
Foreign currency translation	158	12	170
Balance at 31 December 2019	**2,686**	**645**	**3,331**
Amortisation and impairment losses			
Balance at 1 January 2018	**(450)**	**(493)**	**(943)**
Amortisation charge	**-**	(5)	**(5)**
Foreign currency translation	**-**	3	**3**
Balance at 31 December 2018	**(450)**	**(495)**	**(945)**
Amortisation charge	**-**	(4)	**(4)**
Foreign currency translation	**-**	(6)	**(6)**
Balance at 31 December 2019	**(450)**	**(505)**	**(955)**
Net book value			
At 1 January 2018	2,295	97	2,392
At 31 December 2018	**2,078**	**117**	**2,195**
At 31 December 2019	**2,236**	**140**	**2,376**

(c) Amortisation charge

The amortisation charge is included in cost of sales in consolidated statement of profit or loss and other comprehensive income.

(d) Impairment testing of goodwill and other intangible assets

For the purposes of impairment testing, goodwill is allocated to the following cash-generating units. These units represent the lowest level within the Group at which the goodwill is monitored for internal management purposes.

The aggregate carrying amounts of goodwill allocated to each business, and the related impairment losses recognised, are as follows:

USD million	**Allocated goodwill 2019**	**Accumulated impairment loss 2019**	**Allocated goodwill 2018**	**Accumulated impairment loss 2018**
UC RUSAL	2,429	(449)	2,301	(449)
Irkutskenergo	256	-	226	-
Strikeforce Mining and Resources Limited ("SMR")	1	(1)	1	(1)
	2,686	**(450)**	**2,528**	**(450)**

UC RUSAL

For the purposes of impairment testing, the entire amount of goodwill is allocated to the aluminium segment of UC RUSAL's operations. The aluminium segment represents the lowest level within UC RUSAL at which goodwill is monitored for internal management purposes. The recoverable amount represents value in use as determined by discounting the future cash flows generated from the continuing use of the plants within UC RUSAL's aluminium segment.

Similar considerations to those described above in respect of assessing the recoverable amount of property, plant and equipment apply to goodwill.

At 31 December 2019, management analysed changes in the economic environment and developments in the aluminium industry and the Group's operations since 31 December 2018 and performed an impairment test for goodwill at 31 December 2019 using the following assumptions to determine the recoverable amount of the segment:

- Total production was estimated based on average sustainable production levels of 3.8 million metric tonnes of primary aluminium, of 8.2 million metric tonnes of alumina and of 15.4 million metric tonnes of bauxite. Bauxite and alumina are primarily used internally for the production of primary aluminium;
- Sales prices were based on the long-term aluminium price outlook derived from available industry and market sources at USD 1,802 per tonne for primary aluminium in 2020, USD 1,860 in 2021, USD 1,952 in 2022, USD 2,028 in 2023, USD 2,099 in 2024. Alumina prices were derived from the same sources as aluminium prices at USD 301 per tonne for alumina in 2020, USD 311 in 2021, USD 322 in 2022, USD 341 in 2023, USD 349 in 2024. Operating costs were projected based on the historical performance adjusted for inflation;
- Nominal foreign currency exchange rates applied to convert operating costs of the Group denominated in RUB into USD were RUB 65.8 in 2020, RUB 65.4 in 2021, RUB 63.9 in 2022, RUB 63.0 in 2023, RUB 63.6 in 2024. Inflation of 4.0% – 4.6% in RUB and 1.7% - 2.1% in USD was assumed in determining recoverable amounts;
- The pre-tax discount rate was estimated in nominal terms based on the weighted average cost of capital basis and was 11.3%;
- A terminal value was derived following the forecast period assuming a 1.7% annual growth rate.

Values assigned to key assumptions and estimates used to measure the units' recoverable amount was based on external sources of information and historic data. Management believes that the values assigned to the key assumptions and estimates represented the most realistic assessment of future trends. The results were particularly sensitive to the following key assumptions:

- A 5% reduction in the projected aluminium and alumina price levels would result in a decrease in the recoverable amount by 44% and would lead to an impairment in amount of USD 1,241 million;
- A 5% increase in the projected level of electricity and alumina costs in the aluminium production would have resulted in a 21% decrease in the recoverable amount but would not lead to an impairment;
- A 1% increase in the discount rate would have resulted in a 11% decrease in the recoverable amount but would not lead to an impairment.

Based on results of impairment testing of goodwill, management concluded that no impairment should be recorded as at 31 December 2019.

At 31 December 2018, management analysed changes in the economic environment and developments in the aluminium industry and the Group's operations since 31 December 2017 and performed an impairment test for goodwill at 31 December 2018 using the following assumptions to determine the recoverable amount of the segment:

- Total production was estimated based on average sustainable production levels of 3.8 million metric tonnes of primary aluminium, of 8.1 million metric tonnes of alumina and of 16.5 million metric tonnes of bauxite. Bauxite and alumina are primarily used internally for production of primary aluminium;
- Sales prices were based on the long-term aluminium price outlook derived from available industry and market sources at USD 2,117 per tonne for primary aluminium in 2019, USD 2,159 in 2020, USD 2,193 in 2021, USD 2,193 in 2022 and USD 2,216 in 2023. Operating costs were projected based on the historical performance adjusted for inflation;
- Nominal foreign currency exchange rates applied to convert operating costs of the Group denominated in RUB into USD were RUB 66.8 in 2019, RUB 68.3 in 2020, RUB 66.7 in 2021, RUB 65.1 in 2022 and RUB 65.0 in 2023. Inflation of 4.0% – 4.5% in RUB and 1.6% - 2.4% in USD was assumed in determining recoverable amounts;
- The pre-tax discount rate was estimated in nominal terms based on the weighted average cost of capital basis and was 15.9%;
- A terminal value was derived following the forecast period assuming a 1.7% annual growth rate.

Values assigned to key assumptions and estimates used to measure the units' recoverable amount was based on external sources of information and historic data. Management believed that the values assigned to the key assumptions and estimates represented the most realistic assessment of future trends. The results were particularly sensitive to the following key assumptions:

- A 5% reduction in the projected aluminium price level would have resulted in a decrease in the recoverable amount by 22% but would not lead to an impairment;
- A 5% increase in the projected level of electricity and alumina costs in the aluminium production would have resulted in a 14% decrease in the recoverable amount but would not lead to an impairment;
- A 1% increase in the discount rate would have resulted in a 8% decrease in the recoverable amount but would not lead to an impairment.

Based on results of impairment testing of goodwill, management concluded that no impairment should be recorded as at 31 December 2018.

POWER

Goodwill primarily resulted from the acquisition of Irkutskenergo. For the purposes of impairment testing, goodwill is allocated to the Irkutskenergo cash generating unit. This represents the lowest level within the Group at which goodwill is monitored for internal management purposes.

Management performs impairment testing of goodwill annually at 31 December of the respective calendar year.

The recoverable amount of Irkutskenergo in 2019 and 2018 was determined by reference to its value in use derived by discounting of the future cash flows generated from continuing use of production facilities within Irkutskenergo cash generating unit of the Group.

The following key assumptions were used to determine the recoverable amount of the segment at 31 December 2019:

- The sales volumes in 2020 were projected based on the approved budgets for 2020. In particular, the sales volumes of electricity in 2020 and 2021 were planned at the level of 70 million MWh. The expected growth till 2029 was estimated as 1.1% as compared to 2020. The sales volumes of heat in 2020 were planned at the level of 20 million Gcal and no growth till 2029 is expected.
- Sales prices were based on the long-term price outlook derived from the available industry and market sources. The prices for electricity were estimated at the levels of USD 0.5 – 27.2 (RUB 34-1,759) per MWh depending on market segment in 2020 and increased by 17-51% respectively till 2029. The tariffs for heat were estimated as USD 17.5 (RUB 1,133) per Gcal in 2020 and grew by 52% till 2029. Operating costs were projected based on the historical performance of Irkutskenergo and the anticipated increase during the projected period was in line with inflation.
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital amounted to 13.0% ;
- A terminal value was derived following the forecast period assuming a 4% annual growth rate.

The following key assumptions were used to determine the recoverable amount of the segment at 31 December 2018:

- The sales volumes in 2019 were projected based on the approved budgets for 2019. In particular, the sales volumes of electricity in 2019 were planned at the level of 68 million MWh and 69 million MWh in 2020. The expected growth till 2028 was estimated as 7.4% as compared to 2019. The sales volumes of heat in 2019 were planned at the level of 20 million Gcal and no growth till 2028 is expected.
- Sales prices were based on the long-term price outlook derived from the available industry and market sources. The prices for electricity were estimated at the levels of USD 0.4 – 25.1 (RUB 30-1,747) per MWh depending on market segment in 2019 and increased by 20-42% respectively till 2028. The tariffs for heat were estimated as USD 16.4 (RUB 1,094) per Gcal in 2019 and grew by 42% till 2028. Operating costs were projected based on the historical performance of Irkutskenergo and the anticipated increase during the projected period was in line with inflation.
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital amounted to 14.1% ;
- A terminal value was derived following the forecast period assuming a 4% annual growth rate.

Reasonable possible changes in key assumptions will not lead to an impairment.

13. Interests in associates and joint ventures

An associate is an entity in which the Group or Company has significant influence, but not control or joint control, over its management, including participation in the financial and operating policy decisions.

A joint venture is an arrangement whereby the Group or Company and other parties contractually agree to share control of the arrangement and have rights to the net assets of the arrangement.

An investment in an associate or a joint venture is accounted for in the consolidated financial statements under the equity method, unless it is classified as held for sale (or included in a disposal group that is classified as held for sale). Under the equity method, the investment is initially recorded at cost, adjusted for any excess of the Group's share of the acquisition-date fair values of the investee's identifiable net assets over the cost of the investment (if any). Thereafter, the investment is adjusted for the post acquisition change in the Group's share of the investee's net assets and any impairment losses relating to the investment. Any acquisition-date excess over cost, the Group's share of the post-acquisition, post-tax results of the investees and any impairment losses for the year are recognised in the consolidated statement of profit or loss and other comprehensive income, whereas the Group's share of the post-acquisition post-tax items of the investees' other comprehensive income is recognised in the consolidated statement of other comprehensive income.

When the Group's share of losses exceeds its interest in the associate or the joint venture, the Group's interest is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the investee.

Unrealised profits and losses resulting from transactions between the Group and its associates and joint venture are eliminated to the extent of the Group's interest in the investee, except where unrealised losses provide evidence of an impairment of the asset transferred, in which case they are recognised immediately in profit or loss.

If an investment in an associate becomes an investment in a joint venture or vice versa, retained interest is not remeasured. Instead, the investment continues to be accounted for under the equity method.

In all other cases, when the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in that investee, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former investee at the date when significant influence or joint control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset.

In the Group's statement of financial position, investments in associates and joint ventures are stated at cost less impairment losses, unless classified as held for sale (or included in a disposal group that is classified as held for sale).

An impairment loss in respect of an investment in an associate or joint venture is calculated as the difference between its carrying amount after application of the equity method of accounting and its recoverable amount. The recoverable amount of such investment is the greater of its value in use and its fair value less cost to sell. In determining the value in use of the investment the Group estimates: (a) its share of the present value of the estimated future cash flows expected to be generated by the investee, including the cash flows from the operations of the investee and the proceeds on the ultimate disposal of the investment; or (b) the present value of the estimated future cash flows expected to arise from the dividends to be received from the investee and from its ultimate disposal depending on which available information with respect to each investee is more reliable. An impairment loss is reversed to the extent that the recoverable amount of the investment subsequently increases and the resulting carrying amount does not exceed the carrying amount that would have been determined, after application of the equity method, had no impairment loss previously been recognised.

	31 December 2019 USD million	31 December 2018 USD million
Balance at the beginning of the year	**3,701**	**4,459**
Group's share of profits, impairment and reversal of impairment	1,669	948
Acquisition and contribution to investments	78	-
(Return of prepayment)/prepayment for shares	(41)	41
Dividends	(1,609)	(946)
Group's share of other comprehensive income/(loss)	-	10
Foreign currency translation	450	(811)
Balance at the end of the year	**4,248**	**3,701**
Goodwill included in interests in associates	2,428	2,163

The following list contains only the particulars of associates, all of which are corporate entities, which principally affected the results or assets of the Group.

Name of associate/ joint venture	Place of incorporation and operation	Particulars of issued and paid up capital	Proportion of ownership interest: Group's effective interest	Proportion of ownership interest: Group's nominal interest	Principal activity
PJSC MMC Norilsk Nickel	Russian Federation	158,245,476 shares, RUB 1 par value	15.82%	27.82%	Nickel and other metals production
Queensland Alumina Limited	Australia	2,212,000 shares, AUD 2 par value	11.38%	20%	Production of alumina under a tolling agreement
BEMO project	Cyprus, Russian Federation	BOGES Limited and BALP Limited – 10,000 shares EUR 1.71 each	28.44%	50%	Energy / Aluminium production

The summary of the consolidated financial statements of associates and joint ventures for the year ended 31 December 2019 is presented below:

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other associates and joint ventures	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
	USD million	USD million	USD million	USD million	USD million	USD million	USD million	USD million
Non-current assets	5,868	12,899	163	535	1,528	2,942	260	488
Current assets	1,829	6,575	33	169	151	302	65	162
Non-current liabilities	(2,726)	(9,765)	(64)	(202)	(1,012)	(2,024)	(70)	(142)
Current liabilities	(1,509)	(5,422)	(132)	(373)	(83)	(166)	(53)	(136)
Net assets	**3,462**	**4,287**	**-**	**129**	**584**	**1,054**	**202**	**372**

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other associates and joint ventures	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
	USD million	USD million	USD million	USD million	USD million	USD million	USD million	USD million
Revenue	3,774	13,563	124	620	365	729	306	879
Profit/(loss) and impairment from continuing operations	1,587	5,966	-	4	49	(128)	33	69
Other comprehensive income	383	484	-	(1)	61	123	6	2
Total comprehensive income	**1,970**	**6,450**	**-**	**3**	**110**	**(5)**	**39**	**71**

The summary of the consolidated financial statements of associates and joint ventures for the year ended 31 December 2018 is presented below:

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other associates and joint ventures	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
	USD million	USD million	USD million	USD million	USD million	USD million	USD million	USD million
Non-current assets	5,123	10,697	104	503	1,366	2,849	150	371
Current assets	1,267	4,554	38	196	126	252	105	352
Non-current liabilities	(2,633)	(9,420)	(67)	(194)	(986)	(1,972)	(38)	(173)
Current liabilities	(656)	(2,358)	(75)	(379)	(37)	(75)	(86)	(308)
Net assets	**3,101**	**3,473**	**-**	**126**	**469**	**1,054**	**131**	**242**

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other associates and joint ventures	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
	USD million	USD million	USD million	USD million	USD million	USD million	USD million	USD million
Revenue	3,247	11,670	140	701	288	575	971	3,306
Profit/(loss) and impairment from continuing operations	885	3,085	-	(1)	41	69	22	70
Other comprehensive income	(693)	(853)	-	(13)	(92)	(184)	(16)	(30)
Total comprehensive income	**192**	**2,232**	**-**	**(14)**	**(51)**	**(115)**	**6**	**40**

(a) PJSC MMC Norilsk Nickel

The Group's investment in Norilsk Nickel is accounted for using equity method and the carrying value as at 31 December 2019 and 31 December 2018 amounted USD 3,462 million and USD 3,101 million, respectively. The market values amounted USD 13,586 million and USD 8,286 million as at 31 December 2019 and 31 December 2018, respectively, determined by multiplying the quoted bid price per share on the Moscow Exchange on the year-end date by the number of shares held by the Group.

(b) Queensland Alumina Limited

The carrying value of the Group's investment in Queensland Alumina Limited as at both 31 December 2019 and 31 December 2018 amounted to USD nil million. At 31 December 2019 management did not identify any impairment reversal indicators relating to the Group's investment in QAL and as a result no detailed impairment testing was performed in relation to this investment.

(c) BEMO project

The carrying values of the Group's investment in BEMO project as at 31 December 2019 and 31 December 2018 amounted USD 584 million and USD 469 million, respectively.

For the purposes of impairment testing, the BEMO project was separated into two cash generating units – the Boguchansky Aluminium Smelter ("BoAZ') and the Boguchansky Hydro Power Plant ("BoGES"). The recoverable amount was determined by discounting the expected future net cash flows of each cash generating unit.

At 31 December 2019 management did not identify any impairment indicators relating to the Group's investment in BoGES nor any impairment reversal indicators relating to investments in BoAZ and as a result no detailed impairment testing was performed in relation to this investment.

At 31 December 2019, accumulated losses of USD 651 million (2018: USD 639 million) related to impairment charges at BoAZ have not been recognised because the Group's investment has already been fully written down to USD nil million.

Additional financial information of the Group's effective interest in BEMO project for the year ended 31 December 2019 and 31 December 2018 is presented below (all in USD million):

	31 December 2019	**31 December 2018**
	USD million	**USD million**
Cash and cash equivalents	60	51
Current financial liabilities	(41)	(12)
Non-current financial liabilities	(929)	(947)
Depreciation and amortisation	(17)	(19)
Interest income	3	2
Interest expense	(18)	(19)
Income tax expense	(12)	(11)

14. Inventories

Inventories are measured at the lower of cost or net realisable value. Net realisable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses.

The cost of inventories is determined under the weighted average cost method, and includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business, less the estimated cost of completion and selling expenses.

Production costs include mining and concentrating costs, smelting, treatment and refining costs, other cash costs and depreciation and amortisation of operating assets.

	31 December	
	2019	**2018**
	USD million	**USD million**
Raw materials and consumables	1,247	1,293
Work in progress	669	703
Finished goods and goods for resale	789	1,217
	2,705	3,213
Provision for inventory obsolescence	(163)	(176)
	2,542	**3,037**

Inventories at 31 December 2019 and 31 December 2018 are stated at cost.

Inventories with a carrying value of USD 383 million and USD 5 million were pledged as collateral for secured bank loans at 31 December 2019 and 31 December 2018, respectively (note 17).

15. Non-derivative financial instruments

Non-derivative financial instruments comprise investments in securities, trade and other receivables (excluding prepayments and tax assets), cash and cash equivalents, loans and borrowings and trade and other payables (excluding advances received and tax liabilities).

Non-derivative financial instruments except for trade and other receivables are recognised initially at fair value plus any directly attributable transaction costs. Trade and other receivables are recognised at transaction price.

A financial instrument is recognised when the Group becomes a party to the contractual provisions of the instrument. Financial assets are derecognised if the Group’s contractual rights to the cash flows from the financial assets expire or if the Group transfers the financial asset to another party without retaining control or substantially all risks and rewards of the asset. Financial liabilities are derecognised if the Group’s obligations specified in the contract expire or are discharged or cancelled.

IFRS 9 *Financial Instruments* sets out requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. The details of significant accounting policies are set out below.

Classification and measurement of financial assets and financial liabilities

IFRS 9 specifies three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income (“FVOCI”) and fair value through profit or loss (“FVTPL”). The classification of financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. Under IFRS 9, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

The Group’s financial assets mostly fall within category of financial assets measured at amortised cost. The only exception is derivative financial assets measured at fair value through profit or loss and cash flow hedges accounted through other comprehensive income (note 19). The same applies to the Group’s financial liabilities.

(i) Impairment of trade receivables

Under IFRS 9, loss allowances (expected credit losses – ECL) are measured on either of the following bases:

- *12-month ECLs*: these are ECLs that result from possible default events within the 12 months after the reporting date; and
- *lifetime ECLs*: these are ECLs that result from all possible default events over the expected life of a financial instrument.

The Group measures loss allowances at an amount equal to lifetime ECLs, except for bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition. The Group measures loss allowances for trade receivables at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and including forward-looking information.

The Group assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due.

The Group considers a financial asset to be in default when:

- the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held); or
- the financial asset is more than 90 days past due, but additional analysis is conducted for each such receivable and assessment is updated accordingly.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset in case of long-term assets.

At each reporting date, the Group assesses whether financial assets carried at amortised cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of the assets. Impairment losses related to trade and other receivables are presented as part of net other operating expenses.

The following analysis provides further detail about the calculation of ECLs related to trade receivables. The Group uses an allowance matrix to measure the ECLs of trade receivables from the customers. Loss rates are calculated using a 'roll rate' method based on the probability of a receivable progressing through successive stages of delinquency to write-off. The ECLs were calculated based on actual credit loss experience over the past two years. The Group performed the calculation of ECL rates separately for the customers of each key trading company of the Group. Exposures within each trading company were not further segmented except for individually significant customers which bear specific credit risk depending on the repayment history of the customer and relationship with the Group.

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The following table provides information about determined ECLs rates for trade receivables both as at 1 January 2019 and 31 December 2019.

	Weighted-average loss rate		Credit-impaired
	1 January 2019	**31 December 2019**	
Current (not past due)	2%	1%	No
1–30 days past due	10%	4%	No
31–60 days past due	40%	11%	No
61–90 days past due	50%	80%	No
More than 90 days past due	85%	92%	Yes

POWER

The following table provides information about determined ECLs rates for trade receivables both as at 1 January 2019 and 31 December 2019.

	Weighted-average loss rate		Credit-impaired
	1 January 2019	**31 December 2019**	
Current (not past due)	1%	1%	No
1–90 days past due	1%	1%	No
90 - 180 days past due	30%	30%	No
More than 180 days past due	100%	100%	Yes

Fluctuations reflect differences between economic conditions during the period over which the historical data has been collected, current conditions and the Group's view of economic conditions over the expected lives of the receivables.

Impairment losses in respect of trade receivables are recorded using an allowance account unless the Group is satisfied that recovery of the amount is remote, in which case the impairment loss is written off against trade receivables directly.

(b) Trade and other receivables

	31 December	
	2019	**2018**
	USD million	**USD million**
Trade receivables from third parties	**715**	**572**
Trade receivables from related parties, including	**115**	**87**
Related parties – companies capable of exerting significant influence	*82*	*76*
Related parties – other	*2*	*4*
Related parties – associates and joint ventures	*31*	*7*
VAT recoverable	**447**	**330**

	31 December	
	2019	2018
	USD million	USD million
Advances paid to third parties	**135**	**197**
Advances paid to related parties, including	**46**	**51**
Related parties – companies capable of exerting significant influence	-	*1*
Related parties – other	-	*1*
Related parties – associates and joint ventures	*46*	*49*
Other receivables from third parties	**218**	**174**
Other taxes receivable	**26**	**22**
Income tax receivable	**28**	**30**
Dividends receivable from related parties	**430**	**-**
Related parties – associates and joint ventures	*430*	-
Other current assets	**7**	**23**
	2,167	**1,486**
Allowance for doubtful debts	(85)	(97)
Total short-term receivables	**2,082**	**1,389**

(i) Ageing analysis

Included in trade and other receivables are trade receivables (net of allowance for doubtful debts) with the following ageing analysis as of the statement of financial position dates:

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	31 December	
	2019	2018
	USD million	USD million
Current	448	346
Past due 0-30 days	99	62
Past due 31-60 days	30	6
Past due 61-90 days	-	2
Past due over 90 days	4	10
Amounts past due	133	80
	581	**426**

POWER

	31 December	
	2019	2018
	USD million	USD million
Current	165	151
Past due 0-30 days	18	17
Past due 31-60 days	9	7
Past due 61-90 days	6	6
Past due 91 - 180 days	8	5
Past due over 180 days	-	-
Amounts past due	41	35
	206	**186**

Trade receivables are on average due within 60 days from the date of billing. The receivables that are neither past due nor impaired (i.e. current) relate to a wide range of customers for whom there was no recent history of default.

Further details of the Group's credit policy are set out in note 20(e).

(c) Trade and other payables

	31 December	
	2019	**2018**
	USD million	**USD million**
Accounts payable to third parties	**630**	**658**
Accounts payable to related parties, including	**49**	**31**
Related parties – companies capable of exerting significant influence	*3*	*5*
Related parties – other	-	*2*
Related parties – associates and joint ventures	*46*	*24*
Advances received from third parties	**562**	**72**
Advances received from related parties, including	**392**	**260**
Related parties – companies capable of exerting significant influence	*392*	*260*
Other payables and accrued liabilities	**224**	**239**
Income tax payable	**38**	**146**
Other taxes payable	**257**	**209**
	2,152	**1,615**

All of the trade and other payables are expected to be settled or recognised as income within one year or are repayable on demand.

(d) Cash and cash equivalents

	31 December	
	2019	**2018**
	USD million	**USD million**
Bank balances, USD	1,310	51
Bank balances, RUB	329	461
Bank balances, EUR	118	300
Bank balances, other currencies	21	28
Cash in transit	-	16
Short-term bank deposits	476	273
Other cash equivalents	11	11
Cash and cash equivalents in the statement of cash flows	**2,265**	**1,140**
Restricted cash	13	43
Cash and cash equivalents in the statement of financial position	**2,278**	**1,183**

As at 31 December 2019 and 31 December 2018 included in cash and cash equivalents was restricted cash of USD13 million and USD43 million, respectively, pledged under a Swiss Law Pledged Agreement with BNP Paribas (Suisse) SA and Allied Irish Bank.

16. Equity

(a) Share capital, additional paid-in capital and transactions with shareholders

As at 31 December 2019 the Parent Company's share capital is divided into 638,848,896 ordinary shares with a nominal value of USD 0.00007 each. The Parent Company may also issue 75,436,818.286 ordinary shares.

As at 31 December 2019 and 31 December 2018 all issued ordinary shares were fully paid.

(i) Glencore deal

On 26 January 2019, the Parent Company issued 67,420,324 shares with a par value of USD 0.00007 each with a subsequent issue of GDRs on these shares, to Glencore Group Funding Limited pursuant to a securities exchange agreement in exchange for 8.75% shares in UC RUSAL ("Glencore deal").

Due to certain regulatory requirements, under the securities exchange agreement, Glencore has agreed to transfer its stake in UC RUSAL to the Parent Company in two stages. The first stage was settled on 31 January 2019 and 1.97% of RUSAL's shares was transferred to the Parent Company following the removal of the Parent Company and UC RUSAL from the SDN list (see note 1(d)), the remaining 6.78% of UC RUSAL's shares were transferred on 3 February 2020.

Under the Group's accounting policy, the Glencore deal was accounted for under the anticipated-acquisition method, as if the remaining 6.78% of UC RUSAL's shares had already been transferred. Fair value of the consideration transferred was determined with reference to market quotations on the London Stock Exchange.

As a result of the Glencore deal, non-controlling interests decreased by USD 435 million with respective increases of share premium of USD 543 million and other reserves of USD 251 million, and decreases of foreign currency translation reserve and accumulated losses by USD 836 million and USD 477 million, respectively.

(ii) Acquisition of non-controlling interests

In 2019 and 2018 the Group acquired 0.4% and 0.3% of Irkutskenergo shares for USD 5 million and USD 3 million, respectively. As a result the Group's shareholding as at 31 December 2019 in Irkutskenergo increased to 93.2% (as at 31 December 2018: 92.8%).

(b) Currency translation reserve

The currency translation reserve comprises all foreign exchange differences arising from the translation of the consolidated financial statements of foreign operations. The reserve is dealt with in accordance with the accounting policies set out in note 3(b).

(c) Other reserves

Other reserves include the cumulative unrealised actuarial gains and losses on the Group's defined post-retirement benefit plans, the effective portion of the accumulative net change in fair value of cash flow hedges, the Group's share of other comprehensive income of associates and cumulative unrealised gains and losses on Group's financial assets which have been recognised directly in other comprehensive income.

(d) Dividends

During the year ended 31 December 2019 the Group did not declare and pay dividends.

In March 2018 the Parent Company declared and paid interim dividends for 2017 in the amount of USD 68 million (USD 0.119 per share).

Following redomiciliation in July 2019, the Parent Company may distribute dividends from retained earnings and profit for the reporting period in compliance with the current legislation of the Russian Federation and the provisions of its Charter.

(e) Revaluation reserve

The revaluation reserve comprises the cumulative net change in the fair value of hydro assets at the reporting date and is dealt with in accordance with the accounting policies set out in note 11(a)(i).

An independent valuation analysis of hydro assets was carried out as at 31 December 2018, the fair value of hydro assets was estimated at USD 3,578 million (note 11(e)).

As a result of this fair value valuation, the Group recognised an additional revaluation reserve in the amount of USD 241 million net of tax (including USD 244 million attributable to shareholders of the Parent Company). During 2018, as a result of changes in effective interest in subsidiaries (note 11(e)), the revaluation reserve attributable to the Parent company increased by USD 3 million, net of tax.

(f) Non-controlling interests

The following table summarises the information relating to each of the Group`s subsidiaries that has material non-controlling interest:

31 December 2019

	UC RUSAL	Irkutskenergo Group*	OJSC Irkutsk Electric Grid Company	Total
NCI percentage	**43.1%**	**6.8%**	**47.6%**	
Assets	17,330	4,265	590	
Liabilities	(11,067)	(2,064)	(177)	
Net assets	**6,263**	**2,201**	**413**	
Carrying amount of NCI	2,701	145	196	**3,042**
Revenue	9,711	1,811	342	
Profit	960	172	19	
Other comprehensive income	578	(4)	-	
Total comprehensive income	**1,538**	**168**	**19**	
Profit attributable to NCI	418	19	7	**444**
Other comprehensive income attributable to NCI	267	7	21	**295**
				739
Cash flows generated from/(used in) operating activities	1,652	213	91	
Cash flows used in investing activities	246	(10)	(84)	
Cash flows (used in)/generated from financing activities	(949)	(176)	(16)	
Net increase/(decrease) in cash and cash equivalents	**949**	**27**	**(9)**	

* Net assets of Irkutskenergo Group were adjusted for the effect of Irkutskenergo investments in Irkutsk GridCo, Krasnoyarsk HPP and LLC KRAMZ.

31 December 2018

	UC RUSAL	Irkutskenergo Group*	OJSC Irkutsk Electric Grid Company	Total
NCI percentage	**51.9%**	**7.2%**	**47.7%**	
Assets	15,293	3,640	502	
Liabilities	(10,568)	(1,872)	(149)	
Net assets	**4,725**	**1,768**	**353**	
Carrying amount of NCI	2,451	128	168	**2,747**
Revenue	10,280	1,996	341	
Profit	1,698	102	14	
Other comprehensive income	(933)	(43)	-	
Total comprehensive income	**765**	**59**	**14**	
Profit attributable to NCI	881	9	5	**895**
Other comprehensive income attributable to NCI	(484)	(30)	(34)	**(548)**
				347
Cash flows generated from/(used in) operating activities	680	182	70	
Cash flows used in investing activities	(106)	(81)	(71)	
Cash flows (used in)/generated from financing activities	(517)	(76)	11	
Net increase/(decrease) in cash and cash equivalents	**57**	**25**	**10**	

* Net assets of Irkutskenergo Group were adjusted for the effect of Irkutskenergo investments in Irkutsk GridCo, Krasnoyarsk HPP and LLC KRAMZ.

17. Loans and borrowings

This note provides information about the contractual terms of the Group's loans and borrowings. For more information about the Group's exposure to interest rate and foreign currency risk refer to notes 20(c)(ii) and 20(c)(iii), respectively.

	31 December	
	2019	2018
	USD million	USD million
Non-current liabilities		
Secured bank loans	7,626	7,951
Unsecured bank loans	1,086	476
Bonds	2,546	1,580
	11,258	**10,007**

	31 December	
	2019	2018
	USD million	USD million
Current liabilities		
Current portion of secured bank loans	376	663
Current portion of unsecured bank loans	2	12
	378	**675**
Secured bank loans	210	252
Unsecured bank loans	509	848
Accrued interest	72	118
Bonds	55	377
	846	**1,595**
	1,224	**2,270**

(a) Loans and borrowings

	31 December	
	2019	2018
	USD million	USD million
Non-current liabilities		
Secured bank loans		
Variable		
USD – 3M Libor + 2.25 - 2.50%	1,070	1,405
USD – 3M Libor + 3.75%	2,089	3,328
USD – 1M Libor + 3.60%	54	-
EUR – 6M Euribor + 1.75%	1	3
RUB – CBR + 1.50% - 2.00%	2,581	1,159
Fixed		
RUB - fixed at 8.75% - 9.15%	1,792	1,987
RUB - fixed at 10.00% - 11.50%	39	69
	7,626	**7,951**
Unsecured bank loans		
Variable		
RUB – CBR + 1.00%	696	-
USD – 1M Libor + 2.4%	200	200
Fixed		
RUB – fixed at 5.00%-9.50%	190	276
	1,086	**476**
Bonds	2,546	1,580
	11,258	**10,007**
Current liabilities		
Current portion of secured bank loans		
Variable		
USD – 3M Libor + 2.50%	-	279
EUR – 6M Euribor + 1.75%-1.95%	2	2
RUB – CBR + 1.5% - 2.00%	321	111
Fixed		
RUB – fixed at 8.75%-11.5%	53	271
	376	**663**
Current portion of unsecured bank loans		
Fixed		
RUB – fixed at 5%-8.75%	2	12
	2	**12**
Secured bank loans		
Variable		
USD – 1M Libor + 4.50%	-	54
USD – 3M Libor + 1.65%	210	-
Fixed		
RUB - fixed at 5.00% - 9.25%	-	198
	210	**252**
Unsecured bank loans		
Variable		
RUB – CBR + 0.85% - 0.96%	230	-
RUB – CBR + 1.50% - 2.00%	14	211
Fixed		
USD - fixed at 3.60%	200	
RUB - fixed at 7.35%-10.50%	65	637

	31 December	
	2019	**2018**
	USD million	**USD million**
	509	**848**
Accrued interest	72	118
Bonds	55	377
	846	**1,595**
	1,224	**2,270**

The secured bank and company loans (including guarantee agreement) are secured by pledges of shares of the following Group companies and associate:

	31 December	
	2019	**2018**
	% of shares	**% of shares**
PJSC Norilsk Nickel	25+1 share	25+1 share
ILLC GERSHVIN (ex. Gershvin Investments Corp. Limited)	100	100
ILLC AKTIVIUM (ex. Aktivium Holding B.V.)	100	100
LLC ESE - Hydrogeneration	100	100
JSC Krasnoyarsk Hydro-Power Plant	50+1 share	50.72
PJCS Irkutskenergo	67.70	67.70
OJSC Irkutsk Electric Grid Company	-	33.27

The bank loans are also secured as at 31 December 2019 and 31 December 2018 by the following:

- rights, including all monies and claims, arising out of certain sales contracts between the Group's trading subsidiaries and its ultimate customers, were assigned to secure the syndicated Pre-Export Finance Term Facility Agreement (PXF) dated 25 October 2019 (31 December 2018: the syndicated Pre-Export Finance Term Facility Agreement (PXF) 24 May 2017);
- properties, plant and equipment – refer to note 11(d);
- inventories – refer to note 14.

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On 25 October 2019, UC RUSAL entered into new five-year sustainability-linked pre-export finance facility for USD 1,085,000,000. The interest rate is subject to a sustainability discount or premium depending on UC RUSAL's fulfilment of the sustainability key performance indicators (KPI). The proceeds were partly used to refinance the principal outstanding under the existing pre-export finance facility of up to USD 2 billion.

As at 31 December 2019 UC RUSAL through its subsidiaries had outstanding REPO loans backed by Norilsk Nickel shares of 1,017,000, amounting to USD 210 million and maturing in June 2020.

During the year ended 31 December 2019, UC RUSAL made a principal repayment of USD 1,700 million and RUB 32,769 million (USD 512 million) under the syndicated Pre-Export Finance Term Facility Agreement (PXF) and credit facilities with Sberbank and Gazprombank, respectively.

In January 2018, UC RUSAL entered into a bilateral facility agreement with Nordea Bank AB with the following key terms: principal amount of USD 200 million, tenor of 3 years, interest rate of 1M Libor + 2.4% per annum with a bullet repayment. The proceeds were applied for partial prepayment of UC RUSAL's existing debt.

On 13 December 2018, UC RUSAL executed amendments to its existing credit facility with Sberbank for conversion of ½ of the principal outstanding amount of the loan into RUB at an interest rate 9.15%. Subsequently the amount of USD 2,107 million was converted into RUB.

As at 31 December 2018 UC RUSAL through its subsidiaries had outstanding REPO loan backed by Norilsk Nickel shares of 1,413,379, amounting to USD 194 million and maturing in June 2019.

During 2018, UC RUSAL made a principal repayments of USD 579 million, EUR 55 million (USD 68 million) and RUB 18 million (USD 3 million) under credit facilities with Gazprombank, VTB Capital and Credit Bank of Moscow

The nominal value of UC RUSAL’s loans and borrowings was USD 5 612 million at 31 December 2019 (31 December 2018: USD 6,332 million).

POWER

In December 2019, EuroSibEnergo entered into a 7-year RUB 99.5 billion (USD 1.6 billion) loan agreement with Sberbank to fully refinance its existing obligations on more favorable commercial terms.

During 2019, EuroSibEnergo-Hydrogeneration made a scheduled repayment of principal in the amount of RUB 7,728 million (USD 119 million) under the EuroSibEnergo-Hydrogeneration syndicate facility.

In June 2018, EuroSibEnergo amended the RUB-denominated loan - maturity date was extended to June 2024, the first principal repayment was scheduled for March 2020 and the nominal interest rate was fixed at 8.8%.

In November 2018, EuroSibEnergo converted (via series of transactions) its USD-denominated loan to RUB 33,179 million at an average exchange rate of 66.45 RUB/USD and with an interest rate of 9.0% p.a. while the tenor and security remain unchanged.

The nominal value of Power loans and borrowings was USD 4,243 million at 31 December 2019 (31 December 2018: USD 3,932 million).

The fair value of the Group’s liabilities measured at amortised cost approximate their carrying values as at 31 December 2019 and 31 December 2018.

Change of control over the Group as disclosed in note 1 entitled certain lenders to the Group with the right to request mandatory prepayment of outstanding indebtedness as stipulated in the respective loan agreements. The Group reached an agreement with lenders that this right could not be executed as at 31 December 2019.

In February 2020, the Group entered into 2 loan agreements with Sberbank:

Loan 1 – 3-year RUB 100.8 billion loan agreement to finance the acquisition of a 21.37% stake in the Parent Company for USD 1.6 billion from VTB (note 1(a)).
Loan 2 – loan agreement allowing the execution of the final maturity of the Loan 1 by another 4 years during 2022.

(b) Bonds

As at 31 December 2019, 27,751 series 08 bonds, 397,347 series BO-01 bonds, 15,000,000 series BO-001P-01 bonds, 15,000,000 series BO-001P-02 bonds, 15,000,000 series BO-001P-03 bonds, 15,000,000 series BO-001P-04 bonds were outstanding (traded in the market).

The closing market price at 31 December 2019 was RUB 917, RUB 982, RUB 1,030, RUB 1,047, RUB 1,026 and RUB 1,003 per bond for the six tranches, respectively.

On 20 March 2019, UC RUSAL executed the put option under Panda bonds issuance (the first tranche) and redeemed bonds with notional value CNY 680 million (USD 101 million).

On 29 March 2019, RUSAL Bratsk announced a new coupon rate in respect to the series 08 bonds at the level of 0.01% per annum. On 10 April 2019 the Company exercised a put option on the outstanding RUB-denominated bonds series 08 and redeemed the bonds with notional value of RUB 23.8 million.

On 04 April 2019, RUSAL Bratsk announced a new coupon rate in respect to the series BO-01 bonds at the level of 0.01% per annum. On 18 April 2019 the Company exercised a put option on the outstanding RUB-denominated bonds series BO-01 and redeemed the bonds with notional value of RUB 3.8 billion.

On 29 April 2019, the placement of RUB 15 billion exchange-traded rouble bonds of PJSC RUSAL Bratsk series BO-001P-01 in the amount of with a coupon rate 9.0% was completed and the exchange-traded rouble bonds commenced trading on the Moscow Exchange. Maturity of the bonds is ten years subject to bondholders' put option exercisable in April 2022. In addition to the placement, the Group entered into a cross-currency interest rate swap, which resulted in the exchange-traded rouble bonds exposure being translated in full into US-dollars with a maturity of 3 years and an interest rate of 4.69%.

On 11 July 2019, the placement of RUB 15 billion exchange-traded rouble bonds of PJSC RUSAL Bratsk series BO-001P-02 with a coupon rate 8.60% was completed and the exchange-traded rouble bonds commenced trading on the Moscow Exchange. Maturity of the bonds is ten years subject to bondholders' put option exercisable in January 2023. In addition to the placement, the Group entered into a cross-currency interest rate swap, which resulted in the exchange-traded rouble bonds exposure being translated in full into US-dollars with a maturity of 3.5 years and an interest rate of 4.45%.

On 04 September 2019, the Group executed the put option under Panda bonds issuance (the second tranche) and redeemed bonds with notional value CNY 480 million (USD 67 million).

On 12 September 2019, the placement of RUB 15 billion exchange-traded rouble bonds of PJSC RUSAL Bratsk series BO-001P-03 with a coupon rate 8.25% was completed and the exchange-traded rouble bonds commenced trading on the Moscow Exchange. Maturity of the bonds is ten years subject to a bondholders' put option exercisable in September 2022. In addition to the placement, the Group entered into 2 cross-currency interest rate swaps, which resulted in the exchange-traded rouble bonds exposure being translated in full into US-dollars with a maturity of 3 years for both swaps and interest rates of 3.82% and 3.85%.

On 14 November 2019, the placement of RUB 15 billion exchange-traded rouble bonds of PJSC RUSAL Bratsk series BO-001P-04 with a coupon rate 7.45% was completed and the exchange-traded rouble bonds commenced trading on the Moscow Exchange. Maturity of the bonds is ten years subject to a bondholders' put option exercisable in November 2022. In addition to the placement, the Group entered into a cross-currency interest rate swap, which resulted in the exchange-traded rouble bonds exposure being translated in full into US-dollars with the maturity of 3 years and an interest rate of 3.65%.

18. Provisions

(a) Accounting policy

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as finance costs.

(i) Site restoration

The mining, refining and smelting activities of the Group can give rise to obligations for site restoration and rehabilitation. Restoration and rehabilitation works can include facility decommissioning and dismantling, removal or treatment of waste materials, land rehabilitation, and site restoration. The extent of work required and the associated costs are dependent on the requirements of law and the interpretations of the relevant authorities.

Provisions for the cost of each restoration and rehabilitation program are recognised at the time that environmental disturbance occurs. When the extent of disturbance increases over the life of an operation, the provision is increased accordingly. Costs included in the provision encompass obligated and reasonably estimable restoration and rehabilitation activities expected to occur progressively over the life of the operation and at the time of closure in connection with disturbances at the reporting date.

Routine operating costs that may impact the ultimate restoration and rehabilitation activities, such as waste material handling conducted as an integral part of a mining or production process, are not included in the provision. Costs arising from unforeseen circumstances, such as the contamination caused by unplanned discharges, are recognised as an expense and liability when the event gives rise to an obligation which is probable and capable of reliable estimation.

Restoration and rehabilitation provisions are measured at the expected value of future cash flows, discounted to their present value and determined according to the probability of alternative estimates of cash flows occurring for each operation. Discount rates used are specific to the country in which the operation is located. Significant judgements and estimates are involved in forming expectations of future activities and the amount and timing of the associated cash flows. Those expectations are formed based on existing environmental and regulatory requirements.

When provisions for restoration and rehabilitation are initially recognised, the corresponding cost is capitalised as an asset, representing part of the cost of acquiring the future economic benefits of the operation. The capitalised cost of restoration and rehabilitation activities is amortised over the estimated economic life of the operation on a units of production or straight-line basis. The value of the provision is progressively increased over time as the effect of discounting unwinds, creating an expense recognised as part of finance expenses.

Restoration and rehabilitation provisions are also adjusted for changes in estimates. Those adjustments are accounted for as a change in the corresponding capitalised cost, except where a reduction in the provision is greater than the unamortised capitalised cost, in which case the capitalised cost is reduced to nil and the remaining adjustment is recognised in profit or loss. Changes to the capitalised cost result in an adjustment to future amortisation charges. Adjustments to the estimated amount and timing of future restoration and rehabilitation cash flows are a normal occurrence in light of the significant judgements and estimates involved. Factors influencing those changes include revisions to estimated reserves, resources and lives of operations; developments in technology; regulatory requirements and environmental management strategies; changes in the estimated costs of anticipated activities, including the effects of inflation and movements in foreign exchange rates; and movements in general interest rates affecting the discount rate applied.

(ii) Legal claim

In the normal course of business, the Group may be involved in legal proceedings. Where management considers that it is more likely than not that proceedings will result in the Group compensating third parties, a provision is recognised for the best estimate of the amount expected to be paid. Where management considers that it is more likely than not that proceedings will not result in the Group compensating third parties or where, in rare circumstances, it is not considered possible to provide a sufficiently reliable estimate of the amount expected to be paid, no provision is made for any potential liability under the litigation but the circumstances and uncertainties involved are disclosed as contingent liabilities. The assessment of the likely outcome of legal proceedings and the amount of any potential liability involves significant judgement. As law and regulations in many of the countries in which the Group operates are continuing to evolve, particularly in the areas of taxation, sub-soil rights and protection of the environment, uncertainties regarding litigation and regulation are greater than those typically found in countries with more developed legal and regulatory frameworks.

(b) Disclosure

USD million	**Pension liabilities**	**Site restora-tion**	**Provisions for legal claims**	**Tax provisions**	**Total**
Balance at 1 January 2018	**116**	**459**	**7**	**-**	**582**
Non-current	107	435	-	-	542
Current	9	24	7	-	40
Provisions made during the year	7	21	9	20	57
Provisions reversed during the year	-	(16)	-	-	(16)
Actuarial gains	(10)	-	-	-	(10)
Provisions used during the year	(8)	(7)	(5)	-	(20)
Change in estimates	-	(4)	-	-	(4)
Translation difference	(16)	(42)	(1)	-	(59)
Balance at 31 December 2018	**89**	**411**	**10**	**20**	**530**
Non-current	82	377	-	-	459
Current	7	34	10	20	71
Provisions made during the year	13	47	24	-	84
Provisions reversed during the year	(10)	(25)	-	-	(35)
Actuarial losses	17	-	-	-	17
Provisions used during the year	(8)	(2)	-	(20)	(30)
Change in estimates	-	14	-	-	14
Translation difference	10	14	3	-	27
Balance at 31 December 2019	**111**	**459**	**37**	**-**	**607**
Non-current	104	432	-	-	536
Current	7	27	37	-	71
	111	**459**	**37**	**-**	**607**

(c) Pension liabilities

As at 31 December 2019, the pension liability is represented by UC RUSAL USD 60 million (31 December 2018: USD 54 million) and Power USD 51 million (31 December 2018: USD 35 million).

The provision for pensions mainly comprises lump sum payments at retirement by aluminium plants located in Russia and Ukraine, and by electricity generating companies Irkutskenergo and Krasnoyarsk HPP. The Group also provides pension benefits to eligible participants at facilities located outside of the Russian Federation and Ukraine.

UC RUSAL

Group subsidiaries in the Russian Federation

The Group voluntarily provides long-term and post-employment benefits to its former and existing employees including death-in-service, jubilee, lump sum upon retirement, material support for pensioners and death-in-pension benefits. Furthermore, the Group provides regular social support payments to some of its veterans of World War II.

The above employee benefit programs are of a defined benefit nature. The Group finances these programs on a pay-as-you-go basis, so plan assets are equal to zero.

Group subsidiaries in Ukraine

Due to legal requirements, the Ukrainian subsidiaries are responsible for partial financing of the state hardship pensions for those of its employees who worked, or still work, under severe and hazardous labour conditions (hardship early retirement pensions). These pensions are paid until the recipient reaches the age of entitlement to the State old age pension (55-60 years for female (dependent on year of birth) and 60 years for male employees). In Ukraine, the Group also voluntarily provides long-term and post-employment benefits to its employees including death-in-service, lump sum benefits upon retirement and death-in-pension benefits.

The above employee benefit programs are of a defined benefit nature. The Group finances these programs on a pay-as-you-go basis, so plan assets are equal to zero.

Group subsidiaries outside the Russian Federation and Ukraine

At its Guinean and Nigerian entities, the Group provides a death-in-service benefit and lump-sum benefits upon disability and old-age retirement.

At its Guyana subsidiary, the Group provides a death-in-service benefit.

At its Italian subsidiary (Eurallumina) the Group only provides lump sum benefits upon retirement, which relate to service up to 1 January 2007.

In Sweden (Kubikenborg Aluminium AB), the Group provides defined benefit lifelong and temporary pension benefits. The lifelong benefits are dependent on the past service and average salary level of the employee, with an accrual rate that depends on the salary bracket the employee is in. The liability relates only to benefits accrued before 1 January 2004.

The number of employees in all jurisdictions eligible for the plans as at 31 December 2019 and 2018 was 46,581 and 58,089, respectively. The number of pensioners in all jurisdictions as at 31 December 2019 and 2018 was 41,699 and 44,966, respectively.

The Group expects to pay under the defined benefit retirement plans an amount of USD 4 million during the 12 month period beginning on 1 January 2020.

Actuarial valuation of pension liabilities

The actuarial valuations of the Group and the portion of the Group funds specifically designated for the Group's employees were completed by a qualified actuary, Robert van Leeuwen AAG, as at 31 December 2019, using the projected unit credit method as stipulated by IAS 19.

The key actuarial assumptions (weighted average, weighted by DBO) are as follows:

	31 December 2018	**31 December 2018**
	% per annum	% per annum
Discount rate	6.4	7.9
Expected return on plan assets	N/A	N/A
Future salary increases	8.4	7.8
Future pension increases	5.1	4.6
Staff turnover	4.7	4.7
Mortality	USSR population table for 1985, Ukrainian population table for 2000	USSR population table for 1985, Ukrainian population table for 2000
Disability	70% Munich Re for Russia; 40% of death probability for Ukraine	70% Munich Re for Russia; 40% of death probability for Ukraine

As at 31 December 2019 and 31 December 2018 the Group's obligations were fully uncovered as the Group has only wholly unfunded plans.

POWER

The principal assumptions used in determining pension obligations for the pension plans are shown below:

	31 December 2019	**31 December 2018**
Discount rate	6.3%	8.5%
Future salary increases	5.6%	5.6%
Pension and inflation rate increases	4.1%	4.1%

(d) Site restoration and environmental provisions

The Group provides for site restoration obligations when there is a specific legal or constructive obligation for mine reclamation, landfill closure (primarily comprising red mud basin disposal sites) or specific lease restoration requirements. The Group does not record any obligations with respect to decommissioning of its refining or smelting facilities and restoration and rehabilitation of the surrounding areas unless there is a specific plan to discontinue operations at a facility. This is because any significant costs in connection with decommissioning of refining or smelting facilities and restoration and rehabilitation of the surrounding areas would be incurred no earlier than when the facility is closed and the facilities are currently expected to operate over a term in excess of 50-100 years due to the perpetual nature of the refineries and smelters and continuous maintenance and upgrade programs resulting in the fair values of any such liabilities being negligible.

The site restoration provision relates primarily to mine reclamation and red mud basin disposal sites at alumina refineries and ash dumps removal at coal burning electricity and heat generation stations.

The principal assumptions used in determining site restoration provision are:

	31 December 2019	31 December 2018
Timing of cash outflows	2020: USD 26 million 2021-2025: USD 223 million 2026-2036: USD 125 million after 2036: USD 240 million	2019: USD 34 million 2020-2024: USD 214 million 2025-2035: USD 136 million after 2035: USD 222 million
Years required to fill the ash dumps	16.7	17.7
Discount rate for Irkutskenergo and Coal segment assets after adjusting for inflation	2.6%	4.6%
Risk free discount rate for UC RUSAL after adjusting for inflation	1.96%	3.10%

The risk free rate for the year 2018-2019 represents an effective rate, which comprises rates differentiated by years of obligation settlement and by currencies in which the provisions were calculated.

At each reporting date the Directors have assessed the provisions for site restoration and concluded that the provisions and disclosures are adequate.

(e) Provisions for legal claims

The Group's subsidiaries are subject to a variety of lawsuits and claims in the ordinary course of its business. As at 31 December 2019, there were several claims filed against the Group's subsidiaries contesting breaches of contract terms and non-payment of existing obligations. Management has reviewed the circumstances and estimated that the amount of probable outflow related to these claims should not exceed USD 37 million (31 December 2018: USD 10 million). The amount of claims, where management assesses outflow as possible approximates USD 21 million (31 December 2018: USD 31 million).

At each reporting date the Directors have assessed the provisions for litigation and claims and concluded that the provisions and disclosures are adequate.

(f) Tax provisions

The Group generally provides for current tax based on positions taken (or expected to be taken) in its tax returns. Where it is more likely than not that upon examination by the tax authorities of the positions taken by the Group additional tax will be payable, the Group provides for its best estimate of the amount expected to be paid (including any interest and/or penalties) as part of the tax charge.

At each reporting date the Directors have assessed the provisions for taxation and concluded that the provisions and disclosures are adequate.

19. Derivative financial assets and liabilities

Accounting policies

The Group enters, from time to time, into various derivative financial instruments to manage its exposure to commodity price risk, foreign currency risk and interest rate risk.

Embedded derivatives are separated from the host contract and accounted for separately if the economic characteristics and risks of the host contract and the embedded derivative are not closely related, a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative and the combined instrument is not measured at fair value through profit or loss.

On initial designation of the derivative as a hedging instrument, the Group formally documents the relationship between the hedging instrument and hedged item, including the risk management objectives and strategy in undertaking the hedge transaction and the hedged risk, together with the methods that will be used to assess the effectiveness of the hedging relationship. The Group makes an assessment, both at the inception of the hedge relationship as well as on an ongoing basis, of whether the hedging instruments are expected to be highly effective in offsetting the changes in the fair value or cash flows of the respective hedged items attributable to the hedged risk, and whether the actual results of each hedge are within a range of 80% - 125%. For a cash flow hedge of a forecast transaction, the transaction should be highly probable to occur and should present an exposure to variation in cash flows that ultimately could affect reported profit or loss.

Derivatives are recognised initially at fair value; attributable transaction costs are recognised in profit or loss when incurred. Subsequent to initial recognition, derivatives are measured at fair value.

The measurement of fair value of derivative financial instruments, including embedded derivatives, is based on quoted market prices. Where no price information is available from a quoted market source, alternative market mechanisms or recent comparable transactions, fair value is estimated based on the Group’s views on relevant future prices, net of valuation allowances to accommodate liquidity, modelling and other risks implicit in such estimates. Changes in the fair value therein are accounted for as described below.

When a derivative is designated as the hedging instrument in a hedge of the variability in cash flows attributable to a particular risk associated with a recognised asset or liability or a highly probable forecast transaction that could affect profit or loss, the effective portion of changes in the fair value of the derivative is recognised in other comprehensive income and presented in the hedging reserve in equity. Any ineffective portion of changes in the fair value of a derivative is recognised in profit or loss.

When the hedged item is a non-financial asset, the amount accumulated in equity is included in the carrying amount of the asset when the asset is recognised. In other cases, the amount accumulated in equity is reclassified to profit or loss in the same period that the hedged item affects profit or loss. If the hedging instrument no longer meets the criteria for hedge accounting, expires or is sold, terminated or exercised, or the designation is revoked, then hedge accounting is discontinued prospectively. If the forecast transaction is no longer expected to occur, then the balance in equity is reclassified to profit or loss.

Changes in the fair value of separated embedded derivatives and derivative financial instruments not designated for hedge accounting are recognised immediately in profit or loss.

Disclosures

	31 December 2019		**31 December 2018**	
	USD million		**USD million**	
	Derivative assets	**Derivative liabilities**	**Derivative assets**	**Derivative liabilities**
Petroleum coke supply contracts and other raw materials	39	36	42	31
Forward contracts for aluminium and other instruments	21	18	-	-
Cross currency swap (note 17(b))	48	-	-	-
Total	**108**	**54**	**42**	**31**

Derivative financial instruments are recorded at their fair value at each reporting date. Fair value is estimated in accordance with Level 3 of the fair value hierarchy based on management estimates and consensus economic forecasts of relevant future prices, net of valuation allowances to accommodate liquidity, modelling and other risks implicit in such estimates. The Group's policy is to recognise transfers between levels of fair value hierarchy as at the date of the event or change in circumstances that caused the transfer. The following significant assumptions were used in estimating derivative instruments:

	2020	**2021**	**2022**	**2023**	**2024**	**2025**
LME Al Cash, USD per tonne	1,831	1,908	1,991	2,078	2,166	2,222
Platt's FOB Brent, USD per barrel	64	59	57	57	57	-

The movement in the balance of Level 3 fair value measurements of derivatives is as follows:

	31 December	
	2019	**2018**
	USD million	**USD million**
Balance at the beginning of the year	11	(50)
Unrealised changes in fair value recognised in statement of profit or loss (finance (expense)/income) during the year	(21)	171
Unrealised changes in fair value recognised in other comprehensive income (cash flow hedge) during the year	34	-
Realised portion of electricity, coke and raw material contracts and cross currency swap	30	(110)
Balance at the end of the year	**54**	**11**

During the year 2019 there have been no changes in valuation techniques used to calculate the derivative financial instruments compared to prior year.

Management believes that the values assigned to the key assumptions and estimates represented the most realistic assessment of future trends. The results for the derivative instruments are not particularly sensitive to any factors other than the assumptions disclosed above.

Petroleum coke supply contracts and other raw materials

In May and September 2011, UC RUSAL entered into long-term petroleum coke supply contracts where the price of coke is determined with reference to the LME aluminium price and the Brent oil price. The strike price for aluminium is set at USD 2,403.45 per tonne and USD 1,735.03 per tonne, respectively, while the strike price for oil is set at USD 61.10 per barrel and USD 47.7 per barrel, respectively.

In May 2014, UC RUSAL entered into long-term petroleum coke supply contracts where the price of coke is determined with reference to the LME aluminium price and average monthly aluminium quotations, namely of Aluminum MW US Transaction premium, MB Aluminium Premium Rotterdam Low - High» and Aluminum CIF Japan premium. The strike price for aluminium is set at USD 1,809.65 per tonne while the strike aluminium premium quotations for US, Europe and Japan are set at USD 403.96 per tonne, USD 313.30 per tonne and USD 366.00 per tonne, respectively.

In November 2015, UC RUSAL entered into long-term pitch supply contracts where the price of pitch is determined with reference to the LME aluminium price. The strike price for aluminium is set at USD 1,508 per tonne.

20. Financial risk management and fair values

(a) Fair values

Management believes that the fair values of financial assets and liabilities approximate their carrying amounts.

The methods used to estimate the fair values of the financial instruments are as follows:

Trade and other receivables, short-term investments, cash and cash equivalents, current loans and borrowings and trade and other payables: the carrying amounts approximate fair value because of the short maturity period of the instruments.

Long-term loans and borrowings, other non-current liabilities: the fair values of other non-current liabilities are based on the present value of the anticipated cash flows and approximate carrying value, other than Eurobonds and RUSAL Bratsk bonds issued.

Derivatives: the fair value of derivative financial instruments, including embedded derivatives, is based on quoted market prices. Where no price information is available from a quoted market source, alternative market mechanisms or recent comparable transactions, fair value is estimated based on the Group's views on relevant future prices, net of valuation allowances to accommodate liquidity, modelling and other risks implicit in such estimates. Option-based derivatives are valued using Black-Scholes models and Monte-Carlo simulations. The derivative financial instruments are recorded at their fair value at each reporting date.

The following table presents the fair value of Group's financial instruments measured at the end of the reporting period on a recurring basis, categorised into the three-level fair value hierarchy as defined by IFRS 13, *Fair value measurement*. The level into which a fair value measurement is classified is determined with reference to the observability and significance of the inputs used in the valuation technique as follows:

- Level 1 valuations: Fair value measured using only Level 1 inputs i.e. unadjusted quoted prices in active markets for identical assets or liabilities at the measurement date.
- Level 2 valuations: Fair value measured using Level 2 inputs i.e. observable inputs which fail to meet Level 1, and not using significant unobservable inputs. Unobservable inputs are inputs for which market data are not available.
- Level 3 valuations: Fair value measured using significant unobservable inputs.

As at 31 December 2019

		Carrying amount				Fair value			
	Note	**Designated at fair value**	**Financial assets at amortised cost**	**Other financial liabilities**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Total**
		USD million	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**
Financial assets measured at fair value									
Petroleum coke supply contracts and other raw materials	19	39	-	-	39	-	-	39	39
Forward contracts for aluminium and other instruments	19	21	-	-	21	-	-	21	21
Cross currency swaps	19	48	-	-	48	-	-	48	48
		108	**-**	**-**	**108**	**-**	**-**	**108**	**108**
Financial assets not measured at fair value*									
Trade and other receivables	15(b)	-	1,901	-	1,901	-	1,901	-	1,901
Short-term investments		-	241	-	241	-	241	-	241
Cash and cash equivalents	15(d)	-	2,278	-	2,278	-	2,278	-	2,278
		-	**4,420**	**-**	**4,420**	**-**	**4,420**	**-**	**4,420**
Financial liabilities measured at fair value									
Petroleum coke supply contracts and other raw materials	19	(36)	-	-	(36)	-	-	(36)	(36)
Forward contracts for aluminium and other instruments	19	(18)	-	-	(18)	-	-	(18)	(18)
		(54)	**-**	**-**	**(54)**	**-**	**-**	**(54)**	**(54)**
Financial liabilities not measured at fair value*									
Loans and borrowings	17(a)	-	-	(9,881)	(9,881)	-	(10,038)	-	(10.038)
Unsecured bond issue	17(b)	-	-	(2,601)	(2,601)	(1,002)	(1,700)	-	(2,702)
Trade and other payables	15(c)	-	-	(1,198)	(1,198)	-	(1,198)	-	(1,198)
		-	**-**	**(13,680)**	**(13,680)**	**(1,002)**	**(12,936)**	**-**	**(13,938)**

* The Group considers that the carrying amounts of short-term trade receivables and payables are a reasonable approximation of fair values.

As at 31 December 2018

		Carrying amount				Fair value			
	Note	**Designated at fair value**	**Financial assets at amortised cost**	**Other financial liabilities**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Total**
		USD million	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**
Financial assets measured at fair value									
Petroleum coke supply contracts and other raw materials	19	42	-	-	42	-	-	42	42
		42	**-**	**-**	**42**	**-**	**-**	**42**	**42**
Financial assets not measured at fair value*									
Trade and other receivables	15(b)	-	1,143	-	1,143	-	1,143	-	1,143
Short-term investments		-	211	-	211	-	211	-	211
Cash and cash equivalents	15(d)	-	1,183	-	1,183	-	1,183	-	1,183
		-	**2,537**	**-**	**2,537**	**-**	**2,537**	**-**	**2,537**
Financial liabilities measured at fair value									
Petroleum coke supply contracts and other raw materials	19	(31)	-	-	(31)	-	-	(31)	(31)
		(31)	**-**	**-**	**(31)**	**-**	**-**	**(31)**	**(31)**
Financial liabilities not measured at fair value*									
Loans and borrowings	17(a)	-	-	(10,320)	(10,320)	-	(10,391)	-	(10,391)
Unsecured bond issue	17(b)	-	-	(1,957)	(1,957)	(161)	(1,813)	-	(1,974)
Trade and other payables	15(c)	-	-	(1,283)	(1,283)	-	(1,283)	-	(1,283)
		-	**-**	**(13,560)**	**(13,560)**	**(161)**	**(13,487)**	**-**	**(13,648)**

* The Group considers that the carrying amounts of short-term trade receivables and payables are a reasonable approximation of fair values.

(b) Financial risk management objectives and policies

The Group's principal financial instruments comprise bank loans and trade payables. The main purpose of these financial instruments is to raise finance for the Group's operations. The Group has various financial assets such as trade receivables and cash and short-term deposits, which arise directly from its operations.

The main risks arising from the Group's financial instruments are cash flow interest rate risk, liquidity risk, foreign currency risk and credit risk. Management reviews and agrees policies for managing each of these risks which are summarised below.

The Board of Directors has overall responsibility for the establishment and oversight of the Group's risk management framework.

The Group's risk management policies are established to identify and analyse the risks faced by the Group, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's activities. The Group, through its training and management standards and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations.

(c) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices will affect the Group's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising returns.

(i) Tariffs and commodity price risk

During the years ended 31 December 2019 and 31 December 2018, the Group has entered into certain commodity derivatives contracts in order to manage its exposure of commodity price risks.

The tariffs for electricity, heat and transmission services applied by the Group's significant subsidiaries are currently partially determined by government bodies. The Group cannot directly influence or mitigate the risks in relation to the change in tariffs.

A significant portion of the Group's generation activities is based on coal burning stations. A change in coal prices may have a significant impact on the Group's operations. To mitigate the risk of fluctuations in coal prices, the Group has historically increased its internal coal production through acquisition of coal mines and licences in the Eastern Siberia region.

(ii) Interest rate risk

The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's long-term debt obligations with floating interest rates (note 17). The Group's policy is to manage its interest costs by monitoring changes in interest rates with respect to its borrowings.

The following table details the interest rate profile of the Group's and the Company's borrowings at the reporting date.

	31 December 2019		31 December 2018	
	Effective interest rate %	**USD million**	**Effective interest rate %**	**USD million**
Fixed rate loans and borrowings				
Loans and borrowings (note 17(a))	0.01%-11.5%	4,942	4.85%-12.85%	5,407
		4,942		**5,407**
Variable rate loans and borrowings				
Loans and borrowings (note 17(a))	1.75%-8.25%	7,468	1.75%-9.75%	6,752
		7,468		**6,752**
		12,410		**12,159**

The following table demonstrates the sensitivity to cash flows from interest rate risk arising from floating rate non-derivative instruments held by the Group at the reporting date in respect of a reasonably possible change in interest rates, with all other variables held constant. The impact on the Group's profit before taxation and equity and retained profits/accumulated losses is estimated as an annualised input on interest expense or income of such a change in interest rates. The analysis has been performed on the same basis for all years presented.

	Increase/ decrease in basis points	**Effect on profit before taxation for the year**	**Effect on equity for the year**
		USD million	**USD million**
As at 31 December 2019			
Basis percentage points	+100	(75)	(60)
Basis percentage points	-100	75	60
As at 31 December 2018			
Basis percentage points	+100	(68)	(54)
Basis percentage points	-100	68	54

(iii) Foreign currency risk

The Group is exposed to currency risk on sales, purchases and borrowings that are denominated in a currency other than the respective functional currencies of group entities, primarily USD but also the Russian Rouble, Ukrainian Hryvna and Euros. The currencies in which these transactions primarily are denominated are RUB, USD and EUR.

Borrowings are primarily denominated in currencies that match the cash flows generated by the underlying operations of the Group, primarily USD but also RUB and EUR. This provides an economic hedge.

In respect of other monetary assets and liabilities denominated in foreign currencies, the Group ensures that its net exposure is kept to an acceptable level by buying or selling foreign currencies at spot rates when necessary to address short-term imbalances or entering into currency swap arrangements.

The Group's exposure at the reporting date to foreign currency risk arising from recognised assets and liabilities denominated in a currency other than the functional currency of the entity to which they relate is set out in the table below. Differences resulting from the translation of the financial statements of foreign operations into the Group's presentation currency are ignored.

USD million	**USD-denominated vs. RUB functional currency**		**RUB-denominated vs. USD functional currency**		**EUR-denominated vs. USD functional currency**		**Denominated in other currencies vs. USD functional currency**	
	31 December		**31 December**		**31 December**		**31 December**	
	2019	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Non-current assets	-	-	3	3	-	1	8	-
Derivative financial assets	-	-	40	42	-	-	-	-
Trade and other receivables	1	1	662	640	55	91	43	28
Cash and cash equivalents	26	-	85	417	125	312	35	42
Loans and borrowings	(54)	(54)	(1,980)	(1,030)	-	-	-	-
Provisions	-	-	(66)	(102)	(26)	(26)	(14)	(10)
Derivative financial liabilities	-	-	(11)	(11)	-	-	-	-
Income taxation	-	-	(2)	(15)	-	-	(8)	(11)
Non-current liabilities	-	-	(1)	-	(6)	(6)	-	-
Short-term bonds	-	-	(7)	(161)	-		(49)	(216)
Trade and other payables	-	-	(351)	(393)	(42)	(61)	(74)	(54)
Net exposure arising from recognised assets and liabilities	**(27)**	**(53)**	**(1,628)**	**(610)**	**106**	**311**	**(59)**	**(221)**

Foreign currency sensitivity analysis

The following tables indicate the change in the Group's profit before taxation (and accumulated losses) and other comprehensive income that could arise if foreign exchange rates to which the Group has significant exposure at the reporting date had changed at that date, assuming all other risk variables remained constant.

	Year ended 31 December 2019		
		USD million	USD million
	Change in exchange rates	Effect on profit before taxation for the year	Effect on equity for the year
Depreciation of USD vs. RUB	15%	(240)	(240)
Depreciation of USD vs. EUR	10%	11	11
Depreciation of USD vs. other currencies	5%	(3)	(3)

	Year ended 31 December 2018		
		USD million	USD million
	Change in exchange rates	Effect on profit before taxation for the year	Effect on equity for the year
Depreciation of USD vs. RUB	5%	(28)	(28)
Depreciation of USD vs. EUR	5%	16	16
Depreciation of USD vs. other currencies	5%	(11)	(11)

Results of the analysis as presented in the above tables represent an aggregation of the effects on the Group entities' profit before taxation and other comprehensive income measured in the respective functional currencies, translated into USD at the exchange rates ruling at the reporting date for presentation purposes.

The sensitivity analysis assumes that the change in foreign exchange rates had been applied to re-measure those financial instruments held by the Group which expose the Group to foreign currency risk at the reporting date. The analysis excludes differences that would result from the translation of other financial statements of foreign operations into the Group's presentation currency. The analysis has been performed on the same basis for all years presented.

(d) Liquidity risk

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's policy is to maintain sufficient cash and cash equivalents or have available funding through an adequate amount of committed credit facilities to meet its operating and financial commitments.

The following tables show the remaining contractual maturities at the reporting date of the Group's non-derivative financial liabilities, which are based on contractual undiscounted cash flows (including interest payment computed using contractual rates, or if floating, based on rates current at the reporting date) and the earliest the Group can be required to pay, except loans presented as payable on demand due to breach of covenant:

	31 December 2019 Contractual undiscounted cash outflow					
	Within 1 year or on demand	**More than 1 year but less than 2 years**	**More than 2 years but less than 5 years**	**More than 5 years**	**TOTAL**	**Carrying amount**
	USD million	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**
Trade and other payables to third parties	1,149	-	-	-	1,149	1,149
Trade and other payables to related parties	49	-	-	-	49	49
Bonds, including interest payable	219	161	2,720	-	3,100	2,601
Loans and borrowings, including interest payable	1,763	2,528	6,825	1,005	12,121	9,881
	3,180	**2,689**	**9,545**	**1,005**	**16,419**	**13,680**
Financial guarantees issued: Maximum amount guaranteed	69	67	-	-	136	-

	31 December 2018 Contractual undiscounted cash outflow					
	Within 1 year or on demand	**More than 1 year but less than 2 years**	**More than 2 years but less than 5 years**	**More than 5 years**	**TOTAL**	**Carrying amount**
	USD million	**USD million**	**USD million**	**USD million**	**USD million**	**USD million**
Trade and other payables to third parties	1,252	-	-	-	1,252	1,252
Trade and other payables to related parties	31	-	-	-	31	31
Bonds, including interest payable	480	82	1,773	-	2,335	1,957
Loans and borrowings, including interest payable	2,507	2,052	5,844	2,428	12,831	10,320
	4,270	**2,134**	**7,617**	**2,428**	**16,449**	**13,560**
Financial guarantees issued: Maximum amount guaranteed	63	59	-	-	122	-

At 31 December 2019 and 31 December 2018, UC RUSAL's guarantee in respect of credit arrangement between BoAZ and VEB is presented as a contingent liability and included within the maximum exposure for the Group in the liquidity risk disclosure above (note 22(d)).

(e) Credit risk

The Group trades only with recognised, creditworthy third parties. It is the Group's policy that all customers who wish to trade on credit terms are subject to credit verification procedures. The majority of the Group's third party trade receivables represent balances with the world's leading international corporations operating in the metals industry. In addition, receivable balances are monitored on an ongoing basis with the result that the Group's exposure to bad debts is not significant. Goods are normally sold subject to retention of title clauses, so that in the event of non-payment the Group may have a secured claim. The Group does not require collateral in respect of trade and other receivables. The details of impairment of trade and other receivables are disclosed in note 15. Cash balances are held with high credit quality financial institutions. The extent of the Group's credit exposure is represented by the aggregate balance of financial assets and financial guarantees given.

At 31 December 2019 and 31 December 2018, the Group has no concentration of credit risk within any single largest customer but 14.6% and 4.8% of the total trade receivables were due from the Group's five largest customers.

(f) Capital risk management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

The Group manages its capital structure and makes adjustments to it, in light of changes in economic conditions. To maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt.

The Board's policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board of Directors monitors the return on capital, which the Group defines as net operating income divided by total shareholders' equity, excluding non-controlling interests. The Board of Directors also monitors the level of dividends to ordinary shareholders.

The Board seeks to maintain a balance between higher returns that might be possible with higher levels of borrowings and the advantages and security afforded by a sound capital position.

There were no changes in the Group's approach to capital management during the year.

The Company and its subsidiaries were subject to externally imposed capital requirements in the both years presented in these consolidated financial statements.

(g) Master netting or similar agreements

The Group may enter into sales and purchase agreements with the same counterparty in the normal course of business. The related amount receivable and payable do not always meet the criteria for offsetting in the statement of financial position.

The following table sets out the carrying amounts of recognised financial instruments that are subject to the above agreements.

	Year ended 31 December 2019	
	USD million	**USD million**
	Trade receivables	**Trade payables**
Gross amounts	99	(77)
Net amounts presented in the statement of financial position	**99**	**(77)**
Amounts related to recognised financial instruments that do not meet some or all of the offsetting criteria	(33)	33
Net amount	**66**	**(44)**

	Year ended 31 December 2018	
	USD million	**USD million**
	Trade receivables	**Trade payables**
Gross amounts	78	(51)
Net amounts presented in the statement of financial position	**78**	**(51)**
Amounts related to recognised financial instruments that do not meet some or all of the offsetting criteria	(28)	28
Net amount	**50**	**(23)**

21. Commitments

(a) Capital commitments

UC RUSAL

UC RUSAL has entered into contracts that result in contractual obligations primarily relating to various construction and capital repair works. The commitments at 31 December 2019 and 31 December 2018 approximated USD 298 million and USD 200 million, respectively. These commitments are due over a number of years.

POWER

The Power segment had outstanding capital commitments which had been contracted for at 31 December 2019 and 31 December 2018 in the amount of USD 326 million and USD 78 million, respectively. These commitments are due over a number of years.

(b) Purchase commitments

Commitments with third parties for purchases of alumina, bauxite, other raw materials and other purchases in 2020-2034 under supply agreements are estimated from USD 3,257 million to USD 4,135 million at 31 December 2019 (31 December 2018: USD 2,932 million to USD 3,527 million) depending on the actual purchase volumes and applicable prices.

Commitments with a related party - joint venture for purchases of primary aluminium and alloys in 2020-2030 under supply agreements are estimated from USD 5,134 million to USD 8,636 million (31 December 2018: USD 6,375 million to USD 10,019 million) depending on the actual purchase volumes and applicable prices.

(c) Sale commitments

Commitments with third parties for sales of alumina and other raw materials in 2020-2034 are estimated from USD 962 million to USD 1,292 million at 31 December 2019 (31 December 2018: from USD 509 million to USD 2,344 million) and will be settled at market prices at the date of delivery. Commitments with related parties for sales of alumina in 2020-2024 approximated from USD 413 million to USD 771 million at 31 December 2019 (31 December 2018: from USD 227 million to USD 363 million).

Commitments with related parties for sales of primary aluminium and alloys in 2020-2021 are estimated from USD 375 million to USD 563 million at 31 December 2019 (31 December 2018: from USD 493 million to USD 739 million). Commitments with third parties for sales of primary aluminium and alloys in 2020-2022 are estimated to range from USD 1,720 million to USD 2,559 million at 31 December 2019 (31 December 2018: from USD 832 million to USD 1,155 million).

(d) Social commitments

The Group contributes to the maintenance and upkeep of the local infrastructure and the welfare of its employees, including contributions toward the development and maintenance of housing, hospitals, transport services, recreation and other social needs of the regions of the Russian Federation where the Group's production entities are located. The funding of such assistance is periodically determined by management and is appropriately capitalised or expensed as incurred.

22. Contingencies

(a) Taxation

Russian tax, currency and customs legislation is subject to varying interpretations, and changes, which can occur frequently. Management's interpretation of such legislation as applied to the transactions and activities of the Group may be challenged by the relevant local, regional and federal authorities. Notably recent developments in the Russian environment suggest that the authorities in this country are becoming more active in seeking to enforce, through the Russian court system, interpretations of the tax legislation, in particular in relation to the use of certain commercial trading structures, which may be selective for particular tax payers and different from the authorities' previous interpretations or practices. Recent events within the Russian Federation suggest that the tax authorities are taking a more assertive and substance-based position in their interpretation and enforcement of tax legislation.

The Russian taxation system is continually evolving and is subject to frequent changes, starting from 1 January 2015, changes aimed at regulating tax consequences of transactions with foreign companies and their activities were introduced, such as the concept of beneficial ownership of income, taxation of controlled foreign companies, tax residency rules, country-by-country reporting etc. This legislation and practice of its application is still evolving and the impact of legislative changes should be considered based on the actual circumstances.

All these circumstances may create tax risks in the Russian Federation that are substantially more significant than in other countries. Management believes that it has provided adequately for tax liabilities based on its interpretations of applicable Russian tax legislation, official pronouncements and court decisions. However, the interpretations of the tax authorities and courts, especially due to reform of the supreme courts that are resolving tax disputes, could differ and the effect on these consolidated financial statements, if the authorities were successful in enforcing their interpretations, could be significant.

In addition to the amounts of income tax the Group has provided, there are certain tax positions taken by the Group where it is reasonably possible (though less than 50% likely) that additional tax may be payable upon examination by the tax authorities or in connection with ongoing disputes with tax authorities. The Group's best estimate of the aggregate maximum of additional amounts that it is reasonably possible may become payable if these tax positions were not sustained at 31 December 2019 is USD 34 million (31 December 2018: USD 32 million).

(b) Environmental contingencies

The Group and its predecessor entities have operated in the Russian Federation, Ukraine, Jamaica, Guyana, the Republic of Guinea and the European Union for many years and certain environmental problems have developed. Governmental authorities are continually considering environmental regulations and their enforcement and the Group periodically evaluates its obligations related thereto. As obligations are determined, they are recognised immediately. The outcome of environmental liabilities under proposed or any future legislation, or as a result of stricter enforcement of existing legislation, cannot reasonably be estimated. Under current levels of enforcement of existing legislation, management believes there are no possible liabilities, which will have a material adverse effect on the financial position or the operating results of the Group. However, the Group anticipates undertaking significant capital projects to improve its future environmental performance.

(c) Legal contingencies

The Group's business activities expose it to a variety of lawsuits and claims which are monitored, assessed and contested on an ongoing basis. Where management believes that a lawsuit or another claim would result in the outflow of the economic benefits for the Group, a best estimate of such outflow is included in provisions in the consolidated financial statements (note 18(e)). As at 31 December 2019, the amount of claims, where management assesses outflow as possible approximates USD 21 million (31 December 2018: USD 31 million).

(d) Provision for guarantees

Where the Group enters into financial guarantee contracts to guarantee the indebtedness of related parties, the Group considers these to be insurance arrangements and accounts for them as such. In this respect, the Group treats the guarantee contract as a contingent liability until such time as it becomes probable that the Group will be required to make a payment under the guarantee.

In September 2013, UC RUSAL entered into an agreement with PJSC RusHydro to provide funds to BoAZ, if the latter is unable to fulfil its obligations under its credit facility with GK Vnesheconombank ("VEB"). This agreement represents a surety for the increased credit limit obtained for the financing of BoAZ. The aggregate exposure under the agreement is limited to RUB 16.8 billion (31 December 2019 and 2018 USD 272 million and USD 242 million, respectively) and is split between the Group and PJSC RusHydro in equal proportion.

23. Related party transactions

(a) Accounting policy

(a) A person, or a close member of that person's family, is related to the Group if that person:

- *(i)* has control or joint control over the Group;
- *(ii)* has significant influence over the Group; or
- *(iii)* is a member of the key management personnel of the Group or the Group's parent.

(b) An entity is related to the Group if any of the following conditions applies:

- *(i)* The entity and the Group are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others).
- *(ii)* One entity is an associate or joint venture of the other entity (or an associate or joint venture of a member of a group of which the other entity is a member).
- *(iii)* Both entities are joint ventures of the same third party.
- *(iv)* One entity is a joint venture of a third entity and the other entity is an associate of the third entity.

(v) The entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group.

(vi) The entity is controlled or jointly controlled by a person identified in (a).

(vii) A person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity).

(viii) The entity, or any member of a group of which it is a part, provides key management personnel services to the group or to the group's parent.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by, that person in their dealings with the entity.

(b) Transactions with related parties

The Group transacts with related parties, the majority of which are under control of SUAL Partners Limited or its shareholders, Glencore International Plc or entities under its control, associates and joint ventures and other related parties.

Sales to related parties for the year are disclosed in note 5, trade receivables from related parties are disclosed in note 15(b), accounts payable to related parties are disclosed in note 15(c).

Purchases of raw materials and services from related parties for the period were as follows:

	Year ended 31 December	
	2019	**2018**
	USD million	**USD million**
Purchase of raw materials	**(533)**	**(421)**
Companies capable of exerting significant influence	*(54)*	*(78)*
Other related parties	*(25)*	*(36)*
Associates and joint ventures	*(454)*	*(307)*
Energy costs	**(46)**	**(51)**
Companies capable of exerting significant influence	*(5)*	*(4)*
Other related parties	*(1)*	*(1)*
Associates and joint ventures	*(40)*	*(46)*
Other services	**(126)**	**(152)**
Other related parties	*(2)*	*(3)*
Associates and joint ventures	*(124)*	*(149)*
	(705)	**(624)**

(c) Related parties balances

At 31 December 2019, included in non-current assets are balances of related parties — associates and joint ventures of USD 2 million (31 December 2018: USD 42 million, net of impairment loss of USD 52 million recognized as a result of adoption of IFRS 9). At 31 December 2019, included in non-current liabilities are balances of related parties – associates and joint ventures of USD 11 million (31 December 2018: USD 10 million).

(d) Remuneration to key management

For the year ended 31 December 2019 remuneration to key management personnel during the year was represented by short-term employee benefits and amounted to USD 22 million (31 December 2018: USD 16 million).

24. Events subsequent to the reporting date

On 17 February 2020, the Parent Company's ordinary shares have been included into the "Level 1" part of the list of securities admitted to trading on Moscow Exchange. Other subsequent events are disclosed in notes 1(a), 1(c) and note 17(a).

25. Accounting estimates and judgements

The Group has identified the following critical accounting policies under which significant judgements, estimates and assumptions are made and where actual results may differ from these estimates under different assumptions and conditions and may materially affect financial results of the financial position reported in future periods.

Property, plant and equipment – recoverable amount

In accordance with the Group's accounting policy, each asset or cash generating unit is evaluated every reporting period to determine whether there are any indications of impairment. If any such indication exists, a formal estimate of recoverable amount is performed and an impairment loss is recognised to the extent that carrying amount exceeds recoverable amount. The recoverable amount of an asset or cash generating group of assets is measured at the higher of fair value less costs to sell and value in use.

Fair value is determined as the amount that would be obtained from the sale of the asset in an arm's length transaction between knowledgeable and willing parties, and is generally determined as the present value of the estimated future cash flows expected to arise from the continued use of the asset, including any expansion prospects, and its eventual disposal.

Value in use is also generally determined as the present value of the estimated future cash flows, but only those expected to arise from the continued use of the asset in its present form and its eventual disposal. Present values are determined using a risk-adjusted pre-tax discount rate appropriate to the risks inherent in the asset. Future cash flow estimates are based on expected production and sales volumes, commodity prices (considering current and historical prices, price trends and related factors), reserves (refer "Reserve estimates" below), operating costs, restoration and rehabilitation costs and future capital expenditure. This policy requires management to make these estimates and assumptions which are subject to risk and uncertainty; hence there is a possibility that changes in circumstances will alter these projections, which may impact the recoverable amount of the assets. In such circumstances, some or all of the carrying value of the assets may be impaired and the impairment would be charged against the profit or loss.

Property, plant and equipment – hydro assets – fair value

In accordance with the Group's accounting policy, hydro assets are carried at a revalued amount, being their fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluations are made with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period.

The valuation analysis is primarily based on the cost approach to determine depreciated replacement cost. This method considers the cost to reproduce or replace the property, plant and equipment, adjusted for physical depreciation, functional and economic obsolescence.

This policy requires management to make estimates and assumptions regarding both costs, as there is no active market for used assets of that type, and macroeconomic indicators to assess economic obsolescence which are subject to risk and uncertainty; hence there is a possibility that changes in circumstances will alter these estimates, which may impact the fair value of hydro assets. In such circumstances, the fair value of hydro assets may be lower with any consequential decrease in revaluation reserve recognised through other comprehensive income.

Inventories – net realisable value

The Group recognises write-downs of inventories based on an assessment of the net realisable value of the inventories. A write-down is applied to the inventories where events or changes in circumstances indicate that the net realisable value is less than cost. The determination of net realisable value requires the use of judgement and estimates. Where the expectation is different from the original estimates, such a difference will impact the carrying value of the inventories and the write-down of inventories charged to the profit or loss in the periods in which such estimate has been changed.

Goodwill – recoverable amount

In accordance with the Group's accounting policy, goodwill is allocated to the Group's reportable business segments as they represent the lowest level within the Group at which the goodwill is monitored for internal management purposes and is tested for impairment annually at 31 December by preparing a formal estimate of recoverable amount. Recoverable amount is estimated as the value in use of the business segment.

Similar considerations to those described above in respect of assessing the recoverable amount of property, plant and equipment apply to goodwill.

Investments in associates and joint ventures – recoverable amount

In accordance with the Group's accounting policies, each investment in an associate or joint venture is evaluated every reporting period to determine whether there are any indications of impairment after application of the equity method of accounting. If any such indication exists, a formal estimate of recoverable amount is performed and an impairment loss recognised to the extent that the carrying amount exceeds the recoverable amount. The recoverable amount of an investment in an associate or joint venture is measured at the higher of fair value less costs to sell and value in use.

Similar considerations to those described above in respect of assessing the recoverable amount of property, plant and equipment apply to investments in associates or joint ventures. In addition to the considerations described above the Group may also assess the estimated future cash flows expected to arise from dividends to be received from the investment, if such information is available and considered reliable.

Legal proceedings

In the normal course of business, the Group may be involved in legal proceedings. Where management considers that it more likely than not that proceedings will result in the Group compensating third parties a provision is recognised for the best estimate of the amount expected to be paid. Where management considers that it is more likely than not that proceedings will not result in the Group compensating third parties or where, in rare circumstances, it is not considered possible to provide a sufficiently reliable estimate of the amount expected to be paid, no provision is made for any potential liability under the litigation but the circumstances and uncertainties involved are disclosed as contingent liabilities.

The assessment of the likely outcome of legal proceedings and the amount of any potential liability involves significant judgement. As law and regulations in many of the countries in which the Group operates are continuing to evolve, particularly in the areas of taxation, sub-soil rights and protection of the environment, uncertainties regarding litigation and regulation are greater than those typically found in countries with more developed legal and regulatory frameworks.

Provision for restoration and rehabilitation

The Group's accounting policy requires the recognition of provisions for the restoration and rehabilitation of each site when a legal or constructive obligation exists to dismantle the assets and restore the site. The provision recognised represents management's best estimate of the present value of the future costs required. Significant estimates and assumptions are made in determining the amount of restoration and rehabilitation provisions. Those estimates and assumptions deal with uncertainties such as: changes to the relevant legal and regulatory framework; the magnitude of possible contamination and the timing, extent and costs of required restoration and rehabilitation activity. These uncertainties may result in future actual expenditure differing from the amounts currently provided.

The provision recognised for each site is periodically reviewed and updated based on the facts and circumstances available at the time. Changes to the estimated future costs for operating sites are recognised in the statement of financial position by adjusting both the restoration and rehabilitation asset and provision. Such changes give rise to a change in future depreciation and interest charges. For closed sites, changes to estimated costs are recognised immediately in profit or loss.

Taxation

The Group's accounting policy for taxation requires management's judgement in assessing whether deferred tax assets and certain deferred tax liabilities are recognised on the statement of financial position. Deferred tax assets, including those arising from carried forward tax losses, capital losses and temporary differences, are recognised only where it is considered more likely than not that they will be recovered, which is dependent on the generation of sufficient future taxable profits. Deferred tax liabilities arising from temporary differences in investments, caused principally by retained earnings held in foreign tax jurisdictions, are recognised unless repatriation of retained earnings can be controlled and is not expected to occur in the foreseeable future.

Assumptions about the generation of future taxable profits and repatriation of retained earnings depend on management's estimates of future cash flows. These depend on estimates of future production and sales volumes, commodity prices, reserves, operating costs, restoration and rehabilitation costs, capital expenditure, dividends and other capital management transactions. Assumptions are also required about the application of income tax legislation. These estimates and assumptions are subject to risk and uncertainty, hence there is a possibility that changes in circumstances will alter expectations, which may impact the amount of deferred tax assets and deferred tax liabilities recognised on the statement of financial position and the amount of other tax losses and temporary differences not yet recognised. In such circumstances, some or all of the carrying amount of recognised deferred tax assets and liabilities may require adjustment, resulting in a corresponding credit or charge to profit or loss.

The Group generally provides for current tax based on positions taken (or expected to be taken) in its tax returns. Where it is more likely than not that upon examination by the tax authorities of the positions taken by the Group additional tax will be payable, the Group provides for its best estimate of the amount expected to be paid (including any interest and/or penalties) as part of the tax charge.

Reserve estimates

Reserves are estimates of the amount of product that can be economically and legally extracted from the Group's properties. In order to calculate reserves, estimates and assumptions are required about a range of geological, technical and economic factors, including quantities, grades, production techniques, recovery rates, production costs, transport costs, commodity demand, commodity prices and exchange rates.

The Group determines ore reserves under the Australasian Code for Reporting of Mineral Resources and Ore Reserves September 1999, known as the JORC Code. The JORC Code requires the use of reasonable investment assumptions to calculate reserves.

Estimating the quantity and/or grade of reserves requires the size, shape and depth of ore bodies or fields to be determined by analysing geological data such as drilling samples. This process may require complex and difficult geological judgements and calculations to interpret the data.

Since economic assumptions used to estimate reserves change from period to period, and since additional geological data is generated during the course of operations, estimates of reserves may change from period to period.

Changes in reported reserves may affect the Group's financial results and financial position in a number of ways, including the following:

- Asset carrying values may be affected due to changes in estimated future cash flows.
- Depletion charged in profit or loss may change where such charges are determined by the units of production basis, or where the useful economic lives of assets change.
- Decommissioning, site restoration and environmental provisions may change where changes in estimated reserves affect expectations about the timing or cost of these activities.

Exploration and evaluation expenditure

The Group's accounting policy for exploration and evaluation expenditure results in certain items of expenditure being capitalised for an area of interest where it is considered likely to be recoverable by future exploitation or sale or where the activities have not reached a stage which permits a reasonable assessment of the existence of reserves. This policy requires management to make certain estimates and assumptions as to future events and circumstances, in particular whether an economically viable extraction operation can be established. Any such estimates and assumptions may change as new information becomes available. If, after having capitalised the expenditure under the policy, a judgement is made that recovery of the expenditure is unlikely, the relevant capitalised amount will be written off to profit or loss.

Development expenditure

Development activities commence after project sanctioning by the appropriate level of management. Judgement is applied by management in determining when a project has reached a stage at which economically recoverable reserves exist such that development may be sanctioned. In exercising this judgement, management is required to make certain estimates and assumptions similar to those described above for capitalised exploration and evaluation expenditure. Any such estimates and assumptions may change as new information becomes available. If, after having commenced the development activity, a judgement is made that a development asset is impaired, the appropriate amount will be written off to profit or loss.

Defined benefit retirement and other post retirement schemes

For defined benefit pension schemes, the cost of benefits charged to the profit or loss includes current and past service costs, interest costs on defined benefit obligations and the effect of any curtailments or settlements, net of expected returns on plan assets. An asset or liability is consequently recognised in the statement of financial position based on the present value of defined obligations, less any unrecognised past service costs and the fair value of plan assets.

The accounting policy requires management to make judgements as to the nature of benefits provided by each scheme and thereby determine the classification of each scheme. For defined benefit pension schemes, management is required to make annual estimates and assumptions about future returns on classes of scheme assets, future remuneration changes, employee attrition rates, administration costs, changes in benefits, inflation rates, exchange rates, life expectancy and expected remaining periods of service of employees. In making these estimates and assumptions, management considers advice provided by external advisers, such as actuaries. Where actual experience differs to these estimates, actuarial gains and losses are recognised directly in the statement of profit or loss and other comprehensive income.

Impairment of assets

The carrying amounts of the Group's non-financial assets, other than inventories and deferred tax assets, are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists then the asset's recoverable amount is estimated. For goodwill and intangible assets that are not yet available for use, the recoverable amount is estimated at each reporting date.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. A cash-generating unit is the smallest identifiable asset group that generates cash flows that are largely independent from other asset groups. Impairment losses are recognised in profit or loss. Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the units and then to reduce the carrying amount of the other assets in the unit (group of units) on a pro rata basis.

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

An impairment loss in respect of goodwill is not reversed. In respect of other assets, impairment losses recognised in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

Goodwill that forms part of the carrying amount of an investment in an associate or a joint venture is not recognised separately and, therefore, is not tested for impairment separately. Instead, the entire amount of the investment is tested for impairment as a single asset when there is objective evidence that the investment in an associate or a joint venture may be impaired.

26. Significant subsidiaries

The significant entities of the Group, included in these consolidated financial statements, are as follows:

Name	Place of incorporation and operation	Principal activities	Ownership and equity interest 31 December 2019	2018
UC RUSAL				
United Company RUSAL Plc	Jersey	Holding company	56.9%	48.1%
Compagnie Des Bauxites De Kindia S.A.	Guinea	Bauxite mining	100.0%	100.0%
Friguia SA	Guinea	Alumina	100.0%	100.0%
JSC RUSAL Achinsk	Russian Federation	Alumina	100.0%	100.0%
Mykolaiv Alumina Refunery Company Ltd	Ukraine	Alumina	100.0%	100.0%
JSC RUSAL Boxitogorsk Alumina	Russian Federation	Alumina	100.0%	100.0%
Eurallumina SpA	Italy	Alumina	100.0%	100.0%
PJSC RUSAL Bratsk	Russian Federation	Smelting	100.0%	100.0%
JSC RUSAL Krasnoyarsk	Russian Federation	Smelting	100.0%	100.0%
JSC RUSAL Novokuznetsk	Russian Federation	Smelting	100.0%	100.0%
JSC RUSAL Sayanogorsk	Russian Federation	Smelting	100.0%	100.0%
RUSAL RESAL LLC	Russian Federation	Processing	100.0%	100.0%
JSC RUSAL SAYANAL	Russian Federation	Foil	100.0%	100.0%
CJSC RUSAL ARMENAL	Armenia	Foil	100.0%	100.0%
RUS-Engineering LLC	Russian Federation	Repairs and maintenance	100.0%	100.0%
JSC Russian Aluminium	Russian Federation	Holding company	100.0%	100.0%
Rusal Global Management B.V.	Netherlands	Management company	100.0%	100.0%
JSC United Company RUSAL Trading House	Russian Federation	Trading	100.0%	100.0%
Rusal America Corp.	USA	Trading	100.0%	100.0%
RS International GmbH	Switzerland	Trading	100.0%	100.0%
Rusal Marketing GmbH	Switzerland	Trading	100.0%	100.0%
RTI Limited	Jersey	Trading	100.0%	100.0%
Alumina & Bauxite Company Limited	British Virgin Islands	Trading	100.0%	100.0%
JSC Komi Aluminii	Russian Federation	Alumina	100.0%	100.0%
JSC Bauxite-Timana	Russian Federation	Bauxite mining	100.0%	100.0%
JSC Severo-Uralsky Bauxite Mine	Russian Federation	Bauxite mining	100.0%	100.0%
JSC RUSAL URAL	Russian Federation	Primary aluminium and alumina production	100.0%	100.0%
SUAL-PM LLC	Russian Federation	Aluminium powders production	100.0%	100.0%
JSC Kremniy	Russian Federation	Silicon production	100.0%	100.0%
RUSAL-Kremniy-Ural LLC	Russian Federation	Silicon production	100.0%	100.0%
UC RUSAL Alumina Jamaica Limited	Jamaica	Alumina	100.0%	100.0%
Kubikenborg Aluminium AB	Sweden	Smelting	100.0%	100.0%
RFCL Sarl	Luxembourg	Finance services	100.0%	100.0%
ILLC AKTIVIUM (ex. Aktivium B.V.)	Russian Federation	Holding and investment company	100.0%	100.0%
Aughinish Alumina Ltd	Ireland	Alumina	100.0%	100.0%
LLC RUSAL Energo	Russian Federation	Electric power	100.0%	100.0%
Limerick Alumina Refining Ltd.	Ireland	Alumina	100.0%	100.0%
JSC RUSAL Management	Russian Federation	Management company	100.0%	100.0%
RUSAL Taishet LLC	Russian Federation	Smelting	100.0%	100.0%
UC RUSAL Anode Plant LLC	Russian Federation	Anodes	100.0%	100.0%

Name	Place of incorporation and operation	Principal activities	Ownership and equity interest 31 December 2019	2018
POWER				
En+ Holding Limited	Cyprus	Holding company	100.0%	100.0%
JSC EuroSibEnergo	Russian Federation	Management company	100.0%	100.0%
JSC Krasnoyarsk Hydro-Power Plant	Russian Federation	Power generation	100.0%	100.0%
LLC MAREM +	Russian Federation	Power trading	99.9%	99.9%
PJSC Irkutskenergo	Russian Federation	Power generation	93.2%	92.8%
OJSC Irkutsk Electric Grid Company	Russian Federation	Power transmission and distribution	52.4%	52.3%
LLC EuroSibEnergo - Hydrogeneration	Russian Federation	Power generation	100.0%	100.0%
LLC Avtozavodskaya TEC	Russian Federation	Power generation	96.5%	96.3%
LLC EuroSibEnergo-engineering	Russian Federation	Engineering services	100.0%	100.0%
LLC Kompaniya VostSibUgol	Russian Federation	Coal production	93.2%	92.8%
LLC KRAMZ	Russian Federation	Manufacturing of semi-finished products from primary aluminium	94.0%	93.7%
LLC Sorsk Mining and Metallurgical Complex	Russian Federation	Ore mining	100.0%	100.0%
LLC Sorsk Ferromolybdenum Plant	Russian Federation	Ore processing, ferromolybdenum production	100.0%	100.0%

The nominal ownerships indicated in the table above are the effective holdings, except for UC RUSAL shareholdings where 56.88% (nominal shareholding is 50.10%) is held by the Parent Company.