En+ Group Limited

Consolidated Financial Statements
for the years ended
31 December 2016, 2015 and 2014

Contents

KPMG

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Independent Auditors' Report

To the Board of Directors and Shareholders

En+ Group Limited

Opinion

We have audited the consolidated financial statements of En+ Group Limited (the "Company") and its subsidiaries (the "Group"), which comprise the consolidated statements of financial position as at 31 December 2016, 2015 and 2014, and the consolidated statements of comprehensive income, changes in equity and cash flows for the years 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 2016, 2015 and 2014, and its consolidated financial performance and its consolidated cash flows for the years 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 Ethics Standards Board for Accountants' *Code of Ethics for Professional Accountants* (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with the requirements in the Russian Federation and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

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 skepticism 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.

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

Andrei Ryazantsev

JSC "KPMG"

Moscow, Russia

30 March 2017

		Year ended 31 December		
		2016	**2015**	**2014**
	Note	**USD million**	**USD million**	**USD million**
Revenues	7	9,776	10,529	11,917
Cost of sales		(6,850)	(7,184)	(8,718)
Gross profit		**2,926**	**3,345**	**3,199**
Distribution expenses		(523)	(442)	(571)
General and administrative expenses		(699)	(731)	(939)
Reversal of impairment/(impairment) of non-current assets	6	18	(143)	(368)
Net other operating expenses	8	(49)	(59)	(222)
Results from operating activities		**1,673**	**1,970**	**1,099**
Share of profits of associates and joint ventures	14	847	368	521
Finance income	10	88	36	46
Finance costs	10	(1,241)	(1,629)	(2,170)
Results from disposal and deconsolidation of subsidiaries including items recycled from other comprehensive income	2(h)	298	95	-
Profit/(loss) before taxation		**1,665**	**840**	**(504)**
Income tax expense	11	(304)	(260)	(120)
Profit/(loss) for the year		**1,361**	**580**	**(624)**
Other comprehensive income				
Items that will never be reclassified subsequently to profit or loss:				
Actuarial (loss)/gain on post retirement benefit plans	19(b)	(2)	(9)	24
Revaluation of non-current assets	12	3,175	-	-
Taxation	11(c)	(635)	-	-
		2,538	(9)	24
Items that are or may be reclassified subsequently to profit or loss:				
Foreign currency translation differences on foreign operations		284	(216)	(1,068)
Foreign currency translation differences for equity-accounted investees		675	(975)	(3,452)
Change in fair value of cash flow hedges		36	144	(81)
Items recycled from other comprehensive income on deconsolidation of subsidiaries	2(h)	22	(95)	-
Share of other comprehensive income of associates	14	-	4	10
Unrealised gain/(loss) on available-for-sale assets	16(a)	7	(4)	-
Taxation	11(a)	-	(41)	(182)
		1,024	(1,183)	(4,773)
Other comprehensive income/(loss) for the year, net of tax		3,562	(1,192)	(4,749)
Total comprehensive income/(loss) for the year		**4,923**	**(612)**	**(5,373)**

The consolidated statements of comprehensive income is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 13 to 123.

		Year ended 31 December		
		2016	2015	2014
	Note	USD million	USD million	USD million
Net profit/(loss) attributable to:				
Shareholders of the Parent Company		689	166	(622)
Non-controlling interests	17(g)	672	414	(2)
Profit/(loss) for the year		**1,361**	**580**	**(624)**
Total comprehensive income/(loss) for the year attributable to:				
Shareholders of the Parent Company		3,170	(295)	(2,763)
Non-controlling interests	17(g)	1,753	(317)	(2,610)
Total comprehensive income/(loss) for the year		**4,923**	**(612)**	**(5,373)**

These consolidated financial statements were authorised for issue by the Board of Directors on 29 March 2017 and were signed on its behalf by:

Maxim Sokov
Director

Andrey Yashchenko
Chief Financial Officer

The consolidated statement of comprehensive income is to be read in conjunction with the notes to, and forming part of, the consolidated financial statements set out on pages 13 to 123.

	Note	31 December 2016 USD million	2015 USD million	2014 USD million
ASSETS				
Non-current assets				
Property, plant and equipment	12	9,355	5,186	5,668
Goodwill and intangible assets	13	2,300	2,053	2,424
Interests in associates and joint ventures	14	4,156	3,222	4,885
Long-term investments	16(a)	25	28	42
Trade and other receivables	16(b)	149	4	31
Deferred tax assets	11(b)	108	96	90
Derivative financial assets	20	51	71	30
Other non-current assets		7	11	45
Total non-current assets		**16,151**	**10,671**	**13,215**
Current assets				
Short-term investments	16(a)	38	34	74
Inventories	15	2,034	1,922	2,135
Trade and other receivables	16(b)	1,401	1,157	914
Prepaid expenses and other current assets		14	22	37
Derivative financial assets	20	16	50	32
Cash and cash equivalents	16(d)	669	591	710
Assets held for sale	5	7	36	1
Total current assets		**4,179**	**3,812**	**3,903**
Total assets		**20,330**	**14,483**	**17,118**
EQUITY AND LIABILITIES				
Equity	17			
Share capital		-	-	-
Additional paid-in capital		9,193	9,193	9,192
Revaluation reserve		2,456	-	-
Other reserves		(63)	(96)	(157)
Foreign currency translation reserve		(4,683)	(5,078)	(4,555)
Accumulated losses		(6,503)	(5,889)	(5,731)
Total equity attributable to shareholders of the Parent Company		**400**	**(1,870)**	**(1,251)**
Non-controlling interests	17(g)	1,785	873	1,429
Total equity		**2,185**	**(997)**	**178**
Non-current liabilities				
Loans and borrowings	18	12,095	9,604	9,626
Deferred tax liabilities	11(b)	1,394	592	575
Provisions – non-current portion	19	618	650	593
Derivative financial liabilities	20	3	-	350
Other non-current liabilities		177	88	66
Total non-current liabilities		**14,287**	**10,934**	**11,210**
Current liabilities				
Loans and borrowings	18	2,110	2,724	3,484
Provisions – current portion	19	64	97	137
Trade and other payables	16(c)	1,652	1,293	1,778
Derivative financial liabilities	20	32	421	318
Liabilities held for sale	5	-	11	13
Total current liabilities		**3,858**	**4,546**	**5,730**
Total equity and liabilities		**20,330**	**14,483**	**17,118**

The consolidated statements 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 13 to 123.

			Year ended 31 December	
		2016	**2015**	**2014**
	Note	**USD million**	**USD million**	**USD million**
OPERATING ACTIVITIES				
Profit/(loss) for the year		**1,361**	**580**	**(624)**
Adjustments for:				
Depreciation and amortisation		641	593	684
(Reversal of)/impairment of non-current assets	6	(18)	143	368
Net foreign exchange (gain)/loss		(57)	302	450
Loss on disposal of property, plant and equipment	8	15	26	17
Loss on disposal and revaluation of available-for-sale investments		-	-	24
Share of profits of associates and joint ventures	14	(847)	(368)	(521)
Interest expense	10	1,060	992	1,192
Net effect of discounting of trade receivables and payables		29	(5)	(3)
Interest income	10	(39)	(30)	(41)
Income tax expense	11	304	260	120
Dividend income	10	(2)	(1)	(2)
(Reversal of)/impairment of inventories		(9)	23	19
Impairment of trade and other receivables	8	3	27	67
Provision/ (reversal of provision) for legal claims	8	4	(11)	30
Pension provision		3	-	7
Reversal of environmental provision		-	(13)	-
Change in fair value of derivative financial instruments	10	157	352	467
Result from disposal and deconsolidation of subsidiaries including items recycled from other comprehensive income	2(h)	(298)	(95)	-
Share based compensation	17(b)	-	-	1
Operating profit before changes in working capital and provisions		**2,307**	**2,775**	**2,255**
(Increase)/decrease in inventories		(85)	197	387
(Increase)/decrease in trade and other receivables		(37)	3	250
Decrease in trade and other payables and provisions		(80)	(486)	(627)
Cash flows from operations before income tax		**2,105**	**2,489**	**2,265**
Income taxes paid	11(f)	(155)	(326)	(239)
Cash flows from operating activities		**1,950**	**2,163**	**2,026**

The consolidated statements 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 13 to 123.

	Note	2016 USD million	2015 USD million	2014 USD million
			Year ended 31 December	
INVESTING ACTIVITIES				
Proceeds from disposal of property, plant and equipment		35	20	38
Acquisition of property, plant and equipment		(834)	(677)	(844)
Acquisition of intangible assets		(17)	(14)	(20)
Interest received		27	31	33
Dividends from associates and joint ventures		336	755	926
Loans given to joint ventures		(6)	-	-
Dividends received		2	1	2
Acquisition of joint ventures	14	-	(5)	-
Contribution to short-term and long-term investments		(2)	(1)	(1)
Proceeds from long-term investments	16(a)	11	10	13
Acquisition of available-for-sale investments		-	(66)	(343)
Proceeds from disposal of available-for –sale investments	16(b)	60	-	91
Acquisition of promissory notes		(22)	(4)	(26)
Proceeds from promissory notes		29	-	15
Repayment of short-term deposit		2	47	-
Proceeds from disposal of a subsidiary	2(h)	298	-	-
Loans issued		(99)		
Cash flows (used in)/generated from investing activities		**(180)**	**97**	**(116)**
FINANCING ACTIVITIES				
Proceeds from borrowings		7,035	4,188	4,940
Repayment of borrowings		(5,858)	(4,850)	(4,849)
Acquisition of non-controlling interest	17(a)	(827)	(16)	-
Proceeds from disposal of shares in subsidiaries		39	9	-
Interest paid		(867)	(855)	(1,052)
Restructuring fees and other expenses		(14)	(2)	(149)
Purchase of shares for vesting	17(b)	-	-	(1)
Payments from settlement of derivative instruments		(446)	(320)	(452)
Acquisition of subsidiaries from related party under common control	17(a)	-	-	(16)
Distributions to shareholder	17(a)	(318)	(1)	(64)
Dividends to shareholders	17(e)	(318)	(262)	(203)
Dividends to non-controlling shareholders of subsidiaries	17(e)	(130)	(149)	(23)
Cash flows used in financing activities		**(1,704)**	**(2,258)**	**(1,869)**
Net increase in cash and cash equivalents		**66**	**2**	**41**
Cash and cash equivalents at beginning of the year, excluding restricted cash		577	697	811
Effect of exchange rate changes on cash and cash equivalents		13	(122)	(155)
Cash and cash equivalents at end of the year, excluding restricted cash	16(d)	**656**	**577**	**697**

Restricted cash amounted to USD 13 million, USD 14 million and USD 13 million at 31 December 2016, 31 December 2015 and 31 December 2014, respectively.

Non-cash repayment of borrowings and interest amounted to USD 192 million, USD 173 million and USD 57 million for the years ended 31 December 2016, 31 December 2015 and 31 December 2014, respectively.

The consolidated statements 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 13 to 123.

USD million	**Attributable to shareholders of the Parent Company**							
	Additional paid-in capital	**Revaluation reserve**	**Other reserves**	**Foreign currency translation reserve**	**Accumulated losses**	**Total**	**Non-controlling interests**	**Total equity**
Balance at 1 January 2014	**9,192**	**-**	**(134)**	**(2,436)**	**(4,854)**	**1,768**	**4,284**	**6,052**
Comprehensive income								
Loss for the year	-	-	-	-	(622)	(622)	(2)	(624)
Other comprehensive loss	-	-	(22)	(2,119)	-	(2,141)	(2,608)	(4,749)
Total comprehensive loss for the year	**-**	**-**	**(22)**	**(2,119)**	**(622)**	**(2,763)**	**(2,610)**	**(5,373)**
Transactions with owners								
Share based compensation (note 17(b))	-	-	(1)	-	-	(1)	(1)	(2)
Change in effective interest in subsidiaries (note 17(a))	-	-	-	-	24	24	(219)	(195)
Acquisition of non-controlling interest (note 17(a))	-	-	-	-	(14)	(14)	(2)	(16)
Dividends to shareholders (note 17(e))	-	-	-	-	(201)	(201)	-	(201)
Dividends to non-controlling shareholders (note 17(e))	-	-	-	-	-	-	(23)	(23)
Other distributions (note 17(a))	-	-	-	-	(64)	(64)	-	(64)
Total transactions with owners	**-**	**-**	**(1)**	**-**	**(255)**	**(256)**	**(245)**	**(501)**
Balance 31 December 2014	**9,192**	**-**	**(157)**	**(4,555)**	**(5,731)**	**(1,251)**	**1,429**	**178**
Balance at 1 January 2015	**9,192**	**-**	**(157)**	**(4,555)**	**(5,731)**	**(1,251)**	**1,429**	**178**
Comprehensive income								
Profit for the year	-	-	-	-	166	166	414	580
Other comprehensive loss	-	-	62	(523)	-	(461)	(731)	(1,192)
Total comprehensive loss for the year	**-**	**-**	**62**	**(523)**	**166**	**(295)**	**(317)**	**(612)**
Transactions with owners								
Share based compensation (note 17(b))	1	-	(1)	-	-	-	-	-
Change in effective interest in subsidiaries (note 17(a))	-	-	-	-	-	-	(16)	(16)
Write off of intragroup loans (note 17(a))	-	-	-	-	67	67	(67)	-
Accrual of provision for guarantees (note 17(f))	-	-	-	-	(95)	(95)	-	(95)
Dividends to shareholders (note 17(e))	-	-	-	-	(287)	(287)	-	(287)
Dividends to non-controlling shareholders (note 17(e))	-	-	-	-	-	-	(149)	(149)
Other distributions (note 17(a))	-	-	-	-	(9)	(9)	(7)	(16)
Total transactions with owners	**1**	**-**	**(1)**	**-**	**(324)**	**(324)**	**(239)**	**(563)**
Balance 31 December 2015	**9,193**	**-**	**(96)**	**(5,078)**	**(5,889)**	**(1,870)**	**873**	**(997)**

The consolidated statements 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 11 to 123.

USD million	**Attributable to shareholders of the Parent Company**							
	Additional paid-in capital	**Revaluation reserve**	**Other reserves**	**Foreign currency translation reserve**	**Accumulated losses**	**Total**	**Non-controlling interests**	**Total equity**
Balance at 1 January 2016	**9,193**	**-**	**(96)**	**(5,078)**	**(5,889)**	**(1,870)**	**873**	**(997)**
Comprehensive income								
Profit for the year	-	-	-	-	689	689	672	1,361
Revaluation of hydro assets as at 1 January 2016 (12(g))	-	1,479	-	-	-	1,479	554	2,033
Taxation		(296)	-	-	-	(296)	(111)	(407)
Revaluation of hydro assets as at 31 December 2016 (12(g)	-	1,131	-	-	-	1,131	11	1,142
Taxation		(226)	-	-	-	(226)	(2)	(228)
Other comprehensive income for the year	-	-	33	360	-	393	629	1,022
Total comprehensive income for the year	**-**	**2,088**	**33**	**360**	**689**	**3,170**	**1,753**	**4,923**
Transactions with owners								
Change in effective interest in subsidiaries (note 17(a))	-	368	-	35	(726)	(323)	(690)	(1,013)
Dividends to shareholders (note 17(e))	-	-	-	-	(280)	(280)	-	(280)
Dividends to non-controlling shareholders (note 17(e))	-	-	-	-	-	-	(130)	(130)
Other distributions (note 17(a) and (f))	-	-	-	-	(297)	(297)	(21)	(318)
Total transactions with owners	**-**	**368**	**-**	**35**	**(1,303)**	**(900)**	**(841)**	**(1,741)**
Balance 31 December 2016	**9,193**	**2,456**	**(63)**	**(4,683)**	**(6,503)**	**400**	**1,785**	**2,185**

The consolidated statements 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 11 to 123.

1. Background

(a) Organisation

En+ Group Limited (the “Parent Company” or the “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. The Parent Company’s registered office is 44 Esplanade, St Helier, Jersey, JE4 9WG, British Channel Islands.

En+ Group Limited is a private equity management company which focuses on investing in promising sectors of the Russian, CIS and other developing economies.

The Parent Company directly or through its subsidiaries controls a number of entities engaged in aluminium production, energy generation and distribution and other businesses (together with the Parent Company referred to as “the Group”).

As at 31 December 2016 the Parent Company’s major shareholders were B-Finance Limited with a 61.55% ownership interest and Basic Element Limited with a 21.10% ownership interest (61,55% and 21.10% as at 31 December 2015 and 70.50% and 21.10% as at 31 December 2014, respectively).

During 2015 B-Finance Limited acquired 1 and then sold 180 ordinary shares of En+ Group Limited to non-controlling shareholder. As a result, the share of B-Finance in En+ Group Limited decreased to 61.55%.

The ultimate parent undertaking of the Group is Fidelitas International Investments Corp., the company incorporated in the Republic of Panama (“Fidelitas”), and the ultimate beneficial owner of the Group (the “Shareholder”) is Mr. Oleg Deripaska (“Mr. Deripaska”). He also has a number of other business interests outside of the Group. Related party transactions are detailed in note 24.

(b) Operations

As at 31 December 2016 the Group’s operations comprised the following:

United Company RUSAL Plc and its subsidiaries (“UC RUSAL”) operate in the aluminium industry primarily in the Russian Federation, Ukraine, Guinea, Jamaica, Ireland, 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.

Other activities of the Group include generation, transmission and distribution of energy in East Siberia, Russia, through its main power subsidiaries: PJSC Irkutskenergo (“Irkutskenergo”), PJSC Krasnoyrsk Hydro-Power Plant (“Krasnoyarsk HPP”) and JSC Eurosibenergo (“Eurosibenergo”), as well as its supporting operations engaged in the supply of logistics services and coal resources to the Group. The Group’s subsidiaries are also engaged in metallurgy production in Krasnoyarsk region and production and processing of molybdenum and ferromolybdenum at plants located in the cities of eastern part of the Russian Federation.

(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.

The conflict in Ukraine and related events has increased the perceived risks of doing business in the Russian Federation. The imposition of economic sanctions on Russian individuals and legal entities by the European Union, the United States of America, Japan, Canada, Australia and others, as well as retaliatory sanctions imposed by the Russian government, has resulted in increased economic uncertainty including more volatile equity markets, a depreciation of the Russian Ruble, a reduction in both local and foreign direct investment inflows and a significant tightening in the availability of credit. The longer term effects of recently implemented sanctions, as well as the threat of additional future sanctions, are difficult to determine.

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.

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").

In preparing these financial statements the Group has applied the following standards and interpretations which are effective in respect of the financial years beginning on 1 January 2016.

- Annual Improvements to IFRSs, 2012-2014 cycle, various standards
- Amendments to IFRS 10, IFRS 12 and IAS 28, *Investment entities: applying the consolidation exemption*
- Amendments to IFRS 10 and IAS 28: *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*
- Amendments to IFRS 11: *Accounting for acquisitions of interests in joint operations*
- Amendments to IAS 1: *Disclosure Initiative*
- Amendments to IAS 16 and IAS 38: *Clarification of acceptable methods of depreciation and amortisation*

As part of applying Amendments to IAS 1: *Disclosure Initiative* the Group has adopted a new presentation approach which would provide more relevant, clear and concise presentation and disclosures for all periods presented in these financial statements. Other above mentioned standards have not had significant impact on these consolidated financial statements.

The IASB has issued the following amendments, new standards and interpretations which are not yet effective in respect of the financial years included in these consolidated financial statements, and which have not been adopted in these consolidated financial statements.

	Effective for accounting periods beginning on or after
IFRS 9, Financial Instruments	1 January 2018
IFRS 15, Revenue from Contracts with Customers	1 January 2018
IFRS 16, Leases	1 January 2019

The Group is in the process of making an assessment of what the impact of these amendments, new standards and new interpretations is expected to be in the period of initial application. So far the Group has identified some aspects of the new standards which may have a significant impact on the consolidated financial statements. Further details of the expected impacts are discussed below. As the Group has not completed its assessment, further impacts may be identified in due course and will be taken into consideration when determining whether to adopt any of these new requirements before their effective date and which transitional approach to take, where there are alternative approaches allowed under the new standards.

IFRS 9, *Financial instruments*

IFRS 9 will replace the current standard on accounting for financial instruments, IAS 39, *Financial instruments: Recognition and measurement*. IFRS 9 introduces new requirements for classification and measurement of financial assets, calculation of impairment of financial assets and hedge accounting. On the other hand, IFRS 9 incorporates without substantive changes the requirements of IAS 39 for recognition and derecognition of financial instruments and the classification of financial liabilities. Expected impacts of the new requirements on the Group's financial statements are as follows:

(i) Classification and measurement

IFRS 9 contains three principal classification categories for financial assets: measured at (1) amortised cost, (2) fair value through profit or loss and (3) fair value through other comprehensive income as follows:

- The classification for debt instruments is determined based on the entity's business model for managing the financial assets and the contractual cash flow characteristics of the asset. If a debt instrument is classified as fair value through other comprehensive income then effective interest, impairments and gains/losses on disposal will be recognised in profit or loss.
- For equity securities, the classification is fair value through profit or loss regardless of the entity's business model. The only exception is if the equity security is not held for trading and the entity irrevocably elects to designate that security as fair value through other comprehensive income. If an equity security is designated as fair value through other comprehensive income then only dividend income on that security will be recognised in profit or loss. Gains, losses and impairments on that security will be recognised in other comprehensive income without recycling.

Based on the preliminary assessment, the Group expects that its financial assets currently measured at amortised cost and fair value through profit or loss will continue with their respective classification and measurements upon the adoption of IFRS 9.

The classification and measurement requirements for financial liabilities under IFRS 9 are largely unchanged from IAS 39, except that IFRS 9 requires the fair value change of a financial liability designated at fair value through profit or loss that is attributable to changes of that financial liability's own credit risk to be recognised in other comprehensive income (without reclassification to profit or loss). The Group currently does not have any financial liabilities designated at fair value through profit or loss and therefore this new requirement may not have any impact on the group on adoption of IFRS 9.

(ii) Impairment

The new impairment model in IFRS 9 replaces the "incurred loss" model in IAS 39 with an "expected credit loss" model. Under the expected credit loss model, it will no longer be necessary for a loss event to occur before an impairment loss is recognised. Instead, an entity is required to recognise and measure expected credit losses as either 12-month expected credit losses or lifetime expected credit losses, depending on the asset and the facts and circumstances. This new impairment model may result in an earlier recognition of credit losses on the Group's trade receivables and other financial assets. However, a more detailed analysis is required to determine the extent of the impact.

(iii) Hedge accounting

IFRS 9 does not fundamentally change the requirements relating to measuring and recognising ineffectiveness under IAS 39. However, greater flexibility has been introduced to the types of transactions eligible for hedge accounting. The Group preliminarily assesses that its current hedge relationships will qualify as continuing hedges upon the adoption of IFRS 9 and therefore it does not expect that the accounting for its hedging relationships will be significantly impacted.

IFRS 15, *Revenue from contracts with customers*

IFRS 15 establishes a comprehensive framework for recognising revenue from contracts with customers. IFRS 15 will replace the existing revenue standards, IAS 18, *Revenue*, which covers revenue arising from sale of goods and rendering of services, and IAS 11, *Construction contracts*, which specifies the accounting for revenue from construction contracts.

The Group is currently assessing the impacts of adopting IFRS 15 on its financial statements.

Based on the preliminary assessment, the Group has identified the following areas which are likely to be affected:

(i) Timing of revenue recognition

The Group's revenue recognition policies are disclosed in note 7. Currently, revenue arising from sale of goods is generally recognised when the risks and rewards of ownership have passed to the customers.

Under IFRS 15, revenue is recognised when the customer obtains control of the promised good or service in the contract. IFRS 15 identifies 3 situations in which control of the promised good or service is regarded as being transferred over time:

(1) When the customer simultaneously receives and consumes the benefits provided by the entity's performance, as the entity performs;

(2) When the entity's performance creates or enhances an asset (for example work in progress) that the customer controls as the asset is created or enhanced;

(3) When the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

If the contract terms and the entity's activities do not fall into any of these 3 situations, then under IFRS 15 the entity recognises revenue for the sale of that good or service at a single point in time, being when control has passed. Transfer of risks and rewards of ownership is only one of the indicators that will be considered in determining when the transfer of control occurs.

As a result of this change from the risk-and-reward approach to the contract-by-contract transfer-of-control approach, it is possible that for some of the Group's contracts the point in time when revenue is recognised may be earlier or later than under the current accounting policy. However, further analysis is required to determine whether this change in accounting policy may have a material impact on the amounts reported in any given financial reporting period.

(ii) Significant financing component

IFRS 15 requires an entity to adjust the transaction price for the time value of money when a contract contains a significant financing component, regardless of whether the payments from customers are received significantly in advance or in arrears.

Currently, the Group would only apply such a policy when payments are significantly deferred, which is currently not common in the Group’s arrangements with its customers. Currently, the Group does not apply such a policy when payments are received in advance.

The Group is in the process of assessing whether this component in the Group’s advance payment schemes would be significant to the contract and therefore whether, once IFRS 15 is adopted, the transaction price would need to be adjusted for the purposes of recognising revenue.

IFRS 16, *Leases*

IFRS 16 provides a comprehensive model for the identification of lease arrangements and their treatment in the financial statements of both lessees and lessors. It will replace the following lease standard and Interpretations upon its effective date: IAS 17 *Leases*, IFRIC 4 *Determining whether an Arrangement contains a Lease*, SIC-15 *Operating Leases – Incentives* and SIC-27 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*.

The Group is currently assessing the impacts of adopting IFRS 16 on its financial statements.

Based on the preliminary assessment, the Group has identified the following area which is likely to be affected: classification and recognition of lease assets and liabilities. The Group estimates that insignificant amounts related to leases may be recognised in the Group’s statement of financial position.

IFRS 16 introduces significant changes to lessee accounting: it removes the distinction between operating and finance leases under IAS 17 and requires a lessee to recognise a right-of-use asset and a lease liability at lease commencement for all leases, except for short-term leases and leases of low value assets.

The right-of-use asset is initially measured at cost and subsequently measured at cost (subject to certain exceptions) less accumulated depreciation and impairment losses, adjusted for any remeasurement of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at that date. Subsequently, the lease liability is adjusted for interest and lease payments, as well as the impact of lease modifications, amongst others.

If a lessee elects not to apply the general requirements of IFRS 16 to short-term leases (i.e. one that does not include a purchase option and has a lease term at commencement date of 12 months or less) and leases of low value assets, the lessee should recognise the lease payments associated with those leases as an expense on either a straight-line basis over the lease term or another systematic basis, similar to the current accounting for operating leases.

(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 12 and 20.

(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 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 judgments, 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.

Judgement 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 26.

(e) Significant accounting policies and changes in accounting policies and presentation

Significant accounting policies are described in the related notes to the financial statements captions.

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 years ended 31 December 2015 and 2014, except for changes described in note 12(a)(i).

(f) Consolidation of UC RUSAL

Following the Global Offering and issuance of additional shares by UC RUSAL the Group's interest in UC RUSAL reduced below 50% to 47.41% by 31 December 2010. In November 2012 the Parent Company purchased additional 0.72% shares of UC RUSAL for cash consideration of USD 70 million.

In order to ensure continuing control over UC RUSAL and in connection with the Global Offering, the Parent Company entered into the Shareholders' agreement with non-controlling shareholders of UC RUSAL. The Shareholders' agreement provides to the shareholders of the Parent Company certain rights which, based on its current shareholding in UC RUSAL, enables it to retain the power over UC RUSAL and to use it to obtain benefits from UC RUSAL's activities:

• The Parent Company is entitled to nominate more than 50 percent of the Board of Directors, including two independent directors;

• The Parent Company is entitled to provide instructions to one of the non-controlling shareholders for voting at the Board of Directors and Shareholders' meetings on matters including appointment and removal of Directors and distribution of dividends and this non-controlling shareholder is obliged to vote according to such instructions pursuant to the terms of the Shareholders' agreement; and

• The Parent Company is entitled to appoint the CEO of UC RUSAL.

Management believes that its shareholding in UC RUSAL and the terms of the shareholders agreement described above enable the Group to retain control over UC RUSAL despite holding less than 50%.

(g) 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 Cyprus companies of the Group controlling 34.16% of the shares in Irkutsk GridCo; subsequently the Group purchased back 19.9% 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 2016 effective interest in Irkutsk GridCo held by the Group is 51.93%.

As laws and regulations in the electricity sector in Russia are in the developing stage there is an uncertainty with respect to the legal interpretation of the existing arrangements which enable the Group to control Irkutsk GridCo and 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.

(h) Deconsolidation and disposal of subsidiaries

PJSC Zaporozhye Aluminium Combine ('ZALK')

On 11 March 2015, the Supreme Court of Ukraine denied the UC RUSAL's appeal to reconsider the previous court decision that 68% of shares of ZALK, an indirect subsidiary of UC RUSAL PLc, should be deprivatised and returned to the State of Ukraine.

On 9 June 2015 ZALK shares were written off the Company's account and transferred to the State of Ukraine.

As a result of the Supreme Court ruling the Group no longer has the rights to varying returns from ZALK or the ability to control this entity to affect those returns.

The assets and liabilities of ZALK have been deconsolidated which resulted in recognition of USD 9 million gain in these consolidated financial statements. Additionally, USD 155 million of foreign currency translation gain arising on the translation of ZALK accumulated from 2007 was recycled through profit and loss.

In August 2015 one of the UC RUSAL's intermediary holding subsidiaries was liquidated. Consequently, USD 60 million of foreign currency translation loss arising on translation of investments in foreign assets accumulated by this subsidiary was recycled through profit and loss.

Alpart

In July 2016 the Group entered into an agreement to sell its 100% stake in the Alumina Partners of Jamaica (“Alpart”) to the Chinese state industrial group, JIUQUAN IRON & STEEL (GROUP) Co. Ltd. (“JISCO”) for a consideration of USD 299 million. In November 2016 the Group completed the sale of Alpart.

3. Significant accounting policies

The following significant accounting policies have been applied in the preparation of the consolidated financial statements. These accounting policies have been consistently applied to all periods presented in these consolidated financial statements.

Since 1 January 2016 there were changes in the accounting policy relating to property, plant and equipment, described in note 12(a)(i).

(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 income and the consolidated statement of 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 the statement of income. 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

16 and 20) or, when appropriate, the cost on initial recognition of an investment in an associate or joint venture (refer to note 14).

(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.

A put option (a mandatory offer) to acquire a non-controlling interest in subsidiary after control has been obtained and accounted by the Group as an equity transaction whereby the issue of the put option 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.

(iii) Acquisitions from entities under common control

Business combinations arising from transfers of interests in entities that are under the common control of the shareholder that controls the Group are accounted for as if the acquisition had occurred at the beginning of the earliest period presented or, if later, at the date that common control was established. The assets and liabilities acquired are recognised at the carrying amounts recognised previously in the Group's controlling shareholder's consolidated financial statements. The components of the equity of the acquired entities are added to the same components within Group equity except that any share capital of the acquired entities is recognised as part of additional paid-in capital. Any cash paid for the acquisition is recognised directly in equity.

(iv) 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 are translated using the exchange rate at the date of transaction. Foreign currency differences arising on retranslation are recognised in the statement of income, except for differences arising on the retranslation of qualifying cash flow hedges to the extent the hedge is effective, which is recognised in the statement of 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 the statement of 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 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 the statement of income 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 the statement of income.

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.

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 CEO 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.

In 2016, the Group has changed its internal management reporting structure, which resulted in a revision of its reportable segments and restatement of comparative information for earlier periods, respectively.

Based on the current management structure and internal reporting the Group has identified the following five segments:

- *Metals.* The Metals segment is comprised of UC RUSAL which is involved in mining and refining of bauxite into alumina; production and sale of primary aluminium, alumina and related products and also includes equity investment in Norilsk Nickel. The Metals segment is disclosed based on public financial statements of UC RUSAL. All adjustments made to UC RUSAL, including adjustments arising from different time of IFRS first time adoption, are included into reconciliation of reportable segment revenue, profit or loss, assets and liabilities.

- *Power*. The Power segment is involved in generation, transmission and distribution of energy in East Siberia and Volga regions of Russia.
- *Coal*. The Coal segment is engaged in the mining and sale of coal in the East Siberia region. Brown and fossil coals are the products of the segment.
- *Logistics*. The logistics segment is engaged in transportation services both for other segments and for the third parties.
- *Other*. The Other segment is comprised production and processing of molybdenum and ferromolybdenum, and also aluminium processing plant.

The Power and Coal assets of UC RUSAL are included into the Metals segment.

These business units are managed separately and results of their operations are reviewed by the CEO on a regular basis.

Prior to the changes in management reporting structure the Group reported the following operating segments:

- *Metals*. The Metals segment is involved in mining and refining of bauxite into alumina; production and sale of primary aluminum, alumina and related products;
- *Mining*. The Mining segment is involved in production and processing of molybdenum and ferromolybdenum at plants located in the cities of eastern part of the Russian Federation. These products are mainly sold abroad.
- *Coal*. The Coal segment is engaged in the mining and sale of coal in the Irkutsk region. Brown and fossil coals are the products of the segment.
- *Logistics*. The logistics segment is engaged in transportation services both for other segments and for the third parties.
- *Energy*. The Energy segment is involved in generation, transmission and distribution of energy in East Siberia, Russia.

(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 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 adjusted for income tax and other items not specifically attributed to individual segments, such as finance income, costs of loans and borrowings. The segment profit or loss is included in the internal management reports that are reviewed by the Group’s CEO. Segment profit or loss is 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.

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, loss 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.

Reportable segments

Year ended 31 December 2016

USD million	**Metals**	**Power**	**Coal**	**Logistics**	**Other**	**Total**
Revenue from external customers	7,849	1,546	93	55	231	9,774
Inter-segment revenue	134	531	167	78	14	924
Total segment revenue	**7,983**	**2,077**	**260**	**133**	**245**	**10,698**
Segment profit/(loss)	**1,179**	**317**	**(15)**	**18**	**(18)**	**1,481**
Reversal of impairment/ (impairment) of non-current assets	44	(26)	-	-	-	18
Loss on disposal of property, plant and equipment	(12)	-	(3)	-	-	(15)
Share of profits/(loss) of associates and joint ventures	848	(1)	-	-	-	847
Interest expense, net	(598)	(320)	(12)	(4)	(24)	(958)
Other finance (costs)/income, net	(262)	155	(6)	(2)	1	(114)
Result from disposal and deconsolidation of subsidiaries including items recycled from other comprehensive income	298	-	-	-	-	298
Depreciation and amortisation	(453)	(166)	(15)	(1)	(6)	(641)
Income tax	(175)	(119)	(5)	(4)	-	(303)
Additions to non-current segment assets during the year	(583)	(262)	(11)	(28)	(11)	(895)
Cash and cash equivalents	544	96	7	5	3	655
Interests in associates and joint ventures	4,147	9	-	-	-	4,156
Other segment assets	9,761	5,981	302	74	123	16,241
Total segment assets	**14,452**	**6,086**	**309**	**79**	**126**	**21,052**

USD million	Metals	Power	Coal	Logistics	Other	Total
Loans and borrowings	(8,965)	(4,071)	(188)	(42)	(304)	(13,570)
Other segment liabilities	(2,188)	(1,464)	(114)	(41)	(105)	(3,912)
Total segment liabilities	**(11,153)**	**(5,535)**	**(302)**	**(83)**	**(409)**	**(17,482)**

Year ended 31 December 2015

USD million	Metals	Power	Coal	Logistics	Other	Total
Revenue from external customers	8,551	1,599	88	49	231	10,518
Inter-segment revenue	129	476	155	57	18	835
Total segment revenue	**8,680**	**2,075**	**243**	**106**	**249**	**11,353**
Segment profit/(loss)	**558**	**172**	**(20)**	**23**	**(39)**	**694**
Impairment of non-current assets	(132)	-	-	-	-	(132)
Loss on disposal of property, plant and equipment	(17)	(5)	(4)	-	-	(26)
Share of profits of associates and joint ventures	368	-	-	-	-	368
Interest expense, net	(617)	(200)	(5)	(3)	(23)	(848)
Other finance (costs)/income, net	(492)	(179)	(2)	5	(11)	(679)
Depreciation and amortisation	(457)	(112)	(19)	(1)	(5)	(594)
Income tax	(205)	(51)	(2)	(5)	4	(259)
Foreign currency translation gain recycled from other comprehensive income on deconsolidation of subsidiaries	95	-	-	-	-	95
Additions to non-current segment assets during the year	(540)	(138)	(10)	(1)	(11)	(700)
Cash and cash equivalents	508	68	5	4	2	587
Interests in associates and joint ventures	3,214	8	-	-	-	3,222
Other segment assets	9,087	1,731	188	79	101	11,186
Total segment assets	**12,809**	**1,807**	**193**	**83**	**103**	**14,995**
Loans and borrowings	(8,880)	(2,288)	(145)	(33)	(265)	(11,611)
Other segment liabilities	(2,538)	(332)	(99)	(21)	(77)	(3,067)
Total segment liabilities	**(11,418)**	**(2,620)**	**(244)**	**(54)**	**(342)**	**(14,678)**

Year ended 31 December 2014

USD million	Metals	Power	Coal	Logistics	Other	Total
Revenue from external customers	9,120	2,257	107	42	371	11,897
Inter-segment revenue	237	599	248	87	30	1,201
Total segment revenue	**9,357**	**2,856**	**355**	**129**	**401**	**13,098**
Segment profit/(loss)	**(91)**	**(192)**	**(95)**	**33**	**(57)**	**(402)**
Impairment of non-current assets	(103)	(124)	(97)	-	(6)	(330)
Loss on disposal of property, plant and equipment	(10)	(6)	-	-	-	(16)
Share of profits/(loss) of associates and joint ventures	536	(15)	-	-	-	521
Interest expense, net	(817)	(175)	(17)	(4)	(24)	(1,037)
Other finance (costs)/income, net	(514)	(463)	(5)	5	(41)	(1,018)
Depreciation and amortisation	(459)	(182)	(35)	(1)	(7)	(684)
Income tax	(238)	100	21	(3)	-	(120)
Additions to non-current segment assets during the year	(477)	(345)	(16)	(1)	(18)	(857)
Cash and cash equivalents	570	112	2	13	5	702
Interests in associates and joint ventures	4,879	6	-	-	-	4,885
Other segment assets	9,408	2,352	466	48	136	12,410
Total segment assets	**14,857**	**2,470**	**468**	**61**	**141**	**17,997**
Loans and borrowings	(9,407)	(2,531)	(189)	(48)	(269)	(12,444)
Other segment liabilities	(3,213)	(498)	(150)	(14)	(87)	(3,962)
Total segment liabilities	**(12,620)**	**(3,029)**	**(339)**	**(62)**	**(356)**	**(16,406)**

(i) Reconciliation of reportable segment revenue, profit or loss, assets and liabilities

	Year ended 31 December		
	2016	2015	2014
	USD million	USD million	USD million
Revenue			
Reportable segment revenue	10,698	11,353	13,098
Elimination of inter-segment revenue	(924)	(835)	(1,201)
Unallocated revenue	2	11	20
Consolidated revenue	**9,776**	**10,529**	**11,917**

	Year ended 31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Profit/(loss)			
Reportable segment profit/(loss)	1,481	694	(402)
Impairment of non-current assets	-	(11)	(38)
Income tax expense	(1)	(2)	(1)
Interest expense, net	(63)	(113)	(114)
Other finance costs	(19)	48	46
Unallocated income/(expense)	(37)	(36)	(115)
Consolidated profit/(loss) for the year	**1,361**	**580**	**(624)**

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Assets			
Reportable segment assets	21,052	14,995	17,997
Elimination of inter-segment receivables	(394)	(290)	(609)
Consolidation adjustment	(469)	(469)	(469)
Unallocated assets	141	247	199
Consolidated total assets	**20,330**	**14,483**	**17,118**
Liabilities			
Reportable segment liabilities	(17,482)	(14,678)	(16,406)
Elimination of inter-segment payables	394	290	609
Unallocated liabilities	(1,057)	(1,092)	(1,143)
Consolidated total liabilities	**(18,145)**	**(15,480)**	**(16,940)**

(ii) 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 and Ukraine. 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 production facilities 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**		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Russia	3,371	3,431	4,219
USA	1,193	637	892
Netherlands	664	1,754	1,631
Turkey	634	836	979
Japan	610	584	871
Poland	377	404	267
South Korea	313	411	530
Greece	260	254	272
Italy	244	228	219
Germany	200	142	181
Sweden	182	220	182
Norway	179	103	226
France	178	189	179
Switzerland	52	6	10
China	24	78	91
Other countries	1,295	1,252	1,168
	9,776	**10,529**	**11,917**

Specified non-current assets	**31 December**		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Russia	12,454	7,329	9,187
Ireland	414	372	355
Ukraine	192	195	227
Guinea	117	56	46
Sweden	152	16	15
Unallocated	2,822	2,703	3,385
	16,151	**10,671**	**13,215**

(c) Principal business segments

Management additionally analyses performance of the Group through two principal business segments:

1. En+ Group excluding UC RUSAL (“EN+”) is predominantly comprised of power assets and operations as described in note 1(b).
2. UC RUSAL as described in note 4(a).

	31 December 2016				31 December 2015				31 December 2014			
USD million	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+
Non-current assets												
Property, plant and equipment	9,355	4,065	-	5,290	5,186	3,854	-	1,332	5,668	3,953	-	1,715
Goodwill and intangible assets	2,300	2,470	(469)	299	2,053	2,274	(469)	248	2,424	2,572	(469)	321
Interests in associates and joint ventures	4,156	4,147	-	9	3,222	3,214	-	8	4,885	4,879	-	6
Long term investments	25	-	(4,053)	4,078	28	-	(4,053)	4,081	42	-	(4,053)	4,095
Trade and other receivables	149	-	4	145	4	-	3	1	31	-	2	29
Derivative financial assets	51	51	-	-	71	71	-	-	30	30	-	-
Deferred tax assets	108	51	-	57	96	51	-	45	90	57	-	33
Other non-current assets	7	52	(45)	-	11	51	(41)	1	45	80	(37)	2
	16,151	**10,836**	**(4,563)**	**9,878**	**10,671**	**9,515**	**(4,560)**	**5,716**	**13,215**	**11,571**	**(4,557)**	**6,201**
Current assets												
Short term investments	38	-	28	10	34	-	23	11	74	-	13	61
Inventories	2,034	1,926	-	108	1,922	1,837	-	85	2,135	1,998	-	137
Trade and other receivables	1,401	1,130	(77)	348	1,157	899	(65)	323	914	686	(83)	311
Prepaid expenses and other current assets	14	-	13	1	22	-	21	1	37	-	33	4
Derivative financial assets	16	16	-	-	50	50	-	-	32	32	-	-
Cash and cash equivalents	669	544	-	125	591	508	-	83	710	570	-	140
Assets held for sale	7	-	-	7	36	-	-	36	1	-	-	1
	4,179	**3,616**	**(36)**	**599**	**3,812**	**3,294**	**(21)**	**539**	**3,903**	**3,286**	**(37)**	**654**
Total assets	**20,330**	**14,452**	**(4,599)**	**10,477**	**14,483**	**12,809**	**(4,581)**	**6,255**	**17,118**	**14,857**	**(4,594)**	**6,855**

	31 December 2016				31 December 2015				31 December 2014			
USD million	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+
Equity												
Share capital	-	152	(152)	-	-	152	(152)	-	-	152	(152)	-
Additional paid-in capital	9,193	15,786	(8,925)	2,332	9,193	15,786	(8,925)	2,332	9,192	15,785	(8,925)	2,332
Revaluation reserve	2,456	-	-	2,456	-	-	-	-	-	-	-	-
Other reserves	(63)	2,882	(2,969)	24	(96)	2,823	(2,939)	20	(157)	2,679	(2,860)	24
Foreign currency translations reserve	(4,683)	(9,058)	4,477	(101)	(5,078)	(9,978)	4,954	(54)	(4,555)	(8,679)	4,280	(156)
Retained earnings/(accumulated losses)	(6,503)	(6,463)	1,587	(1,627)	(5,889)	(7,392)	2,070	(567)	(5,731)	(7,700)	2,226	(257)
Total equity attributable to shareholders of the Parent	**400**	**3,299**	**(5,982)**	**3,083**	**(1,870)**	**1,391**	**(4,992)**	**1,731**	**(1,251)**	**2,237**	**(5,431)**	**1,943**
Non-controlling interests	1,785	-	1,460	325	873	-	471	402	1,429	-	910	519
	2,185	**3,299**	**(4,522)**	**3,408**	**(997)**	**1,391**	**(4,521)**	**2,133**	**178**	**2,237**	**(4,521)**	**2,462**
Non-current liabilities												
Loans and borrowings	12,095	7,532	-	4,563	9,604	7,525	-	2,079	9,626	8,960	-	666
Deferred tax liabilities	1,394	585	-	809	592	531	-	61	575	515	-	60
Provisions – non-current portion	618	423	-	195	650	487	-	163	593	507	-	86
Derivative financial liabilities	3	3	-	-	-	-	-	-	350	350	-	-
Other non-current liabilities	177	51	-	126	88	63	-	25	66	48	-	18
	14,287	**8,594**	**-**	**5,693**	**10,934**	**8,606**	**-**	**2,328**	**11,210**	**10,380**	**-**	**830**
Current liabilities												
Loans and borrowings	2,110	1,433	-	677	2,724	1,355	-	1,369	3,484	447	-	3,037
Provisions – current portion	64	40	-	24	97	85	-	12	137	113	-	24
Trade and other payables	1,652	1,054	(77)	675	1,293	951	(60)	402	1,778	1,362	(73)	489
Derivative financial liabilities	32	32	-	-	421	421	-	-	318	318	-	-
Liabilities held for sale	-	-	-	-	11	-	-	11	13	-	-	13
	3,858	**2,559**	**(77)**	**1,376**	**4,546**	**2,812**	**(60)**	**1,794**	**5,730**	**2,240**	**(73)**	**3,563**
Total equity and liabilities	**20.330**	**14,452**	**(4,599)**	**10,477**	**14,483**	**12,809**	**(4,581)**	**6,255**	**17,118**	**14,857**	**(4,594)**	**6,855**

	Year ended											
	31 December 2016				**31 December 2015**				**31 December 2014**			
USD million	En+ Group Consolidated	UC RUSAL*	Adjustments	EN+	En+ Group Consolidated	UC RUSAL*	Adjustments	EN+	En+ Group Consolidated	UC RUSAL*	Adjustments	EN+
Revenues	9,776	7,983	(689)	2,482	10,529	8,680	(610)	2,459	11,917	9,357	(866)	3,426
Cost of sales	(6,850)	(6,070)	689	(1,469)	(7,184)	(6,215)	609	(1,578)	(8,718)	(7,223)	852	(2,347)
Gross profit	**2,926**	**1,913**	**-**	**1,013**	**3,345**	**2,465**	**(1)**	**881**	**3,199**	**2,134**	**(14)**	**1,079**
Distribution expenses	(523)	(331)	-	(192)	(442)	(336)	1	(107)	(571)	(402)	1	(170)
General and administrative expenses	(699)	(521)	-	(178)	(731)	(533)	-	(198)	(939)	(605)	3	(337)
Reversal/(impairment) of non-current assets	18	44	-	(26)	(143)	(132)	-	(11)	(368)	(103)	-	(265)
Other operating (expenses)/income, net	(49)	(37)	-	(12)	(59)	(55)	-	(4)	(222)	(82)	12	(152)
Results from operating activities	**1,673**	**1,068**	**-**	**605**	**1,970**	**1,409**	**-**	**561**	**1,099**	**942**	**2**	**155**
Share of profits of associates and joint ventures	847	848	-	(1)	368	368	-	-	521	536	-	(15)
Dividend income	-	-	(120)	120	-	-	(120)	120	-	-	-	-
Results from disposal and deconsolidation of subsidiaries including items recycled from other comprehensive income	298	298	-	-	95	95	-	-	-	-	-	-
Finance income	88	19	-	69	36	23	-	13	46	30	-	16
Finance costs	(1,241)	(879)	-	(362)	(1,629)	(1,132)	-	(497)	(2,170)	(1,361)	20	(829)
Profit/(loss) before tax	**1,665**	**1,354**	**(120)**	**431**	**840**	**763**	**(120)**	**197**	**(504)**	**147**	**22**	**(673)**
Income tax expense	(304)	(175)	-	(129)	(260)	(205)	-	(55)	(120)	(238)	-	118
Profit/(loss) for the period	**1,361**	**1,179**	**(120)**	**302**	**580**	**558**	**(120)**	**142**	**(624)**	**(91)**	**22**	**(555)**

* 48.13% of UC RUSAL profit for the years ended 31 December 2016, 31 December 2015 and 31 December 2014 is attributable to shareholders of the Parent company.

	Year ended											
	31 December 2016				31 December 2015				31 December 2014			
USD million	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+
Profit/(loss) for the period	**1,361**	**1,179**	**-**	**182**	**580**	**558**	**-**	**22**	**(624)**	**(91)**	**20**	**(553)**
Adjustments for non-cash items	946	298	-	648	2,195	1,490	-	705	2,879	1,611	(20)	1,288
Operating profit before changes in working capital and provisions	**2,307**	**1,477**	**-**	**830**	**2,775**	**2,048**	**-**	**727**	**2,255**	**1,520**	**-**	**735**
Changes in working capital and provisions	(202)	(177)	-	(25)	(286)	(282)	-	(4)	10	(27)	-	37
Cash flows from operations before income tax	**2,105**	**1,300**	**-**	**805**	**2,489**	**1,766**	**-**	**723**	**2,265**	**1,493**	**-**	**772**
Income taxes paid	(155)	(55)	-	(100)	(326)	(199)	-	(127)	(239)	(93)	-	(146)
Cash flows from operating activities	**1,950**	**1,245**	**-**	**705**	**2,163**	**1,567**	**-**	**596**	**2.026**	**1,400**	**-**	**626**
Cash generated (used in)/generated from investing activities, including:	**(180)**	**103**	**(120)**	**(163)**	**97**	**262**	**(120)**	**(45)**	**(116)**	**512**	**-**	**(628)**
Capital expenditure (including pot rebuilds and intangible assets)	(851)	(575)	-	(276)	(691)	(522)	-	(169)	(864)	(479)	-	(385)
Proceeds from disposal of property, plant and equipment	35	33	-	2	20	8	-	12	38	37	-	1
Dividends from associates and joint ventures	336	336	-	-	755	755	-	-	926	926	-	-
Dividends from subsidiaries	-	-	(120)	120	-	-	(120)	120	-	-	-	-
Loans issued	(99)	-	-	(99)	-	-	-	-	-	-	-	-
Acquisition of available-for-sale investments	-	-	-	-	(66)	-	-	(66)	(343)	-	-	(343)
Proceeds from disposal of a subsidiary	298	298	-	-	-	-	-	-	-	-	-	-
Acquisition of joint ventures	-	-	-	-	(5)	-	-	(5)	-	-	-	-
Proceeds from disposal of available-for-sale investments	60	-	-	60	-	-	-	-	91	-	-	91
Interest received	27	17	-	10	31	21	-	10	33	28	-	5
Other receipts, net	14	(6)	-	20	53	-	-	53	3	-	-	3

	Year ended											
	31 December 2016				**31 December 2015**				**31 December 2014**			
USD million	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+	En+ Group Consolidated	UC RUSAL	Adjustments	EN+
Cash flows used in financing activities, including:	**(1,704)**	**(1,305)**	**120**	**(519)**	**(2,258)**	**(1,827)**	**120**	**(551)**	**(1,869)**	**(1,900)**	**-**	**31**
Interest paid	(867)	(452)	-	(415)	(855)	(516)	-	(339)	(1,052)	(677)	-	(375)
Proceeds from/ (repayment of) borrowings, net	1,177	(143)	-	1,320	(662)	(741)	-	79	91	(640)	-	731
Acquisition of non-controlling interest	(827)	-	-	(827)	(16)	-	-	(16)	-	-	-	-
Payments from settlement of derivative instruments	(446)	(446)	-	-	(320)	(320)	-	-	(452)	(452)	-	-
Restructuring fees and other expenses	(14)	(14)	-	-	(2)	-	-	(2)	(149)	(130)	-	(19)
Proceeds from disposal of shares in subsidiaries	39	-	-	39	9	-	-	9	-	-	-	-
Distributions to shareholder	(318)	-	-	(318)	(1)	-	-	(1)	(64)	-	-	(64)
Dividends to shareholders	(318)	(250)	250	(318)	(262)	(250)	250	(262)	(203)	-	-	(203)
Dividends to non-controlling shareholders of subsidiaries	(130)	-	(130)	-	(149)	-	(130)	(19)	(23)	-	-	(23)
Other payments, net	-	-	-	-	-	-	-	-	(17)	(1)	-	(16)
Net increase in cash and cash equivalents	**66**	**43**	**-**	**23**	**2**	**2**	**-**	**-**	**41**	**12**	**-**	**29**
Cash and cash equivalents at beginning of the year, excluding restricted cash	577	494	-	83	697	557	-	140	811	701	-	110
Effect of exchange rate changes on cash and cash equivalents	13	(6)	-	19	(122)	(65)	-	(57)	(155)	(156)	-	1
Cash and cash equivalents at end of the year, excluding restricted cash	**656**	**531**	**-**	**125**	**577**	**494**	**-**	**83**	**697**	**557**	**-**	**140**

5. Assets and liabilities held for sale

As at 31 December 2016 management made a decision to dispose its ownership interest in some non-core operations and classified these assets and liabilities as held for sale.

The assets and liabilities of the disposal group classified as held for sale are represented as follows:

	31 December 2016	**31 December 2015**	**31 December 2014**
Assets classified as held for sale	**USD million**	**USD million**	**USD million**
Property, plant and equipment	7	28	1
Inventories	-	1	-
Trade and other receivables	-	5	-
Other current assets	-	2	-
	7	**36**	**1**

	31 December 2016	**31 December 2015**	**31 December 2014**
Liabilities classified as held for sale	**USD million**	**USD million**	**USD million**
Provisions	-	-	(13)
Trade and other payables	-	(4)	-
Other non-current liabilities	-	(7)	-
	-	**(11)**	**(13)**

6. 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 the statement of income. 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.

	Year ended 31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Reversal of impairment/(impairment) of property, plant and equipment (note 12)	107	(125)	(344)
Impairment of other assets	(89)	(18)	(24)
	18	**(143)**	**(368)**

7. Revenues

Revenue from the sale of goods is recognised when the significant risks and rewards of ownership have been transferred to the buyer, recovery of the consideration is probable, the associated costs and possible return of goods can be estimated reliably, there is no continuing management involvement with the good and the amount of revenue can be measured reliably. This is generally when title passes. If it is probable that discounts will be granted and the amount can be measured reliably, then the discount is recognised as a reduction of revenue as the sales are recognised.

For the majority of sales transactions (excluding sales of electricity and heat) agreements specify that title passes on the bill of lading date, which is the date the commodity is delivered to the shipping agent.

Revenue is not reduced for royalties or other taxes payable from production.

Sales of electricity and heat are carried out on both regulated and unregulated power markets.

Revenue in the regulated power market in Russia is based on the application of authorised tariffs as approved by the Federal Tariff Service (for energy and capacity sales) and the Regional Energy Commission (for heat sales). Revenue is recognised on a monthly basis upon the delivery of the electricity and heat, excluding value-added tax.

Under competitive bilateral contracts electricity and capacity supply trading is based on unregulated prices negotiated between customers and suppliers. In order to sell necessary volume of electricity and capacity to the buyers the Group is required to purchase the equivalent volume from wholesale market. Management of the Group has exercised critical judgment in respect of transactions under free bilateral contracts to reflect their economic substance, thus the amounts of revenue and cost of sales are shown net for presentation purposes.

According to the Resolution of the Russian Government No. 1172 dated 27 December 2010 the seller is required to sell all electricity volume produced on wholesale market including the volume required for own production needs. In order to provide self-consumption the Group has to repurchase self-produced electricity back from whole

sale market. The amounts of revenue and expenses of self-produced and consumed electricity volume are shown net for presentation purposes based on selling prices on a day-ahead market.

Management believes that such presentation provides more relevant and meaningful information about the operation of the Group.

The Group's retail electricity and heating sales, other than to residential customers, are made on the basis of contracts signed with customers. Residential customers pay for their electricity usage on a monthly basis by means of a "self read" system. Residential customers pay for heating usage at a flat rate, based on a floor space of their apartments in square meters.

Revenue comprises the sales value of electricity and heating supplied to customers during the period, excluding value added tax ("VAT"). Electricity revenue is recognised on the date the metered information is read by or reported to the Group; heat sales are recognised as produced and delivered.

	Year ended 31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Sales of primary aluminium and alloys	**6,487**	**7,163**	**7,608**
Third parties	3,991	4,208	4,627
Related parties – companies capable of exerting significant influence	2,489	2,945	2,936
Related parties – companies under common control	7	9	11
Related parties – associates and joint ventures	-	1	34
Sales of alumina and bauxite	**655**	**617**	**612**
Third parties	377	382	377
Related parties – companies capable of exerting significant influence	186	207	235
Related parties – associates and joint ventures	92	28	-
Sales of semi-finished products and foil	**417**	**450**	**584**
Third parties	416	450	584
Related parties – companies under common control	1	-	-
Sales of electricity	**1,200**	**1,170**	**1,565**
Third parties	1,150	1,115	1,474
Related parties – companies under common control	36	39	77
Related parties – associates and joint ventures	14	16	14
Sales of heat	**345**	**344**	**541**
Third parties	322	317	505
Related parties – companies under common control	23	27	36
Sales of ferromolybdenum	**51**	**51**	**83**
Third parties	51	51	83
Other revenues	**621**	**734**	**924**
Third parties	515	639	817
Related parties – companies capable of exerting significant influence	11	17	53

	Year ended 31 December		
	2016	2015	2014
	USD million	USD million	USD million
Related parties – companies under common control	31	27	16
Related parties – associates and joint ventures	64	51	38
	9,776	**10,529**	**11,917**

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 UC RUSAL Plc with a 8.75% share) with whom transactions have exceeded 10% of the Group's revenue. In 2016 revenues from sales of primary aluminium and alloys to this customer amounted to USD 2,322 million (2015: USD 2,710 million, 2014: USD 2,745 million).

8. Net other operating expenses

	Year ended 31 December		
	2016	2015	2014
	USD million	USD million	USD million
Impairment of accounts receivable	(3)	(27)	(67)
Charity	(14)	(11)	(13)
(Provision)/reversal of provision for legal claims	(4)	11	(30)
Loss on disposal of property, plant and equipment	(15)	(26)	(17)
Other operating expenses, net	(13)	(6)	(95)
	(49)	**(59)**	**(222)**

9. 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 the statement of income 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 any unrecognised past service costs 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 net total of any unrecognised past service costs and 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 the statement of 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 the statement of comprehensive income 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 and past service costs that had not previously been recognised.

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		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Contributions to defined contribution retirement plans	(227)	(212)	(303)
Contributions to defined benefit retirement plans	(3)	(4)	(7)
Total retirement costs	(230)	(216)	(310)
Wages and salaries	(964)	(976)	(1,323)
Share-based compensation (note 17(b))		-	(1)
	(1,194)	**(1,192)**	**(1,634)**

10. 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 expenses 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 the statement of income 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.

	Year ended 31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Finance income			
Net foreign exchange gain	41	-	-
Interest income	39	30	41
Dividend income	2	1	2
Other finance income	6	5	3
	88	**36**	**46**

	Year ended 31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Finance costs			
Interest expense – *third parties*	(1,053)	(970)	(1,174)
Interest expenses on company loans from related parties – *companies capable of exerting significant influence*	(7)	(22)	(18)
Change in fair value of derivative financial instruments (refer to note 20)	(157)	(352)	(467)
Net foreign exchange loss	-	(285)	(487)
Other finance costs	(24)	-	(24)
	(1,241)	**(1,629)**	**(2,170)**

11. Income tax expense

Income tax expense comprises current and deferred tax. Income tax expense is recognised in the statement of income 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 liability. 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		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Current tax expense			
Current tax for the year *(i)*	(252)	(232)	(110)
Deferred tax expense			
Origination and reversal of temporary differences	(52)	(28)	(10)
	(304)	**(260)**	**(120)**

(*i*) Current tax in the amount of USD nil million (2015: USD 41 million, 2014: USD 182 million) was recognised in other comprehensive income/(loss).

Pursuant to the rules and regulations of Jersey, the Parent Company is not subject to any income tax in Jersey. The Parent Company's applicable tax rate is 0%. Subsidiaries pay income taxes in accordance with the legislative requirements of their respective tax jurisdictions. For subsidiaries domiciled in Russia the applicable tax rate is 20%; in Ukraine of 18%; Cyprus of 12.5%; Guinea of 0%; China of 25%; Kazakhstan of 20%; Australia of 30%; Jamaica of 25%; Ireland of 12.5% and Sweden of 22%. 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 9.27% and 14.60% for different subsidiaries. For the Group's significant trading companies the applicable tax rate is 0%. The applicable tax rates for the year ended 31 December 2016 were the same as for the years ended 31 December 2015 and 31 December 2014.

Reconciliation of effective tax rate

	Year ended 31 December					
	2016		**2015**		**2014**	
	USD million	**%**	**USD million**	**%**	**USD million**	**%**
Profit/(loss) before taxation	**1,665**	**(100)**	**840**	**(100)**	**(504)**	**100**
Income tax at tax rate applicable for Russian subsidiaries	(333)	20	(168)	20	101	(20)
Non-deductible expenses	(47)	3	(92)	11	(115)	23
Effect of impairment of non-current assets	(12)	1	-	-	-	-
Effect of changes in investment in Norilsk Nickel	64	(4)	1	-	19	(4)
Change in unrecognised deferred tax assets	(48)	3	(105)	12	(11)	2
Effect of different income tax rate	72	(4)	104	(12)	(114)	23
Income tax	**(304)**	**18**	**(260)**	**31**	**(120)**	**24**

(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**		
	2016	**2015**	**2014**	**2016**	**2015**	**2014**	**2016**	**2015**	**2014**
Property, plant and equipment	62	31	40	(1,408)	(630)	(665)	(1,346)	(599)	(625)
Inventories	51	33	49	(7)	(1)	(1)	44	32	48
Trade and other receivables	22	19	32	(6)	-	(1)	16	19	31
Financial instruments	-	-	33	(11)	(22)	(9)	(11)	(22)	24
Tax loss carry-forwards	43	62	39	-	-	-	43	62	39
Others	89	83	88	(121)	(71)	(90)	(32)	12	(2)
Tax assets/(liabilities)	267	228	281	(1,553)	(724)	(766)	(1,286)	(496)	(485)
Set off of tax	(159)	(132)	(191)	159	132	191	-	-	-
Net deferred tax assets/(liabilities)	**108**	**96**	**90**	**(1,394)**	**(592)**	**(575)**	**(1,286)**	**(496)**	**(485)**

(c) Movement in temporary differences during the year

USD million	1 January 2016	Recognised in profit or loss	Recognised directly in equity*	Currency translation	31 December 2016
Property, plant and equipment	(599)	(14)	(635)	(98)	(1,346)
Inventories	32	11	-	1	44
Trade and other receivables	19	(5)	-	2	16
Financial instruments	(22)	11	-	-	(11)
Tax loss carry-forwards	62	(18)	-	(1)	43
Others	12	(37)	(6)	(1)	(32)
	(496)	**(52)**	**(641)**	**(97)**	**(1,286)**

* Temporary differences on property, plant and equipment relate to revaluation of hydro assets and were recognised in other comprehensive income. Others in amount of USD 6 million were recognised in the transactions with owners part of the Consolidated Statement of Changes in Equity.

USD million	1 January 2015	Recognised in profit or loss	Currency translation	31 December 2015
Property, plant and equipment	(625)	6	20	(599)
Inventories	48	(15)	(1)	32
Trade and other receivables	31	(8)	(4)	19
Financial instruments	24	(46)	-	(22)
Tax loss carry-forwards	39	29	(6)	62
Others	(2)	6	8	12
	(485)	**(28)**	**17**	**(496)**

USD million	1 January 2014	Recognised in profit or loss	Currency translation	31 December 2014
Property, plant and equipment	(679)	5	49	(625)
Inventories	37	12	(1)	48
Trade and other receivables	47	1	(17)	31
Financial instruments	-	24	-	24
Tax loss carry-forwards	141	(56)	(46)	39
Others	(2)	4	(4)	(2)
	(456)	**(10)**	**(19)**	**(485)**

(d) Unrecognised deferred tax assets

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

	31 December 2016 USD million	31 December 2015 USD million	31 December 2014 USD million
Deductible temporary differences	591	678	709
Tax loss carry-forwards	513	612	587
	1,104	**1,290**	**1,296**

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 2016	31 December 2015	31 December 2014
Year of expiry	**USD million**	**USD million**	**USD million**
Without expiry	505	520	459
From 6 to 10 years	-	64	88
From 2 to 5 years	3	18	25
Up to 1 year	5	10	15
	513	**612**	**587**

(e) **Unrecognised deferred tax liabilities**

Tthe 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 2016	31 December 2015	31 December 2014
	USD million	**USD million**	**USD million**
Net income tax payable/(receivable) at the beginning of the year	(75)	26	13
Income tax for the year	252	273	292
Income tax paid	(155)	(326)	(239)
Dividend withholding tax	(23)	(51)	(62)
Translation difference	(17)	3	22
	(18)	**(75)**	**26**
Represented by:			
Income tax payable	26	13	51
Prepaid income tax	(44)	(88)	(25)
Net income tax (receivable)/payable	**(18)**	**(75)**	**26**

12. 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 the statement of income.

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 Russian power sector (100% liberalisation) and the fact that hydropower is one of the most efficient sectors of the electric power industry, the 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. The opening balance of equity was not adjusted and comparatives were not restated.

Hydro assets are a class of property, plant and equipment with unique nature and use in production of hydropower plants. Since 1 January 2016 hydro assets are measured at a revalued amount, being its 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 external independent valuer.

Determined class of assets may be revalued on a rolling basis provided revaluation 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 the statement of income 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 the statement of income.

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 the statement of income.

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. Freehold 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.

(vii) Leased assets

Leases under the terms of which the Group assumes substantially all the risks and rewards of ownership are classified as finance leases. Upon initial recognition the leased asset is measured at an amount equal to the lower of its fair value and the present value of the minimum lease payments. Subsequent to initial recognition, the asset is accounted for in accordance with the accounting policy applicable to that asset.

The corresponding finance lease obligation is included within interest bearing liabilities. The interest element is allocated to accounting periods during the lease term to reflect a constant rate of interest on the remaining balance of the obligation for each accounting period.

Assets held under other leases (operating leases) are not recognised in the statement of financial position. Payments made under the lease are charged to profit or loss in equal instalments over the accounting periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the leased assets. Lease incentives received are recognised in profit or loss as an integral part of the aggregate net lease payments made. Contingent rentals are charged to profit or loss in the accounting period in which they are incurred.

Long-term land leases may be recognised as finance leases even without the transfer of ownership of the land at the end of the lease if in the Group's judgment, the lease transfers significantly all the risks and rewards of ownership of the land such that the Group is in a position economically similar to that of a purchaser.

(b) Disclosure

USD million	**Land and buildings**	**Machinery and equipment**	**Electrolysers**	**Hydroassets**	**Mining assets**	**Construction in progress**	**Other**	**Total**
Cost/Deemed cost								
At 1 January 2014	**5,300**	**7,616**	**2,121**	**507**	**1,091**	**1,988**	**467**	**19,090**
Additions	6	1	143	-	12	765	2	929
Acquisition though business combination (note 17(a))	1	4	-	-	-	1	-	6
Disposals	(16)	(58)	(111)	(2)	(35)	(26)	(25)	(273)
Transfers	104	293	4	90	41	(559)	27	-
Change in estimate of site restoration provision	-	-	-	-	(26)	-	-	(26)
Translation difference	(986)	(1,014)	(77)	(242)	(397)	(357)	(137)	(3,210)
At 31 December 2014	**4,409**	**6,842**	**2,080**	**353**	**686**	**1,812**	**334**	**16,516**
Additions	1	11	106	-	40	581	10	749
Disposals	(20)	(54)	(17)	-	-	(37)	(12)	(140)
Transfers	77	282	13	20	80	(556)	84	-
Reclassification to assets held for sale (note 5)	-	-	-	-	-	(28)	-	(28)
Change in estimate of site restoration provision	-	-	-	-	3	-	-	3
Translation difference	(338)	(344)	(34)	(79)	(140)	(112)	(50)	(1,097)
At 31 December 2015	**4,129**	**6,737**	**2,148**	**294**	**669**	**1,660**	**366**	**16,003**
Revaluation of hydro assets as at 1 January 2016	-	-	-	1,941	-	-	-	1,941
Additions	-	22	89	-	33	738	8	890
Disposals	(102)	(441)	(15)	-	(128)	(15)	(5)	(706)
Transfers and reclassifications (note 12 (f))	153	353	14	157	15	(628)	(64)	-
Revaluation of hydro assets as at 31 December 2016	-	-	-	1,068	-	-	-	1,068
Change in estimate of site restoration provision	-	-	-	-	(1)	-	-	(1)
Translation difference	196	194	(19)	459	97	68	22	1,017
At 31 December 2016	**4,376**	**6,865**	**2,217**	**3,919**	**685**	**1,823**	**327**	**20,212**

USD million	**Land and buildings**	**Machinery and equipment**	**Electrolysers**	**Hydroassets**	**Mining assets**	**Construction in progress**	**Other**	**Total**
Depreciation and impairment losses								
At 1 January 2014	**(2,537)**	**(5,034)**	**(1,719)**	**(157)**	**(798)**	**(1,345)**	**(292)**	**(11,882)**
Depreciation charge	(147)	(317)	(160)	(20)	(20)	-	(27)	(691)
Impairment losses	(78)	(111)	(6)	-	(129)	(20)	-	(344)
Disposals	8	42	102	1	35	-	8	196
Translation difference	531	594	135	72	304	183	54	1,873
At 31 December 2014	**(2,223)**	**(4,826)**	**(1,648)**	**(104)**	**(608)**	**(1,182)**	**(257)**	**(10,848)**
Depreciation charge	(115)	(276)	(162)	(14)	(6)	(7)	(21)	(601)
(Impairment losses)/reversal of impairment	(20)	(63)	1	-	(97)	55	(1)	(125)
Disposals	9	49	14	-	-	11	6	89
Translation difference	201	218	32	25	114	50	28	669
At 31 December 2015	**(2,148)**	**(4,898)**	**(1,763)**	**(93)**	**(597)**	**(1,073)**	**(245)**	**(10,817)**
Revaluation of hydro assets as at 1 January 2016	-	-	-	92	-	-	-	92
Depreciation charge	(120)	(290)	(152)	(67)	(6)	-	(16)	(651)
(Impairment losses)/reversal of impairment	66	85	4	(6)	(22)	(20)	-	107
Disposals	94	432	12	-	114	-	3	655
Transfers and reclassifications (note 12(f))	(6)	(9)	-	-	-	2	11	(2)
Revaluation of hydro assets as at 31 December 2016	-	-	-	74	-	-	-	74
Translation difference	(101)	(116)	20	-	(82)	(30)	(6)	(315)
At 31 December 2016	**(2,215)**	**(4,796)**	**(1,879)**	**-**	**(593)**	**(1,121)**	**(253)**	**(10,857)**
Net book value								
At 1 January 2014	2,763	2,582	402	350	293	643	175	7,208
At 31 December 2014	**2,186**	**2,016**	**432**	**249**	**78**	**630**	**77**	**5,668**
At 31 December 2015	**1,981**	**1,839**	**385**	**201**	**72**	**587**	**121**	**5,186**
At 31 December 2016	**2,161**	**2,069**	**338**	**3,919**	**92**	**702**	**74**	**9,355**

Included in disposals of property, plant and equipment are disposals related to deconsolidation of Alpart (note 2(h)) of USD 564 million both at cost and accumulated depreciation.

Depreciation expense of USD 604 million (2015: USD 552 million, 2014: USD 637 million) has been charged to cost of goods sold, USD 4 million (2015: USD 6 million, 2014: USD 8 million) to distribution expenses and USD 21 million (2015: USD 18 million, 2014: USD 21 million) to administrative expenses.

Interest capitalised for the years ended 31 December 2016, 31 December 2015 and 2014 was USD 5 million, USD 9 million and USD 12 million, respectively. The capitalisation rate used to determine the amount of borrowing costs eligible for capitalisation during the years ended 31 December 2016, 31 December 2015 and 2014 was 11.30%, 12.06% and 9.5%, respectively.

Included in construction in progress at 31 December 2016, 31 December 2015 and 31 December 2014 are advances to suppliers of property, plant and equipment of USD 99 million, USD 53 million and USD 37 million, respectively.

(c) Leases

At 31 December 2016, 31 December 2015 and 31 December 2014 the carrying value of plant and equipment held under finance leases was USD 32 million, USD 5 million and USD 13 million, respectively.

(d) 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.

Based on the analysis performed, management identified several indicators including significant fluctuations in the exchange rate of Russian Rouble throughout the year, significant decrease of aluminium and alumina prices in the beginning of 2016 and their recovery by the end of the same period, the postponement of the commissioning of certain considerable consumers of electricity and the respective reassessment of the forecasted volumes of coal supplies to the heat power-plants as well as the forecasted volumes of electricity transmission. In aluminium and silicon production, the Group faced significant decrease in cash cost due to depreciation of national currencies and application of cash cost control measures. For alumina cash generating units, major influence was on the part of recovery in alumina prices and decrease in prices of energy resources being a significant part of cash cost. In foil production, the price of primary thick foils was low compared to that of more thinner and sophisticated positions. Bauxite cash generating units faced decrease in the sale price of bauxite.

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 2016, 31 December 2015 and 31 December 2014 management identified several indicators that a number of the Group’s cash-generating units may be impaired or see reversal of previously recognised impairment loss.

Based on results of impairment testing as at 31 December 2016, management has concluded that an impairment loss relating to property, plant and equipment should be recognised in these financial statements in respect of the Bauxite Company of Guyana Inc., Armenal and Ural Foil cash generating units in the amounts of USD 58 million, USD 48 million and USD 13 million, respectively, as the determined recoverable amount was negative. Management has also concluded that a reversal of previously recognised impairment loss relating to property, plant and equipment should be recognised in these financial statements in respect of the Kubikenborg Aluminium, Kremniy, Windalco, Aughinish Alumina, Kandalaksha smelter and Irkutsk smelter cash generating units in the amounts of USD 124 million, USD 52 million, USD 48 million, USD 38 million, USD 30 million and USD 7 million, respectively.

Based on results of impairment testing for the year 2015 and 2014, management has concluded that no impairment loss relating to property, plant and equipment should be recognised in these financial statements.

For the purposes of impairment testing the recoverable amount of each cash generating unit was determined by discounting expected future net cash flows of the cash generating unit. 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		
	2016	**2015**	**2014**
Bauxite Company of Guyana Inc.	16.7%	20.5%	18.6%
Armenal	20.0%	20.0%	22.0%
Ural Foil	15.3%	-	-
Kubikenborg Aluminium	13.2%	13.2%	15.0%
Kremniy	19.0%	19.0%	-
Windalco	31.5%	-	-
Aughinish Alumina	13.5%	13.2%	15.6%
Kandalaksha smelter	18.5%	-	-
Irkutsk smelter	16.4%	16.4%	-

The recoverable amount of a number of the cash generating units tested for impairment are particularly sensitive to changes in forecast aluminium 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 67 million at 31 December 2016 (2015: USD 115 million, 2014: USD 96 million). These assets have been impaired in full. No further impairment of property, plant and equipment or reversal of previously recorded impairment was identified by management.

EN+

At 31 December 2016 management identified several indicators of impairment of property, plant and equipment of Coal, Irkutsk GridCo and KRAMZ cash-generating units and as a result of impairment testing performed no impairment was recognised.

At 31 December 2015 management identified several indicators of impairment of property, plant and equipment of Coal and Irkutsk GridCo cash-generating units. As a result of impairment testing performed no impairment was recognised.

At 31 December 2014 management identified several indicators of impairment of property, plant and equipment of Coal and Irkutsk GridCo cash-generating units. Based on the results of impairment testing performed management has concluded that impairment loss relating to property, plant and equipment should be recognised in these financial statements in respect of the Coal and Irkutsk GridCo cash-generating units in the amount of USD 95 million and USD 126, respectively. The results were particularly sensitive to the changes in forecast coal export price and volumes, tariffs and volumes of electricity transmission and applicable discount rates.

The following key assumptions were used to determine the recoverable amount of the Coal cash-generating unit at 31 December 2016:

- The sales volumes in 2017 were projected based on the approved budget for 2017. The sales volumes of coal in 2017 were planned at the level of 12,451 thousand tons. The expected growth till 2026 was estimated as 26.4% as compared to 2017;
- Average price for coal in 2017 was estimated at the level of RUB 789 per ton of coal and increased by 4%-8% per annum till 2026. The anticipated price growth included in the cash flow projections for the years from 2018 to 2026 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation;
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and was 14%;
- 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 Coal cash-generating unit at 31 December 2015:

- The sales volumes in 2016 were projected based on the approved budget for 2016. The sales volumes of coal in 2016 were planned at the level of 12,255 thousand tons. The expected growth till 2025 was estimated as 18.2% as compared to 2016;
- Average price for coal in 2016 was estimated at the level of RUB 751 per ton of coal and increased by 4%-10% per annum till 2025. The anticipated price growth included in the cash flow projections for the years from 2017 to 2025 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation;
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and was 15%;
- A terminal value was derived following the forecast period assuming a 3% annual growth rate.

The following key assumptions were used to determine the recoverable amount of the Coal cash-generating unit at 31 December 2014:

- The sales volumes in 2015 were projected based on the approved budget for 2015. The sales volumes of coal in 2015 were planned at the level of 13,228 thousand tons. The expected growth till 2024 was estimated as 11.13% as compared to 2015;
- Average price for coal in 2015 was estimated at the level of RUB 691 per ton of coal and increased by 3.1%-8.3% per annum till 2024. The anticipated price growth included in the cash flows projections for the years from 2016 to 2024 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation;
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and was 16%;
- A terminal value was derived following the forecast period assuming a 3% annual growth rate.

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 at 31 December 2016:

- The sales volume of electricity transmission in 2017 were planned at the level of 45 million MWh. The expected growth till 2026 was estimated as 17.3% as compared to 2017;
- Tariffs for electricity transmission were estimated at the levels of RUB 385-525 per MWh depending on market segment in 2017 and increased by 44% till 2026 as compared to 2017.

The anticipated growth of tariffs included in the cash flows projections for the years from 2018 to 2026 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation in relation to inflation;

- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and amounted to 15.2%;
- 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 Irkutsk GridCo cash-generating unit at 31 December 2015:

- The sales volume of electricity transmission in 2016 were planned at the level of 45 million MWh. The expected growth till 2025 was estimated as 3.1% as compared to 2016;
- Tariffs for electricity transmission were estimated at the levels of RUB 332-538 per MWh depending on market segment in 2016 and increased by 55.9% till 2025 as compared to 2016. The anticipated growth of tariffs included in the cash flows projections for the years from 2017 to 2025 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation in relation to inflation;
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and vary from 13.4% in 2016 to 12.8% in 2025;
- A terminal value was derived following the forecast period assuming a 3% annual growth rate.

The following key assumptions were used to determine the recoverable amount of the Irkutsk GridCo cash-generating unit at 31 December 2014:

- The sales volume of electricity transmission in 2015 were planned at the level of 46 million MWh. The expected growth till 2024 was estimated as 4.46% as compared to 2015;
- Tariffs for electricity transmission were estimated at the levels of RUB 297-469 per MWh depending on market segment in 2015 and increased by 53.5% till 2024 as compared to 2015. The anticipated growth of tariffs included in the cash flows projections for the years from 2016 to 2024 has been based on the publicly available forecasts of Ministry of Economic Development of the Russian Federation in relation to inflation;
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and vary from 16.2% in 2015 to 13% in 2024;
- A terminal value was derived following the forecast period assuming a 3% annual growth rate.

The recoverable amount estimated at 31 December 2016 includes cash flows from sales of electricity transmission to Taishet aluminium smelter starting from 2021. In case Taishet aluminium smelter is not launched the 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 of electricity transmission volumes and tariffs, as well as applicable discount rates.

The following key assumptions were used to determine the recoverable amount of the KRAMZ cash-generating unit at 31 December 2016:

- The sales volumes from current operations, not extended to additional sales volumes from investment projects execution, in 2017 were projected based on the approved budget for 2017. The sales volumes of metal products in 2017 were planned at the level of 92 thousand tons. The expected growth till 2026 was estimated as 10% as compared to 2017;

- Average price for metal products depends on aluminium price on the London Metal Exchange (LME) and premium to the price. The anticipated average price growth for aluminium and premium included in the cash flows projections is 1.3%-5.5% for the years from 2017 to 2025.
- The post-tax discount rate was estimated in nominal terms based on the weighted average cost of capital and was 15%;
- A terminal value was derived following the forecast period assuming a 2% annual growth rate.

The recoverable amount of the KRAMZ cash-generating unit is particularly sensitive to changes in forecast of sales volumes, prices for aluminium 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 6 million (2015: USD 10 million, 2014: USD 27 million). These assets have been impaired in full. No further impairment of property, plant and equipment or reversal of previously recorded impairment was identified by management.

(e) Security

The carrying value of property, plant and equipment which subject to lien under loan agreements was USD 274 million at 31 December 2016 (31 December 2015: USD 639 million, 31 December 2014: USD 637 million) (note 18).

The carrying value of plant and equipment held under finance leases which is pledged under lessors' loan agreements amounted to USD nil million as at 31 December 2016 (31 December 2015: USD nil million, 31 December 2014: USD 7 million).

(f) Reclassification

During 2016 the management and technical specialists of the Group reviewed the classification of property, plant and equipment to categories. As a result, the Group reclassified some assets between the categories to reflect technical and economic basis respective to production cycle.

(g) Hydro assets

An independent valuation analysis of hydro assets has been carried out following the decision to change accounting policy to the revaluation model for this class of property, plant and equipment beginning from 1 January 2016 (note 12(a)(i)). The fair value of hydro assets is estimated to be USD 2,230 million with an equity effect of USD 2,033 million and revaluation loss of USD 4 million recognised in the statement of profit or loss and other comprehensive income.

In October 2016 the Group acquired previously leased dams from the lessor (note 22(d)) for a cash consideration of USD 138 million (RUB 9,280 million at average annual exchange rate), excluding VAT. As at 31 December 2016 the consideration was paid.

As at 31 December 2016 as a result of the independent valuation analysis the fair value of hydro assets was estimated in the amount of USD 3,919 million with an additional equity effect of USD 1,142 million and an additional revaluation loss of USD 2 million recognised in the statement of comprehensive income.

As at 31 December 2016 the increase in fair value mostly refers to the dams acquired in 2016 which are classified as hydro assets and were previously leased. These dams complement existing hydro assets of the Group. As a result, the ability to integrate these dams into the Group's existing generation and distribution facilities has led the management to perform a new revaluation at the end of 2016.

Net book value at the 1 January 2016 according to cost model amounted to USD 201 million and as at 31 December 2016 to USD 402 million.

The valuation analysis primarily was based on the cost approach to determine depreciated replacement cost as it is the most reliable method to estimate value for the assets that have not 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 economical 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 an 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 is no economic obsolescence as at 1 January 2016 and 31 December 2016.

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

13. 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 the statement of income.

(ii) Research and development

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

Capitalised development expenditure is measured at cost less accumulated amortisation and accumulated impairment losses (refer to note 12(d)).

(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 12(d)).

(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 the statement of income when incurred.

(v) Amortisation

Amortisation is recognised in the statement of income 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 2014	**3,900**	**608**	**4,508**
Additions	-	22	22
Disposals	-	(13)	(13)
Foreign currency translation	(1,139)	(42)	(1,181)
Balance at 31 December 2014	**2,761**	**575**	**3,336**
Additions	-	18	18
Disposals	-	(2)	(2)
Foreign currency translation	(361)	(18)	(379)
Balance at 31 December 2015	**2,400**	**573**	**2,973**
Additions	-	20	20
Disposals	-	(14)	(14)
Foreign currency translation	248	6	254
Balance at 31 December 2016	**2,648**	**585**	**3,233**

USD million	**Goodwill**	**Other intangible assets**	**Total**
Amortisation and impairment losses			
Balance at 1 January 2014	**(450)**	**(463)**	**(913)**
Amortisation charge	-	(18)	(18)
Foreign currency translation	-	19	19
Balance at 31 December 2014	**(450)**	**(462)**	**(912)**
Amortisation charge	-	(17)	(17)
Foreign currency translation	-	9	9
Balance at 31 December 2015	**(450)**	**(470)**	**(920)**
Amortisation charge	**-**	(12)	(12)
Foreign currency translation	**-**	(1)	(1)
Balance at 31 December 2016	**(450)**	**(483)**	**(933)**
Net book value			
At 1 January 2014	3,450	145	3,595
At 31 December 2014	**2,311**	**113**	**2,424**
At 31 December 2015	**1,950**	**103**	**2,053**
At 31 December 2016	**2,198**	**102**	**2,300**

(c) Amortisation charge

The amortisation charge is included in cost of sales in profit or loss.

(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**	**Accumulated impairment loss**	**Allocated goodwill**	**Accumulated impairment loss**	**Allocated goodwill**	**Accumulated impairment loss**
	2016	**2016**	**2015**	**2015**	**2014**	**2014**
UC RUSAL	2,388	(449)	2,201	(449)	2,492	(449)
Irkutskenergo	259	-	198	-	268	-
Strikeforce Mining and Resources PLC (“SMR”)	1	(1)	1	(1)	1	(1)
	2,648	**(450)**	**2,400**	**(450)**	**2,761**	**(450)**

UC RUSAL

For the purposes of impairment testing, the entire amount of goodwill is allocated to the aluminium segment of the UC RUSAL’s operations. The aluminium segment represents the lowest level within the UC RUSAL at which the 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 the UC RUSAL's aluminium segment.

At 31 December 2016, management analysed changes in the economic environment and developments in the aluminium industry and the Group's operations since 31 December 2015 and performed an impairment test for goodwill at 31 December 2016 using the following assumptions to determine the recoverable amount of the segment:

- Total production was estimated based on average sustainable production levels of 3.7 million metric tonnes of primary aluminium, of 7.8 million metric tonnes of alumina and of 12.0 million metric tonnes of bauxite. Bauxite and alumina will be used primarily 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 1,673 per tonne for primary aluminium in 2017, USD 1,703 in 2018, USD 1,726 in 2019, USD 1,789 in 2020, USD1,911 in 2021. 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 62.4 for one USD in 2017, RUB 67.7 in 2018, RUB 69.7 in 2019, RUB 71.0 in 2020, RUB 69.0 in 2021. Inflation of 4.4% – 5.4% in RUB and 1.3% - 2.2% 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 13.7%;
- A terminal value was derived following the forecast period assuming a 1.8% 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 price level would have resulted in a decrease in the recoverable amount by 23% and 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 15% decrease in the recoverable amount and would not lead to an impairment;
- A 1% increase in the discount rate would have resulted in a 8% decrease in the recoverable amount and would not lead to an impairment.

Based on results of impairment testing of goodwill, management concluded that no impairment should be recorded in the consolidated financial statements as at 31 December 2016.

At 31 December 2015, management analysed changes in the economic environment and developments in the aluminium industry and the UC RUSAL's operations since 31 December 2014 and performed an impairment test for goodwill at 31 December 2015 using the following assumptions to determine the recoverable amount of the segment:

- Total production was estimated based on average sustainable production levels of 3.7 million metric tonnes of primary aluminium, of 7.5 million metric tonnes of alumina and of 12.0 million metric tonnes of bauxite. Bauxite and alumina will be used primarily 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 1,561 per tonne for primary aluminium in 2016, USD 1,710 in 2017, USD 1,787 in 2018, USD 1,853 in 2019, USD 1,984 in 2020. Operating costs were projected based on the historical performance adjusted for inflation;
- Nominal foreign currency exchange rates applied to convert operating costs of the UC RUSAL denominated in RUB into USD were RUB 63.3 for one USD in 2016, RUB 63.1 in 2017, RUB 62.5 in 2018, RUB 64.8 in 2019, RUB 67.5 in 2020. Inflation of 5.3% – 7.4% 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 2.0% 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 price level would have resulted in a decrease in the recoverable amount by 29% and 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 25% decrease in the recoverable amount and would not lead to an impairment;
- A 1% increase in the discount rate would have resulted in a 13% decrease in the recoverable amount and would not lead to an impairment.

Based on results of impairment testing, management concluded that no impairment should be recorded in the consolidated financial statements as at 31 December 2015.

At 31 December 2014, management analysed changes in the economic environment and developments in the aluminium industry and the UC RUSAL's operations since 31 December 2013 and performed an impairment test for goodwill at 31 December 2014 using the following assumptions to determine the recoverable amount of the segment:

- Total production was estimated based on average sustainable production levels of 3.6 million metric tonnes of primary aluminium, of 7.4 million metric tonnes of alumina and of 12.4 million metric tonnes of bauxite. Bauxite and alumina will be used primarily 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 2,010 per tonne for primary aluminium in 2015, USD 2,127 in 2016, USD 2,203 in 2017, USD 2,270 in 2018, USD 2,313 in 2019. 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 59.6 for one USD in 2015, RUB 55.6 in 2016, RUB 53.2 in 2017, RUB 51.2 in 2018, RUB 49.3 in 2019. Inflation of 4.9% – 11.8% in RUB and 1.5% - 2.5% 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 16.2%;

- A terminal value was derived following the forecast period assuming a 2.1% 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 price level would have resulted in a decrease in the recoverable amount by 17% and 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 5% decrease in the recoverable amount and would not lead to an impairment;
- A 1% increase in the discount rate would have resulted in a 6% decrease in the recoverable amount and would not lead to an impairment.

Based on results of impairment testing, management concluded that no impairment should be recorded in the consolidated financial statements as at 31 December 2014.

EN+

Goodwill primarily resulted from the acquisition of Irkutskenergo. For the purposes of impairment testing, goodwill is allocated to Irkutskenergo segment. 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 2016, 2015 and 2014 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 segment of the Group.

The following key assumptions were used to determine the recoverable amount of the segment at 31 December 2016:

- The sales volumes in 2017 were projected based on the approved budgets for 2017. In particular, the sales volumes of electricity in 2017 were planned at the level of 64 million MWh and 66 million MWh in 2018. The expected growth till 2026 was estimated as 12.1% as compared to 2017. The sales volumes of heat in 2017 were planned at the level of 20 million Gcal and no growth till 2026 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 1.1 – 26.7 (RUB 64-1,617) per MWh depending on market segment in 2017 and increased by 28-53% respectively till 2026. The tariffs for heat were estimated as USD 15.7 (RUB 954) per Gcal in 2017 and grew by 45% till 2026. 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 14.8% ;
- 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 2015:

- The sales volumes in 2016 were projected based on the approved budgets for 2016. In particular, the sales volumes of electricity in 2016 were planned at the level of 73 million MWh and 76 million MWh in 2017. The expected growth till 2025 was estimated as 13.8% as compared to 2016. The sales volumes of heat in 2016 were planned at the level of 20 million Gcal and no growth till 2025 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 1.3 – 25 (RUB 80-1,525) per MWh depending on market segment in 2016 and increased by 53-107% respectively till 2025. The tariffs for heat were estimated as USD 15 (RUB 884) per Gcal in 2016 and grew by 82% till 2025. 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 and vary from 15.7% in 2016 to 15.1% in 2025;
- A terminal value was derived following the forecast period assuming a 3% annual growth rate.

The following key assumptions were used to determine the recoverable amount of the segment at 31 December 2014:

- The sales volumes in 2015 were projected based on the approved budgets for 2015. In particular, the sales volumes of electricity in 2015 were planned at the level of 70 million megawatt-hours and 71 million megawatt-hours in 2016. No growth till 2024 is expected. The sales volumes of heat in 2015 were planned at the level of 21 million Gcal and no growth till 2024 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 1 – 20 (RUB 35-7540 per megawatt-hour depending on market segment in 2015 and increased by 50-115% respectively till 2024. The tariffs for heat were estimated as USD 21 (RUB 823) per Gcal in 2015 and grew by 84% till 2024. 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 and vary from 18.4% in 2015 to 15.2% in 2024;
- A terminal value was derived following the forecast period assuming a 3% annual growth rate.

Based on results of impairment testing, management concluded that no impairment for Irkutskenergo CGU should be recorded in the consolidated financial statements at 31 December 2016, 31 December 2015 and 31 December 2014.

Reasonable possible change in key assumption will not lead to an impairment.

14. 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) (note 5). 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 loss 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, 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 (see note 16).

In the Company's statement of financial position, investments in associates and joint venture 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		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Balance at the beginning of the year	**3,222**	**4,885**	**8,789**
Acquisition	-	5	-
Group's share of profits and other gains attributable to associates	847	368	521
Reversal of provision for a guarantee included in the share of profits	(100)	-	-
Dividends	(490)	(1,063)	(975)
Group's share of other comprehensive income	-	4	10
Foreign currency translation	677	(977)	(3,460)
Balance at the end of the year	**4,156**	**3,222**	**4,885**
Goodwill included in interests in associates	2,477	2,062	2,863

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.

			Proportion of ownership interest		
Name of associate/ joint venture	**Place of incorporation and operation**	**Particulars of issued and paid up capital**	**Group's effective interest**	**Group's nominal interest**	**Principal activity**
PJSC MMC Norilsk Nickel	Russian Federation	158,245,476 shares, RUB 1 par value	13.39%*	27.82%	Nickel and other metals production
Queensland Alumina Limited	Australia	2,212,000 shares, AUD 2 par value	9.63%	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	24.07%	50%	Energy / Aluminium production – construction in progress

*13.50% at 31 December 2015 and 13.39% at 31 December 2014

The summary of the consolidated financial statements of associates and joint ventures for the year ended 31 December 2016 is presented below:

	PJSC MMC Norilsk Nickel		**Queensland Alumina Limited**		**BEMO project**		**Other joint ventures**	
	Group share	**100%**	**Group share**	**100%**	**Group share**	**100%**	**Group share**	**100%**
Non-current assets	4,994	8,881	136	587	1,275	2,818	165	339
Current assets	1,577	5,668	22	115	77	153	153	498
Non-current liabilities	(2,281)	(8,115)	(89)	(242)	(880)	(1,817)	(35)	(73)
Current liabilities	(698)	(2,508)	(69)	(345)	(36)	(73)	(155)	(541)
Net assets	**3,592**	**3,926**	**-**	**115**	**436**	**1,081**	**128**	**223**

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other joint ventures	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
Revenue	2,289	8,165	125	625	282	563	899	3,063
Profit/(loss) from continuing operations	688	2,198	-	(24)	40	16	21	(3)
Other comprehensive income	602	381	-	(1)	67	139	6	4
Total comprehensive income	**1,290**	**2,579**	**-**	**(25)**	**107**	**155**	**27**	**1**

The summary of the consolidated financial statements of associates for the year ended 31 December 2015 is presented below:

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other joint ventures and associates	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
Non-current assets	4,058	6,746	139	595	1,108	2,540	169	342
Current assets	1,858	6,625	29	151	67	135	180	568
Non-current liabilities	(2,192)	(7,734)	(97)	(245)	(810)	(1,620)	(39)	(77)
Current liabilities	(948)	(3,382)	(71)	(361)	(36)	(72)	(193)	(567)
Net assets	**2,776**	**2,255**	**-**	**140**	**329**	**983**	**117**	**266**

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other joint ventures and associates	
	Group share	100%	Group share	100%	Group share	100%	Group share	100%
Revenue	2,396	8,542	142	712	204	407	1,107	2,705
Profit/(loss) from continuing operations	486	1,734	(293)	13	176	64	(1)	39
Other comprehensive income	(817)	(567)	(35)	(15)	(45)	(184)	(73)	(161)
Total comprehensive income	**(331)**	**(1,167)**	**(328)**	**(2)**	**131**	**(120)**	**(74)**	**(122)**

The summary of the consolidated financial statements of associates and joint ventures for the year ended 31 December 2014 is presented below:

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other joint ventures and associates	
	Group share	**100%**	**Group share**	**100%**	**Group share**	**100%**	**Group share**	**100%**
Non-current assets	4,987	7,464	493	676	997	2,700	294	583
Current assets	1,582	5,685	37	190	36	71	243	695
Non-current liabilities	(1,820)	(6,174)	(111)	(269)	(270)	(540)	(71)	(155)
Current liabilities	(608)	(2,182)	(92)	(455)	(565)	(1,130)	(247)	(714)
Net assets	**4,141**	**4,793**	**327**	**142**	**198**	**1,101**	**219**	**409**

	PJSC MMC Norilsk Nickel		Queensland Alumina Limited		BEMO project		Other joint ventures and associates	
	Group share	**100%**	**Group share**	**100%**	**Group share**	**100%**	**Group share**	**100%**
Revenue	3,302	11,869	153	766	88	176	1,250	3,606
Profit/(loss) from continuing operations	515	2,003	(14)	4	4	8	16	(14)
Other comprehensive income	(3,243)	(3,519)	(30)	(13)	(137)	(569)	(40)	(65)
Total comprehensive income	**(2,728)**	**(1,516)**	**(44)**	**(9)**	**(133)**	**(561)**	**(24)**	**(79)**

(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 2016, 31 December 2015 and 31 December 2014 amounted to USD 3,592 million, USD 2,776 million and USD 4,141 million, respectively. The market value amounted to USD 7,348 million, USD 5,542 million and USD 6,388 million as at 31 December 2016, 31 December 2015 and 31 December 2014, respectively, and is 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 and market value of the Group's investment in Queensland Alumina Limited as at 31 December 2016, 31 December 2015 and 31 December 2014 amounted to USD nil million, USD nil million and USD 327 million, respectively.

The Group's share of profits/(losses) in associate for the year ended 31 December 2015 includes impairment losses relating to investment in Queensland Alumina Limited of which USD 283 million was recognised by the Group.

The recoverable amount of investment in Queensland Alumina Limited as at 31 December 2015 was determined by discounting the expected future net cash flows of the cash generating unit and applying the share of Group's ownership to the resulting figure.

The pre-tax discount rate applied to discount the cash flows was 11.0%, estimated in nominal terms based on an industry weighted average cost of capital.

The recoverable amount of the cash generating unit is particularly sensitive to changes in forecast alumina prices, foreign exchange rates, applicable discount rate.

The Group recognised its share of impairment losses in Queensland Alumina Limited to the extent of its investment in the entity in the amount of USD 283 million and made the necessary adjustment to the carrying value of the investment which was written down to nil.

(c) BEMO project

The carrying value and market value of the Group's investment in BEMO project as at 31 December 2016, 31 December 2015 and 31 December 2014 amounted to USD 436 million, USD 329 million and USD 198 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 2016 management has not identified any impairment indicators relating to the Group's investment in BoGES and as a result no detailed impairment testing was performed in relation to this investment. Results of impairment testing of BoAZ investment for the year ended 31 December 2016 showed that investment in BoAZ is fully impaired and no reversal of previously recorded impairment was identified by management.

At 31 December 2016, accumulated losses of USD 550 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.

At 31 December 2015 and at 31 December 2014, management has performed impairment testing for its investments in BoGES and BoAZ as the market conditions remained challenging and volatile.

The pre-tax discount rates applied to discount the cash flows for BoAZ and BoGES were 16.5% and 18.9% for 2015 and 17.2% and 21.5 for 2014, respectively, estimated in nominal terms based on an industry weighted average cost of capital.

The recoverable amounts of the two cash generating units are particularly sensitive to changes in forecast aluminium and electricity prices, foreign exchange rates, applicable discount rates and, in respect to BoAZ, the forecast period to reach full production capacity.

As the result of impairment testing as at 31 December 2015 the Group recognised its share of reversal of impairment losses in BoGES and made the necessary adjustment to the carrying value of investment. The Group's share of gains related to BoGES was recognised in the amount of USD 143 million.

At 31 December 2015, losses of USD 357 million related to impairment charges at BoAZ have not been recognised because the Group's investment has already been fully written down to nil.

At 31 December 2014, losses of USD 375 million related to impairment charges at BoAZ have not been recognised because the Group's investment has already been fully written down to nil.

Summary of the additional financial information of the Group's effective interest in BEMO project for the year ended 31 December 2015 and 31 December 2014 is presented below (all in USD million):

	31 December 2016	31 December 2015	31 December 2014
Cash and cash equivalents	18	16	14
Current financial liabilities	(7)	(778)	(534)
Non-current financial liabilities	(844)	(3)	(241)
Depreciation and amortisation	(16)	(18)	(21)
Interest income	1	2	1
Interest expense	(28)	(23)	(6)
Income tax expense or income	(11)	(10)	(3)

(d) Other joint ventures and associates

In 2014 the Group impaired investment in JSC Krasnoyarskenergosbyt to nil and recognised in profit and loss an impairment loss in the amount of USD 15 million.

15. 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.

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

	31 December		
	2016	2015	2014
	USD million	USD million	USD million
Raw materials and consumables	910	956	1,097
Work in progress	586	555	632
Finished goods and goods for resale	741	672	712
	2,237	2,183	2,441
Provision for inventory obsolescence	(203)	(261)	(306)
	2,034	**1,922**	**2,135**

Inventories at 31 December 2016, 31 December 2015 and 2014 are stated at cost.

Inventories with a carrying value of USD 402 million, USD 122 million and USD 17 million were pledged as collateral for secured bank loans at 31 December 2016, 31 December 2015 and 31 December 2014, respectively (note 18).

Inventory with a carrying value of USD 78 million is pledged under existing trading contracts at 31 December 2016 (31 December 2015: USD 81 million, 31 December 2014: USD 123 million).

16. 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 are recognised initially at fair value plus any directly attributable transaction costs.

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.

Financial assets and liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

Cash and cash equivalents comprise cash balances and call deposits with maturities at initial recognition of three months or less that are subject to insignificant risk of changes in their fair values, and are used by the Group in the management of its short-term commitments.

Subsequent to initial recognition non-derivative financial instruments are measured as described below:

- Trade and other receivables and other non-derivative financial assets are measured at amortised cost using the effective interest method, less any impairment losses.
- Trade and other payables and other non-derivative financial liabilities subsequent to initial recognition, are measured at amortised cost using the effective interest method. Investments in equity securities that are not quoted on a stock exchange and where fair value cannot be estimated on a reasonable basis by other means are measured at cost less impairment losses.

A financial asset not carried at fair value through profit or loss is assessed at each reporting date to determine whether there is any objective evidence that it is impaired. A financial asset is considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of that asset occurred after the initial recognition of that asset and the impact can be estimated reliably.

Objective evidence that financial assets (including equity securities) are impaired can include default or delinquency by a debtor, restructuring of an amount due to the Group on terms that the Group would not consider otherwise, indications that a debtor or issuer will enter bankruptcy and the disappearance of an active market for a security. In addition, for an investment in an equity security, a significant or prolonged decline in its fair value below its cost is objective evidence of impairment.

An impairment loss in respect of a financial asset measured at amortised cost is calculated as the difference between its carrying amount and the present value of the estimated future cash flows discounted at the original effective interest rate.

Individually significant financial assets are tested for impairment on an individual basis. The remaining financial assets are assessed collectively in groups that share similar credit risk characteristics.

All impairment losses are recognised in profit or loss.

An impairment loss is reversed if the reversal can be related objectively to an event occurring after the impairment loss was recognised. For financial assets measured at amortised cost, the reversal is recognised in the statement of income.

Impairment losses for trade receivables included within trade and other receivables whose recovery is considered doubtful but not remote are recorded using an allowance account. When the Group is satisfied that recovery is remote, the amount considered irrecoverable is written off against trade receivables directly and any amounts held in the allowance account relating to that receivable are reversed. Subsequent recoveries of amounts previously charged to the allowance account are reversed against the allowance account. Other changes in the allowance account and subsequent recoveries of amounts previously written off directly are recognised in profit or loss.

For disclosure of loans and borrowings refer to note 18.

(a) Long-term and short-term investments

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Available-for-sale investments			
Wolfensohn Capital Partners, L.P. (*i*)	23	27	41
Other available-for-sale investments	2	1	1
Long-term investments	**25**	**28**	**42**
Short-term deposits, 10.5% per annum	-	-	51
Promissory notes	9	11	9
Other	29	23	14
Short-term investments	**38**	**34**	**74**

(*i*) In November 2010 the Group acquired 100% shares of Catona Commercial Limited, which is a limited partner in Wolfensohn Capital Partners, L.P. with 40% share of total partners' commitments (USD 250 million), for USD 23 million paid by cash. The investment was acquired from a related party under common control with the Group. The fair value of the investment as at 31 December 2016 was determined in the amount of USD 23 million (31 December 2015: USD 27 million, 31 December 2014: USD 41 million). During 2016 the Group contributed USD nil million to Wolfensohn Capital Partners, L.P. and received USD 11 million (during 2015 USD nil million and USD 10 million, during 2014 USD 1 million and USD 13 million, respectively). The remaining change between the recognised cost of investments as at 31 December 2016 and movements during 2016 was recognised in other comprehensive income as unrealised gain on available-for-sale investments in the amount of USD 7 million (31 December 2015: loss of USD 4 million, 31 December 2014: USD nil million).

(b) Trade and other receivables

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Long-term trade receivables from third parties	**98**	**49**	**80**
Advances paid to third parties	**2**	**-**	**-**
Other receivables from third parties	**157**	**11**	**27**
	257	**60**	**107**
Provision for doubtful debts	(108)	(56)	(76)
Total long-term receivables	**149**	**4**	**31**
Trade receivables from third parties	**467**	**362**	**414**
Trade receivables from related parties, including	**82**	**88**	**68**
Related parties – companies capable of exerting significant influence	*56*	*69*	*43*
Related parties – companies under common control	*15*	*12*	*20*
Related parties – associates and joint ventures	*11*	*7*	*5*
VAT recoverable	**293**	**258**	**262**
Advances paid to third parties	**96**	**148**	**114**
Advances paid to related parties, including	**54**	**44**	**68**
Related parties – companies capable of exerting significant influence	*-*	*-*	*6*
Related parties – companies under common control	*10*	*2*	*1*
Related parties – associates and joint ventures	*44*	*42*	*61*
Other receivables from third parties	**173**	**117**	**101**
Other receivables from related parties, including	**7**	**60**	**12**
Related parties – companies under common control	*5*	*60*	*12*
Related parties – associates and joint ventures	*2*	*-*	*-*
Dividends receivables from related parties	**311**	**189**	**14**
Related parties – associates and joint ventures	*311*	*189*	*14*
	1,483	1,266	1,053
Provision for doubtful debt	(82)	(109)	(139)
Total short-term receivables	**1,401**	**1,157**	**914**
Total trade and other receivables	**1,550**	**1,161**	**945**

In June 2015 the Group acquired available-for-sale investment for a consideration of RUB 4,050 million (USD 66 million) from a third party. In December 2015 the Group transferred the ownership for a consideration of USD 66 million payable until December 2016 and bearing 21.3%. As at 31 December 2016 the consideration, including accrued interest was received.

There are no pledged trade receivables under existing secure loans from related parties at 31 December 2016 (31 December 2015: USD 68 million, 31 December 2014: USD 67 million) (note 18).

(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:

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Current	402	259	332
Past due 0-90 days	83	86	55
Past due 91-365 days	13	28	11
Past due over 365 days	14	10	1
Amounts past due	110	124	67
	512	**383**	**399**

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.

Receivables that were past due but not impaired relate to a number of customers that have a good track record with the Group. Based on past experience, management believes that no impairment allowance is necessary in respect of these balances as there has not been a significant change in credit quality and the balances are still considered fully recoverable. The Group does not hold any collateral over these balances. Further details of the Group's credit policy are set out in note 21(e).

(c) Trade and other payables

	31 December		
	2016	**2015**	**2014 restated**
	USD million	**USD million**	**USD million**
Accounts payable to third parties	**578**	**438**	**644**
Accounts payable to related parties, including	**47**	**54**	**39**
Related parties – companies capable of exerting significant influence	*18*	*20*	*24*
Related parties – companies under common control	*4*	*1*	*13*
Related parties – associates and joint ventures	*25*	*33*	*2*
Advances received from third parties	**180**	**201**	**223**
Advances received from related parties, including	**165**	**165**	**406**
Related parties – companies capable of exerting significant influence	*165*	*165*	*405*
Related parties – associates and joint ventures	-	-	*1*
Other payables and accrued liabilities	**615**	**351**	**364**
Other payable and accrued liabilities to related parties, including	**8**	**7**	**3**
Related parties – companies capable of exerting significant influence	-	-	*3*
Related parties – associates and joint ventures	*8*	*7*	-
Dividends payable	**23**	**60**	**35**
Current tax payable	**26**	**13**	**51**
Other current liabilities	**10**	**4**	**13**
	1,652	**1,293**	**1,778**

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

As at 31 December 2016 USD 89 million and USD 206 million for the acquisition of Irkutskenergo were included in other non-current liabilities and short-term other payables and accrued liabilities, respectively (note 17(a)).

(d) Cash and cash equivalents

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Bank balances, USD	389	383	211
Bank balances, RUB	130	130	93
Bank balances, other currencies	97	53	42
Cash in transit	7	2	3
Short-term bank deposits	28	9	347
Other cash equivalents	5	-	1
Cash and cash equivalents in the statement of cash flows	**656**	**577**	**697**
Restricted cash	13	14	13
Cash and cash equivalents in the statement of financial position	**669**	**591**	**710**

As at 31 December 2016, 31 December 2015 and 31 December 2014 included in cash and cash equivalents was restricted cash of USD 13 million, USD 14 million and USD 13 million, respectively, pledged under a Swiss Law Pledged Agreement with BNP Paribas (Suisse) SA and Banca Nazionale Del Lavoro S.p.A.

17. Equity

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

The Parent Company's authorised share capital comprises 50,000 ordinary shares, out of which 2,000 shares are issued with a par value of USD 1 dollar each.

In June 2016 the Group acquired 40.3% shares in PJSC Irkutskenergo from InterRAO Group for cash consideration of USD 1,047 million (RUB 70 billion) with the following payment terms:

- first instalment on the date of transaction in the amount of USD 676 million (RUB 45 billion)
- following 8 equal quarterly instalments of USD 46.75 million (RUB 3,125 million) per quarter within 2 years.

The fair value of consideration was determined by discounting the long-term part of payable at 11.9% and amounted to USD 1,020 million.

The acquisition is financed by syndicate loan from PJSC VTB BANK(VTB) and PJSC Sberbank (Sberbank) (see note18(a)(iii)).

Also during the year ended 31 December 2016 the Group sold 4.8% shares in Irkutskenergo to a third party for cash consideration of USD 46 million receivable in several instalments according to the agreed payment schedule and acquired additional 0.2% for cash consideration of USD 2 million.

These transactions resulted in an increase of effective interest in in Irkutskenergo held by the Group up to 90.8%.

During the year ended 31 December 2016 the Group sold 5.1% shares in Krasnoyarsk HPP for cash consideration of USD 23 million. Also Krasnoyarsk HPP acquired its own 0.4% shares for cash consideration of USD 2 million.

In June 2016 JSC Eurosibenergo submitted the mandatory offer to non-controlling shareholders of Krasnoyarsk HPP for purchase of non-controlling interest. The offer price was based on weighted six-months trading average price prior to the offer and amounted to RUB 81.1 per share (USD 1.2). The mandatory offer resulted in buy out of 10.0% of shares for USD 50 million.

In October 2016 subsequent to the mandatory offer and following consolidation of more than 95% of shares Krasnoyarsk HPP the Group submitted a buyout notice, under the price of RUB 97 per share (USD 1.5). As at 31 December 2016 due to the buyout notice procedures 1.4% of shares were bought out from non-controlling interest for USD 8 million.

These transactions resulted in an increase of the effective interest in Krasnoyarsk HPP held by the Group to 100.00% despite existence of nominal non-controlling interest in Krasnoyarsk HPP of 1.4% which are subject to mandatory redemption under buyout notice.

The transactions above during 2016 resulted in respective decrease in non-controlling interests in Irkutskenergo and Krasnoyarsk HPP in the amount of USD 690 million.

In June and December 2016 the Group companies entered into loan agreements to settle indebtedness of companies under common control in the amount of USD 312 million. These loans were considered non-recoverable and were recorded as other distribution in this consolidated financial statements.

In 2015 the Group acquired 3.0% of Krasnoyarsk HPP. shares from non-controlling interest for cash consideration of USD 16 million. That resulted in an increase of the effective interest in Krasnoyarsk HPP to 92.6% and respective decrease in non-controlling interest in Krasnoyarsk HPP and its subsidiaries by USD 16 million.

Additionally, during 2015 certain subsidiaries of the Group write off intergroup loans issued, resulting in a decrease in non-controlling interest of USD 67 million.

In August 2015 the Company entered into the loan agreement with Basic Element Limited to grant USD 1 million, approved by VTB. This loan was considered non-recoverable and was recorded as other distribution in these consolidated financial statements.

Also during 2015 the Group wrote off the receivables from the entity under common control in the amount of USD 15 million and recognised this amount directly in equity.

During 2014 the Group entered into agreements with third parties and acquired shares of JSC “RusHydro” which were exchanged to Krasnoyarsk HPP shares in July 2014. As a result of transaction the Group acquired 25% of Krasnoyarsk HPP and recognised a distribution in the amount of USD 231 million directly in equity.

In November 2014 the Group sold 4.8% of Krasnoyarsk HPP shares to a third party for USD 36 million payable in June 2015-December 2016. The consideration was recorded in equity in 2014 with respective increase in non-controlling interest of USD 12 million.

During 2014 one of the Group’s subsidiaries acquired 100 % shares of LLC Stroyresourse Holding from a company under common control for cash consideration of USD 16 million. In accordance with the accounting policy of the Group with respect to acquisitions under common control, the amount of consideration was recorded directly in equity.

During 2014 the Company entered into loan agreements with Basic Element Limited to grant two loans in total amount of USD 64 million. These loans were considered non-recoverable and were recorded as other distribution in these consolidated financial statements.

Additionally during 2014 certain subsidiaries of the Group were transferred within the Group, resulting in a decrease of effective interest in these subsidiaries and respective decrease in non-controlling interest of USD 231 million.

(b) Share-based compensation

As at 31 December 2016, 31 December 2015 and 31 December 2014 UC RUSAL held none, 4,773 and 2,700,950 of its own shares, respectively, which were acquired on the open market for the share-based incentive plans (“Shares held for vesting”). During the year ended 31 December 2015 the trustees acquired on the open market 698,297 shares (2014: 1,750,886 shares) and vested to eligible employees 2,055,740 shares in July and 1,338,734 shares in November (in July and November 2014 2,006,218 shares and 1,343,514 shares vested, respectively). For the years ended 31 December 2015 and 31 December 2014, the Group recognised an additional employee expense of nil and USD 1 million in relation to the share based plans, respectively, with a corresponding change in equity.

(c) 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).

(d) 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 available-for-sale investments which have been recognised directly in other comprehensive income.

(e) Dividends

In accordance with the Companies (Jersey) Law 1991 (the “Law”), the Parent Company may make distributions at any time in such amounts as are determined by the Parent Company out of the assets of the Parent Company other than the capital redemption reserves and nominal capital accounts, provided that the directors of the Parent Company make a solvency statement in accordance with that Law of Jersey at the time the distributions are proposed.

Dividend pay-outs are restricted in accordance with the credit facility agreements, and require certain waivers from creditors which were received in due course as disclosed below.

During 2016, the Group declared interim dividends in the amount of USD 280 million, approved by VTB. Dividends in the total amount of USD 318 were distributed in cash including USD 60 million relating to 2015, which were accrued as a liability as at 31 December 2015. The amount of USD 22 million remained payable as at 31 December 2016.

During 2015, the Group declared interim dividends in the amount of USD 287 million, approved by VTB. Dividends in the total amount of USD 262 were distributed in cash including USD 35 million relating to 2014, which were accrued as a liability as at 31 December 2014. The amount of USD 60 million remained payable as at 31 December 2015.

During 2014, the Group declared interim dividends in the amount of USD 201 million, approved by VTB in September 2014. Dividends in the total amount of USD 203 were distributed in cash including USD 36 million relating to 2013, which were accrued as a liability as at 31 December 2013.

During 2016, 2015 and 2014 Group's subsidiaries paid dividends in the amount of USD 130 million, USD 149 million and USD 23 million to the non-controlling shareholders of subsidiaries, respectively.

(f) Accrual of provision for guarantees

During 2015 the Group paid USD 6 million to the bank under guarantee agreement in respect of loan obligations of entity under common control. The remaining amount of issued guarantees as at 31 December 2015 was USD 89 million (note 22(f)). Management of the Group assessed the probability to make a payment under these guarantees and recognised a provision for the whole amount directly in equity. During 2016 the Group paid additional USD 6 million under these guarantee and recorded this transaction as other distribution.

(g) 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 12(a)(i).

An independent valuation analysis of hydro assets has been carried out as at 1 January 2016 and 31 December 2016, the fair value of hydro assets was estimated at USD 2,230 million and USD 3,919 million, respectively (note 12(g)).

As a result of fair value valuation as at 1 January 2016 the Group recognised a revaluation reserve in the amount of USD 1,626 net of tax (including USD 1,183 million attributable to shareholders of the Parent company). During 2016, as a result of changes in effective interest in subsidiaries (note 12(g)), revaluation reserve attributable to the Parent company increased by USD 368 million, net of tax.

As at 31 December 2016 the Group revalued hydro assets (note 12(g)), as a result the additional revaluation reserve in the amount of USD 914 million (including USD 905 million attributable to shareholders of the Parent company), was recognised. As at 31 December 2016 the revaluation reserve amounted to USD 2,540 million (including 2,456 million attributable to shareholders of the Parent company).

(h) Non-controlling interest

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

31 December 2016

	UC RUSAL	Irkutskenergo Group*	LLC Baikal Yacht Club	PJSC Krasnoyarsk Hydro-Power Plant**	OJSC Irkutsk Electric Grid Company	Total
NCI percentage	**51.9%**	**9.2%**	**49.0%**	**0.0%*** **	**48.1%**	
Assets	13,968	3,829	1	1,995	533	
Liabilities	(11,153)	(2,123)	(29)	(324)	(159)	
Net assets	**2,815**	**1,706**	**(28)**	**1,671**	**374**	
Carrying amount of NCI	1,460	158	(14)	-	181	**1,785**
Revenue	7,983	2,006	-	72	280	
Profit/(loss)	1,179	199	(3)	48	20	
Other comprehensive income	979	898	-	907	-	
Total comprehensive income	**2,158**	**1,097**	**(3)**	**955**	**20**	
Profit attributable to NCI	612	50	(3)	4	9	**672**
Other comprehensive income attributable to NCI	508	471	(5)	72	35	**1,081**
						1,753
Cash flows generated from operating activities	1,244	381	-	12	77	
Cash flows (used in)/generated from investing activities	104	(376)	(1)	45	(49)	
Cash flows (used in)/generated from financing activities	(1,305)	(21)	1	(33)	(28)	
Net increase/(decrease) in cash and cash equivalents	**43**	**(16)**	**-**	**-**	**-**	
Dividends paid to NCI	**130**	**-**	**-**	**-**	**-**	**130**

* Net assets of Irkutskenergo Group were adjusted for the effect of Irkutskenergo investments in Irkutsk GridCo, Krasnoyarsk HPP and LLC KRAMZ.
** Net assets of Krasnoyarsk HPP segment were adjusted for investment in LLC KRAMZ.
*** Buyout notice resulted in the derecognition of the non-controlling interest of PJSC Krasnoyarskaya HPP (note 17(a)).

31 December 2015

	UC RUSAL	Irkutskenergo Group*	LLC Baikal Yacht Club	PJSC Krasnoyarsk Hydro-Power Plant	OJSC Irkutsk Electric Grid Company	Total
NCI percentage	**51.9%**	**47.2%**	**49.0%**	**7.4%**	**55.6%**	
Assets	12,325	1,696	-	508	432	
Liabilities	(11,418)	(1,236)	(21)	(80)	(139)	
Net assets	**907**	**460**	**(21)**	**428**	**293**	
Carrying amount of NCI	471	217	(10)	32	163	**873**
Revenue	8,680	2,063	-	222	284	
Profit/(loss)	558	206	(4)	169	24	
Other comprehensive income	(1,154)	(6)	-	-	-	
Total comprehensive income	**(596)**	**200**	**(4)**	**169**	**24**	
Profit attributable to NCI	290	97	(2)	16	13	**414**
Other comprehensive income attributable to NCI	(599)	(78)	3	(10)	(47)	**(731)**
						(317)
Cash flows generated from operating activities	1,568	382	-	123	79	
Cash flows (used in)/generated from investing activities	261	(365)	(2)	(169)	(61)	
Cash flows (used in)/generated from financing activities	(1,827)	(11)	-	25	(35)	
Net increase/(decrease) in cash and cash equivalents	**2**	**6**	**(2)**	**(21)**	**(17)**	
Dividends paid to NCI	**130**	**19**	**-**	**-**	**-**	**149**

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

31 December 2014

	UC RUSAL	Irkutskenergo Group*	LLC Baikal Yacht Club	PJSC Krasnoyarsk Hydro-Power Plant	OJSC Irkutsk Electric Grid Company	Total
NCI percentage	**51.9%**	**47.2%**	**49.0%**	**10.4%**	**55.6%**	
Assets	14,373	2,010	4	477	566	
Liabilities	(12,620)	(1,396)	(26)	(67)	(212)	
Net assets	**1,753**	**614**	**(22)**	**410**	**354**	
Carrying amount of NCI	910	290	(11)	43	197	**1,429**
Revenue	9,357	2,802	-	263	416	
Profit/(loss)	(71)	116	(4)	156	(64)	
Other comprehensive income	(4,222)	10	-	-	1	
Total comprehensive income	**(4,293)**	**126**	**(4)**	**156**	**(63)**	
Profit attributable to NCI	(37)	57	(2)	16	(36)	**(2)**
Other comprehensive income attributable to NCI	(2,190)	(234)	8	(45)	(147)	**(2,608)**
						(2,610)
Cash flows generated from operating activities	1,398	525	1	152	128	
Cash flows (used in)/generated from investing activities	514	(772)	(5)	(195)	(127)	
Cash flows (used in)/generated from financing activities	(1,900)	306	-	33	-	
Net increase/(decrease) in cash and cash equivalents	**12**	**59**	**(4)**	**(10)**	**1**	
Dividends paid to NCI	**-**	**23**	**-**	**-**	**-**	**23**

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

18. 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 21(c)(ii) and 21(c)(iii), respectively.

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Non-current liabilities			
Secured bank loans	9,812	8,012	8,734
Secured company loans	1,000	943	196
Unsecured bank loans	1,088	640	571
Unsecured company loans	-	9	12
Bonds	195	-	113
	12,095	**9,604**	**9,626**

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Current liabilities			
Current portion of secured bank loans	853	831	20
Current portion of secured company loans	50	100	-
Current portion of secured related company loans	-	-	154
	903	**931**	**174**
Secured bank loans	578	1,135	2,725
Unsecured bank loans	492	350	385
Secured related company loans	-	186	-
Unsecured related company loans	-	36	-
Accrued interest	136	65	56
Bonds	1	21	144
	1,207	**1,793**	**3,310**
	2,110	**2,724**	**3,484**

(a) Loans and borrowings

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Non-current liabilities			
Secured bank loans			
Variable			
USD – 1Y Libor + 5.45%	-	4,068	4,167
USD – 3M Libor + 2.80%	-	1,424	-
USD – 3M Libor + 3.15% - 3.75%	1,196	19	-
USD – 3M Libor + 4.15% - 4.50%	312	-	60
USD – 3M Libor + 5.65% - 5.75%	4,923	884	2,178
USD – 3M Libor + 6.50% - 6.90%	-	298	1,428
USD – 3M Libor + 5.05%	95	188	-
USD – 1M Libor + 5.50%	37	-	59
EUR – 3M Euribor + 2.80%	-	104	-
EUR – 3M Euribor + 3.60%	55	-	-
EUR – 3M Euribor + 5.75% - 6.50%	-	-	306
EUR – 3M Libor + 4.50% - 6.50%	43	73	-
EUR – 6M Euribor + 0.75% - 1.90%	6	2	3
EUR – Euribor + 1.80%	-	-	2
RUB – Mosprime + 4.00%	-	-	165
RUB – CBR + 1.50% - 2.00%	2,211	324	-
Fixed			
USD – fixed at 4.75%	-	100	-
USD – fixed at 6.00% - 8.5%	486	260	347
EUR – fixed at 3.55%	38	-	-
RUB - fixed at 5% - 18.00%	410	268	19
	9,812	**8,012**	**8,734**
Secured company loans			
Variable			
USD – 3M Libor + 4.95%	-	-	196
RUB - CBR + 2.31%	108	-	-
Fixed			
USD – fixed at 6.15%	892	-	-
USD – fixed at 9.33%	-	943	-
	1,000	**943**	**196**
Unsecured bank loans			
Variable			
USD – 3M Libor + 4.15% - 4,80%	300	-	-
USD – 3M Libor + 5.50%	-	100	-
RUB – CBR + 2.00%	241	-	-
Fixed			
RUB – fixed at 5.00%	5	7	-
RUB – fixed at 8.00%-20.00%	542	533	571
	1,088	**640**	**571**

	31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Unsecured company loans			
Fixed			
Other fixed	-	9	12
	-	**9**	**12**
Bonds	195	-	113
	12,095	**9,604**	**9,626**

Current liabilities

Current portion of secured bank loans			
Variable			
USD – 3M Libor + 2.80%	-	468	-
USD – 3M Libor + 3.60%	395	-	-
USD – 3M Libor + 4.50%	163	-	-
USD – 3M Libor + 5.05% - 5.65%	155	95	-
USD – 3M Libor + 6.50%	-	174	-
EUR – 3M Libor + 6.50%	-	37	-
EUR – 3M Euribor + 2.80%	-	34	-
EUR – 3M Euribor + 3.60%	28	-	-
EUR – 3M Euribor + 4.50%	28	-	-
EUR – 6M Euribor + 0.75% - 1.85%	1	-	-
USD – 1M Libor + 5.50%	22	-	7
RUB – Mosprime + 4.00%	-	-	13
RUB – CBR + 1.5% - 2.00%	21	3	-
Fixed			
USD – fixed at 6.00% - 8.50%	-	20	-
EUR – fixed at 3.55%	26	-	-
RUB – fixed at 10.50%	14	-	-
	853	**831**	**20**
Current portion of secured company loans			
Fixed			
USD – fixed at 6.15%	50	-	-
USD – fixed at 9.33%	-	100	-
	50	**100**	**-**
Current portion of secured related company loans			
Variable			
USD – 3M Libor + 4.95%	-	-	154
	-	**-**	**154**
Secured bank loans			
Variable			
USD – 1M Libor + 2.00% - 2.50%	123	-	-
USD – 1M Libor + 5.50%	-	63	-
USD – 3M Libor + 2.50% - 4.15%	64	-	86
RUB – LIBOR + 1.75%	-	-	1
USD - 2.50%+ cost of funds	95	19	-
USD - 3.35%+ cost of funds	-	-	3
EUR - 2.50%+ cost of funds	15	-	-
Fixed			
USD - fixed at 2.50% - 5.00%	273	195	-
USD - fixed at 6.90%	-	850	2,635
RUB - fixed at 12.00% - 16.70%	8	8	-
	578	**1,135**	**2,725**

	31 December		
	2016 USD million	**2015 USD million**	**2014 USD million**
Unsecured bank loans			
Variable			
EUR – EURIBOR 6M+1.75%-1.90%	-	2	-
RUB – Mosprime 3M +2.50%/ Mosprime (overnight) +0.40%	-	-	5
Fixed			
RUB - fixed at 8.00%-26.27%	492	248	380
USD - fixed at 4.30%	-	100	-
	492	**350**	**385**
Secured related company loans			
Variable			
USD – 3M Libor + 4.95%	-	186	-
	-	**186**	**-**
Unsecured related company loans			
Fixed			
USD - fixed at 14.00% - 14.20%	-	36	-
		36	**-**
Accrued interest	136	65	56
Bonds	1	21	144
	1,207	**1,793**	**3,310**
	2,110	**2,724**	**3,484**

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

	31 December		
	2016	**2015**	**2014**
	% of shares	**% of shares**	**% of shares**
United Company RUSAL Plc	29.99	29.99	29.99
PJSC Norilsk Nickel	27.8	27.8	27.8
JSC RUSAL Novokuznetsk	40+1 share	40+1 share	40+1 share
JSC SUAL	36+1 share	36+1 share	36+1 share
JSC RUSAL Sayanogorsk	50-1 share	50+2 shares	50+2 shares
OJSC RUSAL Bratsk	50-1 share	50+2 shares	50+2 shares
JSC RUSAL Krasnoyarsk	50-1 share	50+2 shares	65+2 shares
CJSC Khakas Aluminium Smelter	-	-	25+1share
Gershvin Investments Corp. Limited	100	100	100
Seledar Holding Corp Limited	100	100	100
Aktivium B.V.	100	100	100
JSC Eurosibenergo	50+2 shares	25+1 share	-
PJCS Krasnoyarsk Hydro-Power Plant	72.52	66.32	64.34
OJSC Irkutsk Electric Grid Company	33.27	33.27	33.27
PJCS Irkutskenergo	90.47	27.41	27.41
Skydrop	100	100	100
Thornstreet	100	100	100
LLC Sorsk Mining and Metallurgical Complex	100	100	100
LLC Sorsk Ferromolybdenum Plant	100	100	100

	31 December		
	2016	**2015**	**2014**
	% of shares	**% of shares**	**% of shares**
LLC Zhireken Ferromolybdenum Plant	100	100	100
OJSC Zhireken Mining and Metallurgical Complex	100	100	100
Strikeforce Mining and Resources (Geneva)	100	100	100
LLC Tyvinskaya Gornorudnaya Company*	100	100	100

*The pledge of LLC Tyvinskaya Gornorudnaya Company was released in February 2017.

The bank loans are also secured as at 31 December 2016, 31 December 2015, 31 December 2014 by the following:

- 47.84% shares of JSIC Ingosstrakh (the pledge was released in March 2017)
- rights, including all monies and claims, arising out of certain sales contracts between UC RUSAL's trading subsidiaries and ultimate customers, were assigned to secure the Combined PXF Facility dated 18 August 2014;
- export revenues of ferromolybdenum;
- properties, plant and equipment – refer to note 12(e);
- inventories – refer to note 15.

The Parent Company loan was also secured by pledge of 4.83% shares of Krasnoyarsk HPP owned by minority shareholder as at 31 December 2015 and 2014.

The agreement with Glencore AG was secured as at 31 December 2015 and 2014 by pledges of share of the following Group companies:

- 100% shares of Limerick Alumina Refining Limited
- 75% shares of Aughunish Alumina Limited

UC RUSAL

On 26 February 2014, UC RUSAL and Sberbank entered into an amendment agreement to the non-revolving credit facility agreement dated 1 December 2011 in order to increase the credit limit by RUB 2.4 billion from RUB 18.3 billion to RUB 20.7 billion to allow the Group to fulfil its obligations under the put option of Rouble bonds issued by OJSC RUSAL Bratsk (series 07), which was due for repayment on 3 March 2014.

In February 2014 UC RUSAL entered into a facility agreement with Glencore AG for a prepayment facility of up to USD 400 million for the supply of alumina from one of the Group's subsidiaries to Glencore AG for the period 2014-2016. Interest of 3M Libor + 4.95% and principal payable under the facility agreement will, to the extent such amounts are due, be offset against amounts due by Glencore AG under its alumina supply contract at USD40 per metric tonne for the first six months and USD 286 per metric tonne thereafter. The facility is to be repaid on or before 31 December 2016 in accordance with an agreed amortisation schedule which commenced on 30 September 2014.

In February 2014 UC RUSAL entered into a new credit facility of RUB 2 billion (USD 56 million) with Moscow Credit Bank with a maturity of 1 year and an interest rate of 10.4% p.a.

In March 2014 UC RUSAL refinanced its credit facilities with Gazprombank in the amount of USD 242.7 million and EUR 74.7 million. The facilities bear interest at 3M LIBOR + 6.5% and with a maturity date of 5 years from drawdown.

In August 2014 the PXF Amendments relating to the refinancing of USD 4.75 billion syndicated facility and USD 400 million multicurrency credit facility were signed and became effective. Pursuant to the PXF Amendments, the two PXF facilities are now combined into a single facility agreement such facility agreement comprising:

- Tranche A amounting to USD 2.56 billion is to be repaid in equal quarterly instalments starting from the 12 January 2016 with a final maturity date in December 2018.

Loans under tranche A bear interest at the rate of 3-month LIBOR plus margin (cash + PIK) based on Total Net Debt/EBIDTA ratio which is revised quarterly. Interest is to be paid quarterly.

Leverage Ratio Cash Margin	
Greater than 4.5:1	4.50 percent per annum
Greater than 4:1 but less than or equal to 4.5:1	4.25 percent per annum
Greater than 3.5:1 but less than or equal to 4:1	4.00 percent per annum
Greater than 3:1 but less than or equal to 3.5:1	3.60 percent per annum
Less than or equal to 3:1	2.80 percent per annum

Leverage Ratio PIK Margin	
Greater than 5:1	1.25 percent per annum
Greater than 4.5:1 but less than or equal to 5:1	0.80 percent per annum
Greater than 4:1 but less than or equal to 4.5:1	0.50 percent per annum
Greater than 3.5:1 but less than or equal to 4:1	0.25 percent per annum
Less than or equal to 3.5:1	0 percent per annum

- A second tranche which is comprised of the refinanced tranche B under the 2011 PXF Facility Agreement amounting to USD 1 billion is to be repaid in quarterly instalments commencing from 30 January 2017 with a final maturity date in December 2020. The first eight instalments will be in the amount of USD 31.25 million and the remaining eight instalments will be in the amount of USD 93.75 million. Loans under this second tranche will bear interest at a rate of 3-month LIBOR plus 5.65% per annum plus a PIK Margin determined in line with Tranche A and such amounts will be paid quarterly.

The relevant amendments to credit facilities with Sberbank) in line with the PXF Amendments were executed on 25 August 2014 (the "Sberbank Amendment Agreements"). According to Sberbank Amendment Agreements entered into between the Company as borrower and Sberbank, the maturity of the bilateral facility agreements with Sberbank (including: (a) a credit facility agreement dated 30 September 2010 for the amount of USD 4,583 million, (b) credit facility agreement dated 30 September 2011 for the amount of USD 453 million; (c) a non-revolving credit facility agreement dated 1 December 2011 for the amount of RUB 20.7 billion) was extended by no more than 84 months from the date of execution of Sberbank Amendment Agreements. The repayments to be made thereunder will be made quarterly in equal instalments during the sixth and seventh years from the date of the execution of the relevant Sberbank Amendment Agreement.

During 2014 the Group made a scheduled repayment of principal under the USD 4.75 billion syndicated facility in the amount of USD 203 million. Additional principal repayments in total amount USD 332 million, RUB 815 million (USD 15 million) and EUR 23 million (USD 28 million) were made under the USD 4.75 billion syndicated facility and USD 400 million multicurrency credit facility, credit facilities with Sberbank and Gazprombank as prepayments.

In October 2015 UC RUSAL entered into a new credit facility of USD 100 million with OJSC Credit Bank of Moscow with a maturity up to 1 year and an interest rate of 4.30% p.a.

In December 2015 UC RUSAL entered into a new credit facility of USD 100 million with PJSC SovcomBank with a maturity of 3 year and an interest rate of 3MLibor + 5.5% p.a.

In December 2015 UC RUSAL through its subsidiaries entered into the REPO transaction backed by bonds issued by RUSAL Bratsk – in number of 6,500,000 series 08 bonds and 2,865,475 series 07 bonds. As result of the transactions UC RUSAL raised funding in the amount of USD 100 million with fifteen months maturity at a rate of 4.75% p.a.

During 2015 UC RUSAL made a principal repayment in total amounts of USD 590 million, RUB 777 million (USD 14 million) and EUR 25 million (USD 29 million) under the USD 4.75 billion syndicated facility and USD 400 million multicurrency credit facility, credit facilities with Sberbank, Gazprombank and VTB Capital, including prepayments via cash sweep in total amount of USD 309 million, RUB 777 million (USD 14 million) and EUR 10 million (USD 12 million).

On 26 April 2016 UC RUSAL entered into an amendment and restatement agreement with the lenders under the Combined PXF Facility dated 18 August 2014 to introduce new refinancing tranches under the Combined PXF Facility dated 18 August 2014. On 29 April 2016 the Group prepaid three scheduled repayment instalments falling due in 2016 under the Combined PXF Facility dated 18 August 2014 and amended 26 April 2016 in the total amount of USD 524 million, utilising USD 415 million of available commitments under the new refinancing tranches as well as USD 109 million of the UC RUSAL's own funds.

In September 2016 UC RUSAL entered into a new credit facility of USD200 million with JSC Credit Bank of Moscow with a maturity 3 years and an interest rate of 3M Libor + 4.15% p.a.

In October 2016 UC RUSAL entered into new credit facilities with Gazprombank for the total amount of USD 178 million with maturity 4 years and interest rate 3M Libor + 4.5%.

During 2016 UC RUSAL made a principal repayment in total amounts of USD 1,139 million and EUR84 million (USD 93 million) under the Combined PXF Facility, credit facilities with Gazprombank, VTB Capital and Credit Bank of Moscow.

On 23 January 2017 UC RUSAL made a principal prepayment in total amounts of USD 292 million and EUR 17 million (USD 18 million) under the Combined PXF Facility of amounts due in 2017.

The nominal value of UC RUSAL's loans and borrowings was USD 8,852 million at 31 December 2016 (31 December 2015: USD 9,011 million, 31 December 2014: USD 9,346 million).

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(i) Parent company

As at 31 December 2013 the Parent Company had a loan from VTB Capital plc (the "Facility Agreement") in the amount of USD 1,043 million secured by the pledge of 29.99% shares of UC RUSAL and maturing on 31 January 2015.

In December 2014 19.17% shares of PJSC Krasnoyarsk HPP were pledged as an additional security under the Facility Agreement.

During January - June 2015 the Parent Company entered into several amendments to the loan extending maturity date to 30 August 2015 from 31 January 2015.

In August 2015 the Parent Company entered into the USD 1,043 million loan agreement ("Loan") with GrandStroy LLC (Lender) bearing fixed interest of 9.33% which replaced the Facility Agreement. Simultaneously, the Parent Company provided corporate guarantee ("Guarantee") in favour of PJSC VTB BANK (VTB) securing the obligations of the Lender under USD 1,043 million facility agreement ("VTB Facility"). The Guarantee was secured by the pledges of 29.99% shares of UC RUSAL, 25.00% +1 shares of JSC Eurosibenergo and 16.32% shares of Krasnoyarsk HPP. The pledges of shares of JSC Eurosibenergo and Krasnoyarsk HPP, which represent the security under the Guarantee, are also used to secure the VTB Facility. The Guarantee contains certain covenants that put restrictions on the Group's investing and financing activities.

The Loan and the VTB Facility were to be repaid in December 2019 in accordance with an agreed repayment schedule which commenced in December 2015.

Repayment date	**Repayment instalments USD million**
20 December 2015	50
20 December 2016	50
20 December 2017	50
20 December 2019	893
	1,043

The maturity date can be extended to December 2021 by mutual agreement of the parties.

In December 2015 the Parent Company entered into an amendment to the Loan extending repayment date of the first instalment to 20 March 2016, then in March 2016 to 20 June 2016 and reduction of the fixed interest to 7.66% p. a. from 20 March 2016.

In June 2016 the Parent Company entered into amendment to the Loan converting USD 55 million into RUB 3,500 million payable on 20 December 2019. The interest rate on the converted amount is at the Bank of Russia Key Rate plus 2.31% p.a.

In September 2016 the Parent Company entered into amendment to the Loan implementing new interest rate of 6.65% p.a. on the US dollar part of the Loan.

In December 2016 the Parent Company entered into amendment to the Loan implementing new interest rate of 6.15% p.a. on the US dollar part of the Loan and converting USD 46 million into RUB 2,818 million payable on 20 December 2019. The interest rate on the converted amount is at the Bank of Russia Key Rate plus 2.31% p.a.

During 2016 the pledge of Krasnoyarsk HPP under the VTB Facility and the Guarantee was increased to 24%. In December 2016 pledge of 1.48% of Krasnoyarsk HPP was released and then pledged again in January 2017.

As at 31 December 2016 USD-denominated part of Loan was USD 942 million bearing 6.15% interest rate and RUB-denominated part of Loan was USD 108 million (RUB 6,540 million) bearing Bank of Russia Key Rate plus 2.31% p.a.

As at 31 December 2016 the outstanding amount under the Guarantee was USD 942 million bearing interest 6% p.a.

In January 2017 the Lender was acquired by the Parent Company's wholly owned subsidiary (see note 25(c)).

(ii) Sberbank facilities of Eurosibenergo

The Eurosibenergo has secured USD-denominated and RUB-denominated loans with Sberbank.

In August 2014 Eurosibenergo entered into a new RUB-denominated credit facility of USD 178 million (RUB 10 billion) payable until August 2015 and bearing interest not more than 12% p.a.

As at 31 December 2014 Eurosibenergo had a USD-denominated loan of USD 1,410 million ("USD Loan 1") million bearing 7.14% effective interest.

In March 2015 Eurosibenergo received a loan from Sberbank in the amount of USD 141 million to refinance the USD Loan 1.

In June 2015 Sberbank opened two credit lines: RUB-denominated credit line with the limit of RUB 87,550 million bearing interest rate of Central Bank of Russia key rate+1.5% per annum and USD-denominated credit line with the limit in the amount of USD 1,410 million ("USD Loan 2") bearing interest rate of 8.5% per annum. Both credit lines are payable until June 2020 according to the agreed schedule.

During 2015 Eurosibenergo received from Sberbank the amount of RUB 25,055 million under the RUB-denominated credit line of RUB 87,550 million and USD 282 million under the USD Loan 2 which was used to settle the loan of RUB 10,000 million, the loan of USD 141 million and part of the USD Loan 1.

As the result at 31 December 2015 Eurosibenergo outstanding amount under the Loan 1 was USD 850 million bearing 7.14% effective interest and under the Loan 2 was USD 282 million bearing 9.6% effective interest and RUB-denominated loan was amounted to USD 328 million (RUB 23,885 million) bearing 13.8% effective interest.

In March 2016 Eurosibenergo totally refinanced the USD Loan 1 using the USD Loan 2.

During 2016 Eurosibenergo partly refinanced USD Loan 2 using opened RUB-denominated credit line which resulted in the increase of RUB-denominated loan by USD 618 million (RUB 41,418 million at average 2016 annual rate).

As at 31 December 2016 Eurosibenergo had RUB-denominated loan in the amount of USD 1,077 million (RUB 65,303 million) bearing 12.5% effective interest and USD Loan 2 in the amount of USD 488 million bearing 7.4% effective interest.

The terms of the above loans require Eurosibenergo to maintain a certain Net Debt/EBITDA ratio, calculated quarterly based on the Russian statutory accounting records of the certain Group's subsidiaries. The covenants were breached as at 31 December 2014 and in April 2015 the bank waived the covenant testing on 31 December 2014 and 31 March 2015. As a result, a loan in the amount of USD 764 million was reclassified as short-term as at 31 December 2014.

(iii) Syndicate facilities

In June 2016 Telmamskaya HPP LLC entered into the syndicate loan agreement with Sberbank and VTB to finance the acquisition of non-controlling interest in Irkutskenergo (note 17(a)). Total amount of opened credit line is USD 1,257 million (RUB 84,000 million). The loan is payable until June 2023 and bears Central Bank of Russia rate+2%. As at 31 December 2016 the outstanding amount of this loan was USD 1,065 million (RUB 64,618 million). The remaining tranches will be received according to the payment schedule for acquisition of non-controlling interest in Irkutskenergo (note 17(a)).

In November 2016 this credit line was extended by USD 171 million (RUB 10,950 million at exchange rate on drawdown date) to finance an acquisition of dams from the third party (note 12). The extended credit line is payable by two tranches until November 2021, bearing Central Bank of Russia rate+2% and 10.5%, respectively.

As at 31 December 2016 the loan is secured by the following pledges of shares:

- 63.06% shares of PJSC Irkutskenergo;
- 100% shares of Telmamskaya HPP LLC;
- 25%+1 shares of JSC Eurosibenergo;

Subsequent to the reporting date the above pledges were revised (note 25(b)).

The nominal value of En+ loans and borrowings was USD 5,204 million at 31 December 2016 (31 December 2015: USD 3,420 million and 31 December 2014: USD 3,698 million).

(b) **Bonds**

On 3 March and 18 April 2011, the Company's subsidiary RUSAL Bratsk issued two tranches of rouble denominated bonds, each including 15 million bonds, with a par value of 1,000 roubles each, trading on MICEX. Maturity of the first tranche is seven years subject to a put option exercisable in March 2014. Maturity of the second tranche is ten years subject to a put option exercisable in April 2015.

Simultaneously, UC RUSAL entered into cross-currency swaps with an unrelated financial institution in relation to each tranche whereby the first tranche with semi-annual coupon payments of 8.3% p.a. was transformed into a USD obligation with a matching maturity of USD 530 million bearing interest at 5.13% p.a. and the second tranche with semi-annual coupon payments of 8.5% p.a. was transformed into a USD obligation with a matching maturity of USD 533 million bearing interest at 5.09% p. a. The proceeds of the bond issues were used for repayment of part of the Group's outstanding debts.

On 25 February 2014 RUSAL Bratsk entered into a bond sale agreement for the purpose of selling up to 5,000,000 (five million) series 07 bonds which were expected to be bought back on a bondholders' put-option realisation date scheduled for 3 March 2014. The selling price under the terms of bonds sale agreement was RUB 998.356, or 99.8356% of the par value of each bond. Simultaneously United Company RUSAL Aluminium Limited entered into a put-option transaction which may be exercised for up to 5,000,000 (five million) series 07 bonds at a strike price which will be a function of the announced coupon rate, purchase price, tenor and the expected yield of the transaction, and is exercisable on 22 February 2016. At the Company's request this transaction was early terminated in full and settled on 30 June 2015.

On 26 February 2014 cross-currency swap in relation to the first tranche expired.

On 21 February 2014 RUSAL Bratsk announced a coupon rate in respect to the series 07 bond issue at the level of 12% per annum for the 7-10 semi-annual coupon periods after which the series 07 bonds will be subject to a put option and coupon rate revision.

On 3 March 2014 RUSAL Bratsk successfully performed its obligations under the terms of bondholders' put-option. As a result of the put-option being exercised 10,947,149 series 07 bonds (about 73% of the issue) were purchased back by the issuer.

On 6 April 2015 RUSAL Bratsk announced a coupon rate in respect to the series 08 bonds at the level of 12% per annum for the 9-12 semi-annual coupon periods after which the series 08 bonds will be subject to a put option and coupon rate revision.

On 13 April 2015 cross-currency swap in relation to the second tranche expired.

On 15 April 2015 RUSAL Bratsk fulfilled its obligations under a bondholders' put option in regard to the series 08 bonds. 8,067,213 bonds were repurchased from bondholders at the bondholders' request.

As at 31 December 2015 1,482,559 series 07 bonds and 53,680 series 08 bonds were outstanding (traded in the market). The closing market price at 31 December 2015 was RUB 999.80 and RUB 1,000 per bond for the first and second tranches, respectively.

On 19 April 2016, placement of the exchange-traded rouble bonds of OJSC RUSAL Bratsk series BO-01 (in the amount of RUB 10 billion) has been completed and the exchange-traded rouble bonds have commenced trading on the Moscow Exchange. Maturity of the bonds is ten years subject to a put option exercisable in three years.

As at 31 December 2016 3,433,414 series 07 bonds, 53,680 series 08 bonds and 8,396,000 series BO-01 bonds were outstanding (traded in the market).

The closing market price at 31 December 2016 was RUB 1,022, RUB 1,007, RUB 1,027 per bond for the first, second and the third tranches, respectively.

19. 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 the statement of income. 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) Restructuring

A provision for restructuring is recognised when the Group has approved a detailed and formal restructuring plan, and the restructuring either has commenced or has been announced publicly. Future operating costs are not provided for.

(iii) 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.

(iv) Guarantee

Where the Group enters into financial guarantee contracts to guarantee the indebtedness of other companies, controlled by the beneficial shareholder of the Group, 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.

(b) Disclosure

USD million	**Pension liabilities**	**Site restora-tion**	**Provisions for legal claims**	**Tax provisions**	**Provision for guarantee**	**Total**
Balance at 1 January 2014	**185**	**623**	**12**	**68**	**100**	**988**
Provisions made during the year	18	20	33	-	-	71
Provisions reversed during the year	-	(1)	(3)	-		(4)
Actuarial gains and losses	(24)	-	-	-	-	(24)
Provisions used during the year	(15)	(7)	-	(3)	-	(25)
Change in estimates	-	(26)	-	-	-	(26)
Translation difference	(69)	(172)	(9)	-	-	(250)
Balance at 31 December 2014	**95**	**437**	**33**	**65**	**100**	**730**
Non-current	86	411	-	35	61	593
Current	9	26	33	30	39	137
Provisions made during the year	(2)	42	15	-	89	144
Provisions reversed during the year	-	-	(26)	-	-	(26)
Actuarial gains and losses	3	-	-	-	-	3
Provisions used during the year	(9)	(1)	(8)	(11)	-	(29)
Change in estimates	-	3	-	-	-	3
Translation difference	(3)	(62)	(1)	(12)	-	(78)
Balance at 31 December 2015	**84**	**419**	**13**	**42**	**189**	**747**
Non-current	77	400	-	35	138	650
Current	7	19	13	7	51	97
Provisions made during the year	11	30	5	-	-	46
Provisions reversed during the year	-	-	(1)	-	(100)	(101)
Actuarial gains and losses	2	-	-	-	-	2
Provisions used during the year	(7)	(2)	(12)	(17)	-	(38)
Disposal of subsidiary	-	(22)	-	-	-	(22)
Change in estimates	-	(1)	-	-	-	(1)
Translation difference	10	19	1	-	19	49
Balance at 31 December 2016	**100**	**443**	**6**	**25**	**108**	**682**
Non-current	92	422	-	6	98	618
Current	8	21	6	19	10	64
	100	**443**	**6**	**25**	**108**	**682**

(c) **Pension liabilities**

As at 31 December 2016 the pension liability is represented by UC RUSAL USD 57 million (31 December 2015: USD 52 million, 31 December 2014: USD 63 million) and EN+ USD 43 million (31 December 2015: USD 32 million, 31 December 2014: USD 32 million).

The provision for pensions mainly comprises lump sum payments at retirement by aluminium plants located in Russia and Ukraine, and by electricity generating company 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

Subsidiaries in the Russian Federation

UC RUSAL 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. UC RUSAL finances these programs on a pay-as-you-go basis, so plan assets are equal to nil.

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 nil.

Subsidiaries outside the Russian Federation and Ukraine

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

At its Guyana subsidiary, UC RUSAL 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), UC RUSAL 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.

All pension plans of UC RUSAL are unfunded.

The number of employees eligible for the plans as at 31 December 2016, 31 December 2015 and 2014 was 56,611, 57,501 and 56,750, respectively. The number of pensioners as at 31 December 2016, 31 December 2015 and 2014 was 45,915, 46,626 and 48,414, respectively.

The UC RUSAL expects to pay under the defined benefit retirement plans an amount of USD 5 million during the 12 month period beginning on 1 January 2017.

Actuarial valuation of pension liabilities

The actuarial valuation of UC RUSAL and the portion of UC RUSAL funds specifically designated for the UC RUSAL's employees were completed by a qualified actuary, Robert van Leeuwen AAG, as at 31 December 2016, using the projected unit credit method as stipulated by IAS 19.

The key actuarial assumptions (weighted average, weighted by defined benefit obligations) are as follows:

	31 December 2016	**31 December 2015**	**31 December 2014**
	% per annum	% per annum	% per annum
Discount rate	8.0	8.9	11.7
Future salary increases	7.7	7.9	8.8
Future pension increases	4.3	3.3	7.0

As at 31 December 2016, 31 December 2015 and 31 December 2014 the Group's obligations were fully uncovered.

EN+

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

	31 December 2016	**31 December 2015**	**31 December 2014**
	USD million	**USD million**	**USD million**
Discount rate	8.3%	9.6%	13.0%
Future salary increase	6.5%	7.2%	9.5%
Pension and inflation rate increase	5%	5.7%	7.0%

(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 recorded in these consolidated financial statements 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 2016	**31 December 2015**	**31 December 2014**
Timing of cash outflows	2017: USD 20 million	2016: USD 15 million	2015: USD 27 million
	2018-2022: USD 263 million	2017-2021: USD 228 million	2016-2020: USD 244 million
	2023-2033: USD 113 million	2022-2032: USD 147 million	2021-2031: USD 197 million
	after 2033: USD 158 million	after 2032: USD 131 million	after 2031: USD 123 million
Years required to fill the ash dumps	17.4	17.5	15.4
Discount rate for Irkutskenergo	4.9%	5.12%	8.69%
Discount rate for Coal segment assets	4.9%	5.12%	8.69%
Risk free discount rate for UC RUSAL after adjusting for inflation	2.01%	1.75%	2.63%

The risk free rate for the year 2016-2014 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 2016, 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 USD 6 million of probable outflow related to these claims (31 December 2015: USD 13 million, 31 December 2014: USD 33 million, including provision for operating dam lease (note 22(d)). The amount of claims, where management assesses outflow as possible approximates USD 60 million (31 December 2015: USD 38 million, 31 December 2014: USD 111 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

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

(g) Provision for guarantees

In September 2013 the Group entered into an agreement with OJSC 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 2016, 2015 and 2014 USD 277 million, USD 231 million and

USD 299 million, respectively) and is split between the Group and OJSC RusHydro in equal proportion.

During 2016 USD 100 million of provision previously recognised was reversed due to fact that maturity of the initial loan agreement between BoAZ and VEB was extended from 2027 to 2030 accordingly shifting the date principal repayments commence and the fact that BoGES will continue to support BoAZ in settling its liabilities under the credit facility including principal and interest repayments.

In 2015 the Group recognised a provision in the amount of RUB 6.5 billion (31 December 2016 and 2015 USD 108 million and USD 89 million, respectively) for a guarantee issued in favour of the bank in respect of certain loan obligations of several borrowers directly in equity (notes 22(f), 17(f)).

20. Derivative financial assets and liabilities

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 the statement of income 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 the statement of 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 the consolidated statement of income.

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 the statement of income 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 the consolidated statement of income.

Changes in the fair value of separated embedded derivatives and derivative financial instruments not designated for hedge accounting are recognised immediately in the consolidated statement of comprehensive income.

	31 December 2016		**31 December 2015**		**31 December 2014**	
	USD million		**USD million**		**USD million**	
	Derivative assets	**Derivative liabilities**	**Derivative assets**	**Derivative liabilities**	**Derivative assets**	**Derivative liabilities**
Cross-currency swaps	-	-	-	370	-	446
Petroleum coke supply contracts and other raw materials	62	5	109	-	45	-
Interest rate swaps	-	-	-	40	-	30
Cross-currency option on loan	-	-	-	-	-	166
Forward contracts for aluminium and other instruments	5	30	12	11	17	26
Total	**67**	**35**	**121**	**421**	**62**	**668**
Non-current	51	3	71	-	30	350
Current	16	32	50	421	32	318
	67	**35**	**121**	**421**	**62**	**668**

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

		31 December	
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Balance at the beginning of the period	(300)	(606)	(308)
Unrealised changes in fair value recognised in other comprehensive income (cash flow hedge) during the period	36	144	(327)
Unrealised changes in fair value recognised in profit or loss (finance costs) during the period	(157)	(352)	(467)
Realised portion during the period	453	514	496
Balance at the end of the period	**32**	**(300)**	**(606)**

During the year 2016 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.

Cross-currency option

On 16 December 2013 the Group entered into a credit facility up to RUB 15 billion with VTB Capital Plc with a maturity of 5 years and an interest rate of 3M Mosprime + 4.0% and drew down RUB 10.1 billion (USD 309 million) on 17 December 2013. The credit facility includes an option which may be exercised by the bank two years from the date of entering into the credit facility to convert the credit facility to USD with a 3M LIBOR + 5.05% interest rate. On 17 December 2015 the option was exercised by VTB Capital.

Cross-currency swaps

During the year ended 31 December 2011, the Group entered into cross-currency swaps to transform the two tranches of its rouble bonds into USD obligations of USD 530 million and USD 533 million, respectively (refer to note 18(b)). The terms of the swaps were 3 and 4 years, respectively. In February 2012 – August 2013 the Group entered into cross-currency swaps to convert RUB 18.3 billion of 5 year rouble denominated credit facility into a USD denominated liability of USD 598 million.

At 31 December 2014 the Group recognised a loss on part of the instruments as they were considered ineffective. The reasons for this were partial buy-back of bonds in relation to the second tranche, and change of maturity date for RUB 18.3 billion facility as a result of refinancing.

Cross-currency swaps matured in November 2016 and were settled in full.

Petroleum coke supply contracts and other raw materials

In November 2015, the Group entered into long-term pitch supply contract 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.

In May 2014, the Group entered into long-term petroleum coke supply contract 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 quotations for US, Europe and Japan are set at USD 403.956 per tonne, USD 313.3 per tonne and USD 366.0 per tonne, respectively.

In May and September 2011, the Group 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 2,497.72 per tonne, respectively, while the strike price for oil is set at USD 61.10 per barrel and USD 111.89 per barrel, respectively.

The following significant assumptions were used in estimating derivative instruments:

	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
LME Al Cash, USD per tonne	1,699	1,725	1,758	1,800	1,854	1,907	1,955	2,003	2,045
Platt's FOB Brent, USD per barrel	58	58	58	-	-	-	-	-	-

21. 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, 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 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 2016

		Carrying amount					Fair value			
	Note	Designated at fair value	Fair value - hedging instrument	Loans and receivables	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	USD million
Financial assets measured at fair value										
Petroleum coke supply contracts and other raw materials	20	62	-	-	-	62	-	-	62	62
Forward contracts for aluminium and other instruments	20	5	-	-	-	5	-	-	5	5
		67	**-**	**-**	**-**	**67**	**-**	**-**	**67**	**67**
Financial assets not measured at fair value*										
Trade and other receivables	16(b)	-	-	1,398	-	1,398	-	1,398	-	1,398
Cash and cash equivalents	16(d)	-	-	669	-	669	-	669	-	669
		-	**-**	**2,067**	**-**	**2,067**	**-**	**2,067**	**-**	**2,067**
Financial liabilities measured at fair value										
Petroleum coke supply contracts and other raw materials	20	(5)	-	-	-	(5)	-	-	(5)	(5)
Forward contracts for aluminium and other instruments	20	(30)	-	-	-	(30)	-	-	(30)	(30)
		(35)	**-**	**-**	**-**	**(35)**	**-**	**-**	**(35)**	**(35)**
Financial liabilities not measured at fair value*										
Loans and borrowings	18(a)	-	-	-	(14,009)	(14,009)	-	(14,311)	-	(14,311)
Unsecured bond issue	18(b)	-	-	-	(196)	(196)	(208)	-	-	(208)
Trade and other payables	16(c)	-	-	-	(1,307)	(1,307)	-	(1,307)	-	(1,307)
		-	**-**	**-**	**(15,512)**	**(15,512)**	**(208)**	**(15,618)**	**-**	**(15,826)**

***** The Group has not disclosed the fair values for financial instruments such as short-term trade receivables and payables, because their carrying amounts are a reasonable approximation of fair values.

As at 31 December 2015

		Carrying amount					Fair value			
	Note	**Designated at fair value**	**Fair value - hedging instrument**	**Loans and receivables**	**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**	**USD million**
Financial assets measured at fair value										
Petroleum coke supply contracts and other raw materials	20	109	-	-	-	109	-	-	109	109
Forward contracts for aluminium and other instruments	20	12	-	-	-	12	-	-	12	12
		121	**-**	**-**	**-**	**121**	**-**	**-**	**121**	**121**
Financial assets not measured at fair value*										
Trade and other receivables	16(b)	-	-	969	-	969	-	969	-	969
Cash and cash equivalents	16(d)	-	-	591	-	591	-	591	-	591
		-	**-**	**1,560**	**-**	**1,560**	**-**	**1,560**	**-**	**1,560**
Financial liabilities measured at fair value										
Cross-currency swaps	20	(370)	-	-	-	(370)	-	-	(370)	(370)
Interest rate swaps	20	(40)	-	-	-	(40)	-	-	(40)	(40)
Forward contracts for aluminium and other instruments	20	(11)	-	-	-	(11)	-	-	(11)	(11)
	20	**(421)**	**-**	**-**	**-**	**(421)**	**-**	**-**	**(421)**	**(421)**
Financial liabilities not measured at fair value*										
Loans and borrowings	18(a)	-	-	-	(12,307)	(12,307)	-	(12,356)	-	(12,356)
Unsecured bond issue	18(b)	-	-	-	(21)	(21)	(21)	-	-	(21)
Trade and other payables	16(c)	-	-	-	(927)	(927)	-	(927)	-	(927)
		-	**-**	**-**	**(13,255)**	**(13,255)**	**(21)**	**(13,283)**	**-**	**(13,304)**

***** The Group has not disclosed the fair values for financial instruments such as short-term trade receivables and payables, because their carrying amounts are a reasonable approximation of fair values.

As at 31 December 2014

		Carrying amount					Fair value			
	Note	Designated at fair value	Fair value - hedging instrument	Loans and receivables	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	USD million
Financial assets measured at fair value										
Petroleum coke supply contracts and other raw materials	20	45	-	-	-	45	-	-	45	45
Forward contracts for aluminium and other instruments	20	17	-	-	-	17	-	-	17	17
		62	**-**	**-**	**-**	**62**	**-**	**-**	**62**	**62**
Financial assets not measured at fair value*										
Trade and other receivables	16(b)	-	-	763	-	763	-	763	-	763
Cash and cash equivalents	16(d)	-	-	710	-	710	-	710	-	710
		-	**-**	**1,473**	**-**	**1,473**	**-**	**1,473**	**-**	**1,473**
Financial liabilities measured at fair value										
Cross-currency swaps	20	-	(446)	-	-	(446)	-	-	(446)	(446)
Interest rate swaps	20	-	(30)	-	-	(30)	-	-	(30)	(30)
Cross-currency option	20	-	(166)	-	-	(166)	-	-	(166)	(166)
Forward contracts for aluminium and other instruments	20	(26)	-	-	-	(26)	-	-	(26)	(26)
		(26)	**(642)**	**-**	**-**	**(668)**	**-**	**-**	**(668)**	**(668)**
Financial liabilities not measured at fair value*										
Loans and borrowings	18(a)	-	-	-	(12,853)	(12,853)	-	(12,307)	-	(12,307)
Unsecured bond issue	18(b)	-	-	-	(257)	(257)	(258)	-	-	(258)
Trade and other payables	16(c)	-	-	-	(1,149)	(1,149)	-	(1,149)	-	(1,149)
		-	**-**	**-**	**(14,259)**	**(14,259)**	**(258)**	**(13,456)**	**-**	**(13,714)**

***** The Group has not disclosed the fair values for financial instruments such as short-term trade receivables and payables, because their carrying amounts 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 2016, 2015 and 2014, the Group has entered into certain commodity derivatives contracts in order to manage its exposure of commodity price risks. Details of the contracts are disclosed in note 20.

The tariffs for electricity, heat and transmission services applied by the Group’s significant subsidiaries are currently partially restraint by the 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 increased its internal coal production through acquisition of coal mines and licences in the Eastern Siberia region. The Group aims at self-sufficiency in coal in the next several years.

(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 18). 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 2016		31 December 2015		31 December 2014	
	Effective interest rate %	**USD million**	**Effective interest rate %**	**USD million**	**Effective interest rate %**	**USD million**
Fixed rate loans and borrowings						
Loans and borrowings	2.5%-15.1%	3,236	2.5% - 26.27%	3,677	6.90% - 26.27%	3,964
		3,236		**3,677**		**3,964**
Variable rate loans and borrowings						
Loans and borrowings	0.53% - 12.31%	10,639	1.70% - 7.63%	8,565	1.70% - 6.90%	8,833
		10,639		**8,565**		**8,833**
		13,873		**12,242**		**12,797**

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 2016			
Basis percentage points	+100	(106)	(85)
Basis percentage points	-100	106	85
As at 31 December 2015			
Basis percentage points	+100	(86)	(69)
Basis percentage points	-100	86	69
As at 31 December 2014			
Basis percentage points	+100	(88)	(71)
Basis percentage points	-100	88	71

(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.

At 31 December 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**		
	2016	**2015**	**2014**	**2016**	**2015**	**2014**	**2016**	**2015**	**2014**	**2016**	**2015**	**2014**
Non-current assets	-	-	-	3	4	4	3	-	-	1	1	31
Derivative financial assets	-	-	-	59	73	45	-	-	-	-	-	-
Trade and other receivables	-	-	-	324	297	202	44	30	37	18	15	16
Cash and cash equivalents	1	-	-	49	64	306	86	37	17	18	16	22
Loans and borrowings	(682)	(1,381)	(1,657)	(329)	(267)	(525)	(232)	(254)	(306)	-	-	-
Provisions	-	-	-	(71)	(70)	(75)	(33)	(33)	(30)	(15)	(19)	(16)
Derivative financial liabilities	-	-	-	(5)	-	(1)	-	-	-	-	-	-
Income taxation	-	-	-	(60)	(1)	(12)	-	(1)	(1)	-	(7)	(7)
Non-current liabilities	-	-	-	(9)	-	-	(8)	-	-	-	-	-
Trade and other payables	(2)	(5)	(2)	(440)	(254)	(314)	(41)	(23)	(42)	(57)	(63)	(69)
Net exposure arising from recognised assets and liabilities	**(683)**	**(1,386)**	**(1,659)**	**(479)**	**(154)**	**(370)**	**(181)**	**(244)**	**(325)**	**(35)**	**(57)**	**(23)**

Foreign currency sensitivity analysis

The following tables indicate the instantaneous 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 2016		
		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%	10	5
Depreciation of USD vs. EUR	5%	(9)	(9)
Depreciation of USD vs. other currencies	5%	(2)	(2)

	Year ended 31 December 2015		
		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%	62	50
Depreciation of USD vs. EUR	5%	(12)	(12)
Depreciation of USD vs. other currencies	5%	(3)	(3)

	Year ended 31 December 2014		
		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%	65	52
Depreciation of USD vs. EUR	5%	(16)	(16)
Depreciation of USD vs. other currencies	5%	(1)	(1)

Results of the analysis as presented in the above tables represent an aggregation of the instantaneous 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 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 2016 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	1,226	-	-	-	1,226	1,226
Trade and other payables to related parties	55	-	-	-	55	55
Bonds, including interest payable	26	225	-	-	251	196
Loans and borrowings, including interest payable	2,936	3,215	10,885	842	17,877	14,009
	4,243	**3,440**	**10,885**	**842**	**19,409**	**15.486**
Financial guarantees issued: Maximum amount guaranteed	106	113	77	-	296	108

	31 December 2015 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	793	-	-	-	793	793
Trade and other payables to related parties	121	-	-	-	121	121
Bonds, including interest payable	21	-	-	-	21	21
Loans and borrowings, including interest payable	3,331	2,083	7,702	2,147	15,263	12,307
	4,266	**2,083**	**7,702**	**2,147**	**16,198**	**13,242**
Financial guarantees issued: Maximum amount guaranteed	81	111	145	-	337	189

	31 December 2014 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	1,021	-	-	-	1,021	1,021
Trade and other payables to related parties	77	-	-	-	77	77
Bonds, including interest payable	164	119	-	-	283	257
Loans and borrowings, including interest payable	3,929	2,005	5,017	5,040	15,991	12,853
	5,191	**2,124**	**5,017**	**5,040**	**17,372**	**14,208**
Financial guarantees issued: Maximum amount guaranteed	79	143	35	-	257	100

(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 16. 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 2016, 31 December 2015 and 31 December 2014, the Group has certain concentrations of credit risk as 3.4%, 1.4% and 2.3 % of the total trade receivables were due from the Group's largest customer and 8.8%, 1.7% and 3.0% of the total trade receivables were due from the Group's five largest customers.

With respect to credit risk arising from guarantees, management have recognised a provision of USD 108 million against the Group's exposure to guarantees (31 December 2015: USD 189 million, 31 December 2014: USD 100 million) (note 19(g)).

(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 2016	
	USD million	**USD million**
	Trade receivables	**Trade payables**
Gross amounts	52	(45)
Net amounts presented in the statement of financial position	**52**	**(45)**
Amounts related to recognised financial instruments that do not meet some or all of the offsetting criteria	(32)	32
Net amount	**20**	**(13)**

	Year ended 31 December 2015	
	USD million	**USD million**
	Trade receivables	**Trade payables**
Gross amounts	61	(44)
Net amounts presented in the statement of financial position	61	(44)
Amounts related to recognised financial instruments that do not meet some or all of the offsetting criteria	(39)	39
Net amount	**22**	**(5)**

	Year ended 31 December 2014	
	USD million	**USD million**
	Trade receivables	**Trade payables**
Gross amounts	96	(83)
Net amounts presented in the statement of financial position	96	(83)
Amounts related to recognised financial instruments that do not meet some or all of the offsetting criteria	(78)	78
Net amount	**18**	**(5)**

22. 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 2016, 31 December 2015 and 31 December 2014 approximated USD 157 million, USD 169 million and USD 319 million, respectively. These commitments are due over a number of years.

EN+

The Group had outstanding capital commitments which had been contracted for at 31 December 2016, 31 December 2015 and 31 December 2014 in the amount of USD 55 million, USD 61 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 2017-2034 under supply agreements are estimated from USD 3,156 million to USD 4,089 million at 31 December 2016 (31 December 2015: USD 3,793 million to USD 4,912 million, 31 December 2014: USD 3,400 million to USD 3,962 million) depending on the actual purchase volumes and applicable prices.

Commitments with related parties – companies under common control for purchases of alumina in 2017 under supply agreements are estimated at USD nil million at 31 December 2016 (31 December 2015: USD 110 million, 31 December 2014: USD 262 million). Commitments with a related party - joint venture for purchases of primary aluminium and alloys in 2017-2030 under supply agreements are estimated from USD 5,748 million to USD 7,127 million (31 December 2015: USD 5,512 million to USD 6,838 million, 31 December 2014: nill) 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 2017-2034 are estimated from USD 806 million to USD 1,445 million at 31 December 2016 (31 December 2015: USD 793 million to USD 1,349 million, 31 December 2014: USD 958 million to USD 1,946 million) and will be settled at market prices at the date of delivery. Commitments with related parties for sales of alumina in 2017-2019 approximated from USD 546 million to USD 680 million at 31 December 2016 (31 December 2015: USD 504 million to USD 1,046 million, 31 December 2014: USD 852 million to USD 1,324 million).

Commitments with related parties for sales of primary aluminium and alloys in 2017-2030 are estimated to range from USD 4,295 million to USD 4,463 million at 31 December 2016 (31 December 2015: USD 3,728 million to USD 4,173 million, 31 December 2014: USD 3,994 million to USD 4,543 million). Commitments with third parties for sales of primary aluminium and alloys at 31 December 2016 are estimated to range from USD 941 million to USD 1,252 million (31 December 2015: USD 307 million to USD 654 million, 31 December 2014: USD 923 million to USD 1,144 million).

(d) **Operating lease commitments**

Non-cancellable operating lease rentals are payable as follows:

	31 December 2016 USD million	31 December 2015 USD million	31 December 2014 USD million
Less than one year	30	35	22
Between one and five years	88	109	71
More than five years	126	134	183
	244	**278**	**276**

During 2013-2014 the Group was involved in a legal proceeding as a defendant in connection with the change of dams lease contract terms. As a result as at 31 December 2014 the Group accrued the legal provision of USD 27 million (RUB 1,023 million).

On 8 June 2015 the Group signed the amicable agreement with the owner of the dams which led to the lease expenses increase from USD 1 million (RUB 74 million) to USD 14 million (RUB 821 million) per annum and penalty for delayed payment in the amount of USD 4 million and derecognised previously accrued provision in the amount of USD 17 million (RUB 1,023 million) based on this agreement.

In February 2016 the Group received a court ruling that the annual lease payments for dams should be decreased from USD 13 million (RUB 821 million) to USD 6 million (RUB 365 million).

In October 2016 the Group signed an agreement to purchase dams from PJSC RusHydro (see note 12(g)).

As at 31 December 2016 and 31 December 2015 USD 12 million and USD 19 million of lease liabilities under the agreement remained unpaid, respectively.

A number of lease contracts for land, heat network, property and equipment are for one year with the possibility of contract renewal in the future. Management of the Group believes that such contracts will be effective in 2017-2022 therefore expected lease expenses for the respective period were included in the table above.

(e) 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.

(f) Guarantees

EN+

In September 2015 the Parent Company issued a guarantee in respect of certain loan obligations of several borrowers which are not Group companies in favour of Sberbank. The obligations of the Parent Company are limited to (i) aggregate amount up to USD 89 million (RUB 6,500 million) for repayment of principal amounts of all guaranteed loans (including loans in the amount of USD 102 million (RUB 6,202 million) and USD 61 million (RUB 4,428 million) provided by Sberbank to the parties under common control and USD 72 million (RUB 5,263 million) loan provided by Sberbank to the third party), and (ii) interest payments under one of the guaranteed loans of the related company under common control. The guarantee matures simultaneously with the loans with final maturity dated December 2020.

As at 31 December 2015 the Group recognised a provision in the amount of RUB 6.5 billion (31 December 2016: USD 108 million, 31 December 2015: USD 89 million) for a guarantee issued in favour of the bank in respect of loan obligations described above directly in equity (notes 19(g), 17(f)).

Previously issued in 2010 guarantee in respect of loan obligations of a related party under common control with the Group in favour of Sberbank was terminated on 11 September 2015. At 31 December 2014 the guarantee amount was USD 111 million.

23. 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 to the authorities' previous interpretations or practices. Different and selective interpretations of tax regulations by various government authorities and inconsistent enforcement create further uncertainties in the taxation environment in the Russian Federation.

Transfer pricing legislation enacted in the Russian Federation starting from 1 January 2012 provides for major modifications making local transfer pricing rules closer to OECD guidelines, but creating additional uncertainty in practical application of tax legislation in certain circumstances. These transfer pricing rules provide for an obligation for the taxpayers to prepare transfer pricing documentation with respect to controlled transactions and prescribe the basis and mechanisms for accruing additional taxes and interest in case prices in the controlled transactions differ from the market level. The transfer pricing rules apply to cross-border transactions between related parties, as well as to certain cross-border transactions between independent parties, as determined under the Russian Tax Code (no threshold is set for the purposes of prices control in such transactions). In addition, the rules apply to in-country transactions between related parties if the accumulated annual volume of the transactions between the same parties exceeds a particular threshold (RUB 1 billion in 2014 and thereon). The compliance of prices with the arm's length level could be as well subject to scrutiny on the basis of unjustified tax benefit concept.

Effective 1 January 2015 the concept of "beneficial ownership" which is broadly in line with the concept developed by the OECD were introduced into Russian tax legislation. In particular, based on this concept the double tax treaty relief should be available to foreign legal entities provided they have the actual right to receive income (i.e., they qualify as a "beneficial owner of income"). When determining the beneficial owner, the functions of a foreign person that is claiming the application of reduced tax rates under a double tax treaty and the risks that such person takes should be analyzed. Effective 1 January 2017, a non-resident income recipient should be obliged to provide a tax agent with confirmation that it is the beneficial owner of the income. However, at the moment there is no clear guidance in the tax legislation in what form such confirmation should be obtained.

No assurance can currently be given as to how the above concepts will be applied in practice, their potential interpretation by the Russian tax authorities and the possible impact on the Group.

UC RUSAL

In addition to the amounts of income tax UC RUSAL already has provided, there are certain tax positions 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. UC RUSAL'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 2016 is USD 225 million (31 December 2015: USD 237 million, 31 December 2014: USD 357 million).

EN+

During the past several years the Russian tax authorities have shown a tendency to take more assertive positions in their interpretation of tax legislation which has led to an increased number of material tax assessments issued by them as a result of tax audits. In practice, the Russian tax authorities generally interpret the tax laws in ways that do not favor taxpayers.

Tax declarations, together with related documentation, are subject to review and investigation by a number of authorities, each of which may impose fines, penalties and interest charges. Fiscal periods remain open to review by the authorities for three calendar years of review (one year in the case of customs). Under certain circumstances reviews may cover longer periods. In addition, in some instances, new tax regulations effectively have been given retroactive effect. Moreover, in October 2006, the Plenum of the Supreme Arbitration Court of the Russian Federation issued Ruling No. 53, formulating a concept of "unjustified tax benefit", which is defined in the Ruling by reference to specific examples of such tax benefits (e.g., tax benefits obtained as a result of a transaction that has no reasonable business purpose). There is a growing practice on the interpretation of this concept by the Russian tax authorities and the Russian courts and it is apparent that the Russian tax authorities actively seek to apply this concept when challenging tax positions taken by taxpayers. The tax authorities have actively sought to apply this concept when challenging tax positions taken by taxpayers in court, and this trend is anticipated to continue in the future. It is possible that additional taxes may be payable in respect of some operations of the Group upon examination by the tax authorities or in connection with ongoing disputes with tax authorities. It could potentially have a significant impact on the consolidated financial statements of the Group.

Russian tax legislation includes "thin capitalisation" rules which limit the amount of interest that could be deducted by the Russian subsidiaries of the Company for corporate income tax purposes on "controlled" debts. The deductibility of interest is restricted to the extent that the controlled debt of a Russian company exceeds its net assets by more than three times. Interest on excess debt is non-deductible and treated as a dividend subject to Russian withholding tax. Prior to 2017 loans provided between Russian affiliated companies were subject to thin capitalisation rules in case they have direct or indirect foreign shareholder owning more than 20%. There is contemplated tax practice with respect to such kind of transactions and tax authorities interpreted these rules differently. It is currently unclear how the Russian tax authorities will interpret and apply the amended thin capitalisation rules.

The Russian subsidiaries of the Company may be affected by the Russian Federation's thin capitalisation rules which may result in assessment of additional taxes. 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 2016 is 18 million (31 December 2015: USD 7 million; 31 December 2014: USD 28 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 and to bring it into full compliance with current legislation.

(c) **Legal contingencies**

The Group's business activities expose it to a variety of lawsuits and claims which are monitored, assessed and contested on the 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 19(e)). As at 31 December 2016 the amount of claims, where management assesses outflow as possible approximates USD 60 million (31 December 2015: USD 38 million, 31 December 2014: USD 111 million).

In January 2013, the Company received a writ of summons and statement of claim filed in the High Court of Justice of the Federal Capital Territory of Nigeria (Abuja) by plaintiff BFIG Group Divino Corporation ("BFIG") against certain subsidiaries of the Company. It is a claim for damages arising out of the defendants' alleged tortious interference in the bid process for the sale of the Nigerian government's majority stake in the Aluminium Smelter Company of Nigeria ("ALSCON") and alleged loss of BFIG's earnings resulting from its failed bid for the said stake in ALSCON. BFIG seeks compensatory damages in the amount of USD 2.8 billion. In January 2014 the court granted the Company's motion to join the Federal Republic of Nigeria and Attorney General of Nigeria to the case as co-defendants. The next hearing is currently scheduled for 22 May 2017. Based on a preliminary assessment of the claim, the Company does not expect the case to have any material adverse effect on the Group's financial position or its operation as a whole.

(d) **Risks and concentrations**

A description of the Group's major products and its principal markets, as well as exposure to foreign currency risks are provided in note 1 "Background" and note 21(c)(iii) "Foreign currency risk". The price at which the Group can sell its products is one of the primary drivers of the Group's revenue. The UC RUSAL's prices are largely determined by prices set in the international market. The Group's future profitability and overall performance is strongly affected by the price of primary aluminium that is set in the international market.

24. 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 entities under common control with the Group or under the control of minority shareholders of main subsidiaries or entities under its control.

Sales to related parties for the year are disclosed in note 7, trade receivables from related parties are disclosed in note 16(b), cash and cash equivalents are disclosed in note 16(d), accounts payable to related parties are disclosed in note 16(c) and other transactions with shareholders are disclosed in note 17. Related parties are mostly presented as parties under common control.

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

	Year ended 31 December		
	2016	**2015**	**2014**
	USD million	**USD million**	**USD million**
Purchase of raw materials	**(399)**	**(229)**	**(278)**
Related parties – companies capable of exerting significant influence	_(146)_	_(129)_	_(196)_
Related parties – companies under common control	_(24)_	_(38)_	_(55)_
Related parties – associates and joint ventures	_(229)_	_(62)_	_(27)_
Energy costs	**(127)**	**(178)**	**(142)**
Related parties – companies capable of exerting significant influence	_(5)_	_(23)_	_(42)_
Related parties – companies under common control	_(11)_	_(12)_	_(100)_
Related parties – associates and joint ventures	_(111)_	_(143)_	-
Other services	**(129)**	**(145)**	**(162)**
Related parties – companies under common control	_(3)_	_(4)_	_(10)_
Related parties – associates and joint ventures	_(126)_	_(141)_	_(152)_
	(655)	**(552)**	**(582)**

As at 31 December 2016 the Group pledged 15% shares of JSC Eurosibenergo with the bank for the corporate guarantee provided by the related party under common control till 20 December 2019.

As at 31 December 2015 and 31 December 2014, 25% plus one of the shares of Krasnoyarsk HPP were pledged as a collateral to secure loans extended by unrelated banks to related parties under common control.

(c) Remuneration to key management

For the year ended 31 December 2016 remuneration to key management personnel during the year was represented by short-term employee benefits and amounted to USD 14 million (31 December 2015: USD 20 million, 31 December 2014: USD 19 million).

(d) Pricing policies

Prices for transactions with related parties are determined on a case by case basis but are not necessarily at arm's length.

25. Events subsequent to the reporting date

(a) UC RUSAL Eurobonds and Panda bonds issues

In February 2017 UC RUSAL completed the debut offering of Eurobonds with the following key terms: principal amount of USD 600 million, tenor 5 years, coupon rate 5.125% per annum. The bonds proceeds, excluding related expenses, in the amount of USD 597 million were applied for partial refinancing of RUSAL's existing pre-export finance facility.

On 17 March 2017 UC RUSAL completed the debut offering of Panda bonds with the following key terms: principal amount of CNY 1 billion (USD 145 million), maturity of three years with a put option in two years time. Net proceeds received by the Group totaled CNY 970 million (USD 141 million) at 5.5% per annum.

(b) Pledges

In February 2017 pledges of 22.78% shares of Irkutskenergo and 25%+1 share of JSC Eurosibenergo were released and the acquired dams were pledged to secure the extended syndicate facilities in the amount of USD 181 million (RUB 10,950 million at exchange rate as at 31 December 2016) (note 18(a)(iii)).

In February 2017 pledge of 100% share of LLC Tyvinskaya Gornorudnaya Company was released (note 18(a)(i)).

(c) Acquisition of subsidiary

In January 2017 the Parent Company's wholly owned subsidiary acquired GrandStroy LLC – the Lender under Loan (see note 18(a)(i)) for cash consideration of USD 3 million.

(d) Dividends distribution

Subsequently to the reporting date, the Parent Company declared interim dividends for 2016 in the amount of USD 45.6 million. As at the date of these consolidated financial statements, the Group distributed USD 46 million in cash.

(e) **Amendments to loan agreements**

In March 2017 UC RUSAL signed addendums to several of its credit facilities with Sberbank that resulted in:

— Decrease of interest rate for USD loans by 1% to the level of 3M LIBOR +4.75% (but not less than 1%, PIK part of interest was removed).

— Conversion of RUB credit facility of RUB 19,746 million to USD credit facility of USD 340 million at RUB 58 per USD exchange rate. 3M LIBOR + 4.75% interest rate was assigned to the loan while the PIK part of interest was also removed.

26. 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 statement of income.

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 its fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluations shall be 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 economical 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 economical 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, fair value of hydro assets may be lower with respective decrease in revaluation reserve recognised through the statement of 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 difference will impact the carrying value of the inventories and the write-down of inventories charged to the statement of income 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 the statement of income.

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 the statement of income.

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 the statement of income.

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 statement of income.

Defined benefit retirement and other post retirement schemes

For defined benefit pension schemes, the cost of benefits charged to the statement of income 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 comprehensive income.

27. 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		
			2016	**2015**	**2014**
UC RUSAL					
United Company RUSAL Plc	Jersey	Holding company	48.1%	48.1%	48.1%
Compagnie Des Bauxites De Kindia S.A.	Guinea	Bauxite mining	100.0%	100.0%	100.0%
Friguia	Guinea	Alumina	100.0%	100.0%	100.0%
JSC RUSAL Achinsk	Russian Federation	Alumina	100.0%	100.0%	100.0%
RUSAL Mykolaev Ltd	Ukraine	Alumina	100.0%	100.0%	100.0%
JSC RUSAL Boxitogorsk Alumina	Russian Federation	Alumina	100.0%	100.0%	100.0%
Eurallumina SpA	Italy	Alumina	100.0%	100.0%	100.0%
OJSC RUSAL Bratsk	Russian Federation	Smelting	100.0%	100.0%	100.0%
JSC RUSAL Krasnoyarsk	Russian Federation	Smelting	100.0%	100.0%	100.0%
JSC RUSAL Novokuznetsk	Russian Federation	Smelting	100.0%	100.0%	100.0%
JSC RUSAL Sayanogorsk	Russian Federation	Smelting	100.0%	100.0%	100.0%
CJSC Khakas Aluminium Smelter	Russian Federation	Smelting	-	-	100.0%
RUSAL Resal LLC	Russian Federation	Processing	100.0%	100.0%	100.0%
JSC RUSAL SAYANAL	Russian Federation	Foil	100.0%	100.0%	100.0%
CJSC RUSAL ARMENAL	Armenia	Foil	100.0%	100.0%	100.0%
RUS-Engineering LLC	Russian Federation	Repairs and maintenance	100.0%	100.0%	100.0%
JSC Russian Aluminium	Russian Federation	Holding company	100.0%	100.0%	100.0%
Rusal Global Management B.V.	Netherlands	Management company	100.0%	100.0%	100.0%
JSC United Company RUSAL Trading House	Russian Federation	Trading	100.0%	100.0%	100.0%
Rusal America Corp.	USA	Trading	100.0%	100.0%	100.0%
RS International GmbH	Switzerland	Trading	100.0%	100.0%	100.0%
Rusal Marketing GmbH	Switzerland	Trading	100.0%	100.0%	100.0%
RTI Limited	Jersey	Trading	100.0%	100.0%	100.0%
Alumina & Bauxite Company Limited	British Virgin Islands	Trading	100.0%	100.0%	100.0%
JSC Komi Aluminii	Russian Federation	Alumina	100.0%	100.0%	100.0%
JSC Bauxite-Timana	Russian Federation	Bauxite mining	100.0%	100.0%	80.0%
JSC Severo-Uralsky Bauxite Mine	Russian Federation	Bauxite mining	100.0%	100.0%	100.0%
JSC SUAL	Russian Federation	Primary aluminium and alumina production	100.0%	100.0%	100.0%
OJSC Zaporozhye Aluminium Combine	Ukraine	Primary aluminium and alumina production	-	-	98.0%
SUAL-PM LLC	Russian Federation	Aluminium powders production	100.0%	100.0%	100.0%
CJSC Kremniy	Russian Federation	Silicon production	100.0%	100.0%	100.0%
SUAL-Kremniy-Ural LLC	Russian Federation	Silicon production	100.0%	100.0%	100.0%
UC RUSAL Alumina Jamaica Limited (a)	Jamaica	Alumina	-	100.0%	100.0%
UC RUSAL Alumina Jamaica II Limited	Jamaica	Alumina	100.0%	100.0%	100.0%
Kubikenborg Aluminium AB	Sweden	Smelting	100.0%	100.0%	100.0%
RFCL Sarl	Luxembourg	Finance services	100.0%	100.0%	100.0%

Name	Place of incorporation and operation	Principal activities	Ownership and equity interest 31 December 2016	2015	2014
Aktivium B.V.	Netherlands	Holding and investment company	100.0%	100.0%	100.0%
Aughinish Alumina Ltd	Ireland	Alumina	100.0%	100.0%	100.0%
EN+					
Eurosibenergo Plc	Cyprus	Holding company	100.0%	100.0%	100.0%
JSC Eurosibenergo	Russian Federation	Management company	100.0%	100.0%	100.0%
PJSC Krasnoyarsk Hydro-Power Plant (b)	Russian Federation	Energy generation	100.0%	92.6%	89.6%
CJSC MAREM +	Russian Federation	Energy trading	99.9%	99.9%	99.9%
PJSC Irkutskenergo	Russian Federation	Energy generation	90.8%	52.8%	52.8%
OJSC Irkutsk Electric Grid Company	Russian Federation	Power transmission and distribution	51.9%	44.4%	44.4%
LLC Telmamskaya HPP	Russian Federation	Investing company	100.0%	100.0%	100.0%
CJSC Volgaenergosbyt	Russian Federation	Energy trading	96.2%	80.5%	80.5%
LLC Avtozavodskaya TEC	Russian Federation	Energy generation	95.3%	75.9%	75.9%
LLC Zavodskie seti	Russian Federation	Energy transmission	100.0%	100.0%	100.0%
LLC Eurosibenergo-engineering	Russian Federation	Engineering services	100.0%	100.0%	100.0%
LLC Kompaniya VostSibUgol	Russian Federation	Coal production	90.8%	52.8%	52.8%
OJSC Razrez Tulunsky	Russian Federation	Coal production	87.8%	52.6%	52.8%
LLC KRAMZ	Russian Federation	Manufacturing of semi-finished products from primary aluminium	91.7%	57.6%	57.3%
LLC Tyvinskaya Gornorudnaya Company	Russian Federation	Coal production	93.0%	39.5%	39.5%
LLC Sorsk Mining and Metallurgical Complex	Russian Federation	Ore mining	100.0%	100.0%	100.0%
LLC Sorsk Ferromolybdenum Plant	Russian Federation	Ore processing, ferromolybdenum production	100.0%	100.0%	100.0%

(a) Entity was disposed of in 2016 for a consideration of USD 299 million, please see note 2(h) for details.

(b) As at 31 December 2016 excluding squeeze out procedures Krasnoyarsk HPP nominal ownership is 98.6% (note 17(a)).

The nominal ownerships indicated in the table above are the effective holdings, except for UC RUSAL shareholdings where 48.1% is held by the Parent Company.

Trading entities are engaged in the sale of products to and from the production entities.