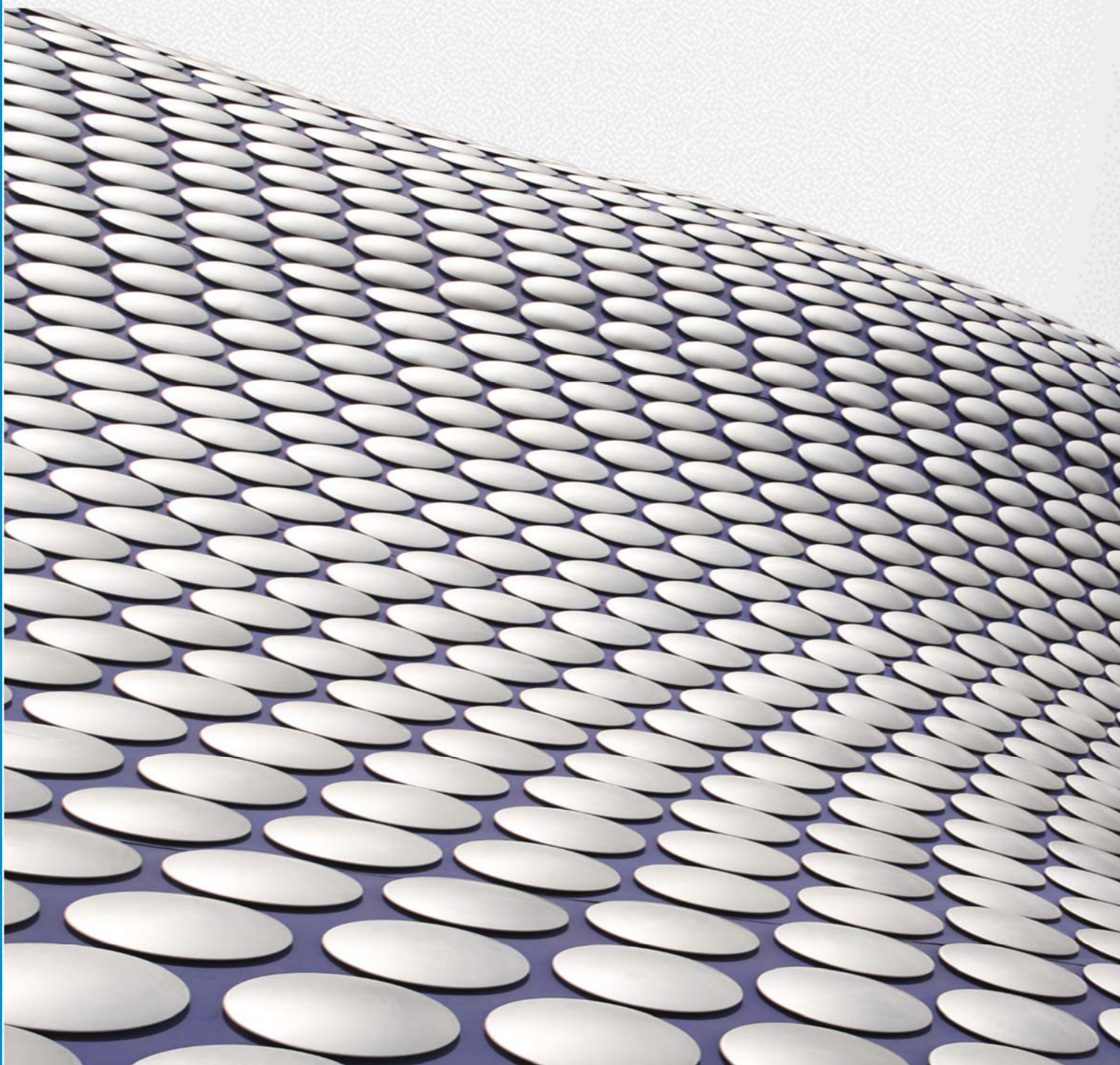




**UC RUSAL**

**SUSTAINABILITY REPORT**

**2016**



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## CEO'S ADDRESS

Dear friends,

I am happy to present UC RUSAL's 2016 Sustainability Report.

Our Company is a leader of one of the world's largest and most dynamically developing industries. Our actions determine the future of this industry, as well as the environmental situation, and well-being of employees and local communities – especially as our production facilities are often the biggest employers for the respective towns and cities.

I am delighted to note that despite the industry being in a difficult situation at the beginning of 2016 – with aluminium prices plummeting to the lowest levels for the past several years – RUSAL has demonstrated a consistent financial performance at the year's end. This was helped by a market recovery in H2 2016 and also by our robust cost-cutting controls, a strict production discipline, and a continuous development of value-added products.

RUSAL retains its focus on operating efficiency and sustainability across the whole supply chain, from mining of bauxite to production of aluminium to logistics and sales. We have a continuous process for introducing the best management methods and production processes to ensure we use resources efficiently and keep our environmental impact at the lowest possible level. In particular, commissioning of super-powerful RA-550 pots (whose environmental and energy performance are unprecedented for this type of cells) at the Sayanogorsk smelter has been a very important technical break-through of 2016.

Another area of work was to continue development of zero-waste production technologies. For instance, recovery of scandium oxide from red mud showed good progress. Scandium oxide is then used to produce aluminium-scandium alloys, which have a great potential in the aerospace, transport and utility segments.

Reduction of GHG emissions and the carbon footprint are among our key strategic objectives. Already today, over 90% of our aluminium is based on clean and renewable energy of Siberian rivers.

Testing of inert anodes continued last year. The technology aims to fully avoid emissions of CO<sub>2</sub> and other pollutants by our smelters.

RUSAL is also an active participant of the national low-carbon development agenda in Russia: RUSAL was one of the initiators for creating the Russian Climate Preservation Partnership, and is also a contributor to several international climate initiatives.

Professional, initiative and qualified employees are our most valuable asset. Each year, the Company invests heavily in various projects to improve working conditions, fulfil commitments under collective bargaining agreements, develop occupational healthcare, and enhance the personnel training system. All proactive H&S activities scheduled for 2016 have been completed in full, and our corporate and site-specific OHSAS 18001 certificates have been duly confirmed by audits.

I would like to separately highlight a large-scale project we have launched in Guinea to fight the Ebola virus. In 2016, the RUSAL-built Scientific Clinical and Diagnostics Centre of Epidemiology and Microbiology received a highly sophisticated laboratory as part of a joint project with the Russian Federal Supervisory Agency for Protection of Consumer Rights and Human Welfare.

Social and economic welfare in the regions where we operate is another priority area for RUSAL, where we finance and implement a large number of community development programmes. RUSAL is represented by 6300 corporate volunteers, who helped expand the geographical range our social programmes and increase the number of beneficiaries. The projects were praised by the public and received recognition from national and regional competitions and ratings.

A lot of attention is also given to stakeholder engagement at regional and national levels, which we view as an essential ingredient of our sustainability activities.

We joined the United Nations Global Compact in 2002, then being one of the first Russian participants of this significant initiative. We've been continuously supporting its practical guidance of UC RUSAL corporate responsibility and confirm our renewed commitment to the Global Compact 10 principles.

**Vladislav Soloviev**

*CEO, UC RUSAL*

## ABOUT THE COMPANY

### *Profile*

United Company RUSAL (UC RUSAL, RUSAL, the Company) is one of the largest producers of primary aluminium and alloys in the world. The company operates in 19 countries around the world on five continents, including Russia, Australia, Armenia, Kazakhstan, China, Turkey and other countries. The headquarters are located in Russia (Moscow). **G4-5, G4-6, G4-3**

The business model of UC RUSAL is built on a vertically integrated production chain comprising deposits of bauxite and nepheline ore, alumina refineries, aluminium smelters, casting systems, foil rolling plants, and power generating facilities. **G4-9**

The Company comprises production facilities grouped into seven divisions. Producing and processing production facilities are located in Russia and abroad.

<b>Division</b>	<b>Production facilities in Russia</b>	<b>Production facilities abroad</b>
<b>Aluminium</b>	9 aluminium smelters located mainly in Siberia. The largest ones are Krasnoyarsk and Bratsk aluminium smelters	1 aluminium smelter in Sweden
<b>Alumina Division</b>	3 alumina refineries 2 bauxite mines 1 nepheline mine	4 alumina refineries in Ireland, in Ukraine, in Jamaica and in Australia 3 bauxite mines in Jamaica, Guinea and Guyana
<b>New Projects Directorate</b>	3 powder plants 1 cryolite plant 2 silicon factories 1 quartzite mine Other production facilities	1 quartzite mine in Ukraine
<b>Packaging Division</b>	3 foil mills	1 foil mill in Armenia

The production facilities of the Energy Division form own source of power supply for RUSAL. The main asset is the Boguchanskaya HPP (part of the Boguchany Energy and Metals Complex).

The Engineering and Construction Division unites organisations providing construction, engineering and maintenance services (nine companies). The Technical Directorate includes four companies of the RUSAL research and development complex. All companies of both divisions are located in Russia.

### *Products*

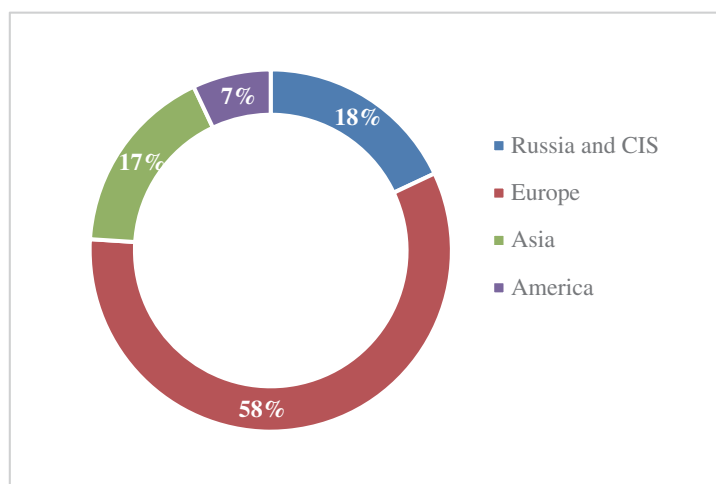
UC RUSAL produces a broad line of products, with almost half of them (45%) being high value-added products (aluminium sheet, ingots, wire rod, foundry alloys, billets, etc.). The Company plans to increase the share of these products to 55% by 2020. The main products of the Company include primary aluminium, aluminium alloys, foil and alumina.

### Main types of products G4-4

Product type	Industry application	Description
<b>Primary aluminium</b>	Transport, construction, electrical and packaging industries	Primary aluminium is produced in accordance with quality standards and specifications developed at the request of the customers
<b>High purity aluminium</b>	Electronics, production of computer hard drives and condensation foil	UC RUSAL is the only producer of high purity aluminium in Russia and other CIS countries
<b>Aluminium alloys</b>	Transport, construction, electrical and packaging industries	UC RUSAL produces a wide range of high quality aluminium alloys
<b>Foil and packaging</b>	Food, pharmaceutical, construction, tobacco and perfume and cosmetics industries	The production facilities of UC RUSAL produce foil with a gauge of 5 to 240 microns and a number of products based on it
<b>Aluminium powder, paste and granules</b>	Metallurgical, chemical, energy, mining and construction industries, production of military equipment	UC RUSAL is the largest Russian producer of aluminium powder products
<b>Wire rod</b>	Cable production, iron and steel industry, production of hardware items	UC RUSAL produces the wire rod in accordance with the GOST and international specifications
<b>Alumina and bauxite</b>	Intermediate products, from which aluminium is made	High quality alumina is produced by the Bayer process
<b>Silicon</b>	Metallurgical, chemical, electrical, production of solar cells	UC RUSAL produces metallurgical and refined silicon. The product registered in the REACH system
<b>Gallium</b>	The production of chemical compounds used in solar energy and electronics industry	UC RUSAL produces high purity metallurgical gallium
<b>Corundum</b>	Production of abrasive tools, ceramic and refractory products	UC RUSAL is one of the world's largest producers of white corundum
<b>Protectors from aluminium alloys</b>	Shipbuilding, oil and gas, housing and utility sector	The products are used for long-term protection against corrosion of metallic objects in aggressive environments (marine and bottom water, ground and reservoir waters)
<b>Aluminium wheel discs</b>	SKAD alloy wheels are installed on passenger cars	The disks are produced using the breakthrough technologies. Some models are certified by TUV

UC RUSAL supplies aluminium products to Europe, America, Southeast Asia, as well as the domestic market. The products are delivered to the customers by rail, road, river and maritime transport. **G4-8**

### *Geographic structure (volume), %*



### *Means of transportation of the products*

Products	Means of transportation
<b>Aluminium in bundles and ingots</b>	Rail transport (boxcars and combined cars), trucks, river transport and maritime transport (vessels of 3.1 to 20.4 thousand tonnes of dead weight)
<b>Aluminium in slabs and billets</b>	Rail transport (gondola cars), trucks, river transport and maritime transport (vessels of 3.1 to 20.4 thousand tonnes of dead weight)
<b>Alumina</b>	Rail transport (hopper cars, gondola cars (including liners), combined cars, boxcars) and sea transport (vessels of 23 and 45 thousand tonnes of dead weight)

### *Presence in financial markets*

The ordinary shares of UC RUSAL are included in the quotation lists of the Hong Kong Stock Exchange, the Moscow Exchange, and the Euronext Paris trading in the form of Global Depository Shares (GDS) and the Moscow Exchange in the form of Russian Depository Receipts (RDR).

### *Shareholding structure*

In 2016, the main shareholders of the Company were: En+, SUAL Partners, Onexim and Amokenga Holdings. The number of shares in public hands amounted to 10.05% of the total stock of the Company. **G4-7**

### *Participation in other companies*

The Company uses the potential for income diversification through investments in Norilsk Nickel, the world's largest producer of nickel and palladium and one of the leading producers of platinum and copper; UC RUSAL owns 27.82% of the company's shares. UC RUSAL also holds 50% of the shares in the coal company Bogatyr Komir (Kazakhstan).

## CORPORATE GOVERNANCE

### CORPORATE GOVERNANCE SYSTEM

#### Principles

High quality corporate governance leads to successful business development and increases the investment potential of the Company, providing more security for shareholders, partners and customers as well as reinforcing the Company's internal control system.

The UC RUSAL's corporate governance system is based on internationally recognised standards of corporate governance. The principles of organisation of corporate governance are enshrined in the Company's Articles of Association, the Code of Corporate Governance, the Code of Corporate ethics, as well as other internal documents governing the operation of the management and control bodies.

The Company is continually improving its corporate governance system by introducing best world practices and ensuring that the activity of the management bodies complies with the requirements of the listing of stock exchanges, where the Company's financial tools are traded.

In 2010, the Code for Securities Transactions by Directors of the Company and other employees of the Group was adopted on the basis of requirements of the Listing Rules of the Hong Kong Stock Exchange and provisions of the French Monetary and Financial Code, the General Regulation of the AMF and the EU Market Abuse Regulation.

*Please see more detailed information about the corporate governance system in the Annual Report for 2016.*

#### Management bodies

##### **General Shareholder Meeting G4-34**

The General Shareholder Meeting is the highest management body, through which the shareholders are able to participate in the management of the Company and in the decision-making process on key issues of its operation.

##### **Board of Directors**

The Board of Directors is collectively responsible for the management and activity of the Company, including the responsibility for approval and control of overall development strategies, annual budget, business plans and material investment plans for the Company; control and evaluation of the performance of the Company in terms of policies, budgets and plans; approval and supervision of management performance; reporting of the Company's operation to all parties, to whom the report is to be submitted in accordance with the established procedure and ensuring that the accounting records are consistent with the legal obligations of the Company. **G4-42, HKEx-Appendix 27 para 8**



The roles of the chairman of the Board of Directors and the Chief Executive Officer are segregated and are independent from each other. The Chairman is responsible for ensuring the effective functioning of the Board of Directors. The functions of the Chief Executive Officer include the monitoring of the implementation of the principles identified by the Board of Directors for the areas of production and the full cycle of production and sales, financial management and corporate finance, marketing, etc., as well as for the day-to-day management of the GROUP and the enforcement of strategic decisions adopted by the Board of Directors. **G4-39**

During the year ended December 31, 2016, the Board of Directors consisted of 3 executive, 9 non-executive and 6 independent non-executive directors (representing at least one third of the members of the Board of Directors as required under the Listing Rules of the Hong Kong Stock Exchange). The current composition of the Board of Directors offers sufficient independent checks and balances and an appropriate governance structure for the Company. **G4-38**

Most of the committees (the Audit Committee, the Remuneration Committee, the Corporate Governance and Nominations Committee, the Health, Safety and Environment Committee and the Norilsk Nickel Committee) were headed by independent directors. The Board of Directors believes that all independent non-executive directors have appropriate and sufficient industrial or financial experience and qualifications to carry out their duties.

Due to the fact that the main shareholders are the companies that compete or can compete with UC RUSAL, and also have the right to initiate the appointment of their representatives on the Board of Directors of the Company, an analysis of the independence of the members of the Board of Directors and the Company's top management from the top management of the main shareholders is carried out to confirm that the Company can conduct its business on its own account and independently from the main shareholders. **G4-41**

UC RUSAL recognises the importance and fully applies the principles of equality and diversity in the composition of the Board of Directors.

Selection of candidates takes into consideration a range of diversity perspectives, including but not limited to gender, age, cultural and educational background, ethnicity, professional experience, skills, knowledge and length of service. The ultimate decision is based on merit and contribution that the candidates will bring to the Board of Directors.

The existence of a wide range of opinions and individual experiences, regardless of gender, age and ethnicity, is a significant factor in the adoption of balanced decisions. The Company believes that the increasing diversity of the Board of Directors is an essential element in supporting its strategic objectives and achieving sustainable development. At the end of the reporting year, the Board of Directors was composed of 4 women and 14 men. The Corporate Governance and Nominations Committee conducts analysis and evaluation of the practical implementation of diversity principles. **G4-LA12 G4-40**

#### ***Committees of the Board of Directors* G4-34**

The following main special purpose committees are operating under the Board of Directors: the Corporate Governance and Nominations Committee, the Remunerations Committee, the Audit Committee and the Norilsk Nickel Committee, as well as the Marketing Committee and the Health, Safety and Environment Committee. The Committees, in accordance with their competence, are responsible for the preliminary consideration of the matters submitted to the Board of Directors and make recommendations. **HKEx Appendix 27 para 8**

The tasks of the Health, Safety and Environment Committee include reviewing the Company's policies in the Health, Safety and Environment related areas, assessing the Company's compliance with regulatory requirements and assumed commitments, and assessing risk and performance. [HKEx Appendix 27 para 9](#)

The functions of the Corporate Governance and Nomination Committee include, among other things, the development, provision of recommendations and the annual revision of the guidelines, policies and practices of corporate governance of the Company and its consolidated subsidiaries, overseeing the implementation of corporate governance issues, reviewing and monitoring the Company's policies and practices on compliance with legal and regulatory requirements, reviewing and monitoring the training and continuing professional development of the Directors and top management, as well as the development, review and monitoring compliance with the Company's Code of Ethics.

The Committee establishes the criteria applicable to the evaluation of the nominees to the Board of Directors, including: independence (in the case of selection of independent non-executive directors), gender diversity, age, existing skills, experience and knowledge of the business of the Company and the industry, in which it operates, and the willingness to devote sufficient time and effort to performing his/her responsibilities as a member of the Board of Directors.

The primary functions of the Remuneration Committee are, among other things, to make recommendations to the Board of Directors on the remuneration package of the Directors and senior management, and to assist the Board of Directors in overseeing the administration of the Company's compensation and benefits plans. Remuneration policies are determined on the basis of an employee's qualifications and performance, as well as the complexity of his or her job.

The total remuneration, including the basic salary, performance-linked salary, incentive-linked salary and bonus of the directors in 2016 amounted to approximately USD18 million. [G4-51](#)

The tasks of the Audit Committee are to provide the Board of Directors with an independent assessment of the effectiveness of the Company's financial statements, internal control and risk management systems and audit processes.

*Please see more detailed information about the composition and activity of the committees of the Boards of Directors in the reporting year in the Company's Annual Report; the regulations on the committees of the Board of Directors have been published on UC RUSAL website.*

#### ***Performance evaluation and training***

The Board of Directors conducts a self-assessment of performance on the annual basis. The results are reviewed by the Corporate Governance and Nomination Committee. In this way, positive developments and areas for further improvement are identified. [G4-44](#)

Pursuant to the Corporate Governance Code, all directors must continually upgrade their professional knowledge and develop their skills. During the reporting period, all directors received information about relevant industry issues and existing legislation. [G4-43](#)

#### ***Executive bodies and senior management***

The Board of Directors has delegated the day-to-day operation of the Group to executive Directors and the Executive Committee to ensure effectiveness and appropriateness of functions.

The primary role of the Executive Committee is to assist the Chief Executive Officer and senior management with the day-to-day management of the Company and to assist the Board of Directors in formulating and implementing the strategy of the Group and monitoring its performance.

Additional functions and responsibilities of the Executive Committee include, inter alia, the development of the GROUP's strategy for subsequent approval by the Board of Directors and implementation of the strategy after its approval, as well as control and monitoring of financial performance and other matters. The Executive Committee is empowered to establish committees comprising of its members, as well as other managers from time to time. **G4-37**

## **INTERNAL CONTROL**

### **Internal control system**

#### ***Main results in 2016***

- 119 audits were carried out, including 60% of unscheduled audits performed at the request of the Company's management. The audit plan approved by the Audit Committee for 2016 was fully implemented (100%).
- The creation of the Company's annual Risk Map, quarterly monitoring of the main risks and timely reporting of risk management status to the shareholders and Company management are organised.
- The Internal Audit & Control Directorate continued to strengthen its control in the following areas:
  - compliance with the Company's regulatory documents;
  - conducting of HR procedures;
  - compliance with the requirements of external regulators (HKEx) and shareholders for connected and related transactions (until December 2016);
  - opening and implementation of investment projects, etc.
- The Internal Audit & Control Directorate has ensured the work of the hotline of UC RUSAL.

Using modern management standards and procedures the Company implements effective control and risk management systems.

The internal control system is organised to protect assets, to improve business processes, to ensure that the Company's financial, economic and other activities comply with legislative requirements, and to maintain the control environment at an appropriate level. The main bodies involved in the development and implementation of activities in these areas are the Directorate for Control, Internal Audit and Business Coordination (hereinafter the Internal Audit & Control Directorate), the Audit Committee and the Review Commission.

The Internal Audit & Control Directorate develops internal controls for the operations of the production facilities and business units of UC RUSAL, monitors their performance as part of audits and reviews, and is responsible for the development and monitoring of risk management policies, for independent evaluation of the effectiveness of management decisions and for monitoring of compliance with the requirements of external regulators.

Supervision of the efficiency of financial and economic activities and the organisation of the internal control system is carried out by Review Commissions formed at all production facilities of the Company. The statements of the production facilities are reviewed and audited annually, which is a mandatory stage in the preparation for annual shareholder meetings.

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**The implementation of internal controls is governed by the regulations, procedures and orders which are constantly updated, among them:**

- *Regulation on reporting to the Board of Directors and the Executive Committee in special cases;*
- *UC RUSAL Environmental Policy;*
- *Guidelines on UC RUSAL Health, Industrial and Fire Safety Management System;*
- *Methodology for the organisation of industrial monitoring of the working conditions of production facilities;*
- *Standard operating practices for internal investigation and analysis of accidents related to health, safety and fire protection;*
- *Methodology for establishing performance indicators;*
- *UC RUSAL Risk Management Policy;*
- *Regulation on emergency management, etc.*

The Internal Audit & Control Directorate continuously monitors compliance by Company management with policies, regulations and procedures established by internal documents, as well as recommendations of reviews and audits.

New documents were introduced in 2016, including:

- *Risk Management Regulations;*
- *UC RUSAL Technical Policy;*
- *Standard of Organisation of technical visits and audits. Requirements for accounting and monitoring of performance of corrective actions according to the results of audits/visits;*
- *Regulation on the commission of individual acts and provision of information and reporting to creditors in accordance with loan agreements;*
- *UC RUSAL Regulation on Supplier Accreditation System, etc.*

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The Internal Audit & Control Directorate reports regularly to the Board of Directors, the Audit Committee and the Review Commission about the results of the work, the performed audits of the internal control system, including the results of the audits of the activity of the management bodies. **HKEx Appendix 27 para 9**

Based on the submitted reporting, the Audit Committee assesses the effectiveness of the Company's internal controls on a quarterly basis. As a result of the evaluation conducted in late 2016, the Board of Directors considers that during the reporting period the Group's internal controls operated in compliance with the Corporate Governance Code.

One of the main areas of internal control is the establishment of a control system and coordination of compliance with:

- the requirements for public companies;
- the requirements of the shareholder agreement;
- the requirements of the ALUMINIUM FACILITY AGREEMENT (AFA) regarding the compliance of operations with the legislative and regulatory acts of the various jurisdictions;
- labour and social policy requirements of the Company;
- environmental protection requirements, etc.

## **Compliance**

The Company pays great attention to improving the system of ensuring compliance with applicable laws, regulations, standards and other applicable requirements and to preventing their violation (compliance function).

In order to strengthen the compliance function, in December 2016, the Company has appointed the Global Compliance Officer.

The main tasks of the compliance function include:

- development and implementation, as well as improvement of policies and procedures to comply with the applicable requirements;
- the implementation of procedures and other necessary measures to prevent violations of applicable requirements;
- training in compliance;
- assisting the employees of the Company in fulfilling their obligations to comply with the applicable requirements;
- promotion and development of an appropriate compliance culture in the Company that ensures the ethical behaviour of employees and their commitment to the compliance with applicable requirements.

In order to prevent conflicts of interest, the Company has an automated multi-level system of control of connected transactions (in accordance with Listing Rules and International Financial Reporting Standards), internal regulations are developed and regularly updated, and responsible employees are trained.

The Company implements the plan of staff training in compliance approved by the Board of Directors.

## **Fight against corruption and fraud prevention**

UC RUSAL makes efforts to prevent the bribing of individuals and public servants, and is not involved in any form of unethical rewards or payments. The leading role in the prevention of corruption is vested in the Global Compliance Officer, the Internal Audit & Control Directorate and the Security Directorate, which in their turn coordinate the activities of the relevant units on the production facilities of the Company.

## **DMA-Against corruption**

In 2016, the Company approved an Anti-Corruption Policy. **G4-SO4**

Anti-corruption measures are also regulated by the following documents: **G4-SO4**

- The Business Partner Code that contains zero corruption tolerance rules;
- Code of Corporate Ethics;
- Provision on prevention and resolution of the conflict of interest;
- Internal labour regulations;
- Information Security Policy of UC RUSAL;
- Information security management policy;
- Policy on prevention of unfair actions;
- Provision on prevention and resolution of the conflict of interest;
- Regulation on audit of planned actions for compliance with antimonopoly requirements.

The Company complies with anti-money laundering legislation and has anti-money laundering policies set out in its Code of Corporate Ethics and the Business Partner Code. **HKEx Appendix 27 KPI B7**

The Internal Audit & Control Directorate conducts regular checks to prevent possible violations or minimise their consequences. Risks in the area of corruption and fraud are analysed and incorporated into the Company's Risk Map. **G4-SO3**

As a result of the audits conducted by the Internal Audit & Control Directorate at the production facilities and the Company's directorates and divisions in 2016, the following HR decisions were taken: eight employees were dismissed, 39 employees received various disciplinary sanctions. **G4-SO5**

All employees are informed about existing anti-corruption and fraud prevention procedures. In addition, the HR Directorate regularly conducts training of staff in anti-corruption techniques, and an exchange of experience in this area is conducted within the framework of the annual gathering of the heads of security business units.

One of the effective tools for combating corruption and fraud is a hotline that any employee of the company can call and report violations. The Hotline provides an anonymous way to send the message and a way in which the name or other identification method of the sender is specified. A message through the hotline can be sent by all employees and third parties having information about activities of the Company.

During 2016, 34 communications were received on the hotline, 100% of which were processed, 48% were partially or fully confirmed. **G4-SO5**

Among the issues raised by those who called the hotline were the following:

- unscrupulous actions and unethical behaviour of Company employees and counterparties – 41%;
- compliance with the requirements of labour law – 35%;
- problems in production processes – 9%;
- irrelevant messages – 15%.

In 2016, the employees of foreign production facilities did not call the hotline.

All communications to the hotline undergo a registration procedure and then an investigation of all the facts presented in the communication is conducted. Depending on the nature of the communication, the managers of the special units of the production facilities or divisions or directors of the Company are involved in the verification of the reported facts. All communications received on the hotline, including anonymous ones, are subject to mandatory verification. After the communication is checked, the initiator receives the response. The Company guarantees that all communications are confidential. The audits of the Directorate for Control, Internal Audit and Business Coordination may be initiated in response to the signals, confirming the effectiveness of the management of the communications.

## **Procurement**

In view of the fact that the Company is engaged in the procurement of a large volume of raw materials, supplies and services, the special area of work of the Internal Audit & Control Directorate is the supervision of procurement activities. A Tender Committee was established under the chairmanship of the Director of Control: it is composed of the representatives of key business units of the Company, which allows for a wide range of monitoring functions. As a result of the work of the Internal Audit & Control Directorate in the Tender Committee, financial savings of USD 2.4 million were achieved in 2016.

## **Plans for 2017-2018**

- Improvement of internal controls, prevention of fraud and corruption risks, increased control of asset integrity;
- Conducting of further training of employees;
- Ensuring control and timely notification of the Executive Committee and the Board of Directors of the Company about the risks relating to environmental aspects of the Company's operation; conducting internal audits of business units of the Company with due regard to the targets of environmental (including greenhouse gases) and industrial safety;
- Improvement of risk management system (tools, reporting);
- Development, approval and implementation of target projects of production systems, continued implementation of projects initiated in 2016 (Supplier Accreditation project and others).

## RISK MANAGEMENT SYSTEM

### Risk analysis

In order to reduce the negative impact of potential hazards and ensure stable and sustainable business development, the Company has an effective risk management system that is part of the corporate governance system. The main goal of risk management is to choose the best practices for each of the identified risks and to provide information to management and Company shareholders. **G4-2**

The risk management system is an ongoing process at all levels of management aimed at accumulation and dissemination of knowledge about the risks within the Company.

Risk management is a part of the competence of the Risk Management Group created by the Board of Directors as a part of the Internal Audit & Control Directorate. **G4-45, HKEx Appendix 27 para 9, G4-37**

The main internal instruments governing this area are:

- A risk management policy that defines the overall concept and responsibilities of the staff (approved by the instruction of Company management of May 15, 2013);
- Risk management regulations describing the main tools and methods for identification, assessment and mitigation of the risks (approved by the instruction of Company management of December 28, 2016).

The key elements of a risk management system include: identification and assessment of risks, development and implementation of risk mitigation activities, reporting on results of risk management, and evaluation of the effectiveness of the risk management system. Stages of the risk management system: **HKEx Appendix 27 para 9**

- organisation of independent risk audits of Company production facilities conducted by specialists Willis Group and Ingosstrakh Engineering Centre for risk mitigation purposes and optimisation of insurance programmes;
- preparation of the annual Corporate Risk Map for four risk groups (operating, financial and market, corporate, project) and risk types (energy, technology, price change risks, legislative, legal, credit, etc.). The Audit Committee is provided with quarterly reports on the status of the risk management system; **G4-49**
- evaluation and audit of the risk management system;
- preparing the risk insurance programme.

The audit procedure consists of planned activities under the risk maps for the production areas and the solution of the tasks set by the Company's management authorities. The purpose of the audits is to identify significant risks, to assess existing key business process indicators, and to make recommendations to improve the internal control system, as well as to oversee the implementation of the recommendations resulting from the audits. Key risk measurement tools:

- financial risk evaluation (USD million);
- probability of risk materialisation (0% to 100%);
- probable damages (USD million);
- risk criticality (points 1 to 5).



Risk status and results of risk management are presented quarterly to the Board of Directors for review, including changes in groups and risk types, as well as activities aimed at reducing or preventing the negative impact of existing or materialised risks. **HKEx Appendix 27 para 9, G4-37**

Work continues on new areas of risk that have not been identified early, as well as work on improving the quality of information provided by the Company's production facilities.

### **Monitoring, reporting and performance evaluation**

The Internal Audit & Control Directorate reports regularly on its activities to the Board of Directors, the Audit Committee and the Review Commission, providing the following information: **G4-47, HKEx Appendix 27 para 9**

- report on materialised risks for the previous year (annually);
- submission of the Corporate Risk Map for the following year (annually);
- report on the status of the Company's risk management (quarterly).

The Audit Committee monitors the compliance by the Company's management of risk management policy and procedures. The Audit Committee and the Board of Directors review the risk profile and results of performance of the Risk Management Programme on a quarterly and yearly basis. The Review Commission conducts an independent evaluation of the effectiveness of the risk management system. **G4-37**

In case of an event occurring or planned that will have a significant impact on the Company, the managers are promptly informed (according to the Regulations on Management Notification about Accidents in Company's Operation, 2nd version approved by the Instruction of the Company's management of January 23, 2017). **G4-47**

According to the Audit Committee and the Board of Directors, during the year ended December 31, 2016, the internal controls of UC RUSAL operated in accordance with the Corporate Governance Code. **G4-46 HKEx Appendix 27 para 9**

### **Major risk groups and their evaluation**

The quantitative risk evaluation is based on two key factors describing the significance of risks:

- risk event probability;
- financial evaluation of probable losses – risk extent describing the consequences of risk materialisation.

The combination of probability of a risk event and financial risk evaluation is an indicator of risk criticality, which allows assessing the consequences of the effect after a risk event has materialised.

### Operating risks

- ✓ preventive maintenance of equipment;
- ✓ control of the quality of rendered services of repair and operation of equipment by personnel;
- ✓ improvement of the quality of finished products, quality control of raw materials;
- ✓ conducting regular training on health and safety;
- ✓ timely receipt of permits for emissions / discharges of pollutants. Conducting negotiations with regulators;
- ✓ conducting negotiations with carriers, ports and other agents of transport infrastructure,
- ✓ reorientation of cargo flows;
- ✓ insurance of risks (property, equipment, goods)

### Financial and market risks

- ✓ search for new sales markets with high profitability of sales;
- ✓ monitoring of sales markets (reorientation of supplies from the foreign to the domestic market);
- ✓ timely adjustment of contractual relations;
- ✓ adjustment of the production programme;
- ✓ negotiations with banks to optimise the terms of loan agreements;
- ✓ consideration of the possibility of sale of non-core assets and other measures to increase cash flow.

### Company-wide risks

- ✓ protection of rights in court;
- ✓ control of the level of labour remuneration at the production facilities relative to the level of the region/labour market;
- ✓ wage indexation;
- ✓ optimisation of the system for identifying, preventing and neutralising external threats to material and financial resources;
- ✓ monitoring of the political situation and conducting negotiations with public authorities

### Project risks

- ✓ implementation of projects in strict compliance with approved schedules;
- ✓ control over holding of competitions and concluding contracting agreements;
- ✓ control over compliance with the time and quality of work performed;
- ✓ strict observance of all regulations, rules and instructions;
- ✓ negotiations with relevant government and regional authorities in the implementation of major projects.

*The management of the key risks in the area of sustainable development*

<b>Risks</b>	<b>Description</b>	<b>Management measures</b>
<b>Environmental risks</b>	Risks associated with damage to the environment from the Company and increased fees for the negative impact on the environment	In order to reduce the risks, the Company monitors environmental legislation and implements a range of environmental protection activities (e.g., monitoring of red mud disposal area). <i>Please see details in the Environment Protection Section</i>
<b>Violations in the area of health and safety</b>	Risks related to the health and safety of employees	In order to prevent accidents, the Company develops the system of management of health, industrial and fire safety, including the assessment of risks in this area, conducts training of employees, implements programmes and activities to ensure safe working conditions, and conducts management audits. <i>Please see details in the Work Safety section</i>
<b>Risks associated with social tensions</b>	Risks arising from the emergence of social tensions due to staff dissatisfaction with the current situation at production facilities	In the context of risk management, constant explanatory work is conducted with staff, management and trade unions. Work on the prevention of these risks has been systematised, so far the risks are at a minimal level. <i>Please see more details in the Employees section</i>

## **ETHICS AND HUMAN RIGHTS**

### **Management approach**

UC RUSAL pays due attention to ethics and respects human rights. The Company shares the principles enshrined in the conventions of the International Labour Organisation, the Universal Declaration of Human Rights and the UN Global Compact, and applies the business guidelines in terms of human rights and the Guideline for Multinational Enterprises of the Organisation for Economic Cooperation and Development as a methodical basis for building a management system in this area.

The main documents, which set out UC RUSAL position on ethics and respect for human rights, are the Code of Ethics and the Business Partner Code; some provisions are also contained in the HR Management policy. Together, these documents define the policy of UC RUSAL with respect to compliance with and respect for human rights.

In 2016, a number of documents was adopted, including regulations on the functioning of the corporate ethics system, and regulations on corporate ethics officer, the purpose of which is to further improve the mechanisms to ensure the Company's high ethical requirements. **G4-56**

In 2016, Business Partner Code compliance issues were included in the Supplier Questionnaire that the counterparties must fill in before audits are conducted.

**Implementation of the Company's human rights policy HKEx Appendix 27 KPI B4, B5**

<b>Human rights principles</b>	<b>Corporate documents</b>	<b>Tools and procedures for verification and response to HKEx Appendix 27 KPI B5.2</b>
Non-discrimination on the grounds of gender, race and/or religion <b>G4-HR3</b>	Code of Corporate Ethics	On-site audits
Abandonment of child and forced labour <b>G4-HR5, G4-HR6</b>	HR Policy Business Partner Code	Hotline Institute of corporate ethics officers (100% coverage of the production facilities)
Provision of working conditions that are safe for life and health of workers, measures to prevent industrial injuries		
Compliance with the regulations relating to hours of work and rest, overtime, salary, working hours, etc. <b>G4-HR6</b>		
Compliance with the codes and regulations of business ethics and law, conducting its business without corruption; compliance with anti-money laundering legislation <b>HKEx Appendix 27 KPI B7 G4-SO4</b>	Code of Corporate Ethics Business Partner Code	
Implementation of measures necessary to reduce the impact of production on environment, including the conservation of fresh water to meet people's needs	Code of Corporate Ethics Business Partner Code	Environmental reporting Management system audits (100% coverage of the production facilities)
Conformity of the services provided and goods delivered to the quality and safety standards <b>HKEx Appendix 27 KPI B6</b>	Code of Corporate Ethics Business Partner Code	QMS elements: quality services, supplier evaluation (100% coverage of the production facilities)
Respect for the cultural characteristics of the countries and regions of operation <b>G4-HR8</b>	Code of Corporate Ethics Business Partner Code	Assessment of the situation during the development of programmes for local communities, meetings with community representatives (100% coverage of the production facilities) Evaluation of programmes (in Russia)

UC RUSAL pays due attention to human rights in the process of production and other activities:

- promotes respect for human rights in its own activities and the activity of its partners through the development and implementation of corporate instruments and monitoring and control mechanisms;
- conducts a periodic self-examination to determine the existence of violations of human rights in the activity of production facilities that are part of the Company (including by means of corporate ethics officers); **G4-HR9**
- arranges for the registration and verification of all communications from the employees or local residents to the Hotline;
- conducts investigations into the written communications from the employees to the management of the production facilities and the Company.

Human rights monitoring procedures are part of the operating standards of UC RUSAL business units and production facilities, integrated into internal documents (labour contracts, corporate policies, labour safety regulations, etc.) and in broader procedures to ensure compliance with law.

**Code of Ethics and ethics officers**

UC RUSAL has a Code of Ethics, which provides for the selection of ethics officers to work with employees’ communication regarding work safety, compliance with labour laws, internal communication problems, and other issues. **G4-HR12, G4-57**

The principal task of the officers is to communicate directly with the employees in difficult situations to find a common solution and to implement it. If a negative signal is received from the employees about decisions concerning labour relations, the corporate ethics officer promptly interacts with the business leaders, the labour disputes commission and trade unions, and the company’s administration develops corrective measures.

**Characteristics of ethics officers**

<b>Indicators</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Number of corporate ethics officers	36	32	30
Number of communications processed by the officers <b>G4-HR12, G4-LA16</b>	198	156	105
Number of meetings held by the officers	230	314	198

**Hotline**

To work with the communications of related parties, a Hotline is organised, which can be accessed by any individual or entity, regardless of where it is located, to report a problem or violation related to the business of Company’s production facilities. **G4-HR12**

Staff and local residents also have the opportunity to write to the Company’s management. In each case, a comprehensive verification of the facts is carried out, and the results of the verification are sent to the claimant in writing. UC RUSAL ensures that all communications on the Hotline will be kept confidential. **G4-58**

### *Content of the business in terms of human rights*

On the basis of the UN international practice and the Resource Guide to Corporate Human Rights Reporting and UC RUSAL highlights the following aspects, in which these issues may be relevant to its business in Russia and abroad:

- law enforcement in the countries of operation, handling of complaints and communications; **HKEx Appendix 27 KPI B7**
- labour relations;
- the relationship in the supply chain, including the procurement of resources from areas, where conflicts occur;
- impacts on local communities, including the equitable use of natural resources, the payment of taxes, the impact of industries on health, employment and well-being of local residents in the mining and production regions.

The Company implements projects to eliminate negative impact on human rights, and in some cases involves external stakeholders for their development.

### **Labour relations**

The Company respects and guarantees the rights and freedoms of its employees according to international law and in accordance with the laws of the country of operation. **HKEx Appendix 27 KPI B1**

Collective bargain agreements (or similar documents) contain provisions on work and rest hours, minimum wages, social benefits, etc. The Company interacts with trade unions and other legitimate representatives of employees in an effort to address emerging issues in the negotiating process, which is the realisation of workers' right to collective associations for the protection of their rights. **G4-HR4**

All matters relating to the disciplinary liability or dismissal of employees must be reviewed by the lawyers of production facilities to ensure that the labour rights are not violated and the law is respected. Forms of protection of personal data of employees of production facilities have been created. **HKEx Appendix 27 KPI B1**

In the Russian Federation, the main source of labour law is the Labour Code of the Russian Federation (LCRF), which sets out the rights and obligations of the employee and employer, and regulates the issues of hiring, dismissal, and promotion. The LCRF prohibits discrimination in the workplace and forced labour, sets out rules for remuneration of labour, labour conditions, working hours and rest, provides for the differentiation of working conditions, depending on gender, age and the family responsibilities of employees, and other aspects. State supervision and control over observance of labour legislation by employers is carried out by the State Labour Inspectorate. All inspections at the Company's enterprises are registered in the corporate information system and the management of production directorates monitors the timely measures taken on the production sites. **HKEx Appendix 27 KPI B1 (b)**

The HR Directorate, the Directorate for Control, Internal Audit and Business Coordination, and the Legal Affairs Directorate are responsible for monitoring compliance with labour legislation in business units and at production facilities. During the on-site visits, staff interviews are conducted selectively to identify violations of labour rights (including cases of discrimination, forced labour and similar). In 2016, a comprehensive audit of HR services was conducted on all UC RUSAL production facilities; there are no violations of the labour rights of the workers. **G4-HR6 G4-HR5 G4-HR9 HKEx Appendix 27 KPI B4 G4-37**

The prohibitions of child and forced labour are set out in the state legislation in the countries of operation. The Company included these prohibitions in the Corporate Code of Ethics and the Business Partner Code. The Company conducts regular control actions. During on-site and off-site inspections of financial and economic activities of the Company's enterprises, as well as during individual inspections of personnel, the control directorate checks the labour contracts of personnel. No evidence of violation of these prohibitions have been identified since the establishment of the Company. **HKEx Appendix 27 KPI B4 (b)**

The compensation system using grades operating in UC RUSAL does not include a gender perspective in the determination of compensation, which ensures equal pay for equal work of men and women.

Human rights education, mainly in terms of compliance with labour rights, is provided to HR officers. **G4-HR2**

The Company adheres to the principle of diversity and equal opportunities, which is manifested in the increased representation of women in higher levels of management, and the provision of career prospects for staff at every level. *For more information please see the Corporate Governance and HR sections.*

## **Security**

The safety of the employees of UC RUSAL production facilities and contracting organisations is one of the main priorities of corporate social responsibility. The policy applies to all production facilities of the Company. Health and safety management system includes mechanisms to enable the assessment of the state of work safety and to take prompt action (e.g. audits of management systems at production facilities). The requirements for compliance with work safety standards are included in contracts with service providers. *For more information, please see Labour Protection and Supply Chain sections.*

All employees of contracting organisations ensuring security at UC RUSAL enterprises and facilities are subject to compulsory training under the Company's approved access and internal regulations, as well as periodical briefings. **G4-HR7**

## **Local communities**

The Company implements charitable and social programmes aimed at improving the quality of life, health and education in the countries of operation. Programmes for local communities are addressed to small indigenous peoples, among other, with a view to providing them with clean water, electricity, social and health services. **G4-MM5, G4-HR8**

*For more information please see the Investment in Community Development section.*

## **Results in 2016**

In 2016 the Company received no communications about human rights violations at its production facilities, as well as significant conflict situations. There have also been no accidents during the reporting period that have damaged the life and health of workers and residents of the surrounding territories. There were no cases of violation of the rights of indigenous minorities. **G4-MM5**

## PERFORMANCE MANAGEMENT

### QUALITY MANAGEMENT SYSTEM

#### Management approach

The Company has successfully established and implemented the quality management system (QMS), certified in compliance with the International Standard ISO 9001:2008.

QMS encourages for continuous improvement of all business processes, reduction of production and other risks, and effective interaction with stakeholders involved in the supply chain. High quality of management processes is the key to achieving and maintaining the high quality of products and services.

The main production facilities of UC RUSAL (Russian and foreign) have ISO 9001 compliance certificates (in total 27 production facilities). A plan for transition to a new version of the standard, ISO 9001:2015, has been developed. The plan was launched in 2016, and the full migration to the new version is planned for 2017.

In addition, four aluminium smelters have certificates of compliance with the international standard for automotive suppliers ISO/TS 16949. The foil rolling mill Sayanal has ISO 22001 compliance certificate for Food Safety Management System.

There is a Quality Policy that establishes uniform requirements and principles for all production facilities of the Company. Each year, quality goals are set and evaluated through KPI of functional business units. Reports are submitted for review to the Executive Committee of UC RUSAL.

QMS management procedures affect the following stages of the product life cycle:

- analysis of customer requirements;
- development of new process and improvement of existing production processes;
- procurement of raw materials and supplies;
- production;
- customer related processes;
- storage and delivery of products.

Employees are regularly trained in the requirements of international standards and quality tools such as Failure Mode and Effects Analysis (FMEA), Statistical Process Control (SPC), Measurement System Analysis (MSA), Advanced Product Quality Planning (APQP), etc.

An effective system for internal audits has been deployed. It assesses the status of QMS and indicates areas for improvement. An automated system to audit, to document the findings and to control the corrective actions is being developed.

Quality Management Directorate (QMD) is responsible for maintaining the RUSAL QMS and leading the improvement initiatives. Divisional Quality Structures, which report to the QMD, operate on production sites.



## Main results of 2016

### Quality Development Strategy

The Company's main areas of development in terms of quality are defined in the Quality Development Strategy for 2016-2019 (approved by the Steering Committee on Quality on June 21, 2016 and the Executive Committee on July 13, 2016). The deployment of Quality Strategy and objectives are documented in X-matrix. In order to achieve the objectives, an action plan has been set up. The achievement of objectives and gaps monitored on weekly basis. In 2016 QMD developed and implemented the following standards:

- Regulations on the Steering Committee on Quality (enacted on June 23, 2016);
- Claims Management Process (enacted on April 12, 2016);
- Internal non-compliance management. Requirements for process organisation (enacted on September 26, 2016).

In 2016, the reorganisation of divisional and corporate quality structure completed. Smelters have, which directly report to Managing Directors/General Managers and are independent from the production.

The functions of the QA departments include the control of incoming raw materials, in-process control and product release. An important function is the risk analysis and quality planning during a product launch.

The Steering Committee on Quality is a management body which regulates the quality planning, quality assurance and quality improvement activities. The meetings of the Committee have been held monthly since June 2016. The topics reviewed by the Steering Committees include quality issues, the RCCA plans, quality initiatives, resources required and changes to the QMS.

### QMS development

#### *'Perfect Process'*

The Perfect Process Initiative has been established with the objective to improve the stability and capability of production processes focused on meeting and exceeding of the key customer requirements.

The main stages of the Perfect Process Initiative include:

- identification of key customer requirements;
- benchmarking on quality, defining of gaps and opportunities;
- identification of special product characteristics;
- identification of special process parameters in correlation with the characteristics;
- assigning the control methods and measuring system analysis;
- monitoring and evaluating the process stability and capability;
- development and implementation of corrective actions to improve the process and product;
- customer evaluation on effectiveness.

Pilot projects started on Sayanogorsk and Krasnoyarsk aluminium smelters: they have become sites for training of the employees in this methodology. The Company plans to implement projects at all production facilities of the Aluminium Division, the New Projects Divisions, and the Packaging Division. In 2016, 21 perfect processes were launched for key customers, including:

- 9 perfect processes by the Aluminium Division;
- 8 perfect processes by the New Projects Directorate;
- 4 perfect processes by the Packaging Division.

In order to provide methodology support and to monitor the progress, the mentors from QMD/quality assurance departments have been assigned.

### ***Variability Reduction Team (VRT)***

A VRT under the lead of QA Managers was set up to address the repeatable quality issues in 2016. The root cause analysis and corrective actions of these problems are under the scrutinized attention of Senior Management. The effectiveness of the corrective actions is monitored through the customer feedback. Lesson learned is reviewed by the Steering Committee on Quality.

### **Training of employees in quality**

Training on quality related matters has been organized and included the following topics: ‘Quality Strategy and Objectives’, ‘Customer Claims Management’, ‘Internal Non-compliance Management’, and ‘Root Cause and Corrective Action (RCCA)’.

### ***Number of employees trained in quality***

Type of training	Number of persons		
	2014	2015	2016
Internal	462	175	369
External	52	227	55
In the distance learning system	648	187	715
<b>Total</b>	<b>1162</b>	<b>589</b>	<b>1139</b>

### **Achievement**

- Defined RUSAL Quality Strategy
- Set up RUSAL leveled Quality Management Structure
- Established VRT team
- Implemented the Pilots on Processes Certification in SAZ and KRAZ
- Initiated the Perfect Processes
- Started Focus Improvement Programs with Key Customers
- Streamlined the Customer Claim Management process
- Claim response time reduced from 67 business days in 2015 to 20 business days in 2016.
- Harmonized the quality control procedures with the business partners.

## **Plans for 2017**

- To develop action plan and to implement the transition to the ISO 9001:2015 and IATF 16949:2016
- To build quality into production processes through automation, function changes and motivation system
- To reduce the claim reponse time through futher process streamlining and elimination of non-value added activities
- To build the Perfect Processes at each smelter
- To implement the Focus Improvement programs with Key Customers
- To ensure the uniformity in Incoming Quality Assurance
- To incorporate APQP
- To develop Cost of Quality Procedure

## **UC RUSAL BUSINESS SYSTEM**

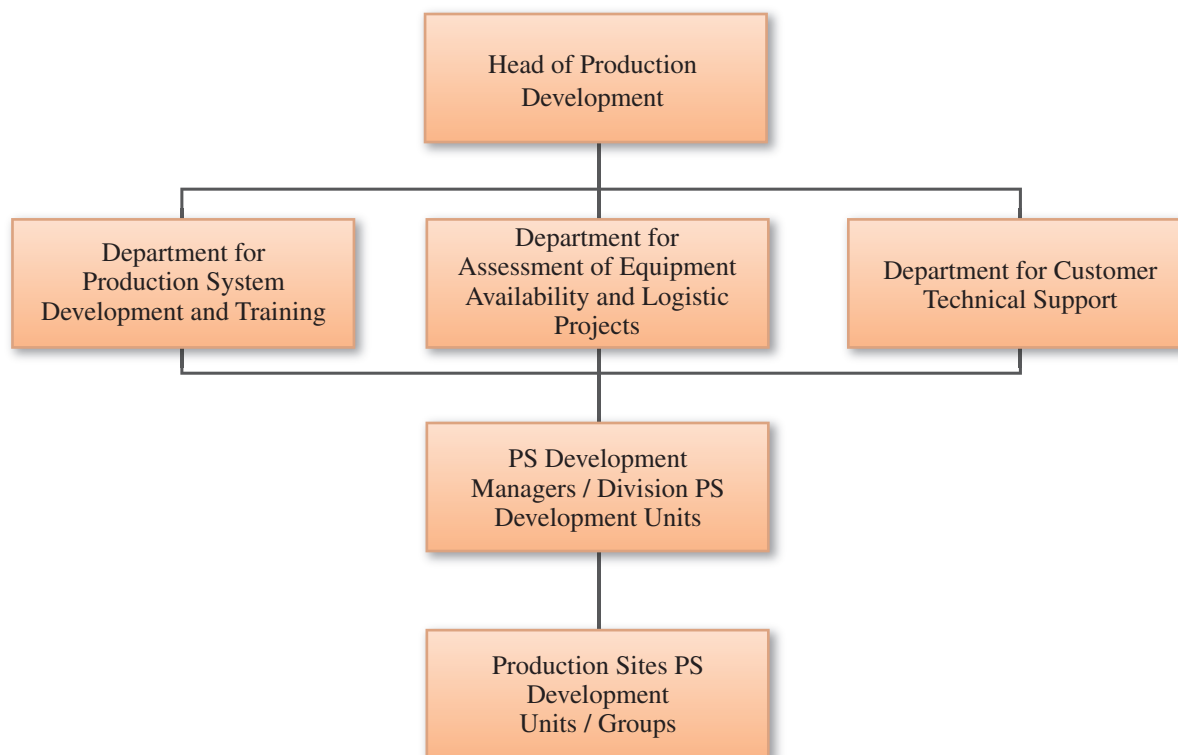
### **Management approach**

UC RUSAL Business System (BS) aims to create an environment for the development of personnel, the creation of a culture aimed at the continuous improvement of the Company's production and business processes, and the creation of a unified systematic approach to understanding the tools for increasing efficiency, and introducing and disseminating the production system of RUSAL.

UC RUSAL Business System is based on the TOYOTA Production System (TPS), which allows for continuous improvement of production and business processes, promptly responding to customer needs, and remaining an effective company in the world market.

The purpose of the construction and development of the BS is to build through business chains from the supplier to the customer and to manage their expectations and needs effectively, and to introduce a culture of continuous improvement on production facilities. BS is set up on a Company-wide scale, including foreign assets.

### ***Structure of the BS management***



The objectives of the BS are related to the overall strategic objectives of the Company: key objectives and quantitative indicators for the next reporting period are formulated each year. Specific targets are set for each division and production facilities. Each head (senior foreman, head of shop, head of unit, head of production, head of the area) should have his/her project of BS development and report on its implementation to the CEO.

### ***Steering committees***

On-site steering committees are held several times a year to develop the BS at the production facilities. Each of them is attended by senior management: members of UC RUSAL executive committee are required to attend.

### ***Kaizen workshops***

Kaizen workshops are an effective tool for optimisation of production processes and standardisation of technology operations that allow employees to implement the proposed improvements. Kaizen workshops operate on 10 production facilities of UC RUSAL in Aluminium, Alumina and Packaging Divisions, as well as the New Projects Directorate.

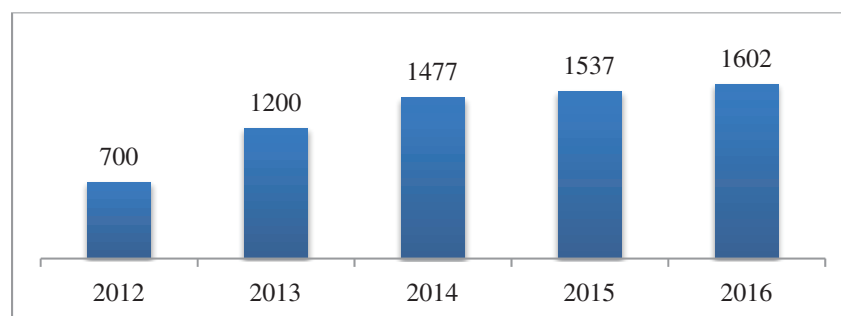
### ***Kaizen improvement indicators for the BS development***

<b>Indicators</b>	<b>2015</b>	<b>2016</b>
Number of proposals received from employees	5311	10863
Number of implemented proposals from employees	4639	9856
Number of kaizen workshops	10	10

### ***‘Improvement of the year’ competition***

The annual ‘Improvement of the year’ competition is held in four categories: Security, Quality, Performance, and Cost Effectiveness. The proposals received from the employees are evaluated, the best are recognised as winning and implemented in production. UC RUSAL receives a significant social and economic effect every year from the implementation of the proposals received: In 2016, the expected economic effect from the implementation of improvements was of USD 10.5 million.

### ***Number of employees who took part in the competition***



### **Training**

The implementation of BS requires maximum participation, understanding and commitment of all employees of the Company, including senior management. Therefore, staff development and training in relevant management mechanisms and tools, and the introduction of procedures for the identification of leaders at the workplace (the BS 250 programme) are mandatory elements of the BS management.

Together with the HR Directorate, training is provided to the members of the Executive Committee and to the Kaizen teams members of production facilities on the principles and ideals of the BS at the training sites and model sites of the key production facilities. In the reporting year, a decision was taken about the annual cycle of the BS 250 talent pool training programme. At the same time, the graduates of the complete training cycle will make up at least 10% of the total number of candidates.

In 2016, all members of the Executive Committee, including heads of divisions, as well as 15 top managers (managing directors and division directors) were trained and qualified in the methods and approaches of the Business System.

### ***Training of employees in the principles and tools of the BS***

<b>Indicators</b>	<b>2015</b>	<b>2016</b>
Number of persons trained in total, including	4450	7651
internal training, persons	1213	3780
external training, persons	207	27
distance learning, persons	3030	3844
Number of on-hand training sessions on various topics related to the organisation and improvement of the production process	32	306

The training of BS talent pool provides continuity in the approaches to the management of BS implementation process and accumulates the Company's experience. In 2016, 127 persons were recruited from the three stages of the selection process, of which 78 were assigned to different positions (including 59 to top positions). Of the 2015 admission, 84 persons were assigned to different positions (including 56 persons who were promoted).

### **Business system development in 2016**

The Company has a strategic goal of lowering the unit cost of production and business system projects can make a significant contribution to its achievement by lowering transport costs, eliminating the cost of repackaging, and by the lack of claims from the customers in terms of delivery schedules, effective maintenance and maintenance of equipment and other improvements.

Efforts to improve the efficiency of industrial equipment, including the reduction of planned and unplanned downtime, continue to be systematically pursued. A methodology for evaluating the overall equipment efficiency (OEE) is being introduced. The Company analyses the data received to find additional equipment reserves.

In 2015, several pilot projects were launched to increase output through improved equipment efficiency, and in 2016 the first results were obtained:

- two projects were implemented at the Krasnoyarsk aluminium smelter. As a result, the performance of the casting unit No 5 for the production of slabs rose from 10.5 thousand tonnes per month to 11.5 thousand tonnes per month, and the performance of the casting unit No 16 for the production T-bars rose to 4,900 tonnes per month;
- at SAYANAL as a result of reduction in the time of changeovers and downtime of the foil mill S-2 increased the production of foil to 2720 tonnes per month.

### **BS development Indicators**

<b>Indicators</b>	<b>2015</b>	<b>2016</b>
Number of projects aimed at the development of UC RUSAL BS (Company-level projects for logistics operations, quality, supplier development, etc.)	119	312
Number of on-site projects (production facility-level projects aimed at reducing losses, optimisation of equipment operation, etc.)	712	644
Number of projects in A3 format (projects at the level of business units and areas – each worker can initiate and defend his or her project on any topic)	309	229

### **Interaction with consumers**

Since 2015, the priority in business system development is to build through business processes from supplier to consumer, to work with key customers and suppliers.

The key suppliers of the Company include producers of alloying materials, coke (Lukoil-Perm), pitch (West Siberian Metallurgical Plant), aluminium fluoride (PhosAgro) and other raw materials and supplies required for the production process. The professionals of UC RUSAL Business System meet with partners, talk about TPS, show examples of the impact of the business system on production culture and processes, then help them fix the problem areas. Thus, the supplier is given knowledge and training, when interested.

For the benefit of the consumers and to increase flexibility in production and logistics, a number of projects were opened in 2016 to reduce the lead time (the period from the receipt of an order to the delivery of the ordered products). In particular, the following were open:

- project of ‘Optimisation of the supply chain of the finished products of the caster No 5 of the Krasnoyarsk aluminium smelter to European consumers’; customer – ELVAL S.A. (slabs). Achieved lead time – 60 days;
- project of ‘Optimisation of the supply chain of the finished products of the caster No 10 of the Bratsk aluminium smelter to Asian consumers’; customers – KOBE STEEL LTD., UACJ Corporation, Novelis Korea Limited (slabs). Achieved lead time – 60 days;
- project of ‘Optimisation of the logistics of the supply of 3104BT slabs produced by the Krasnoyarsk aluminium smelter (caster No 4) to the Arconic SMZ’; customer – Arconic SMZ. Achieved lead time – 20 days;
- project of ‘Lead time reduction in the USA. Reduction of the lead time of the orders and improvement of the utilisation of the capacities of primary alloys in T-bars, caster No 16 of the Krasnoyarsk aluminium smelter’; customer – General Aluminium Manufacturing Company. Achieved lead time – 75 days;

In the future, it is planned to scale the results to other production facilities, products and consumers of the Company.

### **Plans for 2017**

To reduce product delivery times and optimise the supply chain, projects are planned at the Bratsk aluminium smelter, Krasnoyarsk aluminium smelter and SAYANAL foil mill.

On certain production facilities, new pilot projects will be opened for preventive maintenance of equipment and for the organisation of stable schedules of carload freight by railway.

## **SUPPLY CHAIN**

### **Supply chain structure**

As one of the world’s largest producers of aluminium, UC RUSAL works with a large number of suppliers of electricity and fuel products, raw materials and supplies, equipment and technology, as well as services, including contractors directly operating at Company’s production facilities. **G4-12**

UC RUSAL suppliers include the largest Russian companies (RusHydro, Russian Railways, Vnesheconombank, EuroSibEnerg, etc.). Most of them publish regular sustainable development reports or have a formal position in key governance aspects.

In turn, UC RUSAL acts as supplier to companies working in such industries as engineering, metallurgy, chemical, transport, construction, electrical, food, packaging, etc. (*please see the About the Company section*).

The Company also interacts with organisations that provide intermediary services (distributors and wholesalers, commodity exchanges and electronic trading platforms).

New companies appear every year that become suppliers for UC RUSAL. In 2016, for example, the Company began working with a sea port in the Troitsa Bay (the Primorsky Territory).

## **System of relations with suppliers**

The Company is open to cooperation on a long-term basis with organisations that share its commitment to high standards of business ethics, quality and production effectiveness as set out in the Business Partner Code.

The objective of the Company is to build a long-term relationship that allows all parties to meet each other's needs and expectations the highest possible extent, and to combine efforts to achieve sustainable development goals. The Business Partner Code adopted by UC RUSAL in 2016 contains principles of interaction with related parties that the Company intends to extend to the supply chain.

### ***Implementation of the Business Partner Code* [HKEx Appendix 27 KPI B5](#)**

All partners with whom the Company has direct contracts have been sent a proposal to sign a Declaration of Accession to the Code on a voluntary basis. The content of the Code and the purpose of its signing were explained in direct communication with partners as well as during the audits of the suppliers. The producers of raw materials have raised the issue of the need to develop a similar document for their suppliers (Tier 2), which is seen by the Company as a positive signal showing that the principles set out in the Code can be proliferated along the supply chain. [HKEx Appendix 27 KPI B5.2](#)

Compliance with the principles of the Business Partner Code is verified during the review of the Supplier Questionnaire (completed by the partner prior to the supplier audit), as well as by observation during supplier audit.

### ***Purchase of raw materials and supplies for the production of the main products***

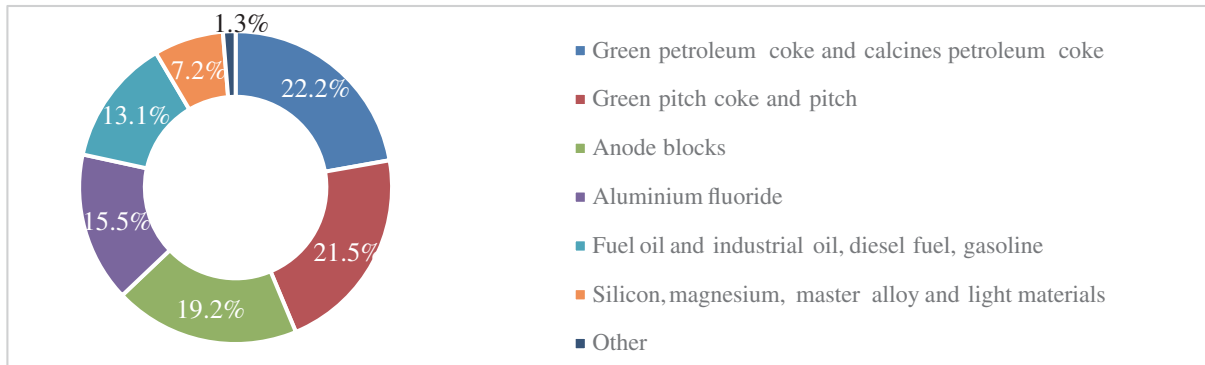
The specificity of UC RUSAL production entails that the quality of 80% of the final products depends on the suppliers. Therefore, the quality and timing of the supply of raw materials and supplies for the production of the main products are critical factors. All delivered products must comply with the requirements of the contracts and the regulatory documents. [HKEx Appendix 27 KPI B 6.4](#)

In 2016, the Commercial Directorate of the Business Support Directorate (hereinafter the BSD) worked with 117 producers of raw materials and suppliers, the majority of which (95) were Russian and Chinese. Total purchases amounted to USD 650 million. [HKEx Appendix 27 KPI B 5.1 \(part\)](#)

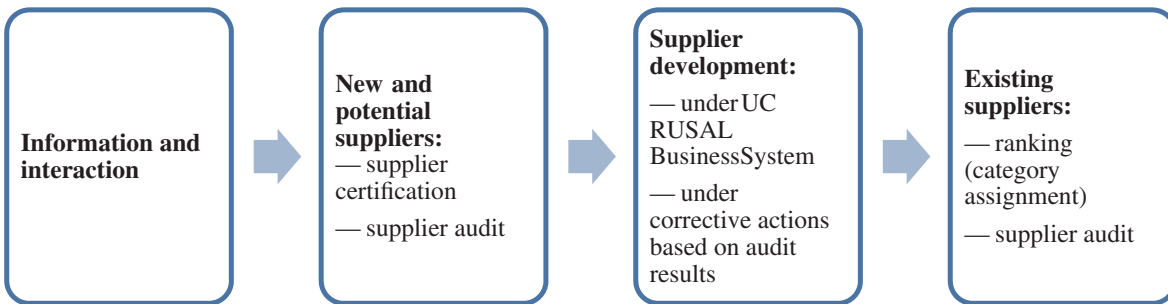
In the procurement of raw materials satisfying the requirements of UC RUSAL, the Company prefers suppliers from Russia and the CIS, building relationships based on long-term contracts. If there is insufficient supply, additional quantities are purchased abroad.



**Procurement structure, % of total acquisition of raw materials and supplies for the production of the main products**



Supplier procedures cover a full cycle of communication, from informing new and potential organisations to assessing the results of collaboration with long term suppliers of UC RUSAL.



The system of requirements of UC RUSAL to the suppliers of raw materials and supplies for the production of the main products and the procedures are documented in the following main documents:

- *Unified UC RUSAL requirements to suppliers;*
- *Procurement procedure and procurement rules;*
- *Rules for the certification of suppliers;*
- *Procedure for supplier audits;*
- *Regulations on supplier accreditation;*
- *Supplier rating assessment method;*
- *Methods of organisation of accounting of raw materials and supplies with deviations from regulatory requirements (under revision). HKEx Appendix 27 KPI B6.1*

The requirements in the area of health and safety are set out in the following documents:

- *Regulations on contractor management in the area of health and safety, fire and environment safety;*
- *Regulation on Supplier Accreditation System.*

### *Information and access to the procurement system*

To ensure the sustainability of production processes, the Company is constantly looking for the best and most promising offers in the market, and tracks the emergence of new products and services. The Company adheres to an open purchasing information policy, giving potential suppliers equal access to information and orders.

The main source of information is the suppliers portal, which is daily visited by about 3000 organisations. Here, the acquisition plan of UC RUSAL is published annually. An electronic trading platform of Transtrade.Rusal has been created to enhance the transparency of competitive procedures. The Company continues its cooperation with Fabrikant electronic trading platform, which also publishes information about UC RUSAL tenders.

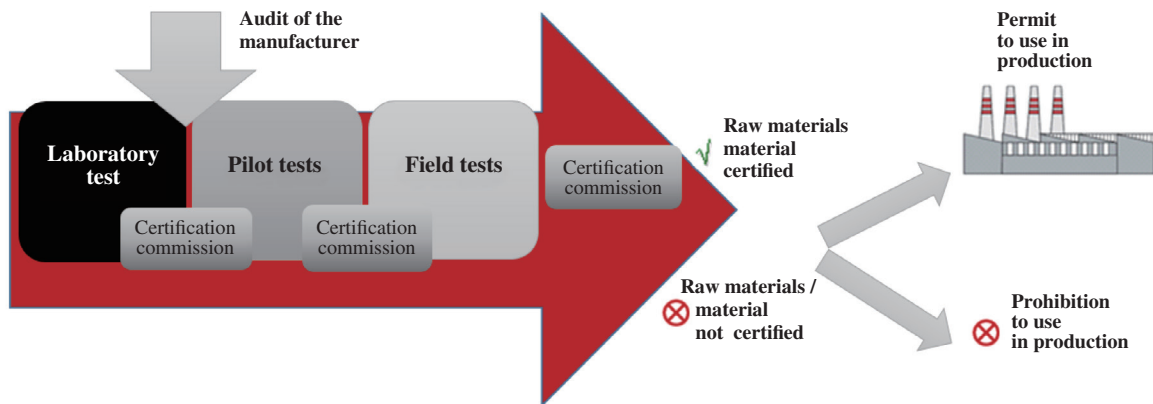
UC RUSAL participates in permanent platforms that provide the possibility to interact with suppliers on a regular basis. For example, one such platform is the Market Council, a non-profit partnership aimed at bringing together the players in the energy market and large consumers of electrical power.

The transparency of procurement procedures is monitored through online monitoring of the Hotline and the Suppliers portal on the corporate site.

### **Supplier certification**

The certification of suppliers of raw materials and supplies for the production of the main products includes the following test stages: laboratory tests, pilot tests and field tests. Certification is meant to confirm the compliance of the quality of raw materials and supplies with the requirements of production technology and the possibility of its use at the production facilities of the Company.

### **Certification stages**



### ***Audits***

Audits of new/potential suppliers are carried out prior to the decision on the possibility of cooperation. Existing suppliers are also audited to ensure the compliance of the supply of the purchased products to the production requirements. The audits address the following tasks: **HKEx-B 6.4**

- assessment of production capacities, risk assessment (in terms of technologies used, quality, timing and volume of supply);
- confirmation of the ability of the supplier to supply products with parameters compliant with the Company's relevant requirements;
- reduction of the risks of supply of poor quality products;
- improvement of the reliability of suppliers;
- creation of a competitive environment for evaluating and selecting suppliers;
- supplier development.

A multifunctional team participates in audits: representatives of the technical service, quality assurance department, commercial service, aluminium smelters, etc. The audit process is standardised: a Supplier audit control chart containing over 60 questions in the following areas is used:

- management of raw materials and supplies;
- organisation of production;
- production technology;
- management of finished products;
- quality management system;
- HR – qualification and training, rotation.

The audits ensure a score that is the basis for the organisation's approval for further cooperation and is taken into account in the selection of the supplier for procurement.

### ***Scoring zones***

Green	> 69	Future cooperation is recommended
Yellow	55–69	Review of supplies downwards, repeated evaluation after the implementation of corrective actions
Red	< 55	Search for alternative suppliers to cover the quantity purchased

If the supplier does not fully meet the requirements of UC RUSAL (55-70%), the Company can provide support in the development of such organisations.

As a result of the audit, the Company provides a list of inconsistencies and corrective actions. Audit results have a stimulating effect on supplier development: The Company helps to address the identified weaknesses and optimise processes that help them to certify their management systems and offer new perspectives. The partners may also be invited to participate in the Supplier Development Project within UC RUSAL Business System. After performing corrective actions, the supplier can be reaudited: if the risks are eliminated, the company's score changes.

A total of 40 supplier audits were carried out by the Commercial Directorate of the BSD in 2016.

#### *Supplier development in the framework of the Business System*

One of the Company's priorities in the Business System is the development and training of suppliers. The project of 'Supplier Development Centre' is being implemented for this end aimed at:

- a comprehensive solution of the issues of poor quality supplies at the production facilities of UC RUSAL;
- improvement of the corporate certification system;
- improvement of the reliability of suppliers.

The Supplier Development Centre helps to introduce progressive tools and production methods through technology and raw material integration with the Company and the harmonisation of quality standards. The project also assists in the implementation of the principles and tools of the Toyota Production System (TPS), including training of specialists directly at the production facilities of the suppliers.

Key suppliers of raw materials and supplies for the production of the main products (coke, pitch, fluoride aluminium and ligatures) have joint projects to improve overall efficiency, reduce costs without losing final quality, shorten the time of performance of the works, etc.

#### *Transportation and logistics*

One of the areas of work is the improvement of the efficiency of transportation and transshipment services. As part of the logistics optimisation project, the supply chain is analysed from the time of acquisition of the raw materials to the receipt of the products by the final consumers.

Russian and foreign ports are audited to preserve the quality of the products in transit, to reduce the stocks of finished products in ports and the time of metal turnover from the smelter to the export from the Russian port. The conditions of storage and handling of the products during storage and loading are analysed, as well as the economic indicators that characterise these processes.

In 2016, seven ports were audited: St. Petersburg, Novorossiysk, Vanino, Baltimore, Houston, Rotterdam and Kaohsiung. The audits have resulted in improved loading patterns. For example, the port of Novorossiysk has changed the location of storage of slabs, thereby reducing the risk of their damage by the passing equipment and reducing the pollution. As a result of the audits, work is also being done to improve the reliability of the packaging of finished products.

### ***Supplier rating***

The rating of suppliers is performed within the QMS and represents an assessment of the work of existing partners during the period of cooperation with UC RUSAL. The assessment is carried out according to the methodology of the 100 point system and is based on the application of the criteria:

- quality of products delivered;
- compliance with agreed delivery dates;
- compliance with agreed delivery volumes;
- existence of certified quality management system;
- no claims arising from the supplier's fault from the Company's customers.

According to the number of points earned, the organisation is assigned a category that must be considered when selecting suppliers for procurement. The partner is sent a letter explaining the results.

<b>Score</b>	<b>Category</b>	<b>Recommended actions</b>
85–100	Excellent	Work can be continued, the supplier is considered as priority when placing new orders
50–84	Acceptable	A supplier development project can be opened and an audit of the supplier performed
30–49	Conditionally acceptable	Work is possible if there are no market alternatives
Up to 30	Unacceptable	Work with supplier impossible

### ***Major events in 2016***

In 2016, in the framework of the QMS and the Business System 40 audits of the suppliers of raw materials were completed and the rating assessment of the suppliers of master alloys for the main products. Three joint projects have also been opened with existing suppliers of raw materials (anode blocks, aluminium fluoride, master alloy) aimed at eliminating losses and reducing the cost of purchased products.

A primary visit to the four suppliers with existing contracts (pitch, anode blocks, aluminium fluoride, master alloy) is planned for 2017 to teach the principles and philosophy of the Business System, to identify losses, and to develop plans with partners to address them. Joint projects may be opened in the future.

During the reporting period, 10 audits were conducted.

### ***Plans for 2017***

- In the framework of QMS and the Business System it is planned to:
  - conduct 45 audits of suppliers of raw materials (Commercial Directorate of BSD);
  - as part of the implementation of ISO 9001:2015:
    - to formalise the requirements for the suppliers of transportation services;
    - to implement the standard Quality section in procurement contracts;

- to update supplier rating and supplier audits;
- to form the PPAP base (production part approval process) for the suppliers of UC RUSAL.

*Requirements for suppliers in the area of health and safety* **G4-LA14**

A special area of interaction with the providers of services and works is health and industrial safety. The existence of risks in this area at the production facilities of the suppliers is considered by the Company a critical factor influencing successful cooperation.

Compliance with health and industrial safety standards is enshrined in service contracts. They are similar to the requirements for their own production facilities and for UC RUSAL employees. In case of violation by contracting organisations of the terms of the contract, they shall be subject to penalties up to termination. **HKEx Appendix 27 KPI B 5.2**

The main criteria for the assessment of contractors are as follows: qualification, provision of personal protective equipment, availability of skills for safe conduct of work.

The Company is conducting an investigation into all of the incidents. The injury rate among contractors' employees is based on the requirements of the corporate regulation on single reporting of health, industrial and fire safety. **HKEx Appendix 27 KPI B 5.2**

Health and safety services of UC RUSAL provide assistance to suppliers in order to improve compliance with Company requirements. To this end, the following activities are carried out:

- training in health, industrial and fire safety, first aid;
- regular and preliminary medical inspections;
- conducting production monitoring of working conditions;
- conducting of special assessment of working conditions;
- repair and construction works (as part of control of HSE compliance);
- transport;
- development of internal HSE regulatory documents;
- performance expert reviews of industrial safety;
- provision of personal protective equipment and working cloths, washing and mending.

In 2016, there were two fatal accidents involving contracted workers.

The increased control of the safe performance of works by contracting organisations is part of the corporate Plan for the reduction of injuries in 2016-2017. *For more information, please see Work Safety section.*

To this end, the instruction has been issued 'On the strengthening of supervision of the work of contracting organizations in the area of health and industrial safety', in accordance with which routine checks of the compliance with labour protection requirements of contractors are carried out. **HKEx Appendix 27 KPI B 5.2**

## **Interaction with consumers**

UC RUSAL mainly produces aluminium and alloys from which the customers are producing the final products. The main consumers of UC RUSAL are companies from Russia, Europe and America.

One of the Company's strategic objectives is to develop a long-term relationship with consumers by actively participating in the development of their new products, offering a wide variety of alloys tailored to the specific needs of each client.

## **Management approach**

UC RUSAL seeks to maximally comply with customer needs and reduce the number of claims by using various tools and techniques. **HKEx Appendix 27 KPI B 6**

In order to identify customer needs, the characteristics of their production and development priorities, the Company sends teams of representatives of production and service units to the production facilities of its customers. The production facilities of the Company regularly undergo on-site audits by customers to evaluate production processes and obtain recommendations. Key customers participate in joint trials.

In order to disseminate information about their approaches and results in the application of advanced production and environmental technologies and to interact with stakeholders and business partners, including buyers of metal products, equipment manufacturers and suppliers of various materials, the Company sends its representatives to key international congress and exhibition events.

The Company is developing the Customer Support Centre project to improve the customer claim management system and to accelerate the market entry of the most demanded products.

In 2016, targeted programmes for customer-specific improvement have been developed (one targeted programme for one production facility), with direct contacts with a number of key customers. In 2017, this tool will continue to be distributed and regulated and contacts with customers will continue to be extended.

In the reporting year, the project of 'Reduction of the duration of design and approval of specifications' was launched to reduce the time of response to the customers.

Initiatives to support and increase customer satisfaction are being developed. A redesign of the process of investigation of claims has been carried out, KPI of claim investigation have been changed, and a pattern of escalation of claim-related issues has been introduced. These changes are reflected in the updated corporate standard 'Customer Claim Management'. As a result of the work, the duration of claim investigation has been reduced to 20 business days.

In 2016, a decision was made to introduce the indicator of 'Promptness of review of customer applications' as a key indicator for achieving the Company's objectives under the Quality Management System.

In 2016, the Company did not receive any product safety-related feedback or claims. **G4-PR2 HKEx Appendix 27 KPI B6.1**

### *Analysis of customer satisfaction* **G4-PR5**

The main indicator of quality of Company's interaction with customers is the level of customer satisfaction. Studies have been conducted annually since 2004. A questionnaire is sent to the Customers containing 69 questions in 7 areas of interaction. The results of the study help to see opportunities for improvement and are taken into account in the development of future action plans.

As of 2016, the Customer Satisfaction Index has increased from 90% to 94% compared to the previous year's indicator. There is a positive trend in the level of customer satisfaction assessment in all areas, including satisfaction with the quality of the metal and alloys supplied. Among the questions raised by customers during the questionnaire, the most important are the following:

- product quality;
- packaging;
- delivery performance (time, early warning about delivery problems, timeliness, delivery of shipping documents, etc.);
- communications on technical issues/technical support;
- creation/development of new alloys.

### **General customer satisfaction level of UC RUSAL in 2013-2016**

	Period			
	2013	2014	2015	2016
<b>Overall rating</b>	<b>8.1</b>	<b>8.0</b>	<b>8.4</b>	<b>8.8</b>
Relations	8.3	8.2	8.7	9.0
Technical support	7.4	7.4	7.9	8.4
Product quality	8.1	8.2	8.5	8.7
Commercial arrangements	8.1	8.1	8.6	8.8
Delivery performance	7.9	7.9	8.3	8.5
Business cooperation	8.1	8.0	8.5	8.9

*Note:* The maximum value for each area is 10 points.

### *Labelling products* **HKEx Appendix 27 KPI B6 (a) and (b)**

The finished products produced at the company's enterprises are automatically labelled in accordance with the requirements of the state. The label includes a trademark or name of the manufacturer, aluminium grade or alloy brand, melting number and other information. In 2016, there were no significant claims in connection with the labelling of the products. There were 11 notifications of non-compliance of labelling:

- the information in the certificate does not correspond to the information on the sticker – 5 notifications;
- Labelling errors - incorrectly specified width/grade of alloy (execution error) - 3 notifications;
- other issues related to marking/identification - 3 notifications.



*Plans for 2017*

- creation/development of the CRM system;
- customer audits and technical visits of the specialists to the customers;
- improvement of technical communications with customers;
- creation of quality standards for high value-added products.

## STRATEGY AND SUSTAINABLE DEVELOPMENT

### STRATEGY

UC RUSAL's development strategy sets the company's main directions and targets until 2021. The development vector is aimed at strengthening the leadership position of UC RUSAL in the aluminium industry by improving production effectiveness, improving own energy base and access to competitive sources of electricity, and ensuring the production of aluminium with own raw materials. It is also an important task to ensure the transport security of the business by optimising the logistics system. The company intends to strengthen its position in key sales markets, with particular emphasis on the Russian perspective market. **G4-1**

According to the strategy, the objectives of the Company are: **HKEx Appendix 27 para 10**

- maintaining the position of UC RUSAL as one of the most efficient producers of low-carbon aluminium;
- self-containment in terms of raw materials for full independence from third-party deliveries;
- carrying out R&D to improve production effectiveness, produce new types of aluminium alloys and products, and develop innovative technologies;
- increasing the flexibility of the production process to adapt quickly to changing market conditions;
- increasing the share of value-added products to maximise margins and improve customer service;
- increasing the share of sales in the key market for UC RUSAL – in Russia and in the CIS;
- creation of new applications for aluminium products that stimulate metal consumption in Russia;
- launching in Russia, in conjunction with partners, of new processing capacities, primarily based on the existing infrastructure of the production facilities, where primary aluminium production has been discontinued;
- improvement of the environmental performance of the production facilities and further enhancement growth of cleaner production;
- energy security through access to competitive power supplies;
- secure business transport security by optimising the logistics system;
- ensuring optimal capital structure, increasing the liquidity of shares and further reduction of financial indebtedness.

One of the most important strategic objectives is to make the Company the most efficient and green producer of aluminium in the world (in terms of production and technology). To achieve this goal, the Company invests in research engineering (including the production of new types of alloys, the introduction of RA-550 cell and inert anode technologies, the development of new products) and the modernisation of production capacities.

In the medium term, the Company intends to increase the share of value-added products in the structure of production (bringing it to 60%) and increase the sales of these products in key markets in Europe, Asia, and the United States. To this end, a comprehensive production development programme is being implemented, in the framework of which the Company intends to restructure the product portfolio, improve quality management system and UC RUSAL Business System. In the immediate plans of UC RUSAL leadership is the development of a new Company development strategy.

Another important task of UC RUSAL is to promote the demand for aluminium in Russia and the CIS. In order to increase the interaction between producers and consumers of aluminium, a combination of producers, suppliers and consumers of aluminium (Russian Aluminium Association) was established in Russia. Through its existing contacts, the Company actively cooperates with domestic consumers in a constructive dialogue with them, and works together to create new products and to find new uses for aluminium products. The company, with the assistance of the Ministry of Industry and Trade of the Russian Federation, is implementing a programme to support domestic aluminium-consuming industries designed to stimulate import substitution.

UC RUSAL continues to make every effort to remain an effective and sustainable producer. This is achieved through continuous cost reduction and optimisation of supply, transportation and logistics. The programme of capacity rationalisation continues, with the mothballing of a number of production sites.

Despite the changed economic environment, strategic environmental priorities remain: investments are directed both at the maintenance of capacities and the technical retooling of production and, on a mandatory basis, at environmental protection.

In the area of environment and climate, UC RUSAL has the following objectives and targets: [HKEx Appendix 27 para 10](#)

- meeting air emission standards prescribed by laws of the countries of operation by production facilities of the Company by 2022;
- protecting the interests of the Company in the regulation of greenhouse gas emissions and reducing them by 2025 by 15% for aluminium smelters and by 10% for alumina refineries compared to 2015;
- establishment of closed recycled water supply systems for key production processes at the Company's production facilities by 2020;
- annual increase in the share of waste processing and recycling, safe storage and disposal of waste;
- complete abandonment of equipment and exclusion of waste containing polychlorinated biphenyls (PCBs) by 2022;
- annual increase in the share of reclaimed land and promotion of preservation of biodiversity;
- establishment of a corporate management system for the management of environmental aspects and risks and certification by 2020 of all production facilities selling products in the market for compliance with ISO 14001; and
- promotion of the creation of a modern legal and regulatory framework for the protection of environment in the production of aluminium and alumina.

In addition, UC RUSAL plans to further modernise production and certify its production sites of alloys, foil, powders and silicon in accordance with ISO 14001. UC RUSAL will continue to pay due attention to protecting the environment and improving energy efficiency.

All social programmes in the regions of Company's operation, such as the development of education, health, culture and support for social initiatives in cities and villages of operations, have been maintained.

***Created and distributed value for the 2013-2016, USD million USA G4-E C1***

<b>Indicator</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Created direct economic Value</b>	<b>9,811</b>	<b>9,387</b>	<b>8,703</b>	<b>8,002</b>
Revenue	9,760	9,357	8,680	7,983
Financial income	51	30	23	19
<b>Distributed economic value</b>	<b>14,449</b>	<b>17,465</b>	<b>11,435</b>	<b>12,539</b>
Operating costs	9,562	8,230	7,084	6,922
Cost of sales	8,429	7,223	6,215	6,070
Selling expenses	488	402	336	331
Administrative expenses	645	605	533	521
Salaries and other payments and benefits to employees	1,124	1,007	761	781
Wages and salaries	869	795	616	619
Payments for defined contribution pension plans	246	207	143	160
Payments for defined contribution pension plans	9	5	2	2
Payments to capital providers	3,668	7,977	3,374	4,647
Interest expenses from operating activity	787	1,361	1,132	879
Interest paid within financing activity	631	677	516	452
Repayment of the principal	2,250	2,271	1,476	3,066
Dividends to shareholders	—	—	250	250
Payments to states	81	238	205	175
Income tax	81	238	205	175
Investments in communities	14	13	11	14
Charitable contributions	14	13	11	14
<b>Undistributed economic value</b>	<b>-4,638</b>	<b>-8,078</b>	<b>-2,755</b>	<b>-4,537</b>

<b>Assets, liabilities and equity</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Total assets	20,480	14,857	12,809	14,452
Net debt	10,109	8,837	8,372	8,421
Equity	6,550	2,237	1,391	3,299

***Operating loss/profit, thousand tonnes***

<b>Indicator</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Production of primary aluminium	3,857	3,601	3,645	3,685
Alumina production	7,310	7,253	7,402	7,528
Bauxite production	11,418	12,108	12,112	12,187

## MANAGEMENT OF THE ASPECTS OF SUSTAINABLE DEVELOPMENT

### Management approach

The work of UC RUSAL in the area of sustainable development and corporate social responsibility is based on best practices, international and Russian standards and principles, including:

- 10 principles of the Global Compact;
- provisions of the Social Charter of Russian business;
- the concept of the Global Reporting Initiative (GRI) and international SASB standards;
- provisions of the International Standard ISO 26000:2010.

The Company's activities cover the main areas of corporate social responsibility and sustainable development in accordance with standard ISO 26000.

### Governance structure

The management of the sustainable development aspects is coordinated by the Board of Directors, the President, the Executive Committee, the functional units of the managing company and the relevant business units of the subsidiaries. [G4-35](#)

Health, industrial safety and environmental issues are dealt with directly at the level of the Board of Directors in the context of the work of the relevant Committee.

The management bodies and the business units of the management company and subsidiaries are responsible for the development and implementation of policies and action plans on sustainable development aspects in accordance with their functions. Policies and major corporate documents are approved by UC RUSAL Executive Committee. [HKEx Appendix 27 para 10](#)

The responsibility for addressing economic, social and environmental aspects of sustainable development, as well as consultation with stakeholders, is exercised within the functions of the employees of the relevant services; the results are brought to the attention of top management under the existing corporate governance procedures. [G4-36](#) [G4-37](#)

During 2016, nine meetings of the Board of Directors were held to decide on the strategic development of the Company, as well as on staff motivation, health and industrial safety, environmental protection and the development of the regions of operation. [G4-50](#) [HKEx Appendix 27 para 10](#)

The Business Partner Code establishes the principles observed by the Company in interaction with supply chain organisations. [HKEx Appendix 27 para 10](#)

### Global sustainable development goals

On January 1, 2016, the official recording of the actions was launched to achieve the 17 sustainable development goals set out in the UN document 'Transforming Our World: the 2030 Agenda for Sustainable Development' (SDGs), supported by 193 countries of the world. Private business, from which considerable investments and meaningful actions are expected not only in its own business, but also at the international level, is important in ensuring the effectiveness of collective efforts. [G4-15](#)

UC RUSAL implements approaches compliant with SDGs-2030 in its management of Company operations, as well as its participation in a number of international initiatives. [HKEx Appendix 27 para 10](#)

Global sustainable development goals - 2030	Content of activities
<p>1. No poverty</p> <p>2. Zero hunger</p>	<p>The Company promotes the employment of the able to work population in significant regions of its operation. The international training programme for Jamaican students gives graduates the opportunity to get well-paid jobs.</p> <p>Taxes paid by the production facilities of UC RUSAL raise the revenues of local budgets.</p> <p>In the areas of residence of indigenous peoples, the Company's social investments improve the quality of life by providing access to water, electricity, health care and social services. The social infrastructure of towns and rural settlements is being developed</p>
<p>3. Good health and well-being</p>	<p>The Company implements health and well-being programmes for staff members and their families, invests in the health infrastructure in the regions of its operation and enhances the availability of modern health care for the local population. A large-scale international project is the Medical Centre in Guinea, which ensures research, diagnosis, treatment and prevention of infectious diseases, including high-risk quarantine</p>
<p>4. Quality education</p>	<p>A variety of training programmes are available to the employees of the Company to help them continue their lifelong education. Programmes of interaction with schools and specialised universities and the UC RUSAL to Russian Schools project help to make the content of education more modern, and schools are provided with modern teaching aids</p>
<p>5. Gender equality</p>	<p>The Company provides equal rights to men and women with regard to access to employment, remuneration, opportunities to hold managerial positions, etc. The Social Entrepreneurship programme for Russian regions supports business projects developed by women</p>
<p>6. Clean water and sanitation</p>	<p>The Company operates in a limited number of regions with arid climates or uneven distribution of drinking water supplies. Being aware that water is a valuable resource and its accessibility affects the health and social well-being of the residents, the Company finances the solution of these issues through social investment programmes. Programmes for local communities in Guinea, Guyana and Jamaica include the construction of water pipes and water treatment equipment. The creation of closed water supply systems at production capacities is one of the Company's strategic objectives</p>
<p>7. Affordable and clean energy</p>	<p>The largest investment of the Company was the BEMO project (together with RusHydro), which includes the construction of Boguchanskaya HPP, a source of clean energy. Jamaica is implementing a solar-powered irrigation system project.</p> <p>More than 90% of the aluminium production of UC RUSAL is covered of clean renewable hydropower</p>

Global sustainable development goals - 2030	Content of activities
8. Decent work and economic growth	<p>The Company carries out a responsible social policy with regard to its employees: their rights are protected by collective bargain agreements and agreements of the administrations of production facilities with trade unions. The wage system is transparent and exceeds the corresponding indicators in the regions of operation and the social package contains benefits and guarantees that are important for workers and their families. Special attention is paid to the safety and health of workers.</p> <p>The Company's activity contributes to the development of regions of operation through the procurement system and social investment programmes</p>
9. Industry, innovation and infrastructure	The Company has considerable scientific and research potential and implements new technology solutions
10. Reduced inequalities	The Company provides equal opportunities for local residents in obtaining employment at its production facilities, and trains those willing to be employed
11. Sustainable cities and communities	Within the social investment programmes, projects have been implemented that are supported by the residents of nearby cities and towns
12. Responsible consumption and production	The Company works with the consumers of its products to increase the use of clean aluminium products. Aluminium can be 100% reprocessed without losing its unique properties. In addition, the Company strives to increase the share of recycled or reused waste
13. Climate action	The programme to reduce greenhouse gas emissions at the production facilities of the Company has quantified objectives. UC RUSAL is one of the initiators of the Climate Partnership of Russia, as well as a number of international projects and initiatives
14. Life below water	The production of the Company does not adversely affect marine ecosystems. Sea water is used only at KUBAL for cooling in the casthouses
15. Life on land	The Company works on long-term programmes aimed at the maintenance and conservation of biological diversity, cooperates with environmental organisations, including in environmental monitoring (including biodiversity monitoring) in specially protected natural areas within the affected zone of individual production facilities
16. Partnerships for the goals	The Company participates in several international projects and initiatives

## INTERACTION WITH STAKEHOLDERS

### Management approach

The Company seeks to accommodate the expectations of a wide range of stakeholders, including individuals or entities influencing, or directly or indirectly affected by, the Company's activity. The key stakeholder groups for UC RUSAL are: **G4-24**

- shareholders and investors;
- customers and suppliers;
- employees and trade unions;
- federal and regional authorities;
- local communities.

The main documents regulating the relationship of UC RUSAL and the stakeholders are the Code of Ethics and the Business Partner Code. The Company maintains effective channels of communication that meet the needs of stakeholders. *Please see the table below* on the methods of interaction applied on a continuous basis and the defined areas of interest. **G4-25**

### Participation in industry organisations and international initiatives

Being one of the largest producers of aluminium in the world, UC RUSAL takes part in a number of international organisations, including: **G4-16**

- International Aluminium Institute;
- European Aluminium Association;
- China Nonferrous Metals Industry Association (CNIA);
- Russian National Committee for the United Nations Environment Programme (UNEP/COM).

The Company also participates in the Russian Union of Industrialists and Entrepreneurs.

In addition, the Company participates in international projects and initiatives, including the environmental ones, which include: **G4-15**

- UN Global Compact;
- Initiatives for responsible planning and management of aluminium;
- CDP (Carbon Disclosure Project).

In 2015, UC RUSAL became one of the initiators of a unique Russian initiative, the Climate Partnership of Russia. At the end of 2016, 21 Russian companies were members of the partnership.

The aim of the partnership is to encourage Russian companies to move towards more environmentally friendly ways of production, to work towards the introduction of balanced support measures that will ensure the cost-effectiveness of investments in clean technologies. **G4-14**



The content of the initiative is in line with the objectives of the climate agreement reached at the XXI session of the Conference of the Parties to the United Nations Framework Convention on Climate Change and Sustainable Development Goals – 2030 (for more details please see <http://climatepartners.ru>)

A Memorandum of Intent defining the objectives of creation and the principles of operation of the Partnership, as well as the Action Plan, were developed and adopted in 2016.

In April, the Partnership became the venue for a round table on the theme ‘Low-Carbon Future: First steps and Perspective’. It was attended by the representatives of state, major business, academic community and international organisations; the participants discussed effective mechanisms for reducing greenhouse gas emissions and the possibility of establishing a platform to record greenhouse gas emissions at global level. And in September together with the Ministry of Economic Development of the Russian Federation another round table entitled ‘How did the world come to the concept of ‘carbon price’?’ was held.

In June, the representatives of the Partnership presented their position at the meeting of the Supreme Environmental Council of the State Duma of the Russian Federation on ‘Legal regulation of greenhouse gas emissions in the Russian Federation’ and in November at the ‘Clean Energy 2016’ conference.

In July, Partnership representatives participated in the 360 Carbon Forum in Marrakesh, a major work event, which represents a stage of preparation for the 22nd session of the United Nations Framework Convention on Climate Change.

In August, the expert seminar ‘Sustainable Business Development in Russia: cooperation directions and formats’ was held at the Moscow School of Management SKOLKOVO, which included students from the school, among others.

### **Industry development**

In December 2015, the official opening of the Aluminium Association (combination of producers, suppliers and consumers of aluminium) took place. The Association supervises more than 30 large-scale projects aimed at expanding the consumption of aluminium in Russia, increasing the share of domestic aluminium products in the domestic market and increasing the export potential of Russian aluminium companies. A programme to increase the demand for aluminium has been developed, which will increase GDP by 1% and create more than 20,000 new jobs. UC RUSAL became one of the initiators and participants of the Association and was joined by more than 60 companies and more than 20 partners – federal and regional authorities, regulators, all-Russia business and industry associations.

## **Regional development**

In late 2015, the Company presented a project for the creation of a special economic zone in the Krasnoyarsk Territory for the metallurgical plants of Krasnoyarsk and Divnogorsk. Project objectives: the social and economic development of the Krasnoyarsk Territory, the development of the processing industry and the production of high value-added products, the improvement of the competitiveness of the aluminium industry in Russia, the creation of favourable conditions for new investments and production development, the reduction of investor risks, the creation of new jobs and the increase of exports. In June 2016, at the St. Petersburg Economic Forum the administration of the Krasnoyarsk Territory, UC RUSAL and the Aluminium Association signed a protocol of intent. Further, the parameters of the project of the special economic zone in the Krasnoyarsk Territory has been developed, and it was named 'Krasnoyarsk Technology Valley'. The possibility of implementation of such projects in the Volgograd region and the Republic of Khakassia is being assessed.

## **Participation in forums**

Economic forums provide opportunities for interaction with business partners, and serve as sites for the discussion of issues of interest to the business community and public authorities. Every year, UC RUSAL participates in a number of major regional and federal events that discuss issues that have a direct impact on the sustainable development prospects of the country and the regions.

In February 2016, the XIII Krasnoyarsk Economic Forum became the site for the discussion of the main theme 'Russia: Strategy-2030', in the discussion Oleg Deripaska, the President of UC RUSAL, expressed his views on the prospects and current development challenges of the country.

In June 2016, at the XX Saint Petersburg International Economic Forum, Oleg Deripaska participated in two panel sessions: 'Combating climate change — investing in the future' and 'The impact of epidemics on the economy. The role of public-private partnerships in the fight against the Ebola epidemic. Experience and outlook'.

## **Interaction on environmental issues**

UC RUSAL has extensive experience in interacting with stakeholders of environmental issues. As mentioned above, the Company participates in a number of international initiatives.

As part of its cooperation with the UN Development Programme, UC RUSAL has identified quantitative targets for the reduction of greenhouse gas emissions. The Company also participates in the work of the International Aluminium Institute, including the reduction of greenhouse gas emissions and the rational use of energy.

UC RUSAL is the member of the Russian National Committee for the United Nations Environment Programme (UNEPCOM). UNEPCOM is a non-profit partnership of individuals and legal entities aimed at supporting the efforts of the civil society and employers to preserve the environment, improve the health of the population and sustainable development of the Russian Federation, as well as to contribute to the compliance with Russia's international obligations to the United Nations Environment Programme and other international organisations dealing with these issues. The Company intends to continue to work to improve its performance to meet the best international standards.

The Company continues to interact with the all-Russian environmental public movement Green Russia as part of the environmental cooperation agreement signed in 2014. The agreement is aimed at the formulation and implementation of environmental decisions, the enjoyment of citizens’ rights to a secure environment, and the preservation of nature for future generations.

The information about the environmental programmes of the Company and the production facilities is regularly made available to the public as well as to regional authorities and local governments. *Please see more details in the Environment Protection Section.*

**Organisation of interaction with stakeholders**

Stakeholders	Topics of Interest G4-27	Interaction methods G4-26
Shareholders and investors	Performance Strategic business prospects Prudent risk management Quality of corporate governance	<ul style="list-style-type: none"> <li>• Presentations and conference calls by Company leadership to the investment community (at least once a quarter)</li> <li>• Publication on the corporate internet site of AGM agenda items (annually)</li> <li>• Meetings of Company leadership with analysts and investors, including through road show and industry conferences (at least 1-2 times per year)</li> <li>• Regular meetings with minority shareholders</li> <li>• Annual general meeting of shareholders</li> <li>• Financial and non-financial reporting (quarterly, annually)</li> </ul>
Customers and suppliers	Quality and reliability of product deliveries Access to bids and procurement, clarity and transparency of procurement procedures Nature of the business relationship Management of the aspects of sustainable development	<ul style="list-style-type: none"> <li>• Information on tenders and procurement plans (as required)</li> <li>• Annual consumer satisfaction survey (annually)</li> <li>• Meetings with customers, including industry conferences, technical seminars and mutual visits of production facilities (systematically, as required)</li> <li>• Supplier certification and development system (continuously)</li> <li>• Claims system: weekly review of customer claims (continuously)</li> <li>• Procedures for monitoring compliance with contracts (continuously)</li> <li>• Respond to customer inquiries about the Company’s sustainable development activities (upon receipt)</li> </ul>

Stakeholders	Topics of Interest G4-27	Interaction methods G4-26
Employees and labour unions	Remuneration and social guarantees Working conditions Career development opportunities Respect for workers' rights	<ul style="list-style-type: none"> <li>• Reports on the performance of the collective bargain agreement and the agreements in the area of work safety (annually)</li> <li>• Collective bargain agreement (once every 3 years)</li> <li>• Corporate mass media: magazine, social network (monthly)</li> <li>• Regular meetings with leadership and management (at least 1-2 times per year)</li> <li>• Management conferences (periodic)</li> <li>• Consideration of communications on the hotline (continuously)</li> <li>• Participation in the reputation study (annually)</li> </ul>
Federal and regional authorities	Payment of tax Regulatory compliance Contribution to the development of the regions of operation Creation/preservation of jobs	<ul style="list-style-type: none"> <li>• Public hearings and consultations in the modernisation and expansion of existing industries and construction of new facilities (as the projects are ready)</li> <li>• Dialogue with State authorities on legislative and regulatory issues (continuously)</li> <li>• Joint projects (as required)</li> </ul>
Local communities: town residents, non-profit organizations, small business, professional and creative organisations, etc.	Development of the regions of operation Creation/preservation of jobs State of the environment in the locations of production facilities Grant support for initiatives	<ul style="list-style-type: none"> <li>• Public hearings and consultations in the modernisation and expansion of existing industries and construction of new facilities (as projects are ready)</li> <li>• Social and economic partnership agreements are signed with a number of regional governments and municipalities. The duration of agreements differs in various regions of operation from 1 year to 3 years with annual renewal</li> </ul>

## SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT

### MANAGEMENT APPROACH

The strategic goal of UC RUSAL is to become the most efficient and environmentally friendly producer in the world. To achieve this, the Company invests in its own engineering and technology base, developing innovative technologies and products, and retrofitting production facilities. The results of the investments promote:

- increase of the share of value-added products;
- improvement of product quality;
- reduction of the energy intensity of production;
- improvement of environmental safety.

The scientific and technological activities of the Company are in line with the following sustainable development goals – 2030:

- Goal 9: industry, innovation and infrastructure;
- Goal 12: responsible consumption and production.

The Engineering and Technology Centre (ETC) of UC RUSAL is the main business unit of the Company in charge with scientific and technological development. It conducts research and development (R&D) and has successful experience in developing and implementing new technologies. Two design institutes carry out the planning of new construction and retrofitting.

ETC cooperates with leading Russian and foreign specialised universities and scientific institutes, which are developing new or adapting existing approaches and technologies to improve production processes and equipment.

A number of projects is being implemented on the basis of co-financing by the state. In 2016, more than RUR 320 million were received in the form of subsidies and grants from the Ministry of Education and Science and the Ministry of Industry and Trade of Russia, as well as a concessional loan of RUR 2.8 billion. **G4-EC4**

A total of 63 projects were under implementation in 2016, most of which were implemented.

### Production of value-added products

The increase in the share of value-added products (VAP) to 55% at the Russian production facilities by 2020 is one of the key strategic objectives of the Company.

UC RUSAL carefully adapts the product line to customers' needs and current trends in industry demand, continues to implement projects for the reconstruction and retrofitting of production facilities, and expands the range and quality of products.

Core businesses:

- development of the green aluminium product line;
- obtaining of new alloys and introduction of a technology for the production of slabs and billets for the production of aluminium bridges and aluminium wagons;

- development of new types of wire rod from aluminium alloys, including the production of enameled wire;
- introduction/development of a technology for the production of slabs from aluminium-scandium alloys;
- search for technical solutions to increase the strength of the wire rod and billets, as well as to reduce the content of hydrogen and sodium in ingots.

### ***Increase in the output of value-added products***

<b>Indicator</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
VAP share, %	42	44	45	45

### **Innovations in aluminium production**

The Company conducts research and development and introduces new technologies and processes that help to solve the tasks relevant for the aluminium industry, as evidenced by the support of UC RUSAL projects by government departments.

### **Reduction cell with inert anodes**

As part of the main sustainable development objective to reduce the carbon footprint, the Company continues to test its own design and technology with inert anodes. The introduction of this technology will allow the production of green aluminium products.

The production of aluminium with inert anodes excludes entirely the emissions of greenhouse gases and polyaromatic hydrocarbons and is characterised by lower material consumption. A ruler of green aluminium alloys has been developed, which can be produced using inert anodes characterised by elevated mechanical and operational properties.

In 2016 works were performed to select optimal technological process parameters, to test technical solutions intended to improve and stabilise reduction process indicators and to minimise cell maintenance operations. Product tests were carried out with the Company's customers.

### **Superpower cells**

The introduction of RA-550 superpower cells contributes to the task of reducing the energy intensity of aluminium production.

In 2016, the RA-550 cell was launched at the Sayanogorsk aluminium smelter. The main advantage of this type of cells developed by the Technical Directorate of UC RUSAL is high energy efficiency. RA-550 consumes by 10-15% less power than previous generation cells, about 12 kWh/kg. According to the design plans and specification RA-550 cell will produce 4.21 tonnes of aluminium per day, which is about twice as much as the RA-300 cell currently used by the production facility. New technical solutions to remove gas from the cell will improve eco-efficiency and reduce the volume of wastes from major repairs by over 30%. The technology will be implemented primarily at the Sayanogorsk and Krasnoyarsk smelters.

## PROCESSES AND PRODUCTS

R&D projects contribute not only to the production of high value-added products, but also to a more rational use of natural resources and improved environmental safety.

### Waste

The Company is testing the technology for the processing of red mud, the waste of alumina production, which contains valuable metal oxides, including scandium. The use of technology will eliminate the costly disposal of wastes that have a negative impact on the environment due to high alkalinity. Adding scandium to aluminium allows obtaining a material with unique properties (light, plastic and solid as steel). In 2016, at the pilot site (Ural aluminium smelter), 10 kg of 99.4% scandium were obtained from red mud. The technology is expected to be further refined to minimise production costs.

### Products

Increased output of value-added products is ensured by the development and production of new products, among others.

#### *Aluminium-scandium alloys*

The projects for the development and production of aluminium-scandium alloys and master alloys can have a promising future because of the attractive properties for potential customers (strength, corrosion resistance, etc.).

The Company implements two key projects in this area:

- production of aluminium-scandium alloys for use in electrical engineering;
- production of aluminium-scandium master alloys for the modification of aluminium alloys for use in the automotive, aviation and shipbuilding industries.

In 2016, under the first project the commercial operations commenced on the installation for the production of aluminium wire rod and aluminium alloys at the Irkutsk aluminium smelter; under the second the pilot section was mounted for the Al-Sc (aluminium-scandium) master alloy technology. In the future, joint testing of the product with foreign and Russian consumers is envisaged.

The Company sees great potential for the use of alloys from scandium in the aerospace, transport and energy sectors.

### Materials and processes

#### *Alumina production*

The development of a new technology of alumina production from non-bauxite ores in Siberia continues. The project offers prospects for the development of large reserves of Siberian ore. In 2016, the miniature full-cycle plant was created. The financial and economic assessment of the construction of a large format industrial facility is underway.

### *Ore enrichment*

A technologically sound and economically viable way of enriching poor ore from Goryachegorsk has been obtained. With the new method, the output of the concentrate exceeds 75%, in terms of the content of useful components the concentrate exceeds the quality of the ore of the Achinsk alumina refinery produced on the Kiya-Shaltyr field. In 2016 pre-design study was carried out with respect to switching of the Achinsk alumina refinery to the new raw material base. A license for subsoil use is being obtained. Therefore, prospects were opened to extend the life cycle of Achinsk alumina refinery by 50 years after exhaustion of the Kiya-Shaltyr Nepheline Ore Deposit (2028-2030).

### **Key retrofitting projects**

<b>Project</b>	<b>Production facility</b>	<b>Outcome/benchmark</b>
<b>Production of metallurgical products</b>		
<i>Production of value-added products</i>		
Construction of casting system for the production of slabs (completion of the project in 2019)	Krasnoyarsk aluminium smelter	Production of new types of products, including large diameter billets – the first batch is planned to be obtained in 2017  Increased equipment performance up to 150 thousand tonnes per year
<i>Lower energy intensity of production</i>		
Units for the heating up and filling of cathode assembly with cast iron (completion of the project in 2018)	Bratsk aluminium smelter	Lower energy consumption of aluminium production by over 100 kWh/t
<i>Production growth</i>		
Installation of Properzi continuous horizontal casting system from automobile alloys (project under completion)	Khakas aluminium smelter	Increase in production of 10-kg ingots from automobile alloys
Project of amperage increase of the potline no 5 up to 330 kA (completion of the project in 2018)	Irkutsk aluminium smelter	Additional production of 6 thousand tonnes of aluminium per year
<b>Alumina production</b>		
Projects to increase alumina output (expected to be completed in 2017)	Bogosovsk aluminium smelter (the project was completed in 2016), Mykolayiv alumina refinery and Urals aluminium smelter	Alumina production has been increased:  BAZ: alumina production capacity has been restored to 1030 thou. tonnes  UAZ (expected): increase in annual output of alumina up to 900 thou. tonnes  NGZ (expected): Increase in production capacities of the digestion area to 1.7 million tonnes of alumina per year



Project	Production facility	Outcome/benchmark
<b>Powder metallurgy</b>		
Installation of new powder production equipment for 3D printing (scheduled to be completed in 2017)	Powder Metallurgy – Shelekhov	Increase in Company's profits of USD 0.7 to USD 0.9 million per year with additional production of a high margin product

***Environmental results of the introduction of new technologies and projects G4-EN27***

Technology	Result
A programme for the equipping of all production facilities with dry gas treatment units has been developed and is being introduced. The total project cost for the next five years will be of USD 120 million	The treatment plant absorbs up to 99% of the substances from the exhaust gases. The emissions of harmful substances to the atmosphere were reduced by over 30%
For the first time in the world, projects to reduce greenhouse gas emissions by reducing the frequency of anode effects have been developed and implemented	For the period 2008-2012, greenhouse gas emissions have been reduced by 14 million tonnes
Testing of technology of processing and ultra-dry storage of red mud	Extension of the life of red mud disposal areas and reduction of storage costs and environmental impact: mitigation of the risks of soil and groundwater pollution by alkali
Development and testing of revolutionary aluminium production technology using inert, carbon-free anode	The by-product of this technique is not carbon dioxide, but oxygen. Besides, the cell will be able to produce the same amount of oxygen as 70 hectares of timber. The results of the testing are expected in 2017
Development of technology for obtaining green pitch from coal for the formation of anodes for the reduction area	Reduction of pyrene emissions by 10-15 times to the minimum level
Development of the technology by the use of unformed cell lining materials; technology of processing of carbon lining and flotation tailings	Improvement of the environmental safety of major productions

**Plans for 2017**

Extension of the tests of the technology of aluminium reduction on the inert anodes to the level of the group of cells; as a result of the tests, a programme will be developed for the conversion of aluminium production from carbon anodes to inert anodes.

Driving up to the design indicators of RA550 superpower cells, launching of the remaining cells of the area, fixation of energy and environmental indicators at a level comparable to the best world figures.

Projects will continue to develop new products and improve the quality of existing products.

The main areas of the projects of modernisation and development of the production facilities will continue to be relevant.

## ENVIRONMENT PROTECTION

### APPROACH

UC RUSAL considers that environmental activities are an integral part of production activities and participation in public sustainable development projects. In the development of natural resources and processing of mineral raw materials, the production sites of UC RUSAL are bound to have an impact on the environment. To minimise and compensate for this impact, the Company has undertaken to comply with legal and regulatory requirements for environmental protection, to participate in the solution of global and regional environmental problems and to search for innovative solutions. **HKEx Appendix 27 KPI A1, A2 and A3.1**

UC RUSAL implements the principles of its environmental policy at all production facilities and continually develops and optimises the environmental management system. The environmental management and environmental stewardship system provides for compliance with environmental impact standards as defined by local laws in the regions, where UC RUSAL carries out its production activities. **G4-EMS, HKEx Appendix 27 KPI A3.**

As an environmentally responsible company, UC RUSAL implements programmes aimed at reducing adverse environmental impacts and reducing the quantity of waste, while ensuring compliance with all applicable legal and regulatory environmental requirements.

The adoption of management decisions at all levels and in all areas of UC RUSAL operations is based on the following guiding principles:

- **risk management:** identification and assessment of environment risk levels, setting targets and planning work in the context of environmental risk management;
- **compliance:** commitment to full compliance with the requirements of the environmental legislation of the countries of operation and the voluntary commitments assumed in the area of environment protection;
- **prevention:** the use of the best available technologies and techniques to prevent pollution, minimise the risks of environmental accidents and other adverse environmental effects;
- **training:** organisation of education for the employees of the Company in the area of environmental requirements applicable to their activity in order to develop an understanding of their capabilities and responsibilities, as well as the implications for the environment when these requirements are violated;
- **interaction:** taking into account the views and interests of stakeholders, establishing environmental requirements for selecting of suppliers and contractors, and assisting them in meeting these requirements;
- **measurability and evaluation:** setting, measurement and assessment of environmental indicators, as well as the assessment of compliance with the environmental legislation of the countries of operation and the voluntary commitments undertaken in the area of environmental protection;
- **openness:** open demonstration of plans and results of environmental activities, including in the form of public reporting by the Company.

The strategic areas of UC RUSAL in the framework of the environmental policy include:

- meeting air emission standards prescribed by laws of the countries of operation by production facilities of the Company by 2022;
- protecting the interests of the Company in the regulation of greenhouse gas emissions and reducing them by 2025 by 15% for aluminium smelters and by 10% for alumina refineries compared to 2015;
- establishment of closed recycled water supply systems for key production processes at the Company's production facilities by 2020;
- annual increase in the share of waste processing and recycling, safe storage and disposal of waste;
- complete abandonment of equipment and exclusion of waste containing polychlorinated biphenyls (PCBs) by 2022;
- annual increase in the share of reclaimed land and promotion of preservation of biodiversity;
- establishment of a corporate management system for the management of environmental aspects and risks and certification by 2020 of all production facilities selling products in the market for compliance with ISO 14001;
- promotion of the creation of a modern legal and regulatory framework for the protection of environment in the production of aluminium and alumina.

Among the significant environmental activities, the Company also emphasizes reliable access to clean renewable energy sources and the commitment to the reduction of the carbon footprint. In the framework of these tasks, UC RUSAL has concluded long-term contracts with hydropower plants in Siberia, allowing more than 90% of aluminium to be produced using renewable and clean hydropower, as well as reducing greenhouse gas emissions.

Every year, UC RUSAL conducts an assessment of the status of implementation of the principles and approaches embodied in the environmental policy. The Company implements a strategy for the progressive improvement of environmental performance within the framework of the adopted technical policy:

- on new capacities, through the introduction of the most advanced technologies;
- on existing production facilities by:
  - modernisation of the existing production cycle;
  - replacement of obsolete gas treatment equipment;
  - creation of closed recycling water supply system or the construction of modern treatment facilities to avoid waste-water discharges without treatment, in case if closed recycling water supply systems cannot be created;
  - construction of modern waste disposal facilities to ensure their long-term and reliable storage;
  - construction of capacities for the preparing of the waste for the consumer (e.g. crushing and screening equipment);

- replacing and disposing of electrical equipment containing PCBs;
- restoration of the environment through the reclamation of damaged land and decommissioned waste disposal facilities;
- implementation of the best available technologies.

The best available technologies and techniques are used to prevent pollution, mitigate the risks of environmental accidents and other factors that adversely affect the environment. They are applied in accordance with the Technical Policy of UC RUSAL G4-EMS. In 2016, an information and technical directory of the best available aluminium production technologies was developed with the participation of specialists from the Company.

## MANAGEMENT STRUCTURE

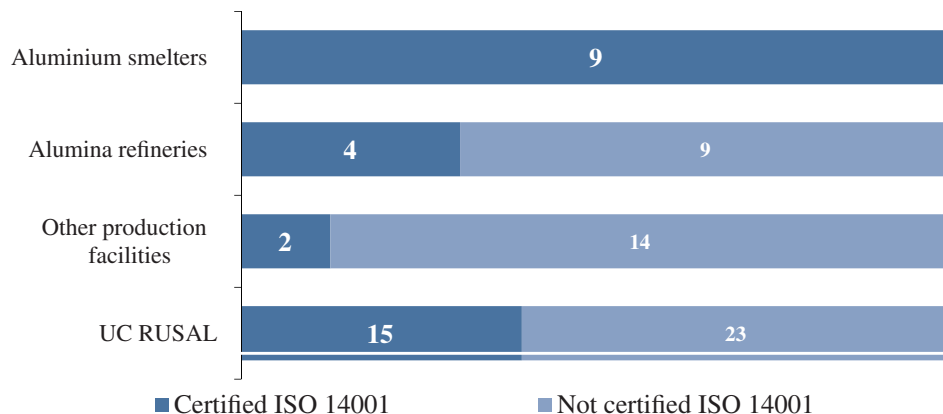
Environmental planning, monitoring and reporting at the Company level is carried out by the Health, Safety & Environment Department, which is part of the Technical Directorate of UC RUSAL. The Department includes the Health & Safety Unit, the Environmental Regulation and Control Unit and the Greenhouse Gas Emissions Control Unit. G4-EMS

Operational management of the environmental issues of the production facilities (approval of objectives and budgets, financing of activities, control of receipt of permits, environmental risk assessment, etc.) is carried out by the environmental services of the divisions. At the level of the production facilities, specialised environment, health and safety departments carry out direct operational activities in the area of environmental protection.

The Company is continually improving its environmental management system. In the reporting year, the compliance of the corporate environmental management system with ISO 14001 has been confirmed until 2018 at 15 production facilities of UC RUSAL, including all aluminium smelters. By 2020, the Company plans to certify all production facilities selling products in the market (foil plants ARMENAL, Urals Foil, silicon production Kremny (Shelekhov) and Silicon Ural (Kamensk-Uralsky). The Company is taking steps to adapt ESM to the requirements of the new version of ISO 14001:2015, including:

- training of Company employees in the requirements of the new version of the standard;
- updating of internal regulations and procedures.

### *Compliance of the Company's enterprises with ISO 14001 standards*



In October 2016, as part of the monitoring audit, DNV confirmed the conformity of the umbrella Environmental Management System (EMS) of aluminium and powder production facilities with the requirements of ISO 14001 for 2015-2018.

The activities of UC RUSAL in the area of environmental management and protection are carried out in accordance with the laws of the country of operation, with corporate regulations and procedures, as well as voluntary obligations. In the Russian Federation, UC RUSAL focuses on the following environmental instruments:

- *Federal Law No 7-FZ dated January 10, 2002 On environment protection;*
- *Federal Law No 96-FZ dated May 4, 1999 On air protection;*
- *Federal Law No 89-FZ dated June 18, 1998 On industrial and consumer waste;*
- *The Water Code of the Russian Federation No 74-FZ dated June 3, 2006;*
- *The Land Code of the Russian Federation No 136-FZ dated October 25, 2001;*
- *Federal Law No 52-FZ dated March 30, 1999 On sanitary and epidemiological well-being of the population;*
- *Federal Law No 416-FZ dated December 7, 2011 On water supply and sanitation;*
- *Federal Law No 261-FZ dated November 23, 2009 On energy conservation and efficiency improvement.*

Environmental risk management is carried out in accordance with established procedures under the Risk Management Regulation. The identified inconsistencies in government oversight and voluntary audits are recorded and corrective actions are developed.

UC RUSAL seeks to comply with the environmental protection requirements of environmental legislation to the maximum extent possible. Emissions into the air and discharges of polluting substances to water facilities, as well as the disposal of wastes, are approved in a manner that defines the limits of negative impacts. The Company also performs timely payments for adverse environmental impacts.

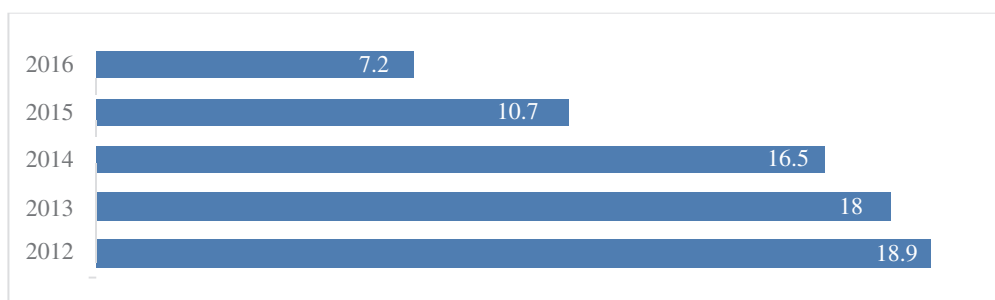
The identified inconsistencies in government oversight and voluntary audits are recorded. For discrepancies (detected violations) corrective actions are developed.

In accordance with the legislation of the Russian Federation, 'nature users' have to make environmental payments as compensation for the negative impact on the natural environment they cause, such as:

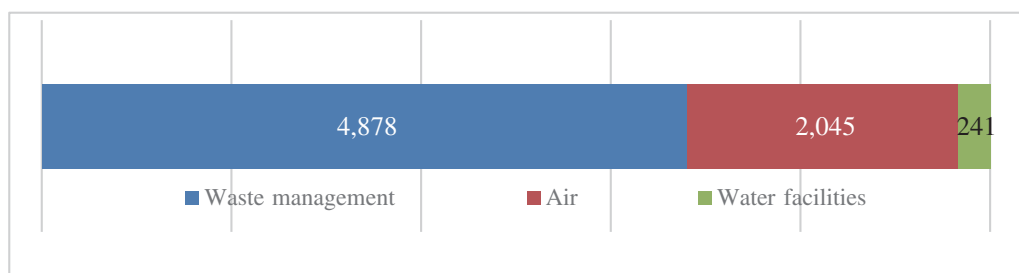
- emission of pollutants from mobile and stationary sources;
- discharge of pollutants into water bodies, both on the surface and underground; and
- waste disposal.

The amount of payments depends on the degree of impact on the environment, i.e. on whether the nature user exceeds the permissible discharges and emissions of pollutants into the atmosphere; or whether the discharges and emissions remain within the limits.

### ***Environmental charges for environmental pollution, USD million G4-EN29***



### ***Structure of environmental charges and fines for environmental pollution, USD million***



In 2016, payments for environmental pollution fell by a third compared with the previous period, amounting to USD 7.2 million, mainly due to the introduction of new negative impact payment standards in the Russian Federation since January 1, 2016. In the expenditure structure, waste disposal payments account for the largest share – 68%, air emission charges amounted to 29%, and water facilities amounted to 3%. Environmental fines in 2016 amounted to USD 30 thousand.

## **LAND AND BIODIVERSITY**

Restoration of damaged land and promotion of the conservation of biological diversity are part of the environmental strategy of UC RUSAL.

Since 2008, the Company has adopted an operational policy, ‘Decommissioning of assets and restoration of environment: requirements for the organisation of work and assessment of obligations, **G4-EMS**, setting:

- common corporate approaches and requirements for the restoration of damaged land;
- common rules on the assessment of obligations to decommission facilities and restore the environment.

According to UC RUSAL accounting policy, the expected cost of decommissioning of facilities and restoration of environment is reflected in the Company’s international financial statements as provisions.

**Land resources**

*Approach G4-EMS*

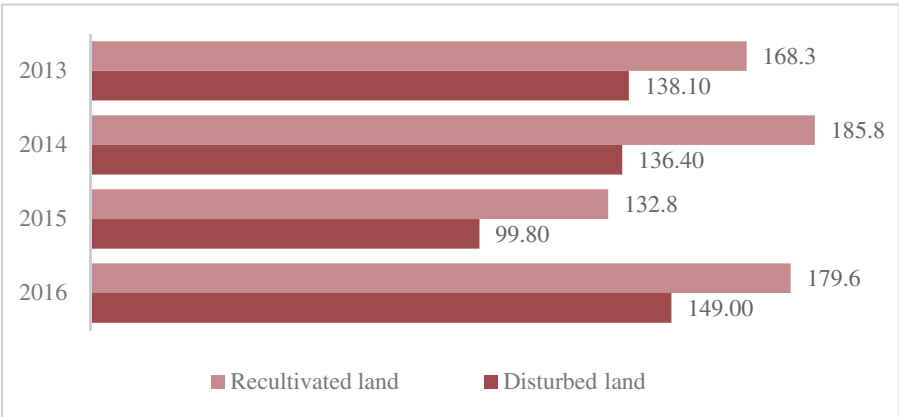
Restoration of the damaged land is carried out by the Company in the following areas:

- restoration of damaged terrain and soil fertility after the completion of mining activities (open-cast and mines);
- reclamation of production and consumption waste disposal areas;
- remediation of damaged and contaminated land.

*Results*

In 2016, the area of recultivated land was by 21% higher than the amount of developed land. The recultivation coefficient (the ratio of recultivated land to disturbed) was of 1.2 (1.3 in 2015). The total amount of disturbed land at the Company’s production facilities has decreased from 7,441 ha in 2015 to 6,906 ha. Of these, the area of safe industrial waste disposal (mud disposal areas and industrial waste landfills) is of 3,243.7 ha (54%), the area of open-cast and waste dump is of 2,683 ha (39%), other areas requiring rehabilitation amount to 497.4 ha.

**Ratio of disturbed and recultivated land, ha**



The obligations of UC RUSAL to decommission the facilities and reclaim land as at the end of the reporting year were estimated at USD 382 million (USD 365 million in 2015). As a result of the sale of the Alpart factory in Jamaica, which had the largest recultivation debt, the total debt was significantly reduced to 440 hectares (more than 970 hectares at the end of 2015). In 2016, 30.6 ha were recultivated (36.6 ha in 2014).

- At the alumina plant Aughinish Alumina in Ireland, the mud disposal areas are being recultivated in full compliance with the requirements of the law. Red mud was compressed and drained, enriched by limestone and sand, loosened, ploughed, etc. Endemic plants were planted that formed the root system and are creating the soil.
- In the course of the development of the Vezhayu-Vorykvinsky deposit of the Timan Bauxite Mine (STBR), virtually all of the spent area of bauxite pits is filled with overburden rocks. This approach to reclamation reduces the area of the disturbed land.

- Windalco bauxite and alumina complex carried out active environmental work in the area of its operation. In the territories remaining after the development of bauxite deposits, which is conducted in Jamaica as open-cast, a large agricultural complex is created in Clapham (St. Ann). Twenty large greenhouses are built at the development site, in which local farmers will be able to grow in large quantities vegetables, spices and herbs. In order to provide the greenhouses with water during the dry season, the mining department of Windalco, together with contractors, constructed two reservoirs of 4 million litres each. The use of solar pumps is planned for the pumping of water during the drought season. Another Windalco project is being implemented in the vicinity of the town of Monig (St. Ann). Degraded land is rehabilitated there with the help of bamboo, which is planted in the abandoned pits. In the future, bamboo can be used by local residents and farmers to produce goods.
- For several years, Sayanogorsk aluminium smelter has been undertaking research of the detoxification of fluoride in the soil. In the reporting year a survey was carried out in a 40-hectare test area in the environmental buffer zone of the production facility, after which the soil was fertilized and the perennial plants of melilot and lucerne were planted. These activities help to reduce the concentration of fluoride and improve the condition of the steppe soils filling them with useful substances. The test area will be monitored in the coming years.

#### **Solution of the problem of contamination of the area adjacent to the mud disposal area of the Achinsk alumina refinery**

While recognising the significant impact of Achinsk alumina refinery (AGK) on the environment, UC RUSAL continues to undertake all necessary measures to improve the environmental situation in the area of the Achinsk alumina refinery.

Work to address the contamination of the area adjacent to the red mud disposal area of AGK is being carried out in accordance with the Programme for the rehabilitation of water facilities and land (PVR).

In 2016, the following significant activities of the Programme were carried out:

- the reconstruction of water supply and wastewater disposal systems of the refinery, with increased consumption of treated wastewater, reduced consumption of clean river water and lower volumes of drains in the mud disposal system:
  - reconstruction of the mud disposal area with the removal of the treatment pond and the construction of the map No 3 with the film impervious membrane;
- reduction of the drainage water from the red mud disposal area:
  - construction of a system for the interception of filtration water along the boundary of the red mud disposal areas, with the returning of the filtration waters of the mud disposal area to the recycling water supply system;
  - cleaning of by-pass water drainage channel of the red mud disposal area from mud sediments;
- quality control of surface and ground water.

The implementation of PVR is planned until 2020, and the total cost of the activities is estimated at USD 5.5 bln. Most of the costs, about USD 3.9 bln., are already included in UC RUSAL investment budgets in the next few years.



## Biodiversity

### *Approach G4-EMS*

The production facilities of UC RUSAL are located in different regions and countries of the world, while the main production capacities of the Company is in Siberia, which is an eco-region with unique flora and fauna.

The territories, in which UC RUSAL production sites are located, do not include or border the land of specially protected natural areas (SPNA). **G4-EN11**

In compliance with the principles of sustainable development and provisions of the environmental policy, the Company works under long-term programmes to maintain and conserve biological diversity:

- the establishment and opening of visit centres and environmental routes in SPNA, and assistance in the development of the infrastructure of such territories;
- ecological volunteering marathon ‘Yenisey Day’ is a joint project with the Russian Geographic Society to clean up the banks of the Yenisey River and to organise special recreational areas;
- a project of study and conservation of the snow leopard (irbis), jointly with the Russian Geographic Society, aimed at enhancing the effectiveness of environmental protection activities in the Altay-Sayan ecoregion. The ecosystem of the Altay-Sayan highlands, located on the border of the steppe and taiga landscapes, is included in the Global 200 ranking list, which includes the most important regions of the world for preservation.

Since 2014, activities are performed under the programme of monitoring of anthropogenic (man-made) impact on the forest ecosystems of the Stolby sanctuary in Krasnoyarsk. In Sayanogorsk, since 2011, the Protected Country National Fund has been carrying out activities under the programme of Environmental Monitoring (including biodiversity monitoring) of specially protected natural areas in the area of influence of the Sayanogorsk aluminium smelter.

### *Results*

For 15 years, the specialists from the Biology Institute of the Komi Science Centre, Ural branch of the RAS monitor the operation of the STBR. This is done by such methods as lichenoidication and bioindication, in which the main surveyed objects are the lichens and mosses that are particularly responsive to soil and air pollution. Monitoring of the state of terrestrial ecosystems, radiological conditions and fish stocks shows that the activities of STBR are carried out with minimal environmental impact. The trees in the STBR area can be classified as healthy. All moss and lichen species, including lobaria and vulpicida included in the Red Book, are preserved. The results of the monitoring allow seeing the reality to date and, accordingly, adjusting environmental activities and design decisions. Research materials are also a unique, regularly growing scientific database on the natural components of the north and the degree of their resilience to the impact of mining.

In the creeks of Chernaya, Vorykva, Vym Atlantic salmon and common miller’s thumb, included in the Red Book of the Russian Federation and the Komi Republic, lay eggs. Data from the annual studies of the fisheries of the Vym river, which flows in the STBR area, confirm that the fish habitat is not distressed, the miller’s thumb maintains its presence in the waters directly in the area of the man-made impact. There are young fish and Atlantic salmon producers in the monitored area of the upper current of Vym. This demonstrates the continued importance of this section of the river in the

reproduction of the salmon population. Nevertheless, scientists note that the number of specimens of valuable and commercially important fish, including whitefish, has decreased several times due to the intensity of fishing in rivers. In 2016, the production facility supported the republican programme for the development of aquaculture and organised the production of 12 thousand young whitefish in the Vym river, which will increase the population of this valuable commercially important fish.

The ecosystem, in which the largest European alumina smelter, Aughinish Alumina, is located was found to be the best preserved ecosystem in Ireland. According to a report of the National Parks & Wildlife Service of the Republic of Ireland about the nationwide study of semi-natural grasslands, the Aughinish peninsula, close to which the territory of one of the alumina refineries of UC RUSAL is located semi-natural grassland. These ecosystems are the habitat of many rare and protected species of plants, as well as invertebrate animals, birds and mammals. Despite the fact that Aughinish Alumina is the largest alumina refinery in Europe, the 400 hectare area of the peninsula represents a wide variety of rare plant distribution, including the two most rare in Europe, where *Sanguisorba officinalis* and other plants faced with extinction grow. [G4-EN12](#), [G4-EN13](#)

During the reporting period, the employees of the Krasnoyarsk, Bratsk, Irkutsk, Petersburg, Volgograd and Kandalaksha aluminium smelters, the Achinsk alumina refinery and the Urals aluminium smelter were actively involved in the social and environmental projects of ground cleaning and water protection areas in cooperation with the all-Russian environmental public movement Green Russia aimed at improving the ecological condition of cities and regions.

Youth organisations of UC RUSAL are regularly involved in urban activities and environmental programmes for the gardening of the urban environment, and for the purification of water protection zones initiated by the city and local public environmental authorities.

The Company works to promote environmental education, awareness and creation of environmental culture among the younger generation through cooperation with universities and general education institutions.

## **WATER RESOURCES**

### *Approach*

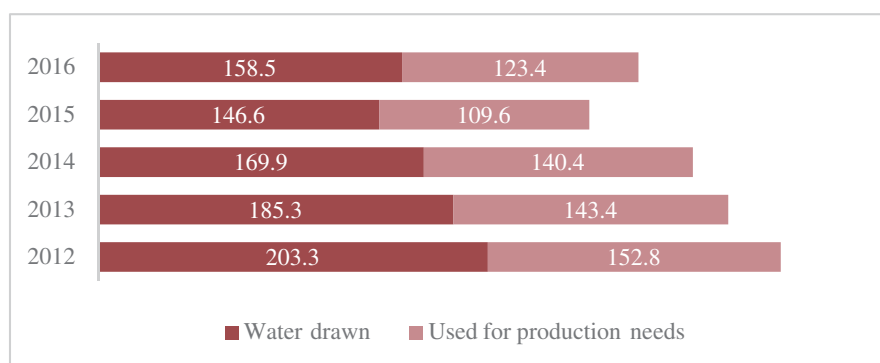
One of the Company's strategic objectives is the creation of a closed water supply system at production capacities that will reduce the need for water use and reduce wastewater discharged. [HKEx Appendix 27 KPI A2.4, G4-EMS](#)

### *Results*

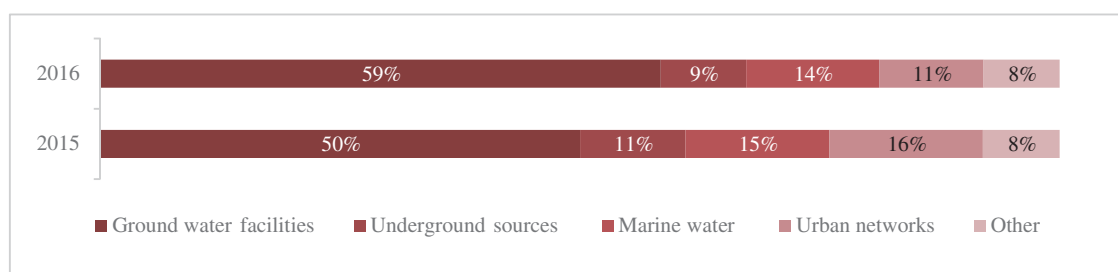
In 2016, the Company increased by 8% in the amount of water drawing compared to the previous reporting period. The consumption of water for production needs has also increased by 13% in relation to 2015. The negative dynamic is mainly caused by increased water consumption for production and heat and power generation at the Achinsk alumina refinery and the Urals aluminium smelter.

The introduction of closed water supply system at the production facilities has resulted in a decrease of 35% of the water drawn from river ecosystems in the last five years and a 68% decrease in wastewater discharges.

**Trends in the drawing and use of fresh water for production in 2012-2016, million cubic metres G4-EN8, HKEx Appendix 27 KPI A2.2.**

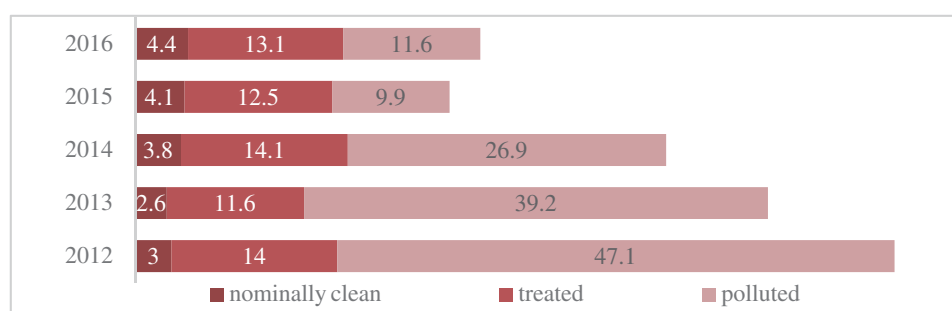


**Water drawn by source G4-EN9**



The structure of the Company’s water consumption according to the types of sources used and the types of production facilities remains constant. Water is mainly drawn from ground water facilities, 59% of the total. The main consumers of water resources remain alumina refineries, related to the technological specificity of alumina production. Specifically, four production facilities (Achinsk alumina refinery, Bogoslovsk aluminium smelter, Boxitogorsk alumina refinery and Ural aluminium Smelter) account for 67% of the Company’s fresh water consumption. In the reporting year, the share of alumina refineries declined from 72.4% in 2015 to 64% of the total freshwater consumption of the Company. Consequently, the share of aluminium production in the volume of water consumption has increased to 27.6%.

**Dynamics of industrial wastewater discharges, million cubic metres G4-EN22, HKEx Appendix 27 KPI A1.1.**



In 2015, the dumping of industrial wastewater increased by 10% compared to the previous period, amounting to 29.2 million cubic metres. Most of these effluents (97%, or 28.3 million cubic metres) are attributed to alumina refineries. The growth in 2016 by 2.7 million cubic metres is related to the increase in the use of flushing water at the Boxitogorsk alumina refinery and the increase in rainfall during the year at the Boxitogorsk, Bogoslovsk and Urals production facilities.

In the last seven years, Bositogorsk alumina refinery has reduced the level of discharges by two times. At the beginning of the reporting year, a special audit was conducted and calculations were made of the consumption of water by production and by individual units for domestic use. A project of close water supply system is being prepared for implementation and work is being done to eliminate the loss of drinking water at production facilities. This will reduce the use of water by 20%: drinking water at least 800 thousand cubic metres, industrial by three million cubic metres. In addition, the drawing of fresh water should be reduced by two times and, accordingly, discharges should be reduced by means of closed water supply. As a result of the retrofitting of the corundum production, wet grinding of the products will be completely excluded and the load of the treatment facilities of the production facility should be reduced. After the establishment of existing water supply systems and the determination of the real level of discharges into the water source, it is planned to design and construct new treatment facilities in line with the scale of the production facility. **HKEx Appendix 27 KPI A1.5, A1.6.**

Until 2020, the Achinsk alumina refinery has to stabilise the process for collection and returning of drainage water into production, as well as the system of capturing of the filtration water and returning it to the water supply of the refinery.

## **ENERGY CONSUMPTION**

### *Approach*

With more than 90% of UC RUSAL aluminium produced using renewable and environmentally friendly hydropower, the Company aims to keep the lowest carbon footprint in the industry through energy efficiency activities.

Electricity is a key element in the production of aluminium, so the Energy Efficient Production programme has the highest priority.

Targeted programmes and energy efficiency projects are implemented at all production facilities of the Company without exception.

Massive introduction of energy-saving technologies, energy savings are achieved through optimisation of power regimes, cells design and technical and process parameters of production, such as reduction of thermal losses, use of slit-type and oblong anodes, modification of regulations for technological operations, reduction of amperage, etc.

Scientific developments to reduce energy consumption can play a key role.

### *Results*

During the accounting period energy efficiency projects were successfully implemented at all smelters of the Aluminium Division. In the area of energy efficiency, at the three aluminium smelters – Sayanogorsk, Krasnoyarsk and Irkutsk – a project to implement the unified anode is implemented almost simultaneously.

The production facilities of the Company have achieved the following indicators of power consumption reduction:

- As a result of the use of the unified anode at the Sayanogorsk aluminium smelter, the decrease in the unit energy consumption per tonne of aluminium was of 69 kWh. The production facility also has a pilot section of RA-550 section. It is planned to achieve the electricity consumption of less than 12,500 kWh per tonne over the next few years. The new reduction cells are operating with the amperage of more than 520 kA, which will reduce operating costs, primarily by improving environmental performance, increasing energy efficiency, and reducing labour costs for maintenance.
- IrkAZ – electricity consumption decreased by 46 kWh per tonne of aluminium, and on the upgraded cell line IrkAZ-5 – by 148 kWh. The savings of the burned anodes was of six kg per tonne.
- At the Krasnoyarsk aluminium smelter the specific electricity consumption per tonne of aluminium dropped by 143 kWh, and the savings of the burned anodes amounted to 7.5 kg per tonne. In potroom No 5 of the Krasnoyarsk aluminium smelter, experimental operation of energy-efficient cell developed by professionals of ETC began. Improved cell design allows to save up to 60 kw of process electricity in the production of each tonne of metal. In recent years, the production facility has achieved a reduction in the consumption of process electricity from 16100 to 15400 kWh per tonne of aluminium.
- Bratsk aluminium smelter reduced energy consumption for the production of a tonne of aluminium by 40 kWh, Novokuznetsk aluminium smelter by 30 kWh.

The aim is to reduce the annual energy consumption of aluminium smelters by 3,400 GWh by 2020 as compared to the 2011 level.

All the production facilities of the Alumina Division also participated in the energy saving programmes. Each of them prepared organisational and technical plans to change the operating systems of existing equipment and to replace obsolete equipment with energy efficient, contributing to the savings in fuel and energy resources.

UC RUSAL production sites continue to work on regular energy audits, the results of which serve as basis for the action plans for efficiency optimisation.

The overall effect of lower electricity consumption was of approximately USD 5.8 million.

## **AIR EMISSIONS**

### *Approach*

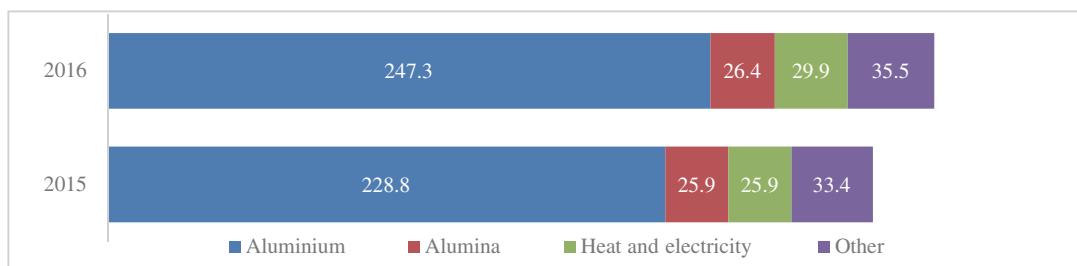
Following the environmental policy, UC RUSAL implements activities aimed at reducing the negative impact on the ambient air. [HKEx Appendix 27 KPI A1](#).

The objective of the Company is to achieve by 2020 air emission standards established by the law of the countries of operation of UC RUSAL production sites.

*Results*

In 2016, total emissions of atmospheric pollutants increased by 8% over the previous period, amounting to 339.2 thousand tonnes due to the increase in carbon monoxide emissions of the Sayanogorsk aluminium smelter.

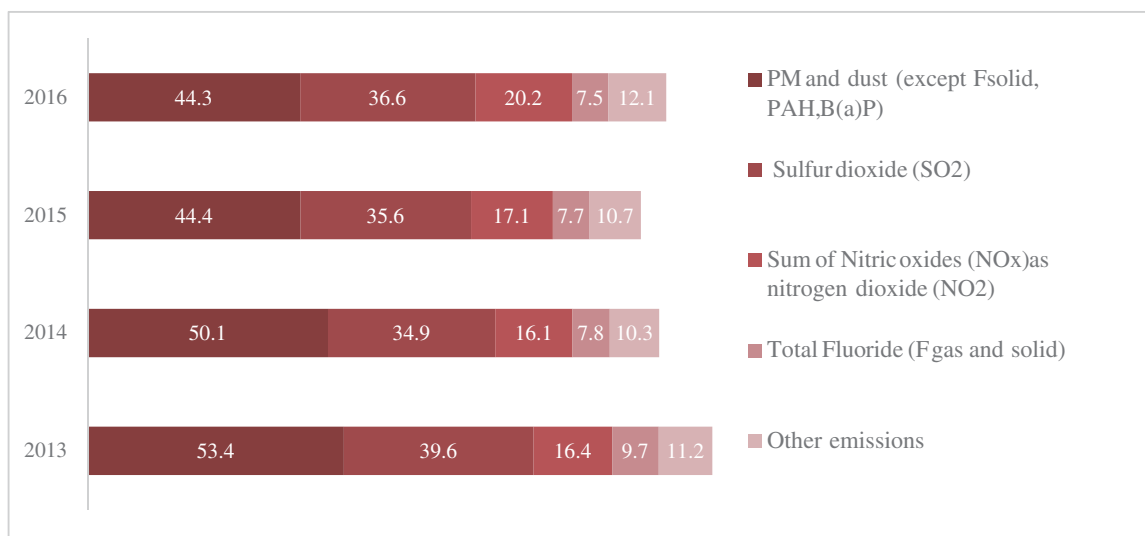
***Emission trends by type of production (excluding greenhouse gases), thousand tonnes***



The distribution of total emissions of pollutants by type of production remains unchanged – aluminium smelters account for the bulk of these. Their share remained at 73% during the reporting period. Alumina refineries, same as in the previous period, accounted for 8% of emissions, heat and power production for 9% (8% the year before). Other production (production of anodes, fluorinated salts, cryolite and others) ensured 10% of total emissions.

Among the pollutants emitted into the air by UC RUSAL production facilities, carbon monoxide emissions account for the largest share, which have the least significant negative impact on the environment. During the reporting period, this figure was of 218.5 thousand tonnes (199.6 thousand tonnes in 2015), or 64.4% of total Company emissions. Emissions of this pollutant increased by 9 p.p. compared to the previous period.

***Emissions of pollutants into the atmosphere (without carbon monoxide), thousand tonnes G4-EN21, HKEx Appendix 27 KPI A1.1.***



During the reporting period, aggregate emissions of other pollutants also slightly increased while maintaining the emission structure by type. Solid substances continue to hold the largest share (with the exception of benz(a)pyrene, solid fluorides, tarry substances) with 44.3 thousand tonnes or 13.1% of gross emissions, sulphur dioxide of 36.6 thousand tonnes or 10.8%, nitrogen oxides of 20.2 thousand tonnes or 6%, total fluoride (solid and gaseous) of 7.5 thousand tonnes or 2.2%, and other substances of 8.5 thousand tonnes or 2.5%.

During the reporting period, the Company continued to work on the retrofitting of the gas treatment centre (GTC) and basic equipment of production facilities, including the transition to the new technology of Clean Soderberg. [HKEx Appendix 27 KPI A1.5, A1.6](#). This technology, developed by the Company's specialists, provides for the improvement of the design of the cell, which ensures that its high sealing capacity. With constructive changes, the reduction cell is opened for routine operation only twice every six days. The rest of the daily operations are carried out without destroying the cryolite-alumina crust through special hatches. This leads to a significant reduction of emissions of gases into the atmosphere. The implementation of the Clean Soderberg project continued at Krasnoyarsk, Bratsk, Irkutsk and Novokuznetsk aluminium smelters.

### **Novokuznetsk aluminium smelter**

In the course of the retrofitting of the main production in portroom No 12 of the smelter, the experimental site was put into operation with six S8BME reduction cells working on Clean Soderberg technology. With the new engineering solutions, the cell records a smaller consumption of primary types of raw materials and electricity. After the technology is mastered, the two potrooms will be converted to the reduction cells operating with Clean Soderberg technology, the rest to the reduction cells with pre-baked anodes RA167. They will all be connected to the latest dry gas treatment centres. The full replacement of the reduction cells and gas treatment capacities is planned for 2019-2020.

*Novokuznetsk aluminium smelter received the gold medal of the regional Industrial Forum, with the support of the administration of the Kemerovo region and the Interregional Association 'Siberian Agreement' for success in developing and implementing the latest environmental technologies.*

One of the main projects aimed at reducing the technological impact of metallurgical production on the environment is the introduction of modern, highly efficient dry gas treatment. These GTC capture up to 99.8% of hydrogen fluoride and solid fluorides in the exhaust gases of the reduction plant. In doing so, it is not only possible to reduce the gross emissions of the production facility but also to reduce the amount of waste from the gas treatment disposed at specialized landfills.

### **Bratsk aluminium smelter**

In the reporting year gas treatment centres No 51 and 52 were put into operation. The use of foaming apparatus (wet cleaning stage) has also been resumed to better capture the pollutants of new plants. By the end of 2016, five dry gas treatment centres were already operating at the production facility. In 2017 the introduction of modern gas treatment equipment will continue.

### **Krasnoyarsk aluminium smelter**

A unit to extract sulphur from the liquors of the gas treatment system has been introduced in industrial operation. This measure made the second stage of the gas treatment more effective by making it the most effective among analogues. The unit considerably reduces the threat to the environment and also produces a marketable product – sodium sulphate.

### **Achinsk alumina refinery**

A large-scale programme of reconstruction of gas and fume treatment equipment continued. During the reconstruction of the sintering kilns, wet gas treatment centres, which are used as an additional stage of cleaning, are mounted after electrostatic filters on all furnaces. This equipment will make it possible to clean up to 98% of flue gases and dust and to further capture up to 1.5 thousand tonnes of dust per year. In general, the emissions of dust of the sintering shop into the atmosphere should be reduced by at least 30-40%. During 2016, the Company introduced this installation on one furnace and began construction on another 10 furnaces. On 12 furnaces there will be installed 14 wet gas treatment units in total.

### **Mykolayiv alumina refinery**

The modernised gas treatment unit has been commissioned at the third limestone bake oven. It has electrofilters that provide a 99.9% cleaning level. As a result, treated flue gases must go into the atmosphere, the dust remains in the electrofilter and is sent to mud disposal by air fluidization system. The production facilities plan to reconstruct another electrofilter on the second bake oven. Once completed, all furnaces will comply with the most stringent requirements not only of Ukrainian but also international standards in terms of particulates emissions.

The reconstruction of the gas treatment equipment has also continued on Kremny (Shelekhov) and Silicon Ural (Kamensk-Uralsky).

### **Silicon Ural**

One of the main tasks of the reporting year at Silicon Ural was the erection of gas treatment facilities. More than 80% of the steel structures have been installed: smoke exhausters, most of the process equipment of the bag filter block and the pre-treatment of the exhaust gases of ore-thermal furnaces, the power supply system and the distribution substation.

### **Middle-Timan bauxite mine**

In order to reduce the dusting during the mining and transportation of bauxites during the dry period, roads and waste dumps are irrigated with water.

### **Volgograd aluminium smelter**

The evidence of the environmental performance of the smelter is the reduction of the environmental buffer zone, in some places up to 500 metres. The reason is the results of the studies of the concentration of harmful substances in the soil, which has been significantly reduced as a result of global emission reductions by the production facility. The new environmental buffer zone also takes into account capacity increases.



UC RUSAL production facilities pay considerable attention to the implementation of environmental monitoring activities. During the period of adverse weather conditions, a special regime of equipment is assigned to aluminium production and technology activities are carried out to reduce emissions. Atmospheric air monitoring is performed daily, including at night, on the premises of production facilities and in surrounding residential areas. Sampling and measurement of major contaminants are carried out. The results of the measurements will be transferred to the supervisory bodies.

The main effect of the reduction of emissions and the achievement of standards by the UC RUSAL production sites is expected after the implementation of the environmental measures planned for 2017-2021.

## **CLIMATE CHANGE**

### *EMS approach*

Addressing the effects of emissions on climate change has been among the priorities of UC RUSAL over the past decade. In 2007, the Company launched the Safe Future Strategy initiative aimed at reducing the impact on air and minimising the impact on climate. In 2008, it joined the United Nations Global Compact 'Caring for Climate – the Business Leadership Platform' initiative. In the light of the goal to reduce greenhouse gas emissions achieved in 2014, UC RUSAL, on the eve of the XXI session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris, made public the five climate change objectives aimed at reducing the carbon footprint and implying the refusal to purchase fossil-fuelled power, increasing energy efficiency and reducing greenhouse gas emissions, and the introduction of clean technologies, new environmental standards and a number of other measures. At the beginning of 2017 the targets were updated and their number increased from five to seven.

UC RUSAL actively joined the work of global organisations on sustainable development issues. The company is a member of the Aluminium Stewardship Initiative (ASI) and Carbon Pricing Leadership Coalition of the World Bank (CPLC), where they interact with the participants of the supply chain of aluminium products from around the world. Upon its accession to ASI, UC RUSAL participated in the development and implementation of a sustainable development standard applicable to the supply chain of aluminium products, developed by this organisation. The purpose of the Company is to certify its production according to the requirements of this standard.

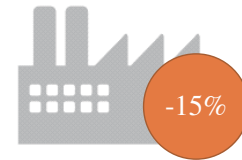
In order to inform the employees about the increasing greenhouse effect as one of the global challenges and solutions offered by UC RUSAL to dramatically improve the situation in Russia, the world and the industry, a corporate 'Clean Step' education programme has been launched. It is designed to enhance the competence of staff in environmental matters, an environmentally responsible approach at their workplaces.

*Seven strategic objectives of UC RUSAL for greenhouse gases until 2025*

To ensure that the aluminium smelters buy at least 95% of their electricity from hydroelectric power plants and other carbon-free power generating sources.



To reduce direct specific greenhouse gas emissions by 15% compared to 2014 at reduction processes at the existing aluminium smelters.



To reduce direct specific greenhouse gas emissions by 10% compared to 2014 at the existing alumina refineries.



To reduce the specific aluminium smelters power consumption by 7% as compared to 2011.



To achieve the average level of specific direct and indirect energy related greenhouse gas emissions from reduction processes at the aluminium smelters not exceeding 2.7 t of CO2e/t Al.



To use an internal carbon price when making strategic and investment decisions starting in 2017.



To support Russian and international initiatives and associations advocating active actions to prevent climate change and supporting carbon prices as long as they are aligned with the strategic goals of the company.



**Measures to reduce carbon footprint** HKEx Appendix 27 KPI A1.5, A1.6.

The key actions in the area of greenhouse gas emissions in 2016 were as follows:

- development of plans to reduce specific emissions from the Company’s aluminium and alumina facilities;
- bringing the share of electricity purchased from renewable sources to 95%, develop a carbon footprint estimation methodology for aluminium;
- creation of a strategy for carbon neutrality of Russian aluminium and the beginning of its implementation.

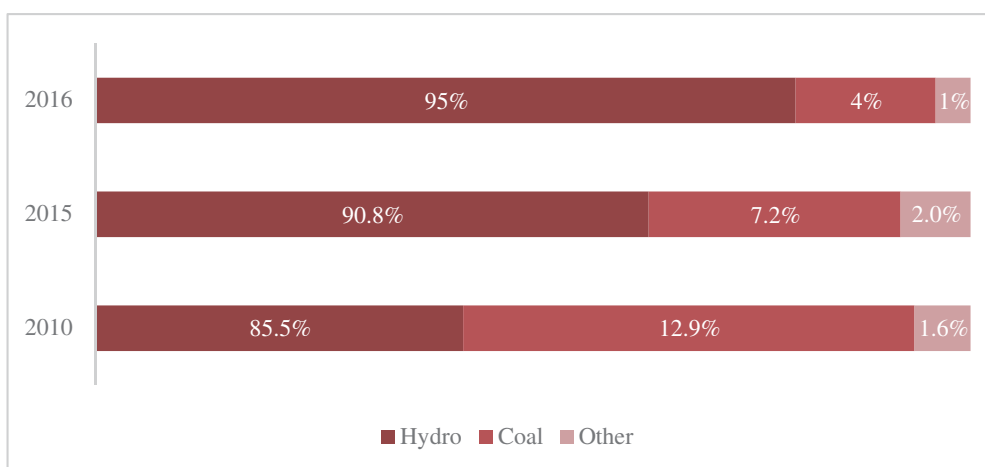
In 2016, the Company continued to implement measures to reduce greenhouse gas emissions. In addition to the main production, the accounting and analysis of greenhouse gas emissions was also carried out at alumina and silicon production facilities.

More than 90% of the aluminium production of UC RUSAL is covered of clean renewable hydropower. Bratskaya, Irkutskaya, Ust-Ilimskaya, Krasnoyarskaya, Sayano-Shushenskaya and Boguchanskaya HPP in Siberia cover the operation of the key production facilities of UC RUSAL.

UC RUSAL reduces the share of purchased carbon-intensive electricity in production, which is fully in line with the basic principles of the Agreement adopted at the XXI session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris. The next item on the agenda is to reach the fullsupply of hydropower to Novokuznetzk Aluminium Smelter.

In 2015, Krasnogorskaya thermal power plant was included in the Ural aluminium smelter. In order to implement the Company’s plans to reduce the carbon footprint, a programme was developed to convert to 100% combustion of gas fuel. The abandonment of coal has already reduced carbon dioxide emissions by 15%.

**Sources of electric power for aluminium smelters**



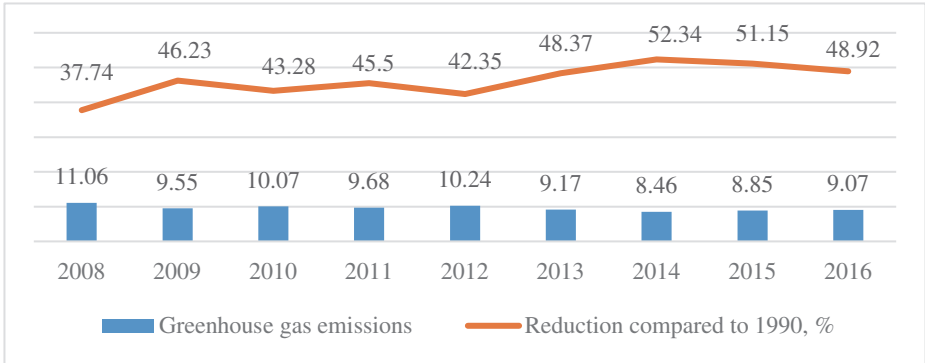
The reduction of greenhouse gas emissions and carbon footprint is one of the main strategic objectives of UC RUSAL. The Company is systematically working to increase the share of the so-called low-carbon aluminium in total production. Low-carbon aluminium is considered to be the metal, for the production of one tonne of which greenhouse gas emissions in CO<sub>2</sub> equivalent are minimal and in line with the best indicators of the global aluminium industry. The carbon-free production strategy of UC RUSAL is based on the maximum reduction of direct and indirect energy emissions of greenhouse gases and the replacement of the undiminished portion of emissions by the reductions from the projects outside the Company.

The second important area is the development of the inert, carbon-free anode. If successful, direct greenhouse gas emissions from aluminium production will be zero, and other pollutants will also be minimised. UC RUSAL of all companies in the industry has advanced the most in the solving of this problem and is testing technology at the industrial site. As a result of these tests, a decision will be taken in 2018 to gradually retrofit the potrooms.

Under the existing agreement with the International Aluminium Institute (IAI), UC RUSAL maintains annual accounting of greenhouse gas emissions and energy consumption in the production of primary aluminium, energy use in casting production and alumina production, and the use of anodes and anode paste.

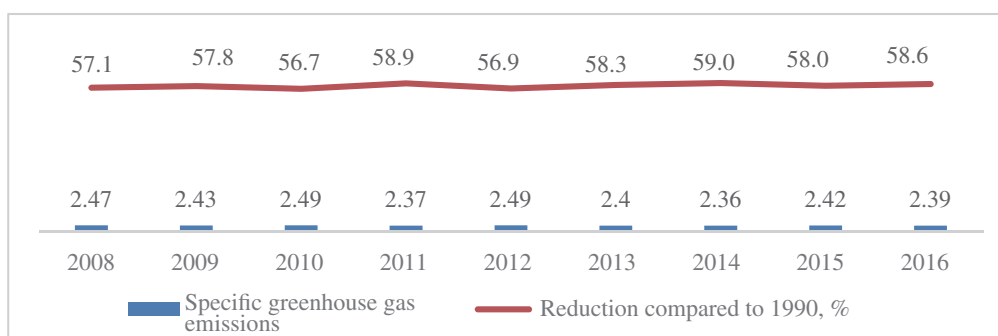
*Results*

**Direct greenhouse gas emissions of reduction plants, million tonnes of CO<sub>2</sub> eq. G4-EN15, HKEx Appendix 27 KPI A1.2.**



The increase in absolute emissions in the reporting year compared with to previous period is due to an increase in output.

**Direct specific emissions of greenhouse gases of reduction plants, tonnes of CO<sub>2</sub> eq per tonne of aluminium** *G4-EN18, HKEx Appendix 27 KPI A1.2.*



The strategic objective ‘to reduce the amount of direct greenhouse gas emissions to the atmosphere by aluminium smelters by 50% compared to 1990 by 2015 has been achieved and maintained below the specified level.

The Company has set a strategic objective to reduce the direct specific emissions of aluminium production by 15% by 2025, and by 10% the direct specific emissions of alumina production compared to 2014. Emission reduction programmes developed during the reporting year have resulted in a reduction by 1.49% in emissions compared to 2015.

Since 2015, UC RUSAL has participated in the CDP Global Initiative (Carbon Disclosure Project), and together with other leading world companies has committed itself to disclosure of information about its greenhouse gas emissions. Information about greenhouse gas emissions from aluminium, alumina and silicon facilities was published as part of the preparation of the annual CDP report.

In the previous period, work has been done to improve the method of calculation of direct greenhouse gas emissions, and new techniques were developed to calculate the carbon footprint from aluminium production and to calculate indirect emissions from the generation of purchased power. In addition, activities to calculate the carbon footprint of primary aluminium in the framework of the creation of the greenhouse gas accounting system were implemented in 2016, which, under Russian law, are expected to start operating after 2017 on the production facilities with emissions over 150 thousand CO<sub>2</sub> eq per year. **G4-EC2**

The draft of the Company’s strategic objectives until 2025 regarding greenhouse gases has been developed.

***Participation of UC RUSAL in the Climate Partnership of Russia***

On the eve of the XXI session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris in 2015, UC RUSAL, together with several other Russian companies, put forward the initiative to bring together the efforts of domestic businesses to reduce environmental impacts and prevent climate change, which is achieved by supporting the Climate Partnership of Russia and by signing the relevant communication.

Russian companies have also asked all participants of the international negotiation process to conclude a legally binding agreement that will enable countries to take joint responsibility for climate change. Such agreement implies a single, universal format of commitments for all countries, unified mechanisms to ensure the implementation of these commitments and full monitoring of their implementation. The participants of the initiative advocate equal conditions of international competition for all participants of the process, and suggest the introduction of market-based mechanisms to encourage business to switch to new production technologies.

In turn, the companies that signed the communication committed themselves to: strive to produce products consistent with the principles of low-carbon, green economy. *(Please see also the section 'Interaction with Stakeholders. Participation in industry organisations and international initiatives.)*

In July 2016, the representatives of the Company participated in the ordinary, third meeting of the members of the Climate Partnership of Russia.

## WASTE

### *Approach*

The activity of UC RUSAL in the area of waste management is aimed at the achievement of key strategic objectives: increase in the share of recycling and reuse of waste, safe storage and disposal of waste, total abandonment of use of PCB equipment and disposal of available PCB waste.

In order to ensure the safe disposal of waste, the Company is actively engaged in the construction of new, reconstruction and retrofitting of existing waste disposal facilities.

### *Results* [HKEx Appendix 27 KPI A1.1.](#)

At the end of 2016, the production sites of the Company accumulated 987.4 million tonnes of waste, including:

- red/nepheline mud – 507.9 million tonnes (51.4%);
- overburden rocks — 392.0 million tonnes (39.7%); [HKEx Appendix 27 KPI A1.4.](#)
- spent pot lining — 0.730 million tonnes (0.07%).

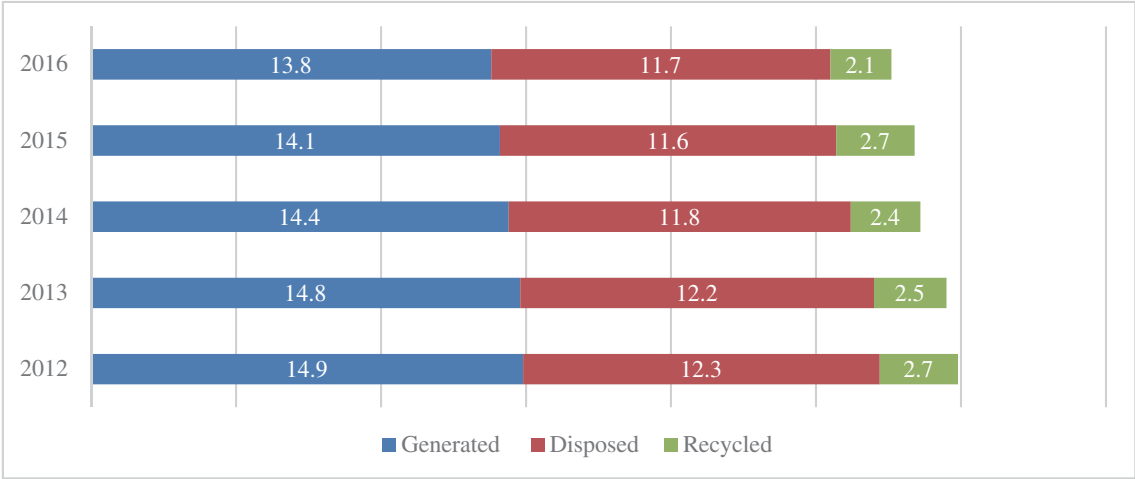
Unlike most of the other countries of operation, the Russian legislation includes the overburden rocks in the waste category. The total amount of produced waste without overburden rocks dropped from 14.1 million tonnes in 2015 to 13.8 million tonnes in 2016. The amount of disposed waste has remained virtually unchanged during the same period. The volume of processed waste, including sale and transfer to third party organisations, decreased from 2.7 million tonnes to 2.1 million tonnes. The ratio of waste categories according to treatment is also slightly different. Thus, the share of waste disposed at own facilities or transferred to third party organisations has increased from 81% to 85%. Accordingly, the share of processed waste decreased from 19% to 15%. The dynamics of the recycling of the generated waste depends directly on the amount of recycling of the red and nepheline muds, which represent the waste of alumina production.

In 2016, 1.04 thousand tonnes of 1-3 hazard class waste were transferred to the specialised organisations for disposal. [G4-EN25, HKEx Appendix 27 KPI A1.3.](#)

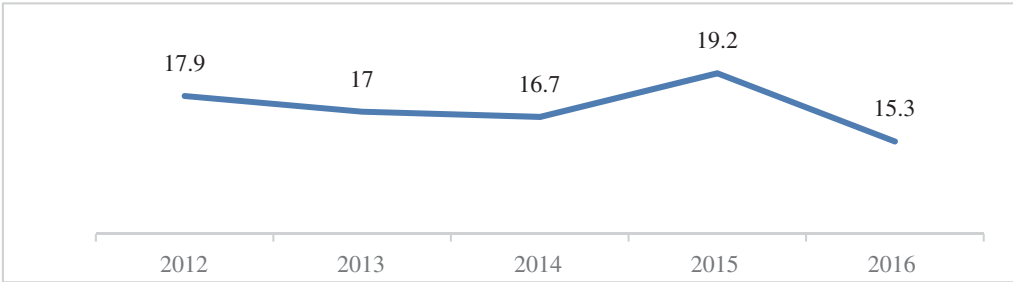
Aluminium is the most frequently recycled material, it is easily disposed and can be 100% recycled without losing its unique properties. Today, in world practice the production of secondary aluminium accounts for about 30% of the total output, and its share continues to increase.

The form of the output of the final product (ingots, slabs, etc.) does not require the use of a special package for supply to consumers, so that this type of waste is virtually non-existent at most production facilities of the Company. [HKEx Appendix 27 KPI A2.5](#).

***Trends in the generation, disposal and recycling of waste, excluding overburden rocks, million tonnes G4- EN23, HKEx Appendix 27 KPI A1.1.***

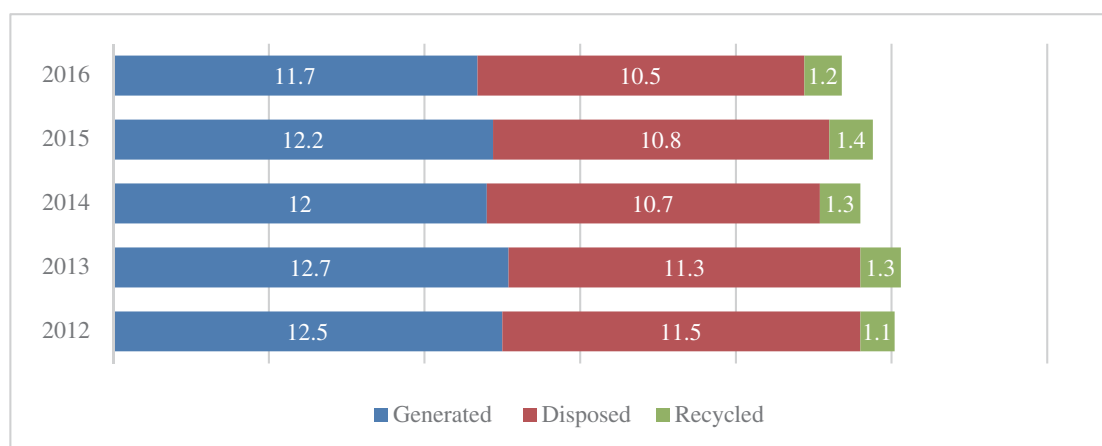


***Share of recycled or reused waste from total generated, % G4-EN2***



In the structure of waste of the Company dominate the red and nepheline muds, which are considered non-toxic waste of 5th class of hazard to the environment. Their share is of 85.9% of the total amount of waste generated. The quantities of generated mud are directly related to the dynamics of production, and also depend on such factors as the depth of ore beds and the percentage of alumina in the processed ore and bauxites.

*Dynamics of the formation and use of mud from the alumina production, million tonnes HKEx Appendix 27 KPI A1.4.*



The quantity of processed mud is directly dependent on the implementation of the measures for the construction of red mud disposal areas. In 2016, the level of generation of mud from alumina production reduced to 11.7 million tonnes, the volume of mud recycling also reduced to 1.2 million tonnes.

UC RUSAL continues to develop and implement technologies for the processing of specific wastes of aluminium and alumina production in cooperation with research centres and institutes.

In 2016, UC RUSAL implemented a large number of environmental projects for the construction and reconstruction of mud disposal areas. **HKEx Appendix 27 KPI A1.5, A1.6.**

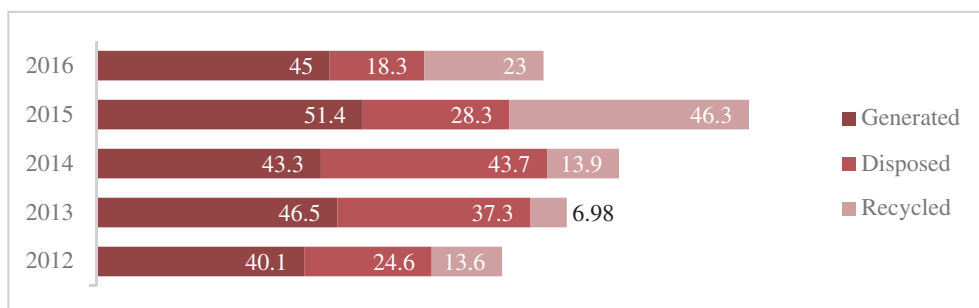
- In connection with the filling of the existing areas No 1 and No 2 of red mud disposal at Achinsk alumina refinery, the construction of a new facility for the storage of nepheline mud, the red mud disposal area No 3, has been completed. It is designed for the disposal of 112 million cubic metres of waste during 20 years. The new red mud disposal area will allow the operation of the Achinsk alumina refinery to be extended until 2035. The facility is built in line with all modern environmental requirements and using the latest technologies that guarantee its safety. In 2016 geophysical studies of the geomembrane were completed and confirmed the integrity of the built screen. A leak tightness test was then carried out. The commissioning of the facility is planned for the second quarter of 2017.
- On the Bogoslovsk aluminium smelter, a second stage of red mud disposal area was commissioned, which would allow alumina production to be operated until 2024 and after all three stages are commissioned, until 2036.
- The implementation of a large-scale project for the reconstruction of production waste disposal facilities at the Bratsk aluminium smelter continues. Over RUR 80 million were invested in their recycling, reintegration into production, and the reconstruction of red mud disposal areas of the smelter. The production facility uses in its own production, processes and sells to third party organisations as a raw material about 54% of total waste generated. The entire amount of generated coal froth has been recycled.



- The technology for obtaining scandium concentrate from red mud developed by UC RUSAL specialists was tested at the Urals aluminium smelter. In July 2016, the industrial production of scandium oxide was launched. In the first shipments received, the purity of the final product was of 99.1%. Work is under way to improve technology to reduce the cost of production. In the future, it is planned to increase the performance of the current installation to 0.8-1.4 tonnes of scandium oxide per year. The resulting products will be used to produce alloys at UC RUSAL production sites.
- At the Volgograd aluminium smelter the project was launched to reduce the load on its own solid industrial waste disposal site. Using the principles of efficient waste management, the smelter has developed options for the sale of flotation sludge, cathode and anode breakage for further processing. As a result, the load on the polygon was reduced by approximately 60 tonnes.

The waste from the production of UC RUSAL production sites second in priority after the mud is the spent carbon lining of the cells. The amounts of this type of waste, which belong to the fourth class of low-hazardous substance, directly depend on the number of completed pot rebuilds. A tonne of aluminium produces about 15 kg of carbon lining.

***Dynamics of generation and processing of carbon lining, thousand tonnes*** *HKEx Appendix 27 KPI A1.4.*



The generation of carbon lining waste during the reporting period decreased by 12% compared to 2015 and made up 45 thousand tonnes. The quantity of processed waste dropped twice compared to the previous period. Since 2014, secondary raw materials obtained from recycling have been sold to the West Siberian metallurgical plant.

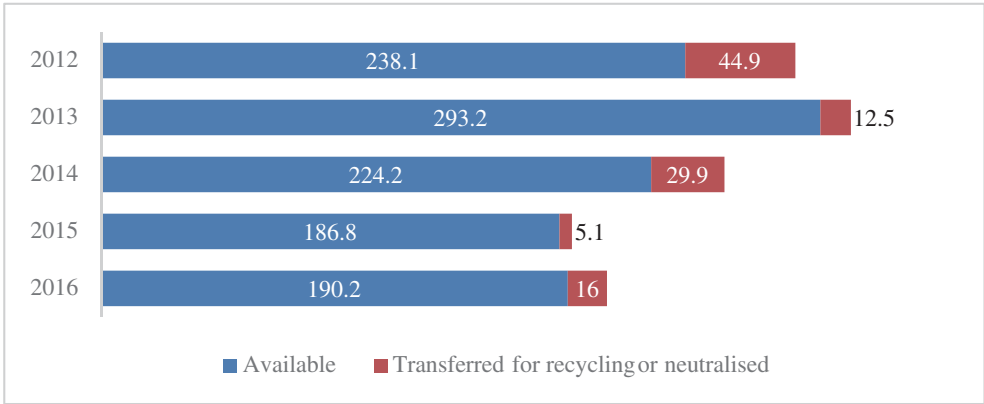
Since 2011, work has been carried out in the Aluminium Division to increase the sale and use of production waste, including through the participation of specialists from research organisations and specialised universities. As a result, the share of recycled waste of carbon lining has increased significantly over the past two years: in 2015, it made up 90.1%, in 2016 – 51%, which is much higher than the best indicator of the previous period of 40%.

In the reporting year, a site was launched to recycle the carbon lining at the Krasnoyarsk aluminium smelter. In the first quarter of 2016, a new industrial waste disposal area was put into operation at the Irkutsk aluminium smelter. Work is underway to build a site for temporary disposal of waste of the Krasnoyarsk aluminium smelter. Red mud disposal area No 3 is being reconstructed at the Bratsk aluminium smelter.

The Company’s production facilities have existing and decommissioned equipment as well as waste containing polychlorinated biphenyls (PCBs). At the end of 2016, the volume of PCBs in the existing equipment was of 190.2 tonnes. The increase of 3.4 tonnes compared to 2015 is due to the rectification of the PCB content of the equipment.

As part of the ongoing work of disposal of PCBs during the reporting period, 15 tonnes of PCB wastes were neutralised and transferred to third party organizations for disposal, this exceeds by over three times the results of the previous year. Since 2008, 167 tonnes of PCBs have been removed/neutralised. It is planned to remove completely all equipment and waste containing polychlorinated biphenyls by 2022.

**Amount of PCBs containing materials neutralised and transferred for recycling, tonnes**

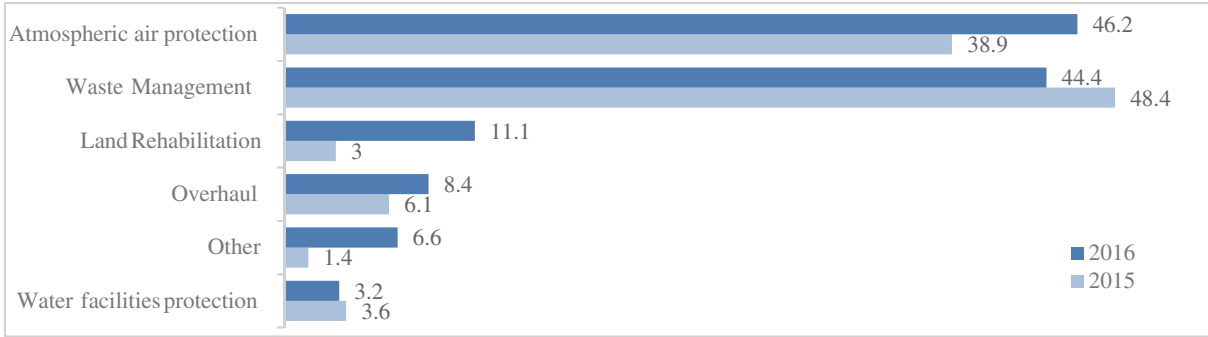


**INVESTMENTS IN ENVIRONMENTAL PROTECTION**

In 2016, UC RUSAL continued to invest in environmental activities in accordance with the strategic objectives defined by the Company’s environmental policy. The total amount spent on scheduled environmental activities exceeded USD 120 million, which is by 18% higher than the previous year’s level.

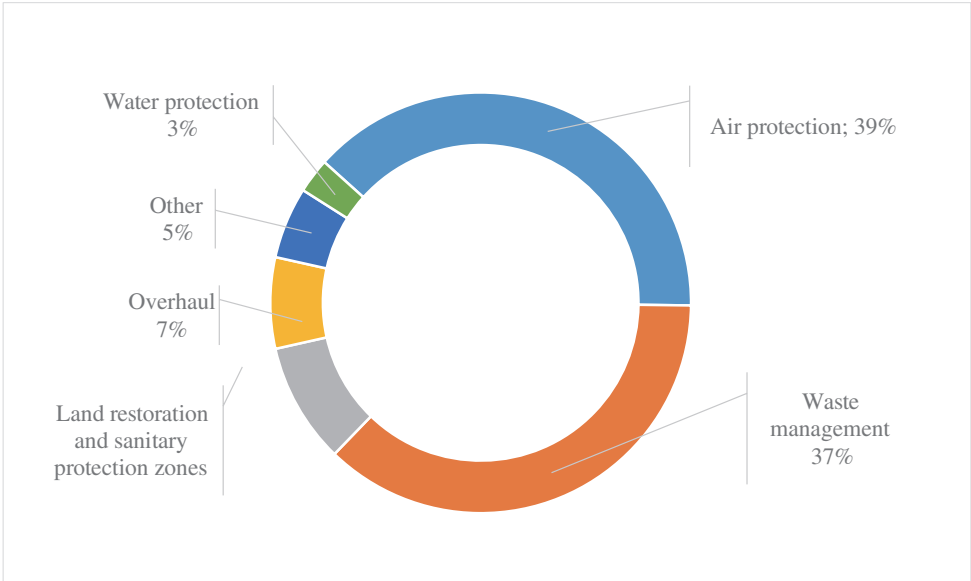
This amount includes partly but not entirely the expenditures on the Company’s environmental commitments to achieve standard emissions, discharges and safe handling of wastes, the total level of which was estimated at USD 109 million and actually was implemented at the amount of USD 92 million.

**Comparison of environmental expenses in 2015-2016, USD million G4- EN31**



In general, the pattern of allocation of funds to environmental protection areas remained unchanged. The largest share still includes expenditures on measures for waste management and air protection, the shares of which in 2016 amounted respectively 37% (\$44.4 million) and 39% (\$46.2 million), respectively. The costs of waste management decreased from 47% (\$48.4 million) in 2015 to 37% (\$44.4 million) in 2016, while the share of expenses for the land restoration raised up to 9% (\$11.1 million).

**Structure of expenses for environmental activities in 2016, %**



Among the most large-scale environmental projects of the reporting period is the continued retrofitting of aluminium smelters, replacement and improvement of gas treatment equipment, construction and reconstruction of red mud disposal areas.

**PLANS FOR 2017 AND MEDIUM TERM**

As an environmentally responsible company, UC RUSAL will continue to implement programmes to reduce negative environmental impacts.

To improve the environmental safety of major production, R&D will be carried out in the areas related to the use of un moulded materials for cell lining; technology for the processing of carbon lining and flotation tailings; improved technology for the extraction of sulphates from the second stage of gas treatment and the receipt of marketable products from them; development of technology for obtaining green pitch from coal to form anodes for the reduction plant that reduce pyrene emissions by 10 to 15 times, to a minimum level.

In 2017, the major tasks and plans of the Company include:

#### Management and monitoring

- development of programmes to improve the environmental performance of production facilities
- participation in the development and preparation for publication of the Handbook of the Best Available Technologies for Aluminium Production
- elaboration of the principles / recommendations for the gradual transition of the production facilities of UC RUSAL to standardisation based on the best available technologies (BAT) and obtaining comprehensive permits
- creation of pilot projects for the transition to the standardisation based on BAT for the Boguchansky aluminium smelter under construction and operating Krasnoyarsk aluminium smelter
- consolidation of process and hygienic standardisation
- selection of optimal solutions for automatic production control

#### Impact on air

- implementation of activities aimed at achieving maximum permissible standards of impact on air
- modernisation of gas treatment plants
- modernization of production within the framework of the Clean Soderberg project

#### Climate change

- creation of the corporate system of management of greenhouse gas emissions
- recording of the carbon footprint throughout from bauxites to final products

#### Impact on land resources

- reclamation of disturbed lands

#### Impact on water resources

- mitigation of the risks of production facilities in the area of discharges into centralised wastewater disposal

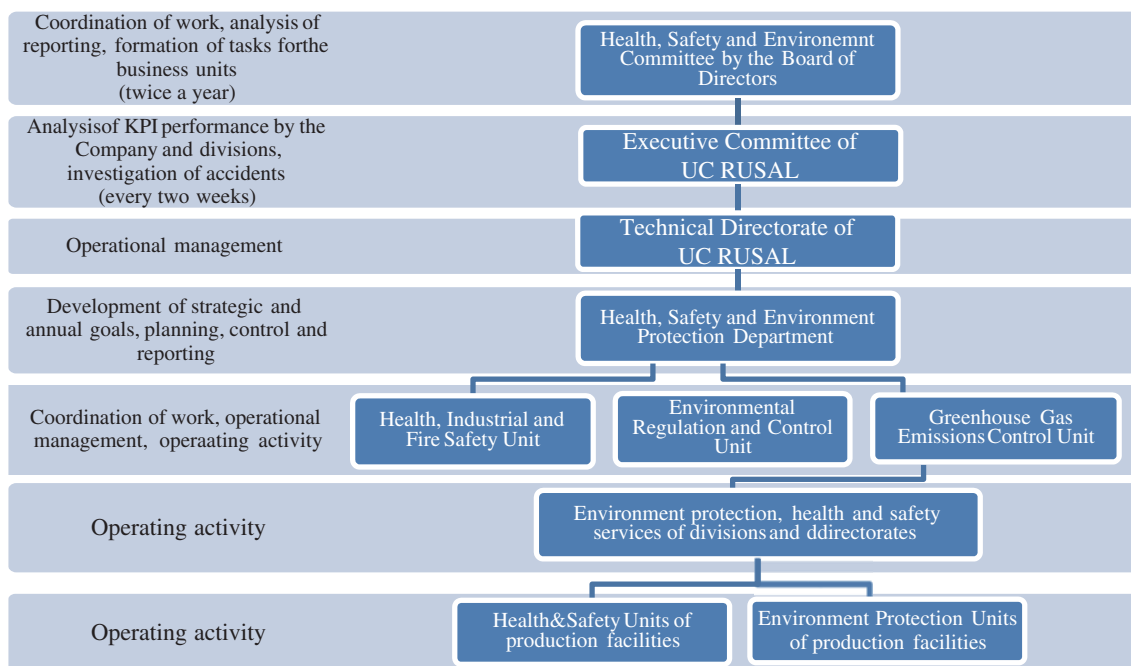
#### Wastes

- implementation of rolling measures for the reconstruction and retrofitting of red mud disposal areas, construction of modern facilities for waste disposal
- mitigation of risks of production facilities in the area of waste management
- work on the development and implementation of technologies for processing and use of waste

## WORK SAFETY

### MANAGEMENT SYSTEM

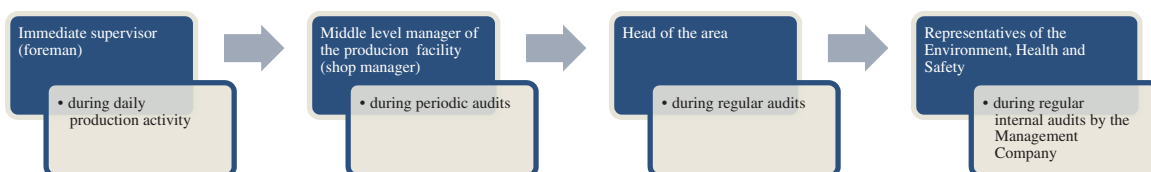
UC RUSAL considers the provision of life and health-friendly working conditions in the workplace to be the direct responsibility of managers at all levels of the Company. The Company has a vertical system for the management of health, industrial and fire safety (HSE Management System). [G4-EMS](#), [HKEx Appendix 27 KPI B2](#)



In 2016, there were 174 persons employed within HSE management system of business units. At each production facility, the HSE Management System includes:

- risk management;
- development of an emergency response plan and emergency procedures;
- procedure for the creation of budgets for health, industrial safety and safety measures;
- a system of reporting of accidents and lessons learned;
- a system for ranking setting of the key indicators of HSE assessment and assessment of their achievement;
- training of staff according to the requirements of the law of the countries of operation and the Company's regulatory documents;
- a system of corporate electronic distance learning and training in safe working methods.

The Company's production sites have real monitoring of the state of work safety. Such monitoring activities are carried out at the following levels:



The Company's experience is required by the specialists in other sectors of economy, including in the regions of operation. In the reporting year, the ordinary meeting of the Republican Coordination Council for Work Protection of Khakassia was held for the first time at the Sayanogorsk aluminium smelter. During the event, the representatives of ministries, departments and organisations highly praised the HSE Management System of the production facility and confirmed that the most current international practices in this area were being used.

In order to comply with the best practices of the HSE Management System the following production sites has been certified to conform to the international health and safety standard OHSAS 18001:2007:

- RUSAL GLOBAL MANAGEMENT B.V. (Management Company);
- Krasnoyarsk aluminium smelter;
- Novokuznetsk aluminium smelter;
- Bratsk aluminium smelter;
- Sayanogorsk aluminium smelter;
- Achinsk alumina refinery;
- Mykolayiv alumina refinery;
- Volgograd aluminium smelter;
- Metallurg Service Centre (Mykolayiv);
- Branch of the Russian Engineering Company (business unit of the Company's Engineering and Construction Division) in Achinsk.

In 2016, Det Norske Veritas Germanischer Lloyd carried out recertification audits on two production facilities and the Management Company. Audits confirmed the compliance of the HSE Management System with the requirements of OHSAS 18001:2007 standard.

The performance of the HSE Management System from the point of view of compliance with the requirements of the OHSAS 18001:2007 standard is assessed not only by external auditors but also through internal audits. Thus, in 2016, UC RUSAL carried out 31 internal audits, including at the Company's production sites not covered by the scope of OHSAS 18001:2007.

In the reporting year, the production of foil at the Sayanal plant was certified in accordance with the international food safety standard FSSC 22000. The auditors of the international firm SGS confirmed that all conditions in accordance with food safety requirements were created in the business units of the production facility. **G4-PR1**

## APPROACH

The unchanged priority of UC RUSAL is the work safety of its employees, industrial and fire safety of production processes and operations. **G4-EMS, HKEx Appendix 27 KPI B2**

In accordance with the ethical principles and UC RUSAL standards in health, industrial and fire safety, every employee of the Company, from specialists to supervisor, must:

- be aware of personal responsibility for his/her life and health, and for the life and health of others;
- know the risks accompanying his/her activities;
- by personal example encourage the safe conduct of his/her colleagues and contractors.

The work of UC RUSAL in the area of work safety is carried out in accordance with the laws of the country of operation, as well as corporate regulations and procedures, which stipulate the requirements for safe working conditions and for the reduction of occupational diseases and injuries.

In the Russian Federation, UC RUSAL focuses primarily on the following work safety instruments:

- *Labour Code of the Russian Federation;*
- *Federal Law No 116-FZ On industrial safety of hazardous production sites dated July 21, 1997;*
- *Federal Law No 426-FZ On special assessment of working conditions dated December 28, 2013;*
- federal rules and regulations in the area of industrial safety;
- *Industry tariff agreement for the mining metallurgical complex of the Russian Federation for 2014-2016.*

In 2016, 241 audits were carried out at the Company's production facilities by the supervisory authorities. The results of the audits confirm compliance with the requirements of the legislation in the areas of health, industrial and fire safety and sanitary and epidemiological welfare.

UC RUSAL continuously monitors changes in HSE legislation. In order for UC RUSAL professionals to meet the new professional standards of HSE specialist, the relevant training is planned for 2016-2017.

The Company is also actively involved in the assessment of the regulatory impact of draft regulations, the holding of round tables and meetings on HSE issues and the preparation of necessary amendments.

Since 2014, the activity in the area HSE at the production facilities of the Company is defined by UC RUSAL Policy Statement in the area of health, industrial and fire safety, taking into account the changed requirements of the Russian law in this area. The document had not been amended in 2016.

In the reporting year, a number of new documents was adopted in the area of HSE management, including an internal order On the organization of audits of management systems for compliance with international standards ISO 9001, ISO/TS 16949, ISO 14001, OHSAS 18001 and FSSC 22000 in 2016.

In the context of compliance with HSE requirements, the Company is guided by the following purposes and principles.

## Principles

- The life and health of a human being are more important than production output or economic performance;
- Full integration of the health and safety management system into the overall business management and production activities;
- All accidents are preventable;
- Compliance with law is a necessary and required condition of UC RUSAL business;
- Competency and responsibility of the employees is the foundation for safe work;
- Safe behaviour of employees must be encouraged and promoted;
- Mutually beneficial relations with suppliers and contractors;
- Monitoring and measuring performance indicators in the area of occupational health, industrial and fire safety.

## Targets

- To strive to eliminate injuries and risk of emergency situations and fire;
- To ensure compliance of equipment and production processes with legal and regulatory requirements of occupational health, industrial and fire safety;
- To ensure personnel safety and health in the workplace and improve workplace environment on an ongoing basis in order to increase the level of safety;
- To prevent the development of occupational diseases.

## Training HKEEx Appendix 27 KPI B3

Training in HSE is provided for all employees, and a set of industrial safety briefings is also carried out on a mandatory basis (induction, primary, repeated, target and unscheduled). Those employees who operate, service and control hazardous production facilities undergo compulsory HSE training. Periodic knowledge checks are conducted to verify staff qualification: once a year, on occupational health, every three years, on industrial safety.

Mentoring is used at the Company's production facilities to allow workers to develop and acquire the necessary skills. The newly employed worker is assigned to an experienced professional, who not only controls his/her actions in the HSE area, but also helps the worker develop a culture of safe conduct.

In the framework of training of future line managers, including on HSE issues, UC RUSAL has implemented the Talent Pool project.

The Company continues to operate a distance learning system containing 12 training courses and programmes in the HSE area.



UC RUSAL Corporate University has developed a computerised environmental education programme that takes into account the peculiarities of operation of various business units and production facilities of the Company. The training program is divided into four modules. The trainees are acquainted with environmental law, with the factors of aluminium production influencing environment and with the factors influencing climate change. Special attention is paid to the ways of reducing of the environmental impact of industrial facilities and public relations. As a result of the training, four self-checks and the final exam must be completed. The managers and professionals are trained in the workplace; workers are trained in computer classes of the production facilities.

Training is also available in the classroom form: the workers of the Middle Timan bauxite mine completed the course of Environmental education in UC RUSAL.

Training and knowledge check in the area of HSE are carried out in strict compliance with the legislation of the countries of operation the Company's production facilities. The relevant requirements are also regulated by the internal documents of UC RUSAL production facilities.

### **Special safety programmes**

As part of the training aimed at raising the awareness of occupational safety in the workplace, UC RUSAL implements various topic-based programmes. They aim both at the improvement of the culture of compliance with HSE rules and the addressing of specific risks.

#### *The project to improve the quality of training of crane operators at the Sayanogorsk aluminium smelter*

In order to improve the quality of the training of crane operators and to reduce the risk of accidents during loading and unloading operations, the project to improve the quality of the training of crane operators has been developed and implemented. As part of the implementation of the project, there were assigned production training foremen who completed a special programme on 'Trainings, mentoring', 'Safety in the operation of the lifting mechanisms', 'Accident and injury experience at the lifting mechanisms'. Two simulators of special pot tending cranes have been installed to provide practical skills in isolation from the actual production of the production facility.

The project was successfully continued in the reporting year: there were no incidents in the operation of the lifting machinery (4 incidents in 2015).

#### *The project of safety in the use of loading machines*

In order to reduce the risk of injury in the performance of the works with the use of loading machines, NGZ has developed a project of safety in the use of loading machines. The project included a questionnaire for the employees to evaluate working conditions through queries and developed a number of proactive measures. According to the first results, the project promotes the improvement of the conditions and safety of work at the production facility, the prevention of injuries and health of workers, and the preservation of the main production assets. As a result of the measures undertaken, the risks of dangerous situations with loading machines are minimised. In 2016, there were no injuries or accidents in the use of the loading machines.

At the Bratsk and Krasnoyarsk aluminium smelters specialised sites were created that fully imitate the potroom of the smelter, where the operators of intrashop floor equipment develop their professional skills.

Within the framework of the Safe Potroom project, a new reflective floor marking has been applied in the potrooms No 5-6 of the Krasnoyarsk aluminium smelter. New reflective elements have also been added to the loading equipment and to the helmets of the workers. Reflective floor lines have already proved their efficacy on the Khakass aluminium smelter.

*‘Prevention of Falls’ and ‘Safe Mine’ projects at the Severouralsky bauxite mine*

As a large share of all injuries occur in the production of raw materials and in the production of alumina, as well as in work at high altitude, the Company undertakes special measures to reduce the level of industrial injuries caused by movement and work at heights.

In particular, the ongoing project ‘Prevention of Falls’ provides for the identification of causes and dangerous factors causing falls in the movement in mine openings, identification of potential hazards that may lead to a fall, survey of movement in horizontal, vertical and incline working and training of employees with the analysis of specific injuries. The ‘Prevention of Falls’ project has reduced the risk of injury by 10%.

The ‘Safe Mine’ project provides for the training in risk assessment for managers and professionals, identification and determination of risk values across all work areas and their evaluation, development and implementation of the activities for risk minimisation and reduction of occupational diseases, and development of practical measures to reduce manual labour at the mine. The effectiveness of the project was demonstrated by the reduction of the risk of injury by 25% compared to 2015.

*‘Business Unit Safety Passport’ project at the Volgograd aluminium smelter*

In 2014, the production facility started implementation of a long-term project of ‘Business Unit Safety Passport’. The project aims at a comprehensive assessment of the work of the business unit in the area of HSE, using a number of objective indicators. Each of them is assigned a numerical score that allows determining the overall level of safety of the business unit.

Activities in the framework of this project allow to rectify the number of violations of the employee in the area of occupational health during his/her work at the production facility, to determine the contribution of the individual employee in the HSE area, to evaluate the work of a particular business unit, the level of security at the level of directorates. The goal of the project is achieved: the injury rate at the production facility in 2015 dropped to zero, and in 2016 there were no industrial injuries.

*The project of ‘Safety of Third Parties on Guinean Railways’ at the Compagnie des Bauxites de Kindia*

An analysis of the injuries of third parties on the sections of the railway of UC RUSAL production facilities in Guinea revealed the key problem – unauthorised access to railways upon the passing of trains and the use of roads by the local population as transient traffic flows. In order to reduce the risk of injury, since 2007 the Company has been building awareness, undertaking measures to organise crossings and protect the railways, working with the national police. The implementation of this project has resulted in an orderly reduction in the level of injuries on the railway. Its importance has increased with the conclusion in 2015 of a multilateral agreement involving UC RUSAL on the use of the existing railway infrastructure in the province of Boke in the framework of the Dian-Dian investment project and plans to resume the work of the Friguia complex in 2017.

The facilities of the Compagnie des Bauxites de Kindia also recorded numerous road traffic accidents due to the fatigue of truck drivers; now the drivers do not go on a trip without the Antison device.

The bauxite alumina complex of Windalco (Jamaica) is implementing an educational project to prevent personnel hand injuries. In addition to the sessions and trainings, injury-risk equipment is replaced, in particular lever handles of locking accessories are replaced with hand wheels.

### **Collective bargain agreements**

The Company has a collective bargain agreement with the employees of most production facilities, which establishes in a separate section health and safety (labour protection) issues, which allows improving the HSE management system. The content of collective bargain agreements is subject to mandatory approval by trade unions.

Through their representatives in trade unions, workers are also involved in the solution of work safety issues. Each production facility has a representative from the trade union organisations in charge with HSE, which participates in the relevant activities. On a parity basis with the representatives of the administration, they are part of the HSE committees (commissions). **G4-LA5, G4-LA8**

### **Emergency situations**

The Company continues to undertake active actions for the prevention, response and mitigation of emergencies.

UC RUSAL is aware of the risk of emergencies. The Company has a well-functioning alert and information system about emergencies, assesses the risk of an emergency, prepares action plans to prevent emergencies, and develops plans for emergency recovery. The Company has a Regulation on notification of the leadership about emergencies and supports high readiness of employees and technical means for rescue works. Some production facilities of the Company operate their own fire and rescue business units staffed with trained personnel and equipped with appropriate equipment. In other cases, contracts are concluded with public and private entities to provide emergency response and fire safety services.

Production facilities also prepare for emergency response, especially in the fire hazardous spring period. The specialists verify the readiness of the fire extinguishing equipment as well as the operation of automatic fire fighting and signalling equipment and conduct fire drills. Training in countering terrorism acts involves the personnel and rescue services of the production facility, staff of security providers and security agencies. In total, 64 joint exercises were carried out at the Company's production facilities in conjunction with the EMERCOM units in 2015.

In order to prevent the occurrence of the emergency, hazardous situations are monitored at the Company's production facilities. Monthly reports of identified situations, indicating the dynamics of the effectiveness of corrective actions, are being prepared.

## **ACTIONS**

In order to meet the objectives set by UC RUSAL as part of the provision of health, industrial and fire safety for its employees, the Company carries out a range of HSE actions. **G4-EMS, HKEx Appendix 27 KPI B2.3**

Plans for improvement and enhancement of working conditions are being developed and approved by the top management of all production facilities. Such plans include the development and implementation of actions to reduce harmful and hazardous production factors in the workplace, and the determination of responsible and deadlines. Plans are being negotiated with trade unions.

The Russian sites of the Company’s production facilities, in accordance with the requirements of Russian law, carry out a special assessment of working conditions (the special assessment). An internal document has been issued, namely the regulation on organisation and conduct of a special assessment of working conditions at the production facilities of the Company located in the Russian Federation, which takes into account the specifics of certain production sites of the Company.

In 2016, special assessment was carried out in 31 business units of UC RUSAL, the working conditions were assessed at 4,994 workplaces, and the inspection covered 12,118 employees.

In general, the Company has assessed all workplaces taking into account the prior appraisal of the workers (valid before the expiration of its term). The assessment process identified, inter alia, occupations with high risk of injury and incidence of disease. **G4-LA7**

Occupations with high risk of injury	Occupations with high risk of incidence of disease
<ul style="list-style-type: none"> <li>• stope miner</li> <li>• anode operator in aluminium production</li> <li>• casting operator of non-ferrous metals</li> <li>• cell operator of molten salts</li> <li>• maintenance technician</li> <li>• electrical fitter</li> <li>• electrician</li> <li>• electric and gas welder</li> </ul>	<ul style="list-style-type: none"> <li>• cell operator of molten salts</li> <li>• crane operator</li> <li>• casting operator</li> <li>• assembler of cell repair</li> <li>• fitter</li> <li>• operator of operating console</li> </ul>

The Company’s production facilities are continuously undertaking activities aimed at reducing the level of industrial injuries and accidents, improving working conditions and reducing the risk of occupational diseases of the workers.

Work is carried out in three main areas:

- internal and external audits, design and implementation of corrective actions;
- implementation of divisional programmes to reduce injury rate and risk of occupational diseases;
- implementation of annual action plans to improve the working conditions of workers.

Taking into account the fact that the main cause of industrial injuries is the misconduct of employees in the framework of compliance with HSE requirements, the Company conducts comprehensive behavioural safety audits.

**Target projects**

The following programmes have been implemented at certain production facilities of the Company in addition to annual injury reduction programmes:

- ‘Chess Board’ is the project that aims at minimising hazardous production factors, it provides for early identification of problem areas, risk calculation, prevention of possible accidents;
- ‘Safe Mine’ is the project to reduce the risks resulting from the rockfall;
- standardisation of workplaces in the Company’s current production system;

- comprehensive programmes to reduce injuries and risk of occupational diseases at the production facilities of the aluminium division;
- detection, registration and removal of hazardous situations and the prevention of hazardous activities at the Volgograd aluminium smelter;
- safety of pedestrians and technological transport.

### **Development and implementation of safety-enhancing equipment and technology**

In order to reduce the share of manual labour, introduce equipment and technology that improves work safety at the production facilities of the Aluminium Division, the Russian Engineering Company develops and organises the production of own diesel processing equipment. The cost of such equipment by 30 to 40% less than its imported analogues.

For several years, the Improvement of the Year competition has been held at the Company's production facilities to improve production and business processes. One of the four nominations, 'Safety', focuses on employee projects aimed at improving working conditions and securing safe working practices.

Since 2016, the employees who perform work on high voltage electrical installations record all their actions with a DVR. The video then allows analysing the correctness of operation, detect errors and violations.

At the Company's production facilities, in accordance with the requirements of the law, special harnesses have been introduced to reduce injuries in the performance of work at heights.

### **PERFORMANCE RESULTS *HKEx Appendix 27 KPI B2.3***

Continuous work on the implementation of activities aimed at optimising the activities of the Company in the HSE area makes it possible to achieve positive results.

As a guideline for the collection, preparation and provision of the relevant information, UC RUSAL applies the Regulation on the Unified HSE Reporting. In accordance with this Regulation, accidents and dangerous situations are classified into categories where all incidents are divided into six groups, from dangerous situations to fatal accidents. Micro traumas and the medical treatment of the workers are also recorded. Statistics for the reporting period to date is automatically consolidated within the production facility, then within the divisions and the Company as a whole.

Among the key performance indicators in the area of HSE, the Company highlights:

- fatalities;
- lost time accident frequency rate (LTAFR);
- lost time incident severity rate (LTISR);
- accidents due to the violation of industrial safety requirements.

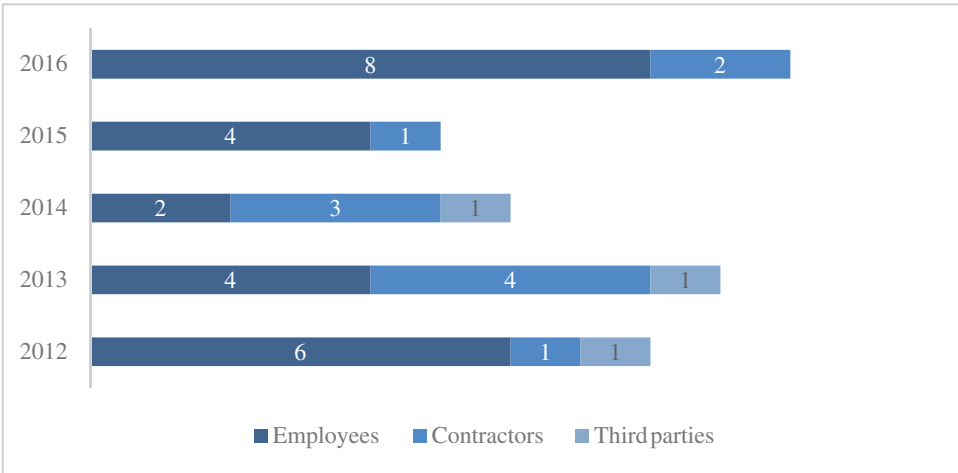
In order to achieve the best HSE results, UC RUSAL is actively working with government authorities and expert organisations, and the professionals and managers of the Company participate in the legislative process.

The expenditures for health & safety measures in 2016 exceeded USD 53 million. About 60% of this amount is used for the acquisition of personal protective equipment (PPE). The average value of the PPE set for one worker is of about USD 850, UC RUSAL purchases only certified means. All employees of the production facilities are fully equipped with the necessary PPE.

Despite the measures taken, in 2016 there was no improvement in the key HSE indicators. The total number of fatalities at work has increased from five to ten in comparison with the previous year. The rate of fatalities increased both among employees (from four to eight cases) and among contractors (from one to two cases). The number of fatal injuries among third parties has remained null for two years.

The main causes of fatalities in the workplace continue to be the violation by the workers of work safety requirements in performing works and personal negligence.

**Number of fatal accidents**

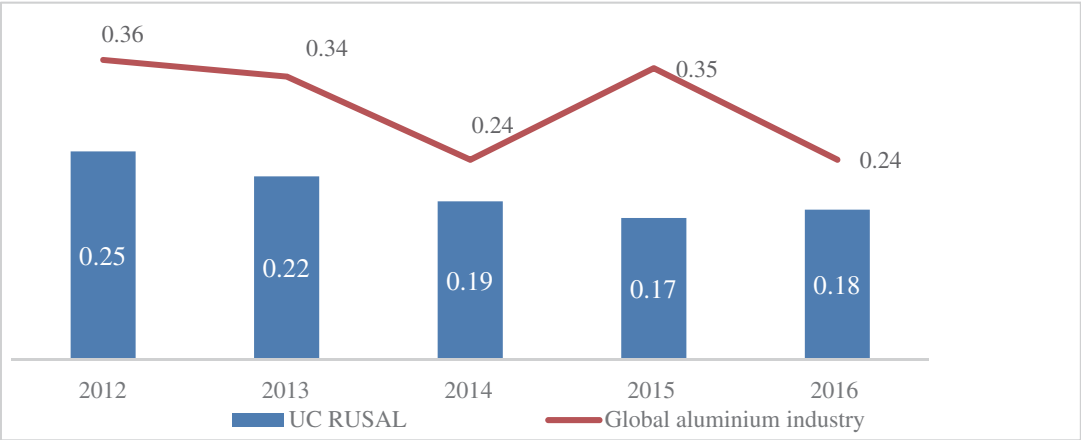


The Company continuously conducts performance monitoring in accordance with indicators:

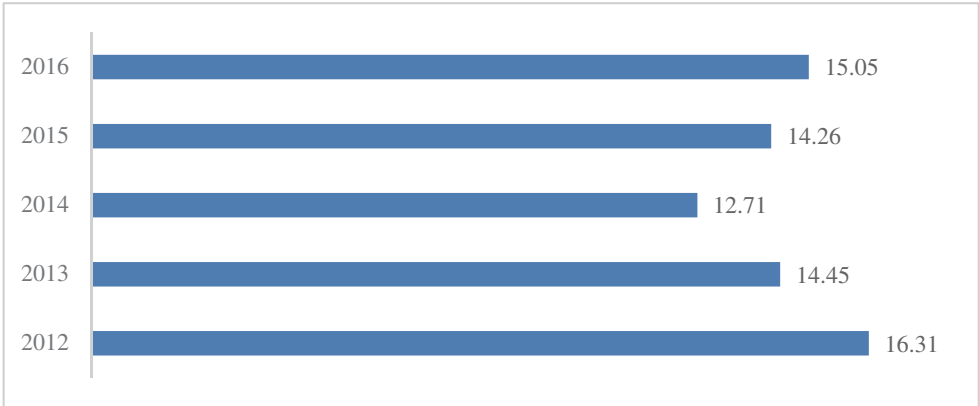
- lost time accident frequency rate;
- lost time incident severity rate. **G4-LA6, HKEx Appendix 27 KPI B2.1**

In 2016, the Lost Time Accident Frequency Rate increased compared to the previous period from 0.17 to 0.18, but did not exceed the target value of 0.21 and continues to be at the level of the best indicators in the aluminium industry. The lost time incident severity rate also increased slightly from 14.26 to 15.05 and surpassed the target of 14.50 for 2016.

**Lost time accident frequency rate among employees G4-LA7**



**Lost time incident severity rate among employees G4-LA7**



According to the data of the International Aluminium Institute, UC RUSAL shows the lowest rate of injury among the largest companies in the industry.

As in the previous period, there were no accidents and fires at the production facilities, the effects of which could significantly affect the production of finished products (10% and more of the annual production plan), confirming high degree of efficiency of the industrial and fire safety system.

The qualitative and quantitative evaluation of the results of HSE activities is conducted each semester at the meeting of the specialised committee of the Board of Directors. The injuries are analysed not only by the employees of the Company, but also by Contractors who provide services to the Company and third parties.

**Causes of accidents**

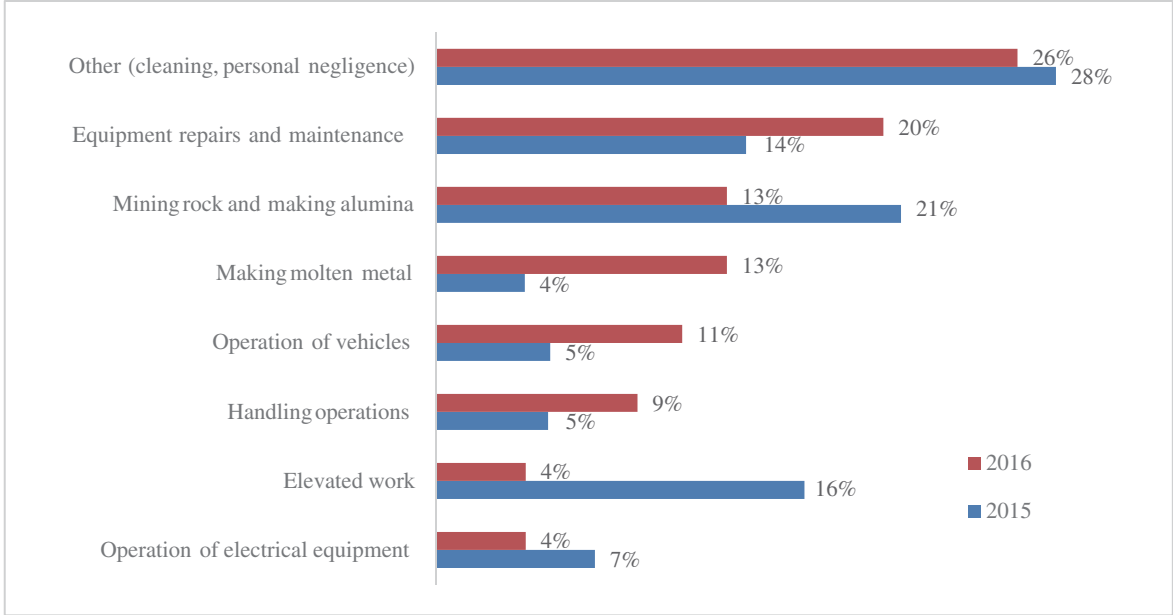
The Company keeps mandatory records of fatal accidents, conducts internal investigations of incidents and analyses the reasons for each.

The process of identifying, investigating, recording and detecting the causes of accidents in the Company is carried out in accordance with the regulation on internal investigation and analysis of accidents in the area of occupational health, industrial and fire safety. After each incident, the employees of the Company are notified by the corporate information system, investigation is conducted, root causes are identified, a corrective action plan is prepared for their elimination and a report on lessons learned is drafted. The regulation is a universal instrument in the investigation of accidents in the countries, where local law is not sufficiently consistent with best world practice. However, a mandatory requirement within the HSE management system is the implementation of the legislation of the regions and countries, where the production capacities of UC RUSAL are located.

During the reporting year, the main efforts in the planning of injury minimisation were applied in the areas of production, where the highest number of accidents was reported. In 2016, personal negligence continued to be the main cause of injuries (26% compared to 28% in 2015). The number of accidents in the process of quarrying and alumina production decreased (from 21% to 13%), and the injury rate of works at heights reduced fourfold. Nevertheless, the rate of injury in the melting and repair and installation of equipment increased.

Accident analysis shows that most of the accidents occur because of a conscious lack of compliance or direct violation by the workers of work safety requirements, misunderstanding of the situation, and inadequate risk assessment. This is true for both new workers and experienced professionals. Occupational injuries are most common for workers with up to 5 years of work experience and those who have worked for more than 10 years.

**Areas of production and hazardous conditions, in which accidents have occurred**





## OCCUPATIONAL MEDICINE

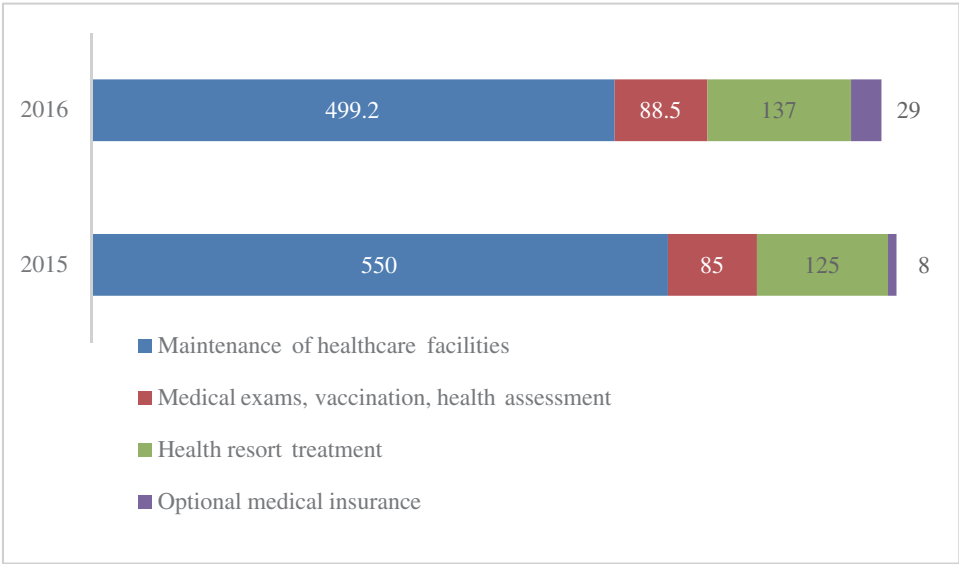
The main focus of occupational medicine is the prevention of occupational and production-related diseases and the implementation of measures to maintain and improve the health of the workers.

The prevention of occupational diseases is carried out through the introduction of progressive technologies for the protection of the environment and the use of high quality personal protection equipment that has been certified.

Rusal Medical Centre (RMC) plays a leading role in the prevention of non-industrial accidents. The main task of RMC is to provide highly qualified medical, preventive and emergency care and to conduct periodic medical examinations in accordance with the legislation of the Russian Federation.

RMC manages a network of thirteen medical institutions located in the 12 regions of the Company’s operation. In 2016, a new branch was opened at the Boguchany aluminium smelter in the Krasnoyarsk territory. The attached workforce comprises over 45 thousand people. Treatment facilities of RMC have 558 employees. The Company’s health costs in 2016 were of RUR 753.7 million, and most of these funds have traditionally been used for the maintenance of health care facilities. The Company’s health care services also operate in Guinea, Guyana and Nigeria.

### Company’s health expenditures, RUR million



The main activity of RMC includes curative and preventive measures to reduce the risk of sudden death in the workplace for somatic reasons, the prevention of heat strokes, as well as the pre-shift medical examinations of staff included in risk groups for health reasons. Employees of production facilities are also treated by third-party medical specialists to prevent diseases.

In recent years, the Siberian Federal District, including the Irkutsk region, registered a growth in the number of cases of HIV infection. Therefore, an action plan for the prevention of HIV/AIDS was approved at UC RUSAL. One way to prevent the spreading of HIV is by conducting mass testing.

In November 2016, at the UC RUSAL industrial site in Shelekhov, the professionals of Irkutsk AIDS Centre conducted an anonymous express HIV test. Those wishing to know their HIV status were given the opportunity to undergo testing in the medical centres of the production facility. On April 28, on the World Day for Safety and Health at Work, the Company had a single day of briefing on the HIV/AIDS problems.

At the Krasnoyarsk industrial site of UC RUSAL, in the framework of the charity programme 'Women's Health', launched with the help of the Volnoe Delo Fund, the female workers of the Krasnoyarsk aluminium smelter had the opportunity to make a mammogram and to get doctor's advice.

Viral hepatitis became the theme of one of the lessons in the Health School during the November informing day.

Not only the employees of the Company but also the residents of the regions of its operation with a VMS policy can get assistance at the RMC.

The Company pays great attention to the timely equipment of medical facilities with modern devices. In 2016, new ultrasound equipment was received in Krasnoturyinsk and Achinsk, Krasnoyarsk received a densitometer to determine the density of bone tissue.

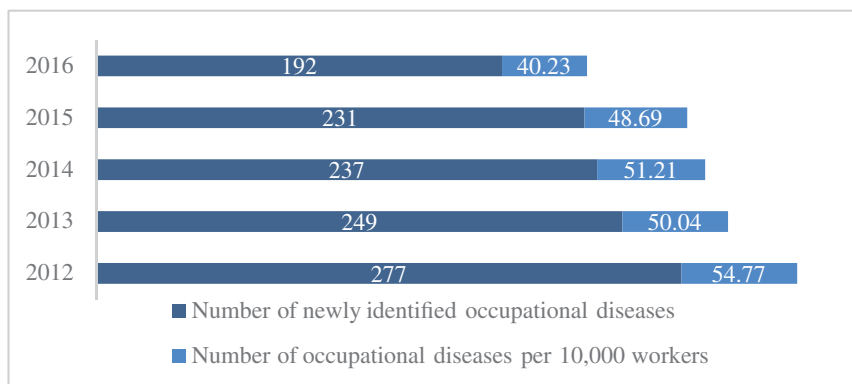
In 2016, the Company continued together with Rospotrebnadzor, the Social Security Fund and the regional centres of occupational pathology to implement a Comprehensive Interdepartmental Programme for the Management of Occupational Hazards, including the following measures: **G4-LA2**

- drafting of the summary production characteristic;
- industrial hygiene and health risk assessment in each workplace;
- special assessment of working conditions;
- medical examinations at the workplace (with the participation of RMC, municipal clinics and occupational pathology centres);
- preventive health care (vaccinations, etc.) and emergency medical assistance;
- health and social programmes and programmes of healthy lifestyle;
- scientific and methodological work to examine the impact of hazardous and harmful production factors on workers' health and effective prevention;
- analysis of employees' health condition and the relevant adjustment of the Programme.

Annual vaccinations of employees are carried out at the Company's production facilities in order to prevent respiratory diseases. Flu vaccines were given to 29 thousand workers, 650 employees were vaccinated against pneumococcal infection, which is also a significant cause of acute respiratory infections in labour collectives. The peak of respiratory diseases falls on the epidemic season, which usually lasts from January to May. The analysis of days away from work during this period showed a decrease in the incidence of respiratory diseases in general, as well as a reduction in the number of days away from work.

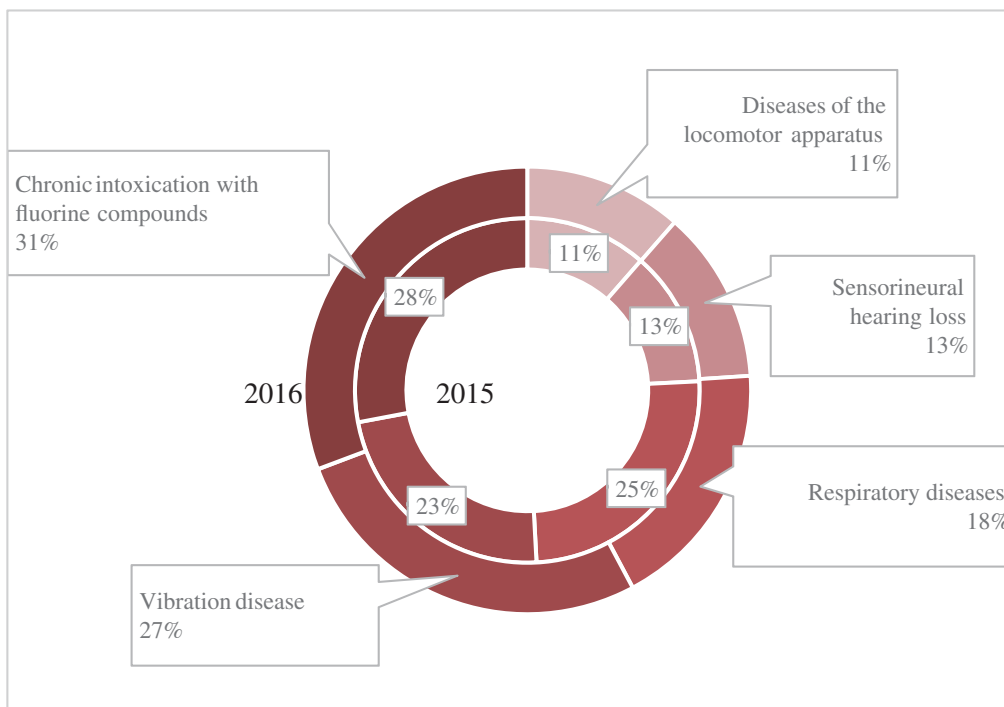
The incidence of occupational diseases has improved during the reporting period. The number of newly discovered occupational diseases has decreased by 17% compared with the previous period, and the number of occupational diseases per 10,000 employees dropped by 17.4%. In 2016, these figures amounted to 192 and 40.2 cases, respectively.

### Dynamics of the number of occupational diseases G4-LA6



### Structure of occupational diseases, % G4-LA7

The structure of occupational diseases continues to be dominated by chronic intoxication by fluorine compounds (31%) and a vibration syndrome (27%).



The structure of overall diseases remains almost unchanged. The main reasons for the temporary disability are: respiratory illnesses (36%), diseases of the locomotor apparatus (25%), injuries (16%), digestive diseases (7%).

### **Fight against Ebola in the Republic of Guinea**

The research and clinical diagnostic centre for epidemiology and microbiology, which has been opened in Guinea with the support of UC RUSAL, is one of the most modern healthcare institutions to deal with acute viral diseases in West Africa. The centre's premises include an infection hospital, a provisional hospital, a mobile laboratory and a blood and plasma transfusion department with a laboratory. Throughout 2016, the centre continued its work to address the impact of the Ebola virus in Guinea. In cooperation with the Federal Service on Surveillance for Consumer rights protection and human well-being of the Russian Federation on the premises of the Centre, staff of the Company converted some of the premises into a high-tech microbiology laboratory of the agency, which monitors and oversees the health and epidemiological well-being of the population. The Company's efforts are directed not only at the staff of UC RUSAL but also at local residents.

The Company is actively cooperating with Russian and overseas scientists in the development of a vaccine against the Ebola virus. The Russian-Guinean scientific centre built by UC RUSAL is used as a clinical base for the testing of the Russian vaccine.

In addition to participating in the thematic scientific conferences, UC RUSAL organizes visits by specialists to the Russian-Guinean science centre, which is equipped by the Company. This gives scientists the opportunity to conduct medical research based on actual aspect of the disease and to gain access to the virologic material.

In the reporting year, the employees and business units staff of UC RUSAL have received a number of acknowledgments and certificates for achievements in the area occupational health, industrial and fire safety.

## PLANS FOR 2017 AND MEDIUM TERM

The Company plans to develop its proactive work to improve the Health & Safety management system. Work in this area will continue next year with an emphasis on the following areas:

Areas	Status	Comment
Complete standardisation of jobs in the production system, including working conditions and safety of performed operations	✓	• The volume planned for 2016 was 100% completed
Universal behavioural safety audit	✓	• Conducted on an ongoing basis
Forming and developing the culture of leadership and personal commitment to job safety	✓	• Conducted on an ongoing basis
Implementation of preventive approach to the protection and promotion of workers' health	✓	• Conducted on an ongoing basis
Finding out system (root) causes in the course of internal investigation of injuries	✓	• In 2016, 100% of cases were completed
Enhancement of responsibility (and motivation) of managers, specialists and clerks for monitoring high-risk work	✓	• Conducted on an ongoing basis
Increased control of the safe performance of the works by contractors	✓	• Conducted on an ongoing basis
Special assessment of the working conditions of the main workers until December 31, 2016	✓	• The volume planned for 2016 was 100% completed
Review of personnel motivation mechanisms in favour of OHS	✓	• The volume planned for 2016 was 100% completed
Promotion of Company's image in the area of HSE in the mass media	✓	• In 2016, 4 articles were published in the magazine 'Work Safety and Social insurance'

The Company's safety benchmarks are defined annually. After a detailed qualitative and quantitative analysis of the injury rate, pursuant to the internal order of the Company targets for the following year are generated and approved. Also as part of the monthly report, the work safety service of the production facilities monitor and analyse so-called 'leading' indicators (number of hazardous situations, hazardous activities, potential damage).

Among the Company's long-term work safety objectives is the reduction of the injury rate to 0.16.

## UC RUSAL OBJECTIVES IN THE AREA OF HEALTH AND SAFETY

	Business Plan 2016	Fact 2016	Business Plan 2017
Number of workers who died in the occupational accidents	0	8	0
Lost time accident frequency rate (LTAFR)	0.21	0.18	0.20
Lost time incident severity rate (LTISR)	14.50	15.05	14.50
Number of accidents/fires whose effects will significantly affect the production of finished products	0	0	0

## EMPLOYEES

### MANAGEMENT APPROACH

UC RUSAL HR policy is based on the principle of partnership between the employees and the employer and aims at creating a corporate environment that is encouraging the dynamic development of the Company. The strategic goal of UC RUSAL and its group companies is to be a better employer, a company that has a professional team, results-oriented and open to new opportunities. Proactive, vibrant and highly educated people are the most valuable asset of the Company.

The HR policy and the Code of Ethics set out the main corporate principles, including: **HKEx Appendix 27 KPI B4**

- compliance with the requirements of labour laws of the countries of operation;
- adherence to high ethical standards of business practice;
- equal rights and opportunities for workers, non-discrimination on any grounds, waiver of child and forced labour;
- creation of conditions for the development of workers' potential and the realisation of their professional ambitions with the best modern teaching methods;
- fair and comprehensive evaluation of staff performance, objectivity and openness of procedures; and
- consistent approach to remuneration.

### SOCIAL PARTNERSHIP

UC RUSAL and its group companies provide benefits and social guarantees, the volume of which is determined with the active participation of trade unions. Collective bargain agreements (in Russia) and similar agreements in other countries of operation regulate matters such as hours of work and rest, health and safety of workers, wage system, social guarantees and benefits, partnership with trade unions. **G4-LA8 HKEx Appendix 27 KPI B1**

The leaders of trade union organisations have the right to exercise trade union control over the compliance by employers and officials with labour legislation, including matters relating to employment contract (agreement) and other social and labour matters. **HKEx Appendix 27 KPI B4.1**

In Russia, collective bargain agreements are concluded at most of the Company's production facilities. About 60% of the Company's employees are members of trade union organisations, with 95% of employees working under the terms of collective bargain agreements. **G4-11**

The working body of the social partnership is the UC RUSAL Social Council, which annually evaluates the results of the social partnership, discusses the Company's work and plans, performance of the terms of the collective bargain agreement on the part of the employer and other matters. The meetings of the Social Council are one of the mechanisms to make the Company's leadership aware of the needs of labour collectives and to take them into account in the decision-making process. **HKEx Appendix 27 KPI B4.1**

## EMPLOYEE COMMUNICATION MECHANISMS

Employees can contact the direct supervisor, the authorized representatives of the labour collectives, the leadership of the production facilities in where they work, or the management company with questions, complaints and proposals relating to labour relations. To do so, they can use the different mechanisms and forms of communication listed below: **G4 EMS ‘Mechanisms for complaints about labour practices’**

- The managers of the production facilities hold regular (weekly/monthly) meetings with workers and review personal matters.
- On a monthly basis, ‘information days’ are held at the production facilities with the participation of management, and employees are given the opportunity to get answers to questions on different topics.
- Employees can send electronic messages through their account, call the hotline, or use a box for written communications located at the entrance to the production facility.
- In emergency and contingency cases, employees can contact 24-hour services at the corporate phone numbers of the dispatchers of fire service and the ‘Production Control Unit’ of the production facility (relevant numbers are located in the Company’s corporate portal and on the information boards of the ‘Business Units’).
- Orientation programme is carried out monthly for newly recruited staff, in which they are also informed about the possibilities of protecting their rights and communicating their questions.
- Employees may make contact through trade unions or trade union delegates (in foreign countries), as well as through corporate ethics officers. **HKEx Appendix 27 KPI B4.1**
- The collective bargain reporting meetings are held annually. Employees’ representatives are involved for the renewal/signing of the collective bargain agreement, and joint discussions are held about the articles of the collective bargain agreement. Business leaders meet with trade union leaders representing the interests of employees to address specific issues.
- In foreign countries (Guyana, Guinea), the issues of interest for the employees are discussed during meetings of the leadership of production facilities with the local communities.
- Information on changes in labour legislation is posted in the corporate portal and on the information boards of production facilities.
- The minimum period of notification to the employees about significant changes in the activity of the production facilities is defined by national law. **G4-LA4, GD3**

The information obtained by the Company using these communication mechanisms is communicated to the leadership of the production facilities and the Management Company if the situation requires the involvement of the leadership, as well as in the framework of the annual reporting process. **HKExAppendix 27 KPI-B4.2, G4-37**

In cases of a dispute arising between the employee and the leadership of the production facilities, the leadership strives to resolve the conflict by negotiations. Individual disputes, where the employee and the employer fail to settle differences by negotiations, are considered by the Labour Disputes Commissions (LDC). They are composed of the representatives of the HR Directorate, the Legal Department, and member(s) of trade union. The Commission considers the application within 10 calendar days from the date of the worker's application in the presence of the employee, decision is taken in the form of minutes of meetings, a copy of which is released to the worker with the acknowledgment of receipt. The decision of the LDC is binding and is executed by the employer within three days of the date of its entry into force. The Company does not apply prosecution or other pressure to its employees who have used the complaint and communication mechanisms. **G4-HR4**

Quantitative methods of evaluation (face-to-face surveys, questionnaires, computer surveys) are being used to monitor the level of satisfaction/involvement of staff at the production facilities. Employees are asked to evaluate working conditions, training programmes, quality of services provided by the medical centre or the catering operator. **G4-26**

## **STAFF STRUCTURE AND PERSONNEL MOVEMENT**

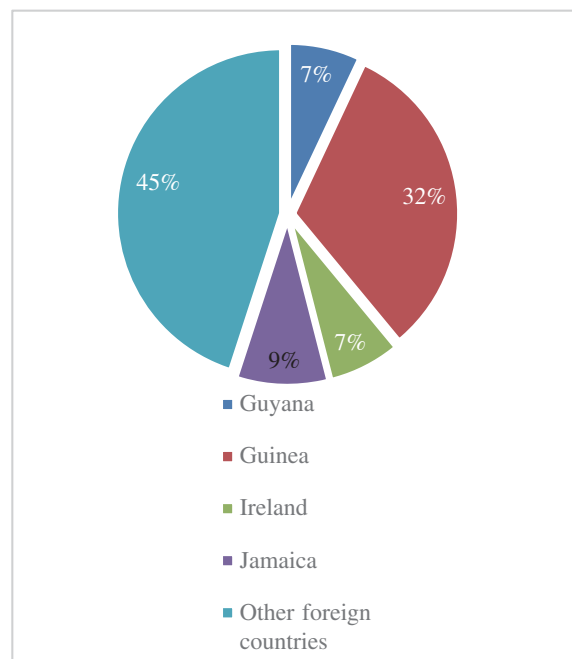
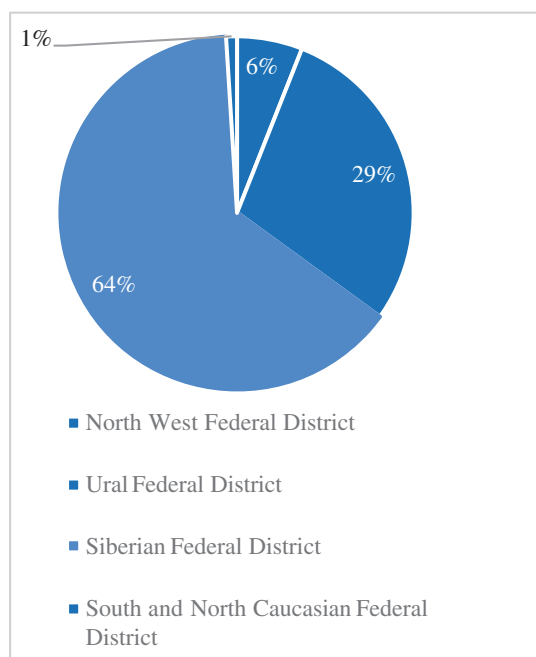
The average number of employees at all UC RUSAL production sites has remained stable over the past years. The majority of the employees are employed in three divisions, namely Aluminium, Alumina and Engineering and Construction. About 83% of workers are employed in significant regions; the most labour collectives work is in the Ural and Siberian federal districts in Russia, and in Guinea abroad. Almost 100% of the employees is employed on a full-time basis. **G4-10**

### ***Staff description G4-10, HKEx Appendix 27 KPI B1.2 (part)***

<b>Indicator</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Average headcount, persons	61,235	60,758	61,088
Labour turnover, %	7.2	7.8	8.9
Share of part-time employees, %	1.1	1.0	0.2
Share of freelance employees, %	1.4	0.8	0.4
Proportion of workers to white collar workers,% to %	81.9 to 18.1	81.6 to 18.4	81.1 to 18.9
Share of men, %	over 85	over 85	77.4



### Significant regions of operation in 2016 G4-10



The turnover rate for the past three years has increased slightly (mainly due to the closing/mothballing of inefficient production facilities).

Given the specific nature of the Company's operations, the majority of employees are men (the share of women does not exceed 25% at both Russian and foreign production facilities). However, the number of women holding management positions, including senior management, is increasing.

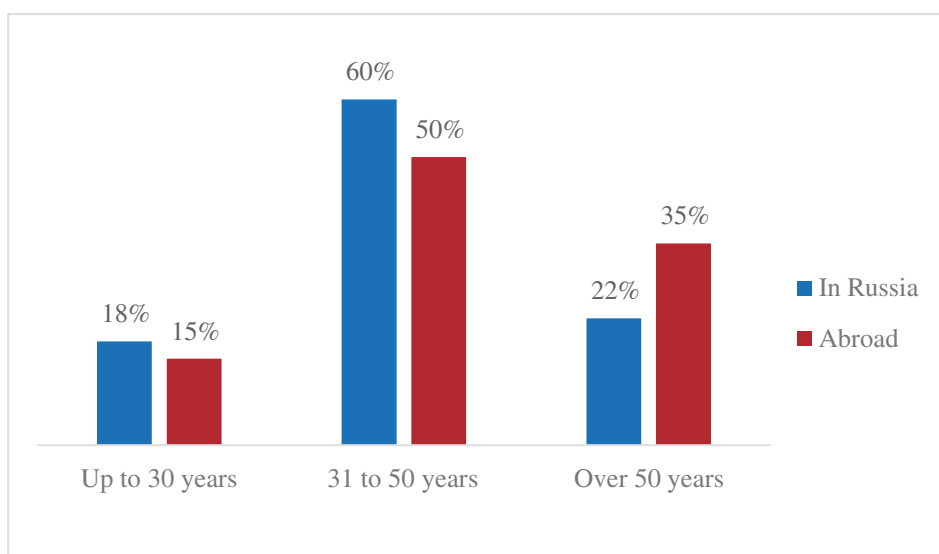
### Gender composition of staff G4-LA12

Composition of management (senior management)	2014	2015	2016
Men, %	91	86	84
Women, %	9	14	16
Composition of management (excluding senior management)			
Men, %	85	84	82
Women, %	15	16	18
Local population (on foreign assets) G4-EC6			
Share of senior and middle-level managers recruited from the local population, %	The indicator wasn't monitored and disclosed before 2016		93

**Staff structure in 2016, persons G4-10 HKEx Appendix 27 KPI B1.1**

	<b>Russia</b>	<b>Foreign countries</b>
Average headcount	52,390	8,698
– broken down by sex		
male	39,170	6,903
female	13,220	1,795
– broken down by type of employment		
full-time	52,283	8,668
part-time	107	30
– broken down by employment contract		
permanent contract	50,198	7,568
fixed-term contract	2,192	1,130
– broken down by category		
white collar staff	9,620	2,015
workers	42,770	6,683
– broken down by age		
up to 30 years	9,379	1,241
31-50 years	31,731	4,390
over 50 years	11,280	3,066

**Structure of staff by age in 2016**



*Note.* The share of staff in each age category is from the average headcount of the Russian and foreign production facilities.

***Total number and share of newly recruited staff as well as turnover of personnel by age group in 2016 G4-LA1***

<b>Indicator</b>	<b>Age</b>	<b>In Russia</b>	<b>In foreign countries</b>
Total number of new staff that joined the Company during the reporting period, persons	Up to 30 years	2,157	279
	30 to 50 years	2,630	245
	Over 50 years	437	45
Total number of new employees who left the Company during the reporting period, persons	Up to 30 years	428	46
	30 to 50 years	547	24
	Over 50 years	154	11
Share of new employees who have left the Company during the reporting period, %	Up to 30 years	20%	16%
	30 to 50 years	21%	10%
	Over 50 years	35%	24%

## **PROVISION WITH LABOUR RESOURCES**

The selection of highly qualified staff capable of fulfilling the strategic objectives of the Company is a special priority in the operation of UC RUSAL. The Company uses a comprehensive approach, involving vocational guidance among pupils, interacting with specialised higher and secondary specialised educational institutions, search for the employees with adequate skills in foreign markets, and improving the skills and motivation of existing employees.

At all production facilities, regardless of their country of residence, the Company applies common approaches and staff selection principles. The staff selection system is based on the evaluation of the candidate's set of competencies and personal characteristics. Within the framework of the professional selection the skills and ability to cope with the assigned tasks is tested, helping to determine the future professional suitability of the candidate. All candidates, regardless of the position to which they aspire, are interviewed face-to-face in each country of UC RUSAL operation. **HKEx Appendix 27 KPI B1**

An open employment policy has a positive impact on foreign labour markets, given the large number of projects that are implemented in Company that require different analysts.

### **Interaction with educational institutions**

UC RUSAL cooperates with educational institutions that provide training to mining and metallurgical professionals to create an external talent pool. The Company is approaching the dual education model: in the course of training, the students not only acquire knowledge at the university or college but also acquire experience and useful skills at the production facility. The following programmes were operating in the reporting period:

- targeted selection and scholarships for students, and
- international educational programmes.

### ***Programme for targeted student selection***

The Targeted Selection Programme is aimed at providing production facilities with a talent pool of skilled young engineers. Over RUR 6 million are allocated annually for the implementation of the programme.

The programme provides an opportunity for graduates to apply for and study at the university in the Company-relevant specialties. The curriculum includes an in-depth study of general subjects and additional subjects, scientific work, as well as sessions at the production facilities of the Company in occupational health and safety, UC RUSAL Business System and the Code of Ethics. The participants of the programme undergo internships at the production facilities annually.

The scholarship holders of UC RUSAL are the talented and excellent students who actively participate in the scientific and technical activities of the educational institutions. Candidates are nominated by the leadership of educational institutions. In addition to the scholarships (up to RUR 5,000 per month, depending on the academic progress), students are paid accommodation in the dormitory for the entire period of their studies, as well as a compensation for the travel to and from the place of residence and place of internship at the production facility. At the end of the training, young professionals will have to work for at least three years at the UC RUSAL companies in their cities.

In 2016, the programme was expanded, and the procedures for planning and job placement for the graduates were established. The newest member of the programme was the Volgograd State Technical University.

### ***Number of students studying under the Targeted Selection Programme:***

<b>Educational institutions</b>	<b>Persons</b>		
	<b>2014</b>	<b>2015</b>	<b>2016</b>
Siberian Federal University (students from Krasnoyarsk and Sayanogorsk)	31	51	44
Irkutsk State Technical University (students from Bratsk and Irkutsk)	9	18	16
Ural Federal University (students from Kamensk-Uralsky and Severouralsk)	4	14	6
Siberian State Industrial University (students from Novokuznetsk)	4	4	15
Ural State Mining University (students from Severouralsk)	4	4	16
Kamensk-Uralsky Polytechnical College (students from Kamensk-Uralsky)	–	25	18
Krasnoyarsk Industrial Metallurgical College (students from Krasnoyarsk)	11	5	11
Volgograd State Technical University (students from Volgograd)	–	–	9
<b>Total</b>	<b>63</b>	<b>121</b>	<b>135</b>
<b>Completed training and came to production</b>	<b>–</b>	<b>–</b>	<b>10</b>

Thanks to the careful training of the young steel workers, the production facilities of the Company receives specialists who, when they start to work, are ready at once to participate in the solution of strategic tasks, make proposals for the development of production and introduce high-tech technology.

The students of the first admission under the Fellowship Programme (2012) are already beginning to come to production. In 2016, six graduates began to work at the Krasnoyarsk aluminium smelter, five of them became members of the reduction production team, and the other held the position of laboratory technician at the Central Plant Laboratory.

*International training programme for students from Guinea, Guyana and Jamaica*

UC RUSAL is implementing an international educational programme to train the local labour of Guinea, Guyana and Jamaica. Under the programme, young people between the ages of 18 and 35 are enrolled in leading Russian universities, People’s Friendship University of Russia, Moscow State University of communication routes, Siberian Federal University, Ural Federal University and Ural State Mining University. The Company undertakes all costs related to their education and staying, organises the internship at its production facilities in Russia and employs them at UC RUSAL production sites in their home country after graduation.

In 2017, the first graduation of the students trained under UC RUSAL International Programme is expected; training will be completed by 19 people: 17 citizens of Guinea and two of Guyana. They already have jobs of the production facilities; they will therefore return to their countries at the end of their studies having a guaranteed job. **HKEx Appendix 27 KPI B1**

***Number of students enrolled in the International Education Programme***

	<b>2016</b>
<b>Total persons, including:</b>	<b>118</b>
Students from Guinea, persons	85
Students from Guyana, persons	5
Students from Jamaica, persons	28

*Example.* At the Institute of non-ferrous metals and materials science of the Siberian Federal University in Krasnoyarsk, 25 young people from Jamaica continued their education (2015/2016 academic year). The applicants first studied Russian and passed the introduction programme, then started their main course in the area of specialisation. During their studies, they would also undergo internship at the Russian production facilities of UC RUSAL, particularly at the Achinsk alumina refinery. Jamaican students note that the education received in Russia is highly valued in their country, while the acquisition of engineering and technical skills offers a good start in life.

**Internal talent pool**

The Talent Pool programme is aimed at achieving the critical strategic goal of UC RUSAL, the achievement of which is supervised by the shareholders: to prepare a pool of professional, highly qualified employees for all managerial positions. **G4-LA10**

A list of key positions that have a maximum impact on the performance of the Company has been approved. These positions are being assessed to determine the risk of vacancies; a competency scale has been developed to determine the level of readiness of the succession candidate to work in a higher position; individual development plans are prepared for the candidates for these positions. For the middle and lower level talent pool (for positions of line managers), a line of requirements is also developed, their professional knowledge and the level of development of managerial competencies are assessed.

The training of the talent pool is diversified by management levels. Succession candidates improve competencies such as ‘formation of professional team’, ‘cooperation and collaboration’, ‘business thinking’, ‘achieving results’, ‘striving for improvements’, etc.

In 2016, the number of succession candidates with new assignments doubled in comparison to 2015, indicating an activation of the Company’s management renewal processes.

In addition to ‘vertical’ development, the employees of UC RUSAL production facilities can have ‘horizontal’ development: the Internal Competition programme provides employees with the opportunity to rotate by production facilities. Information about open positions is regularly published on the internal information portal.

***Development of managerial competencies in the talent pool in 2016***

<b>Level of position</b>	<b>Number of trainings</b>	<b>Number of people trained</b>
Talent pool for the MD level	4	55
Talent pool for the MD-1 level	22	396
Lower talent pool levels (MD-2, 3, 4)	49	468
<b>Total persons trained</b>	<b>75</b>	<b>919</b>

***Movement of talent pool, persons***

	<b>2014</b>	<b>2015</b>	<b>2016</b>
Number of persons in the talent pool	1,406	1,670	1,611
Of whom have been appointed to senior positions during the reporting period	–	22	51

**Recruitment in foreign countries**

In foreign countries, the Company’s HR policy is targeted at local residents, especially those living in close proximity to the production facilities. UC RUSAL production facilities not only provide timely information about open vacancies but also conduct preliminary training for those seeking employment.

**HKEx Appendix 27 KPI B1**

In Guinea, information about vacancies is disseminated through the training service, as well as in local prefectures and communes. A database of CVs of succession candidates is formed from among the local population by the training service. Teachers of local educational institutions are recruited for training, and regular internships are organised for young professionals (graduates) at the production sites.

In Guyana, 64% of the total number of workers hired in 2016 were recruited from nearby localities. The information about existing vacancies is reported on a monthly basis at the meetings of production committees and is posted on the information boards of the business units. Meetings are held several times a year with residents, who, among other topics, discuss employment, as well as local labour legislation. In-house internships are offered to enable employees to master the use of new equipment and devices and to take an open position with these skills. For example, in 2016 the representatives of the local Hururu community were trained in welding. **HKEx Appendix 27 KPI B4.1**

The policy of dismissal and compensation in Guinea and Guyana is in line with the local law, the rules of the enterprise and the agreements between trade unions and the administration of the production facility. **HKEx Appendix 27 KPI B1**

In Armenia, cooperation has been established with higher and secondary vocational educational institutions, and students undergo internship at production facilities. For example, in 2016 at the ARMENAL foil mill, 49 students underwent production and pre-graduation internships. New employees are also recruited through cooperation with local employment centres and recruitment agencies: vacancies are posted on the internet and in local mass media. Compliance with local labour legislation is ensured by regular monitoring of current changes by the Legal Service: officials attend training and awareness-raising seminars on labour law. **HKEx Appendix 27 KPI B4.2**

### ***Leave entitlement***

The possibility of reconciling family and work is considered by UC RUSAL as an important component of social policy. The Company guarantees the granting of maternity leave until the child reaches the age of three on the application of one of the parent, including the father. In this case, the parent taking the leave is entitled to return to work to the same position he or she held before the leave. **HKEx Appendix 27 KPI B1**

### ***Maternity and paternity leave in 2016 G4-LA3***

	<b>Russia</b>	<b>Foreign countries</b>
Number of employees entitled to leave, persons	1,229	26
Number of employees taking leave, persons	381	12
Number of staff members who have returned to work after leave, persons	375	7
Return to work rate, %	31%	27%

## **EDUCATION AND DEVELOPMENT**

The Company considers its Corporate Training System as its contribution to the Sustainable Development Goals – Goal 4 ‘Quality education’, and Goal 8 ‘Decent work and economic growth’. While working in the Company, employees are given the opportunity to continue their training, which increases their demand in the labour market and helps to plan their employment in the future, given the rapid changes in technology and obsolescence of knowledge and skills by modern production. On the other hand, cooperation programmes with specialised universities and the educational project UC RUSAL provides to Russian Schools (<http://sdorsr.rusal.ru>) contribute to the improvement of the quality of general and higher education and to a more specific definition of the set of competencies that a modern engineer should have.

The Company uses a variety of training programs and tools that can help improve the skills of both the employees and senior managers. **G4-LA10**

The following characteristics of the employees are taken into account during training planning in order to ensure the effectiveness of the training programmes, increase the motivational impact and maximise the benefits for the Company:

- quality and performance;
- professional qualification level;
- level of education required to match the position; and
- observance of corporate ethic, industrial and environmental safety standards.

The Corporate University ensures the functioning of the entire training system, develops and offers training programmes and methods that correspond to the current and future needs of the business. The Company continuously develops its personnel training systems through systematising and developing professional training of the workers and specialists, raising the relevancy of functional academies, and creating targeted modular programmes oriented to business objectives. **HKEx Appendix 27 KPI B3**

***Number of employees who have undergone various types of training HKEx Appendix 27 KPI 3.1 (part)***

	2014	2015	2016
Number of trained persons	25,471	26,392	36,595
Share of employees trained to the total number of employees, %	41.6%	43.4%	60%

***Share of employees trained by type of training, % of total trained***

Type of training	2014	2015	2016
Vocational training	50	52	54
Compulsory education	39	35	32
Professional development	11	13	14
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

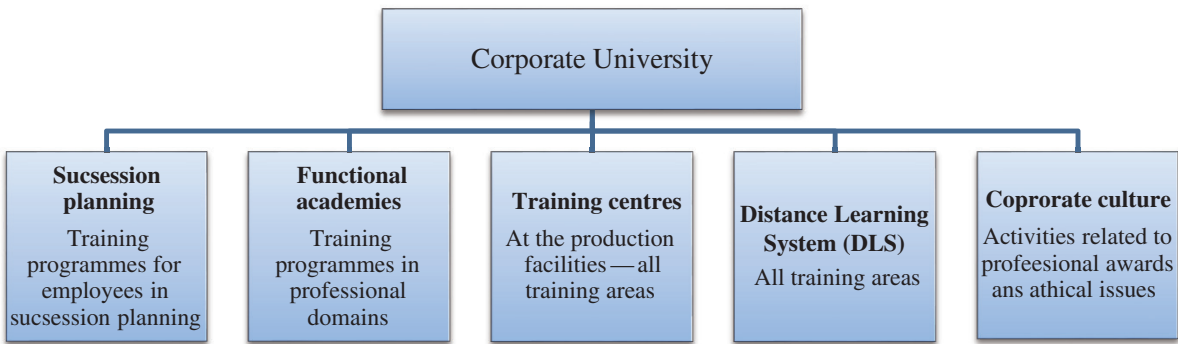
***Corporate training and development system of UC RUSAL***

**Functional academies**

Functional academies is a system of personnel training in the areas that the Company's production facilities required to perform their production and strategic tasks successfully. Employees are given the opportunity to upgrade skills in professional areas; training is conducted in a variety of formats (face-to-face, remote, group, individual, training sessions of external and internal providers, internships at foreign production facilities). **G4-LA10**

Initial further development courses have been organised for key production workers, and since 2016, new knowledge has been provided to ecologists, laboratory technicians, metrologists, power engineers, lawyers, financiers and other employees. In 2016, a revised approach to the formation of training content was adopted: seven programmes were formed (*see table below*) corresponding to the Company's strategy.





***Number persons trained in accordance with the programmes of functional academies in 2016***

Area	Number of trainees
Technology	134
Quality management	822
Laboratory and metrology	89
Energy and repair	47
Health, safety and environment	47
Information technology	44
Project management	91
<b>Total trained persons</b>	<b>1,274</b>

**Modular vocational training system**

UC RUSAL became the first industrial company in Russia to introduce modular training programmes to improve the professional skills of the blue-collar job in order to obtain a higher grade. Training is carried out under 35 modular programmes, including mandatory training programmes and additional programmes (to upgrade skills). **G4-LA10**

In 2016, process personnel studied corporate and international standards, system of customer visits, technologies of production of different types of products, and other topics. A total of 442 people were trained.

**Distance learning**

The most accessible way to upgrade skills is through distance learning, which allows staff to be trained both on-the-job and remotely.

More than 300 e-courses on management, logistics, foreign languages, time planning, presentations, stress management, office management and other topics are included in the distance learning. The courses are intended for the professionals in blue-collar jobs, management personnel and university students studying in the specialties relevant for UC RUSAL. The system allows to carry out remote tests and polls, track the performance of the educational process and get feedback. **G4-LA10**

Distance learning is the platform for the implementation of the educational project UC RUSAL provides to Russian schools (<http://sdorsr.rusal.ru>). The project is mostly for promoting the realisation of the lifelong learning principle, since a continuous education system ‘school – Vocation educational institution – industrial facility’ is built on the basis of the distance learning system of UC RUSAL.

Computer-based courses and manuals (including those developed by the teachers of the Corporate University) can be used by teachers in schools and universities or colleges in the educational process, thereby increasing the amount of modern knowledge and skills acquired by the students. As of 2016, 178 general education organisations in 11 cities of the Company’s operation participated in the distance learning system.

In 2016, the project is located in the social and professional network ‘Education Initiative’ (organised by the Federal Institute of Education Development), which will potentially increase the audience.

***Distant learning system (DLS)***

	2015	2016
Number of production facilities and business units of UC RUSAL using DLS	54	62
Number of trainees through DLS	16,693	57,257
Number of computer trainings (courses)	over 300	over 400
Number of educational institutions participating in the DLS programme UC RUSAL to Russian Schools	142	178

**Simulators**

One modern way of learning is a simulator that reproduces various process operations. Training on simulators has a significant impact on both the newly employed and experienced employees.

The development of equipment and software based on the real production of UC RUSAL is a significant area of the corporate learning system.

Many aluminium smelters are already using simulators to train operators of the bridge crane and loader. In 2016, an overlock machine (pneumatic combine) simulator was launched at Silicon Ural. Virtual simulators are available in the DLS, some of which are created by the employees themselves.

Emulators, special computer programs that simulate certain process operations on the display, are also widely used in the corporate learning system. The computer keeps track of whether the worker is performing the tasks correctly and in a timely manner, and gives a signal in case of error. In 2016, several simulators were developed: process of production of small ingots out of crude aluminium from Sayanogorsk aluminium smelter; reduction plant of Bogoslovsk aluminium smelter; ore-thermal furnace remote control at Silicon Ural.

The simulators can be used by the students of the UC RUSAL to Russian Schools project, which is an important part of the preparation for the on-the-job training.

## Training of employees in higher education institutions

The employees of UC RUSAL companies are given the opportunity to obtain higher education at the specialised universities and to become members of the Presidential Programme. **G4-LA10**

### *University education and the Presidential Programme in 2016*

Levels of education	Number of trained persons
Bachelor's programme	82
Master's programme	54
Specialized department	60
Presidential programme of management training	50
<b>TOTAL</b>	<b>246</b>

An example of cooperation between the Company and educational institutions to upgrade the skills of the employees of the production facilities of UC RUSAL was the creation in 2016 of the chair of nonferrous metal industry at the Siberian research, design and project institute of the aluminium and electrode industries and the National Research Irkutsk State Technical University. UC RUSAL provided training space, equipment and information materials. The training is conducted by unique specialists both from research organisations and UC RUSAL's Engineering and Technology Center.

The first 20 people (employees of the Irkutsk aluminium smelter, specialists of the directorate of anode paste production) have already been trained at the specialized department under the 'anode production' programme.

The specialized department will also supervise the research and development work of university students and the employees of the production facility, coordinate the patenting of the intellectual property in joint research and development with the universities, and publish scientific and teaching literature.

### Plans and priorities for 2017

- In the framework of the functional academies, it planned to train 1,186 people under the seven training programmes.
- In addition, a procedure for evaluating the effectiveness of educational programmes and training courses will be introduced to improve the quality of training, and the adaptation of university programmes to meet the needs of the Company will continue.
- Special attention will be given to the training of project management and innovative cultural skills (including through the organisation of youth-oriented projects).
- It planned to develop the technical and technological competencies of the Company's employees through training programmes or training courses in design, modern technologies of metallurgical production, modular programme of efficient supply chain management technologies, etc.
- The programme of scholarships, the organisation of basic chairs at production facilities will also continue.

## MOTIVATION AND REMUNERATION

### Main results in 2016

In 2016, the following significant activities were carried out:

- the procedures for rewarding the Company's employees who received corporate awards from the production facilities, state and departmental awards for those who participated actively in social activities, were regulated;
- system of material incentives has been developed for employees to increase productivity and efficiency of production;
- improved goal-setting system;
- collective bargain agreements have been renewed with trade union organisations for the period from January 1, 2017 to December 31, 2019.

### Salaries

UC RUSAL ensures its employees a stable and competitive salary and provides an expanded social package. The amount of remuneration paid to a worker depends on the level of skill and performance, the complexity of the work performed and the tasks to be solved, as well as the overall performance of the Company.

Salary consists of a fixed and variable part and is adjusted with due regard to the growth of the consumer price index and the local labour market conditions.

The Company uses motivational systems that encourage the efficient labour of the employees: bonuses from the fund of the head of the production facility, year-end bonuses, rewarding of the employees involved in the implementation of production system development projects and projects of improvement of the production technology, rewarding employees who have received corporate awards, state and departmental awards for those who actively participated in the social projects of the production facilities.

Salary is adjusted annually: the monthly salary of employees of the production facilities in Russia and the CIS is increased every six months by the amount of adjustment.

### *Average salary at the Company's production facilities in 2016, USD/RUR G4-EC5 (part)*

Company total	Russia	Foreign countries
USD 942	USD 879	USD 1081
RUR 63,180	RUR 58,938	RUR 72,503

### Minimum wage

Subject to the performance by the employee's job duties and the completion of the monthly work time balance, the minimum wage shall be set at not less than 1.5 times the subsistence level of the working population in the relevant constituent entity of the Russian Federation. For other employees, the minimum wage is equal to at least 1.3 times the subsistence level of the working population established at the federal level.

**Share of employees (including managers and specialists) assessed in 2016, % G4-LA11**

<b>Company total</b>	<b>Russia</b>	<b>Foreign countries</b>
84.4%	83.7%	94.8%

In 2016, the following significant activities were carried out:

- developed a system of motivation to improve the quality of output;
- developed a system of motivation for staff with high potential for development;
- developed a system of motivation to develop innovative thinking and activities;
- ensured the introduction of the ‘employee’s personal account’ at the pilot production facilities of the Company.

## **SOCIAL SUPPORT**

### **Main results in 2016**

The terms of the branch tariff agreement for the mining and metallurgical complex of the Russian Federation, as well as collective bargain agreements in place at the production facilities, were fully complied with.

UC RUSAL provides a wide range of social benefits, both statutory and auxillary, including to family members. The following benefits provided within the social package in addition to the statutory benefits, are the most relevant to the employees: **G4-LA2, HKEx Appendix 27 KPI B1**

- provision of free meals for each shift of workers;
- possibility to engage in sports and participate in sporting events;
- obtain on a preferential basis vouchers for health resort treatment and rehabilitation in sanatoriums and medical centres located in the Russian Federation (for the employees and their families);
- obtain voluntary medical insurance policies, which allow the employees to use a wide range of out-patient polyclinic and in-patient care services;
- celebration of anniversaries of the production facilities, Day of the Metal Industry and other occasions (for the employees and their families); and
- annual New Year celebrations and gifts for children of the employees.

In 2017, the budget for the social programme was adjusted by 6% in terms of the basic expenses affected by inflation (increased food subsidy, cost of travel vouchers for the employees and their children, cost of mass cultural events) to maintain the real content of social support for the employees.

**Number of employees that used social programme benefits in 2016, persons *RSPP index***

	<b>Russia</b>	<b>Foreign countries</b>
Voluntary medical insurance	1,028	1,424
Non-state pension insurance	83	909
Assistance in the acquisition of housing	685	—
Rehabilitation programmes	5,004	1,034
Financial assistance, including one-time support upon retirement	2,305	2,116

**Costs of collective bargaining commitments in 2016, RUR *RSPP index***

<b>Types of costs</b>	<b>Russia</b>	<b>Foreign countries</b>
• Salary adjustment	3,063,102,000	622,170,000
• Discount vouchers for health resort treatment		
• Financial assistance upon retirement		
• Financial assistance to employees and unemployed retirees of the production facility		
• Cultural and sports events		
• Transportation of workers to/from work		
• Provision of quality free meals to the workers		
• Mandatory and periodic medical examinations, medical insurance		
• Compensatory payments under the housing purchase programme		
• Awards and other incentive payments		

**Social programmes over and above collective bargain agreements in 2016, RUR *G4-LA2***

<b>Types of costs</b>	<b>Russia</b>	<b>Foreign countries</b>
Providing free vouchers to employees in the Imeretinsky resort area (Sochi)	69,754,000	—

**Occupational medicine**

In the area of labour medicine, the Company aims to reduce the number and duration of absenteeism of the frequently sick employees, as well as the number of occupational diseases and deaths due to ill health (including cardiovascular disease), prevention of HIV/AIDS and other dangerous diseases. *For more information please see Work Safety section.*

## INVESTING IN COMMUNITY DEVELOPMENT

### MANAGEMENT APPROACH

The social investment of UC RUSAL in Russia and abroad is aimed at improving the quality of life of the residents in the territories of its operation and strengthening of the social initiative. Local community support programmes are being implemented in all territories of the Company's operation. **G4-SO1**

The management of social investment is based on the following principles: long-term objectives, partnership with stakeholders, professional development and training of professionals and programme participants. The following areas of social investment in Russia and abroad are a higher priority for the Company: **G4-EC8, HKEx Appendix 27 KPI B8.1**

- social infrastructure and the urban environment;
- education;
- sports and healthy lifestyle;
- corporate and city-wide volunteering;
- social entrepreneurship; and
- assistance to vulnerable groups.

Stakeholders (local authorities, public and other organisations, residents of cities and towns, local businesses, etc.) are equal participants in the social programmes of UC RUSAL, and each has mechanisms to take into account the opinions of the target audiences and to obtain feedback. The implementation of social investment programmes in Russia and abroad takes into account the cultural, national and other characteristics of local communities.

#### Management of social investment in Russia

In Russia, the social investment of the Company is carried out in the form of four social programmes: **G4-EC8 HKEx Appendix 27 KPI B8**

- RUSAL Territory is a programme for the social and economic development of the territories of operation;
- Helping is Easy is a program to support and develop corporate and city-wide volunteering;
- The Formula for the Future is a programme to support youth initiatives; and
- Social Entrepreneurship development programme is a programme to support and develop small businesses with significant social impact.

For each programme, impact assessment is carried out: a number of indicators is used to determine its relevance and sustainability. 100% of the programmes implemented in Russia are assessed but with varying frequency depending on the nature of the programme. **G4-SO1**

The implementation of the social investment of UC RUSAL in Russia is carried out by the Center for Social Programs, the corporate charitable fund of the Company (hereinafter the CSP, for more details please see <http://www.fcsp.ru>), which has representation offices in most regions of the Company's operation in Russia and operates in accordance with the development programme. The Social Entrepreneurship development programme is administered by ANO Centre for Innovation in Social Sphere (hereinafter the CISS).

The total budget for the financing of social programmes in Russia from UC RUSAL funds in 2016 was of RUR 140 million. [HKEx Appendix 27 KPI B8.2](#)

### **Agreements with territories of operation in Russia**

UC RUSAL cooperates with the state and municipal authorities of the territories of operation within Russia in the framework of the social and economic cooperation agreements. In 2016, agreements were in force with the administrations of the Kemerovo region, the Komi Republic and the Republic of Khakassia, as well as the cities of Achinsk, Bratsk and Kamensk-Uralsky. [HKEx Appendix 27 KPI B8](#)

The total social investment budget under the social and economic agreements with the territories of operation in 2016 was of RUR 271 million. [HKEx Appendix 27 KPI B8.2](#)

### **Management of social investment outside of Russia**

- Social investment programmes in foreign countries varied depending on the living conditions in Jamaica (the island country south of Cuba), Guinea (West Africa), Ireland (Northern Europe) and Guyana (north-eastern part of South America). The priority of the programmes is the development of local healthcare and education systems, as well as the improvement of the quality of life and the reduction of poverty, including the provision of potable water, improved sanitation (in the countries where this issue is relevant), development of agriculture and access to energy resources. [HKEx Appendix 27 KPI B8](#)
- The total budget for social investment outside Russia in 2016 amounted to USD 1 million. [HKEx Appendix 27 KPI B8.2](#)

**In total, in 2016, UC RUSAL allocated USD 13.8 million for social investment and charitable projects in Russia and abroad. [HKEx Appendix 27 KPI-B8.2](#)**

### **Results of 2016**

In 2016, the activities planned in the framework of social investment programmes have been implemented and the following main results were achieved:

- expanded geography of operation of the Social Welfare for Local Communities – branch office opened in Volgograd;
- continued international cooperation of the CSP – increased participation in the international programme for the development of social entrepreneurship among the young Social Impact Award in cooperation with the Impact Hub infrastructure network, joint activities were implemented in the framework of the International Programme Actors of Urban Change of the R. Bosch Foundation, cooperation with other international organisations has been established and continued;
- the scope of members of the National Council for Corporate Volunteering has been expanded – at the initiative of UC RUSAL, the regional offices of the Council have been opened in Krasnoyarsk, Novokuznetsk and Bratsk;
- in total, 167 thousand persons benefited from the social programmes of the Company in Russia, more than 6,300 volunteers were recruited; programmes were supported by more than 2,000 partners;



- the environmental volunteer project ‘Yenisey Day’ in Krasnoyarsk, as well as the project to assist the victims of the Khakassia fires, received recognition in the ‘Champions of Good Deeds’ competition (I and III places respectively); the project of the educational olympiad ‘The 13th Element. Alchemy of the Future’ won first place of the ‘Corporate Philanthropy Leaders’ award in the category ‘Best programme to promote education in the Russian Federation’;
- obligations under agreements concluded with the constituent entities of the Russian Federation and the towns of operations have been met; and
- Nadvoitsy was granted the priority development area status.

## **PARTICIPATION IN THE DEVELOPMENT OF THE TERRITORIES OF OPERATION**

Agreements about social and economic cooperation are a tool to bring together the Company and local authorities to improve the quality of life in the regions and cities and the effectiveness of the production facilities of UC RUSAL located there.

The main areas of the partnership of UC RUSAL with the constituent entities of the Russian Federation and the cities, where its production facilities operate, include:

- support for general education schools, community centres, theatres, orphanages and further education institutions;
- provision of urban amenities;
- improvement of the quality of transport and social infrastructure; and
- improvement of environmental situation [G4-EC7](#).

For example, in the city of Achinsk in school No 9, the laboratory class of the industry technology and business college was equipped, music school No 2 received new instruments for teaching children, the drama theatre was able to participate in the international festival, the City Palace of Culture was repaired, a section of the road from the city to the alumina refinery was repaired. In Novokuznetsk, the main street of the Kuznetsk district – Lenina street – was repaired, as well as the boarding school there.

A related social partnership with the Company’s territories of operation is a strategic development of single-industry city. Small cities that emerged around the plants built 60-80 years ago are now deprived of the future: obsolete production is closed and there are no other sources of income for local residents. According to the concept of the state programme of comprehensive development of single-industry cities, plans to transform such cities into economic and social priority development areas may be a solution. The ‘stable single-industry city’ strategy implies the retrofitting of the main enterprise, the development of social services, the reduction of taxes to attract investors, and the encouragement of migration of residents to work in the closest major cities.

The list of territories classified as the cities with the most difficult social and economic conditions included, among others, Krasnoturyinsk and Nadvoitsy. The Company took the initiative to set up an industrial park on the premises of the unfinished in the 1970s second stage of the Bogoslovsk aluminium smelter in order to maintain jobs and improve the investment climate. New production, small and medium-sized businesses and non-industrial companies can also be developed within the park.

In 2015, agreement was concluded for the federal and regional co-financing of infrastructure facilities of the Bogoslovsky industrial park in Krasnoturyinsk (Sverdlovsk region). UC RUSAL is one of the founders of the management company of the park.

In 2016, a town of Nadvoitsy (Republic of Karelia) has also received the status of priority development area, where it is planned to create more than 400 new jobs by 2020. **G4-EC7**

At the initiative of UC RUSAL, strategic plans for the development of small towns in partnership with town administrations are also being developed. The first urban development strategy was developed and adopted in 2015-2016 for the city of Achinsk. The strategy identifies eight promising urban infrastructure facilities, the plan to involve urban activists, businesses and government representatives in the implementation of city development projects is developed. A number of projects initiated in accordance with the Achinsk urban development strategy was supported by the Company under the RUSAL Territory programme at the end of the reporting period.

## **MANAGEMENT OF SOCIAL INVESTMENT IN RUSSIA**

In line with the Social Welfare for Local Communities development strategy, further steps have been taken to improve the efficiency of the management of the social programmes and organisational development of the management structures.

In 2016, internal controls and workflow procedures of the Center for Social Programs were improved. The detailed social profiles of Sayanogorsk, Kamensk-Uralsky, Krasnoturyinsk and Severouralsk have been developed in order to interact more effectively with the territories of operation and to strengthen the methodological base of the fund; the work will continue in 2017. The basis for staff development is set: the program of training courses, participation of the employees in forum and conferences is being formed.

Measures have been taken to improve the quality of projects submitted for grants and implemented by grantees, including:

- methodical recommendations for the writing of grant applications;
- training programmes and teaching materials on the 'Helping is Easy' programme, including new educational formats for applicants (quest for social design basics, 'Expertise' the business game);
- electronic platform for applications for grants, remote expert examination of projects and online voting of the residents, which will continue to be improved in 2017.

The employees of the production facilities are regularly informed about the social programmes and major events and participate in the opening of infrastructure facilities. The at representatives of Social Welfare for Local Communities fund speak during Common Information Days and at meetings of the heads of production facilities, providing information about the outcome of activities and opportunities for participation in Social Welfare for Local Communities programmes. As a result, the employees of the Company become active participants, initiators and organisers of events in the framework of the social programmes, projects and actions of the regional offices of the National Council for Corporate Volunteering.

### *Description of social programmes implemented in Russia in 2016*

Indicator	Programmes			
	RUSAL Territory	Helping is Easy	The Formula of the Future *	Social Entrepreneurship
<b>Relevance:</b> Number of applications received from residents/organisations	335	464	–	394
<b>Quality:</b> Number of grants awarded or interest-free loans issued	80	93	–	5**
<b>Coverage:</b> Number of settlements, in which the financed projects are being implemented	15	23	9	7
<b>Sustainability:</b> Share of co-financing from partners, % of the total programme budget for 2016	61	57	49	35

\* *The grant competition under the programme was not held in 2016.*

\*\* *The competition was held in 2015, the winners were given interest-free loans in 2016 and the project implementation began.*

## **IMPLEMENTATION OF SOCIAL PROGRAMMES IN THE RUSSIAN FEDERATION**

### **RUSAL Territory**

The purpose of the programme is to improve the quality of life in the territories of the Company's operation through the development of the urban environment, creation of new public and cultural spaces, modernisation of social infrastructure facilities and organisation of cultural, developmental and sporting events. A feature of the programme is the establishment of long-term partnerships between authorities, business, non-profit organisations, mass media and local residents.

In 2016, the programme was carried out in 8 constituent entities of the Russian Federation and in one region of Ukraine (Mykolayiv region). Local community projects receive grant support in three categories:

- The city of the future – original solutions for urban improvement and urban development, reconstruction, repair and equipment of social infrastructure facilities;
- The city of ideas – improvement of local public spaces (building surrounding grounds, school districts, squares and parks); and

- The living city – organisation of urban cultural events (festivals, art and museum exhibitions, musical concerts, theatrical productions, etc.), as well as the replication of effective social technologies in the area of education, sports and youth policy.

Given the nature of the programme, a diversified approach to stakeholder relations is being used. The mechanisms for interaction in the implementation of the programme include:

- annual Forum of Ideas – a conference in which the representatives of all stakeholder groups participate in order to identify priority projects for the development of the urban environment;
- Schools of urban change – training and negotiating venues, where projects that are found to be the most relevant at the Forum of Ideas are developed or finalised;
- crowdfunding (*Planeta.ru* platform) – co-funding of the projects presented at the competition by any stakeholder;
- online voting of the residents of the territories for the projects presented at the competition; and
- clubs of grantees.

The best projects implemented by grantees are published on the website of the Social Welfare for Local Communities fund (<http://www.fcsp.ru/keysy-proektov/>) for dissemination and replication of progressive practices and ideas.

In 2016, 39 projects funded under the competition in 2015 were completed, and the vast majority of them were implemented in the area of education. Among the major urban projects that attracted the attention of the residents of the territories is the reconstruction of the city's central park and the 'Mine' exhibition on the premises of the Fyodorov Geology Museum (both in Krasnoturyinsk). Other projects include an interactive scientific and educational and entertainment centre for children and adults. Other projects include 'The foundry of science' and the 'Veloguide in the old city' (both in Novokuznetsk).

In Bratsk and other cities, the pool of partners expanded – urbanists, architectural and urban planners that participated in the programme's activities, expert examination, seminars and meetings with the grantees. In Novokuznetsk, new forms of organisation of events aimed at the development of urban spaces were tested. For example, the summer festival of temporary constructions 'Great Construction', an applied educational project combining teams of residents, architects, designers and business partners. Together they designed and built new facilities of urban environments. As a result, seven new designs emerged in the city and an interesting format of celebration of the city's anniversary was developed.

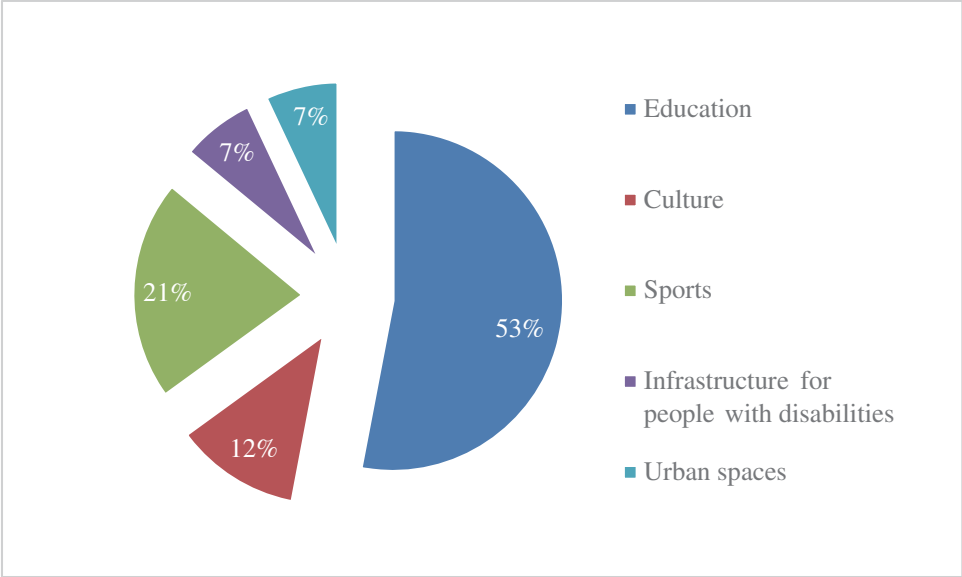
One of the most large-scale events was the Light Metal science and learning programme, which was implemented in the Tayozhny village, the cities of Achinsk, Bratsk, Shelekhov and Novokuznetsk.

In Novokuznetsk, with the support of the programme, an interactive science and learning centre 'The foundry of science' was inaugurated in 2016 and became a popular place for the excursions and educational activities of school children, families with children, residents and visitors in town.

At the initiative of the youth council of the Boguchansk aluminium smelter in partnership with the cultural and sports complex in the village of Tayozhny of the Boguchansk district of the Krasnoyarsk territory; a multifunctional sports ground with outdoor fitness machines and a complex for children, young people and adults has been built.

The 'Island of Goodness and Health' was equipped in Bratsk and became a recreational and sports venue for the workers of the smelter and the city's residents, within walking distance from the place of residence. Cultural and sports events for the families of the Company's employees are also held here.

**Structure of funded and implemented projects**



**Helping is Easy**

The promotion of volunteering is one of the priorities of the Company's social investment programmes, as UC RUSAL considers this movement to be an important tool for building a firm relationship with local communities.

The objective of the programme is to promote corporate and urban volunteering, to identify and support best practices aimed at involving active citizens in volunteer activities in the Company's regions of operation. The mechanisms for programme implementation include:

- 'Helping is Easy' portal (<http://pomogat-prosto.ru>), an open site that brings together people who are willing to provide assistance as volunteers for the non-profit organisations that need it;
- charitable and fund-raising events initiated by the CSP in the cities of operation;
- annual New Year charity marathon, 'Believe in miracle, create a miracle', a series of charitable events for volunteers with socially vulnerable audience, as well as a federal fundraiser for New Year gifts for children from socially vulnerable families and orphanages;
- School of Volunteers – training courses, master classes and workshops on volunteering;
- grants competition of volunteer projects of 'Helping is Easy', to identify and support social initiatives of citizens, companies and initiative teams;

- participation in the National Council for Corporate Volunteering (<http://www.nccv.ru>), a public venue that brings together organisations and companies that have been set up to disseminate the best practices of corporate volunteering in Russia, promote volunteering ideas, develop standards and methodical tools for volunteer programmes.

In 2016, the priority of the programme was to forge long-term relationships with major partner companies in the cities of operation. As a result, a number of joint projects have been carried out, such as ‘Eat! Share! Love!’ (Krasnoyarsk), ‘Great Construction’ (Novokuznetsk) and ‘Day of fluffy paws’ (Achinsk).

23 cities in Russia and Mykolayiv (Ukraine) took part in the New Year charity marathon, the event was supported by 92 companies that participated for the first time. In addition to the volunteers of UC RUSAL and other companies, the representatives of city administration, students and NPOs also participated in the marathon. In the framework of the philanthropy New Year fairs, the volunteers of the New Year marathon collected more than RUR 800,000.

- The community group ‘National Council for Corporate Volunteering’ (<http://www.nccv.ru>) was established at the initiative of UC RUSAL and a number of partners, including Nestlé and Norilsk Nickel companies, in late 2015. In 2016, this initiative was further developed. major companies, such as Gazpromneft, MTS, United Metallurgical Company, Leroy Merlin, the Public Opinion Foundation, Yum Restaurants Russia and others, joined the council (about 30 companies and organizations). Branches of the National Council were opened in Krasnoyarsk, St. Petersburg, Bratsk, Novokuznetsk and the Krasnodar territory.
- During the year, the members of the Board held a number of joint volunteer actions, including the Purple Day festival, the second corporate Clean Games, the pilot corporate consulting programme for social entrepreneurs ‘Pro bono Way’. During 2016, the Company has initiated in the framework of the National Council and implemented together with the partners the project of study of corporate volunteering in Russia. 1,343 corporate volunteers participated in the study survey. The results of the study and the digest ‘Corporate volunteering in Russia: status estimate and development recommendations’ published in accordance with the results of the study, were presented on December 8, 2016 at the V International Forum ‘Corporate volunteering: business and society’.

#### ***Indicators of the Helping is Easy programme***

<b>Year</b>	<b>Number of volunteers</b>	<b>Number of activities carried out</b>	<b>Number of direct beneficiaries</b>	<b>Number of partner organisations</b>
<b>2011</b>	3,563	1,484	7,515	595
<b>2012</b>	5,974	1,721	13,333	540
<b>2013</b>	10,242	1,324	29,556	761
<b>2014</b>	9,018	1,625	40,807	570
<b>2015</b>	10,472	1,497	41,669	563
<b>2016</b>	6,304	2,865	72,015	1,072
<b>TOTAL:</b>	<b>39,269</b>	<b>10,516</b>	<b>204,895</b>	<b>4,101</b>

## Social entrepreneurship

The objective of the programme is to create conditions for the work of social entrepreneurs, organise resource centres based on CISS, teach about the technologies for launching, promote and develop business projects in the social sphere.

The programme enhances the social and business activity of the residents of the territories of operation, the access of socially vulnerable categories of population to social services, the employment of socially vulnerable groups (people with disabilities, women with small children, etc.). The programme consists of several components, including:

- School of Social Entrepreneurship (SSE), in which those who wish to become social entrepreneurs can examine the characteristics of this activity, the basis of business planning and the management of a production facility;
- mentoring institute – assistance from the mentors (skilled professionals and entrepreneurs) to new entrepreneurs; and
- interest-free loans competition.

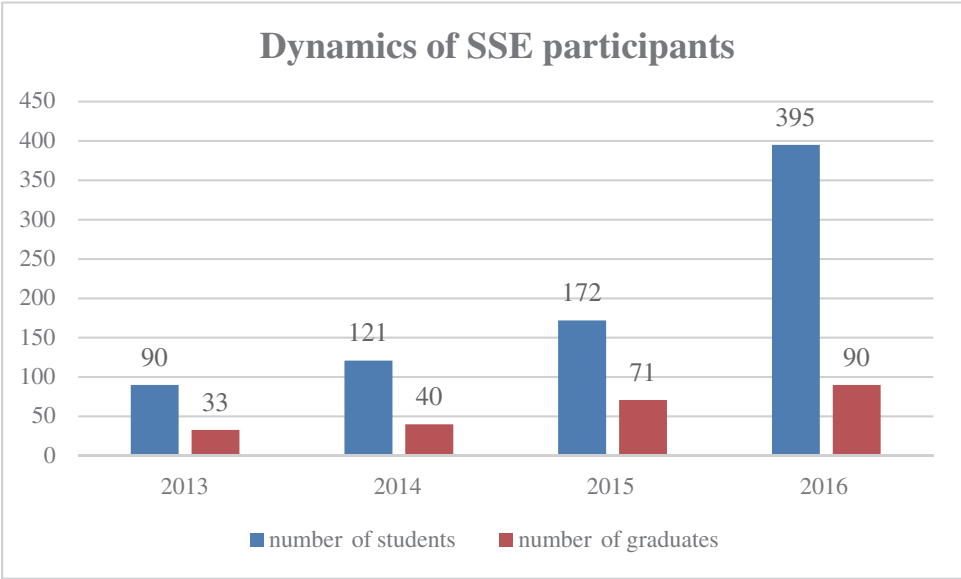
The mechanisms for interaction with stakeholders in the implementation of the programme include:

- club of CISS residents – a meeting of programme participants with specialists in different areas for consultation, horizontal relations and communication; and
- partnership programmes – the involvement of the Company in social enterprise development initiatives. An example of this partnership is the support by UC RUSAL of International Social Impact Award competition (<http://socialimpactaward.ru>), since 2015, aimed at popularising this area among young people.

In 2016, the graduates of the School of Social Entrepreneurship accounted for about 23% of the total number of students enrolled. A total of 32 social entrepreneurship projects have been developed, refined and launched in the School of Social Entrepreneurship in the process of training. New production facilities mainly provide leisure and social services for children and adults; single production facilities produce household goods. At the moment, the average period of operation of the social enterprises that received educational support under the programme was of two years, financial support – 3.5 years. The loans issued in 2014 were repaid at more than 50%.

In 2017, work will continue on expanding the geography and development of the acceleration module of the School of Social Entrepreneurship, as well as on obtaining the licence for educational activities for CSI.

**Dynamics of participants in the School of Social Entrepreneurship**



**Formula of the Future**

The programme is aimed at school-children and students of higher and secondary specialised schools, young specialists in UC RUSAL’s products and those who support young specialists up to 35 years of age. Through the programme, young people are able to realize their ideas or organise city-wide activities in the form of charitable, cultural, sporting, educational or environmental actions.

The objective of the programme is to create conditions for stimulating the productive and social activities of young people, to engage the best young professionals for further education in engineering and technology, and to support initiatives and projects targeting youth audiences in the Company’s regions of operation.

One of the mechanisms for implementing the programme is the youth councils that work at the Company’s production facilities. Training sessions at the Active Youth School and youth conventions are regularly organised for young people. In October 2016, a corporate youth convention ‘Rusal 2.0: New shift’ was organised in Sochi. Since then, there has been an increase in the activity of youth councils: activities have been initiated in the field to attract new staff and to increase the commitment of those who continue to participate.

In 2016, the youth councils comprised of 238 persons who conducted 199 both city-wide and inner corporate events and attracted 94 other organisations and companies as partners. Among the activities that attracted public attention was the tourism convention of the working youth ‘5 cadres’ (Krasnoturyinsk), the Engineers’ Club (Novokuznetsk), the project ‘Basic Road Safety for Pupils’ and the family festival ‘Baik-AI’ (Sayanogorsk) etc. The ‘360 Minutes for Baikal’ partnership action was attended by 30 youth council activists representing all production facilities of UC RUSAL.



## Plans for 2017

In 2017, the work of the Social Welfare for Local Communities fund and the CSI on the development of the programme activities will continue:

- RUSAL Territory programme: development of a system for monitoring projects and evaluating the social impact of the programme, development of the programme 'School of Urban Change'; collection and publication of successful case studies and examples of project sites;
- Helping is Easy programme; expansion of programme geography, development and implementation of the monitoring and evaluation system for supported projects within the grant competition, standardisation of Personal Donations Programme, restarting of 'Volunteer Schools', creation and description of the case database;
- Social Entrepreneurship programme: launching and testing online SSE, launching new social and entrepreneurial projects that focus on the most relevant topics, building a pool of SSE residents, and promoting them at the city and regional levels; and
- Formula for the Future programme: shifting the focus of the programme to the teaching of pupils, raising the prestige of engineering professions and developing new 'JuniorSkills' competence in the design of alloys and materials.

## SOCIAL INVESTMENTS ABROAD

Throughout the history of operation of UC RUSAL in foreign countries, the Company invested in community development, helped to improve the quality of healthcare and education systems as well as social services. Through social investment, the Company returns to society some of the revenues it receives from production. Some of the projects implemented in 2016 in the four countries are presented below. [G4-EC8](#)

### Jamaica

In Jamaica, UC RUSAL (through WINDALCO) funds a large number of projects aimed at developing the potential of local people, especially young people, and improving their living conditions.

## **Education**

<b>Project</b>	<b>Contents</b>
Youth scholarships and grants	<p>Local youth is given the opportunity to receive grants and scholarships to study at local and foreign universities. In 2016, scholarships were awarded to five senior students of the local University of Technology. Support was provided to complete the research diploma project and to pay for the last year of university studies. Another 35 students received grants and scholarships to study at various higher educational institutions of the island.</p> <p>29 students who were studying at the Siberian Federal University and the People’s Friendship University of Russia in Russia continued to receive support.</p>
Labour Day at schools	<p>To celebrate Labour Day, the Company implemented a project to extend and restore the Basic School of Mount Zion in the community of Orangefield, located near the plant. The project included the increase in the area of the building and roof repair. As a result, the school was brought into line with the standards of the Early Childhood Commission.</p> <p>In other communities, Labour Day events were also held: in one of the communities, the fire department was painted and repaired, in others schools and kindergartens, township buildings were repaired.</p>
Back to School	<p>The Back to School project targets youths of schools from communities near the plant (Evarton). Assistance is provided to adolescents in the acquisition of teaching aids, advice to general practitioners and specialty doctors is provided. Similar projects are being carried out by the Company in other communities (Port Esquivel and Kirkvine).</p>
Support for schools in local communities	<p>The Company also responds to local school initiatives: for example, assisting in the acquisition of teaching aids (such as a multimedia projector), refrigerators and wall fans; funding is being allocated for the improvement of school meals and the provision of potable water.</p> <p>In particular, water reservoirs were purchased for the secondary school of the Old Port of St. Catherine and the main school of Clapham in St. Ann, to ensure a supply of water in case of drought or disconnection of main water supply. The donations were made on the occasion of World Water Day.</p>

WINDALCO also continues to develop sports programmes, supporting many sports competitions, such as cricket, soccer, ping-pong and chess.

Funding is also being channelled to the projects of non-profit and charitable organisations. In 2016, support was provided to the Jamaican Red Cross projects and the Enos Barrett Centre (services persons with disabilities), as well as to the Spanish Town Group for the initiative to combat violence against women.

## Guinea



In Guinea, UC RUSAL is one of the largest foreign investors, not only in bauxite production but also in the social sphere.


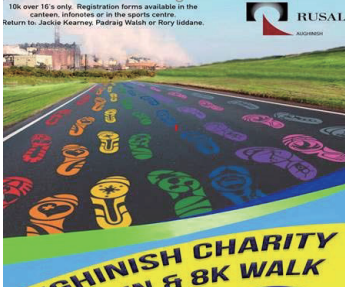
In May 2016, the Russian vaccine against the Ebola virus, GamEvac-Combi, was presented to the world in Geneva in the framework of the 69th WHO General Assembly Meeting. It was decided that the Russian-Guinean scientific centre built by UC RUSAL would be used as a clinical base for the field trials of the vaccine. *Please see details about cooperation in the area of Ebola fever in the Health and Safety section.*

In addition, in commemoration of the 15th anniversary of the Compagnie des Bauxites de Kindia, a children's drawing competition, a sports festival and a gala event were organised with the participation of the minister of mines and geology of Guinea, diplomas and valuable gifts were presented to the best employees.

## Ireland

RUSAL Aughinish alumina refinery is located on a peninsula in the countryside. There are several small towns nearby, where inhabitants are more or less linked to bauxite mining. The Company wants to maintain good relations with them based on respect and ethics. The following projects are being carried out mainly to address local problems.

Project	Contents
Sports and leisure 	Support for local (national) amateur game clubs by assisting in the organisation and implementation of various fund-raising activities. Activities are quite different: it could be a national dance night or a fundraiser to buy special caps to protect the heads of children when they play the national game of kurling.
Art and culture	Every year, the Company helps organise the festival of modern art in the local village, as well as to collect funds for the Museum of Culture. In 2016, with the support of the Company, an illustrative book was also published on the birds that nest in the backyards of the local residents. The ongoing project is supported by local radio.
Education 	The company pays considerable attention to the development of education in local communities.  In 2016, two notable educational initiatives were organised. One of them, Environ 2016, included a seminar for environmental experts at the University of Limerick. A similar seminar was held at the Limerick Institute of Technology, to which second-level students from more than 20 local schools were invited.

Project	Contents
<p>Community</p> 	<p>The Company supports the actions of local volunteer groups that promote a culture of purity in settlements and create an aesthetic environment so that villages and towns can participate in the national competitions of cities and villages.</p>
<p>Charity</p> 	<p>The volunteer river rescue team receives regular support.</p> <p>The Company also organises the annual charitable 10km race and 8km pedestrian walk for the employees on natural paths created by the Company. Collected donations are used for charity.</p>

## Guyana

Since the beginning of operations in Guyana in 2005, UC RUSAL implemented a permanent social investment programme.

During the years of operation in the country, Bauxite Company of Guyana Inc. (BCGI, a joint company of UC RUSAL and the government of Guyana) has established a power and water infrastructure in its area of operation, as well as the possibility of receiving television programmes. The Company supports the proper state of local roads by using its own equipment and materials for this purpose.

The bauxite mine is located in the interior of the country, where the indigenous people of the American Indian Hururu live. The Company has entered into a long-term land lease agreement with the local tribes and has been providing social assistance every year.

As part of the celebration of the 60th anniversary of Guyana's independence in May 2016, the Company made a major financial contribution to the organisation of the Anniversary Festival of Culture, Music and Fashion. In response to an appeal from the authorities, the Company also helped to organise the celebration of the 100th anniversary of bauxite production in Guyana. BCGI has ensured the publishing of a commemorative magazine, a series of commemorative postage stamps and a seminar with the top leadership of the country. The celebration took place in October 2016 in the city of Linden, in which more than 10,000 employees of the industry and local residents participated.

Social programmes and charitable actions strengthen the Company's positive relationship with local residents and authorities.

<b>Project</b>	<b>Contents</b>
Support for indigenous people	In 2016, the Company supported the organization of the month of cultural heritage of the indigenous people, and carried out charitable actions for the secondary school in the Hururu village, including sports equipment and tabletop games.
Education	<p>Financial support is provided on an ongoing basis to the kindergartens and the primary schools in Aroaima, where the children of local employees and students from neighbouring communities are taught. Five teachers received a scholarship from the Company, and the students who are the winners of the annual school competition received memorable gifts. The Company also rented vehicles and provides fuel to ensure the delivery of 115 pupils to and from school both by land and water.</p> <p>UC RUSAL continues to fund an international scholarship project, in which a group of Guyana youth was enrolled in one of the best Russian universities – People's Friendship University of Russia.</p>
Development of mass sports	The Company is a permanent sponsor of sports competitions, such as the Mini Olympiad, the soccer and cricket competitions, to which the teams of residents from the neighbouring settlements are invited. The Company supported participation of the Aroaima cricket team in the regional championship.

## ABOUT THE REPORT

### GENERAL INFORMATION ABOUT THE REPORT

This Sustainable Development Report of UC RUSAL (hereinafter the Report) reflects the main results of the Company's sustainable development management activities for the period from January 1, 2016 to December 31, 2016, and describes management approaches, activities and results achieved. **G4-28**

The previous report was published in 2016 and set out the results of the Company's operations in 2015. The Company publishes sustainable development reports annually. Electronic versions of sustainable development reports are published on the corporate website of UC RUSAL: <http://sr.rusal.ru>. **G4-29, G4-30**

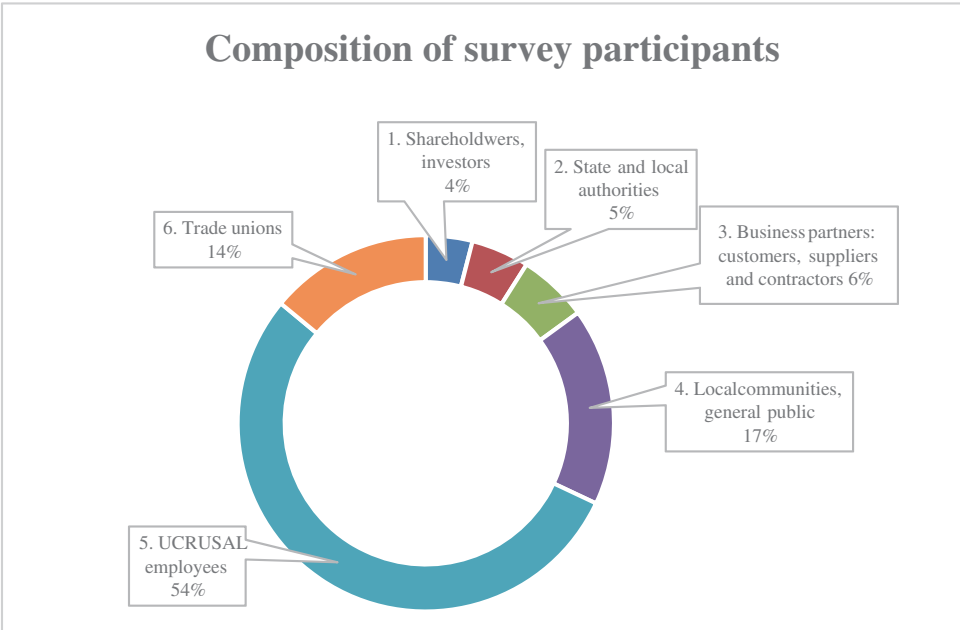
The report has been prepared in accordance with the 'core' version of the Global Reporting Initiative (GRI) of G4 version. **G4-15, G4-32**

#### The process of identification of material aspects

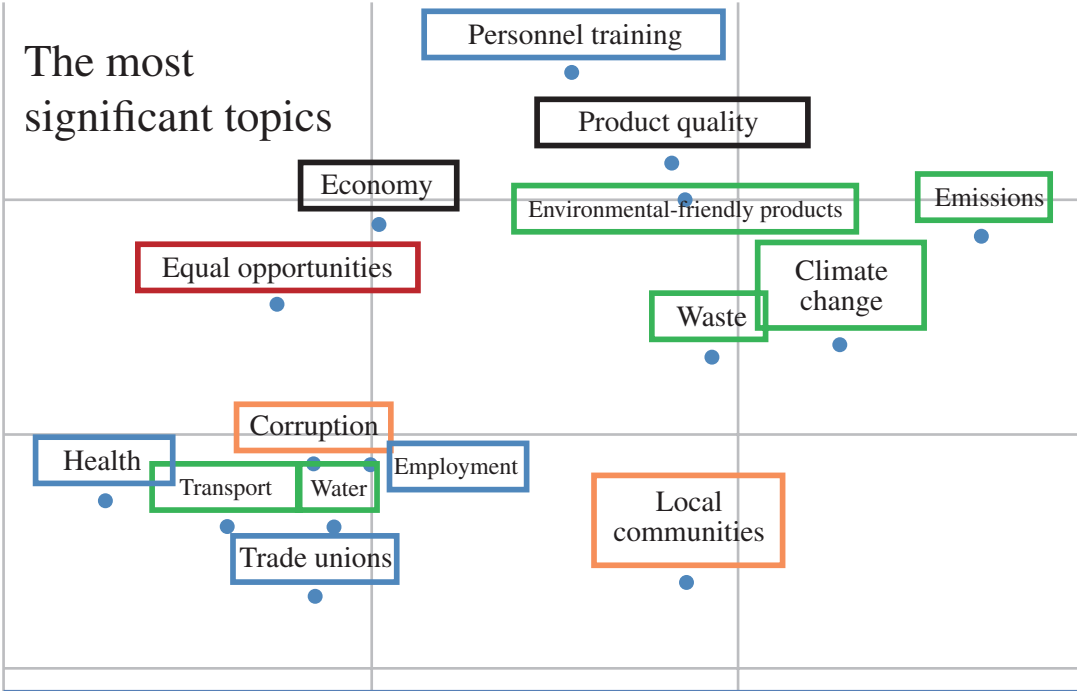
The definition of the content of the Report and the selection of material aspects are based on materiality analysis procedure, which includes the following steps. **G4-18**

1. Compilation of a complete list of topics that can be reflected in the Report based on:
  - analysis of issues raised by the stakeholders within regular business processes (including direct requests by business partners); and
  - review of press publications.
2. The rating of sustainable development aspects by means of:
  - survey of external and domestic stakeholders. (222 persons participated in the questionnaires, including 120 employees of UC RUSAL and 102 representatives of key stakeholders, including from foreign countries (nine persons) – *please see the chart below*);
  - review of material aspects identified by the international and Russian companies of the mining and metallurgical industry;
  - issues recognised as materials by industry associations (ASI Standard);
  - content of key sustainable development ratings; and
  - opinions of the participants in the working group on non-financial reporting of UC RUSAL.
3. Adoption of the list of material aspects by the participants of the working group on non-financial reporting.

**PARTICIPANTS OF THE 2016 SURVEY**



In order to compensate for the difference in the number of participants in the survey from staff and external stakeholders, the average score is obtained for each topic. In accordance with the results of the questionnaire, a ranking of topics by the degree of importance, reflecting the location of each topic, taking into account the two estimates, and the materiality matrix were prepared. 15 topics in the upper right quadrant were classified as material. Since the representatives of external stakeholders participated in the survey in 2016, the positions of a number of topics have changed considerably:



**Material aspects of the Report and the boundaries of the aspects G4-19**

	<b>Material topic</b>	<b>Section of the Report</b>	<b>Within the boundaries of the Company G4-20</b>	<b>Outside the Company G4-21</b>
<b>Specific standard reporting elements</b>				
<b>Economic category</b>	Economic performance	About the Company Quality Management System UC RUSAL Business System	✓	
<b>Environmental category</b>	Initiatives to reduce greenhouse gas emissions	Climate change	✓	✓
	Compliance with the law	Corporate governance system Internal control (compliance procedures)	✓	✓
	Water use Emissions of pollutants Discharges and wastes	Water resources Air emissions Waste	✓ ✓ ✓	
	Total expenditure and investment in environmental protection	Investments in environmental protection	✓	
	Products and services	QMS development Scientific and technological development	✓	
	Transport	About the Company	✓	
<b>Social category</b>				
<i>Labour practices and decent work subcategory</i>	Health and safety in the workplace	Supply chain	✓	✓
	Employment	Staff structure and personnel movement	✓	
	Training and education	Education and development	✓	
<i>Human rights subcategory</i>	Human rights Freedom of association and collective bargaining	Ethics and human rights Social partnership	✓	✓
<i>Society subcategory</i>	Programmes for local communities	Investing in community development	✓	
	Fighting corruption	Code of Ethics and ethics officers	✓	✓



## Reporting boundary

The reporting perimeter includes the main production facilities of UC RUSAL located inside and outside Russia (*please see table below*).

### Reporting perimeter G4-17

Business unit	In the Russian Federation	Outside the Russian Federation
Aluminium Division	Bratsk aluminium smelter Novokuznetsk aluminium smelter Irkutsk aluminium smelter Nadvoitsy aluminium smelter Krasnoyarsk aluminium smelter Sayanogorsk aluminium smelter Kandalaksha aluminium smelter Khakas aluminium smelter	KUBAL (Sweden)
Alumina Division	Achinsk alumina refinery Bogoslovsk aluminium smelter Urals aluminium smelter Timan Bauxite North Urals Bauxite Mine	Aughinish Alumina (Ireland) Winalco (Jamaica) Bauxite Company of Guyana (Guyana) Friguia bauxite and alumina complex (Guinea) Compagnie des Bauxites de Kindia (Guinea) Mykolayiv alumina refinery (Ukraine)
New Projects Directorate	Powder Metallurgy-Volgograd Powder Metallurgy-Krasnoturyinsk Powder Metallurgy-Shelekhov Kremny, Silicon Ural etc	ALSCON
Packaging Division	SAYANAL Ural Foil Sayana Foil	ARMENAL

## Data preparing

The data sources are from the official reporting forms that are provided annually to the state statistics authorities and the data from the management records. There were no reformulations of the indicators for the reporting period. **G4-22**. Scope and boundaries of reporting: the boundaries for a number of human resources management indicators have been extended, and statements have been made in the text of the Report. **G4-23**. Financial performance is based on IFRS consolidated financial statements. The main indicators are shown in three-year dynamics.

The data presented in the Report is verified by the specialised units of UC RUSAL, the approval procedure for the Report implies the participation of the members of the Executive Committee. **G4-48**

## Acknowledgment

No external acknowledgment of non-financial reporting was performed. **G4-33**

## Contact data G4-31

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## Compliance of the Report with the GRI G4 Guidance, the UN Global Compact principles and the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited

Common standard reporting elements				
GRI Indicator	Report section	UN Global Compact	Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited ("HKEx")	Comment
<b>Strategy and analysis</b>				
G4-1 Statement of the Chief Executive	Statement of the Chief Executive Officer Strategy			
G4-2 Description of key impacts, risks and opportunities	Risk analysis		HKEx Appendix 27 para 9	
<b>Organisation profile</b>				
G4-3 Organisation name	Profile			
G4-4 Types of products and services	Main types of products			
G4-5 Headquarters location	Profile			
G4-6 Countries of operation and location of business units	Profile			Please see also UC RUSAL Annual Report for 2016, p. 8
G4-7 Nature of ownership and legal form	Shareholding structure			
G4-8 Markets in which the organisation operates	Main types of products			
G4-9 Scope of the organisation	Profile			Please see also UC RUSAL Annual Report for 2016, p. 6-7

G4-10 Number of staff	Staff structure and personnel movement Staff structure in 2016		HKEx Appendix 27 KPI B1.1	
G4-11 Percentage of staff covered by collective bargain agreements	Social partnership	Principle 3		In accordance with Article 43 of the Labour Code of the Russian Federation: the collective bargain agreement applies to all employees of the Company.  Please see also UC RUSAL Annual Report for 2016, p. 77-78
G4-12 Organisation supply chain	Supply chain		HKEx Appendix 27 KPI B5, B6	Please see also UC RUSAL Annual Report for 2016, p. 5
G4-13 Changes in scale, structure, ownership, or supply chain	Profile			
G4-14 Application of the precautionary principle	Participation in industry organisation and international initiatives			
G4-15 Economic, environmental, social principles and initiatives, to which the organization has acceded or which it has supported	Global sustainable development goals Participation in industry and international initiatives About the report		HKEx Appendix 27 KPI A3.1, B5, B.8	
G4-16 Memberships in association	Participation in industry organisations and international initiatives Interaction with stakeholders			
<b>Identified material aspects and boundaries</b>				
G4-17 Legal entities whose reports were included in the consolidated financial statements	About the Report Reporting boundary			
G4-18 Methodology of definition of report content and aspect boundaries	About the Report			
G4-19 All material aspects	About the Report Material aspects of the Report and the boundaries of the aspects			

G4-20 Material aspects within the organisation	About the Report Material aspects of the Report and the boundaries of the aspects			
G4-21 Material aspects outside the organisation	About the Report Material aspects of the Report and the boundaries of the aspects			
G4-22 Results of all reformulations given in previous reports and their causes	Data preparing			
G4-23 Material changes in the scope and boundaries of aspects compared to previous reporting periods	Data preparing			
<b>Interaction with stakeholders</b>				
G4-24 List of stakeholders	Interaction with stakeholders Management approach			
G4-25 Principles for the identification and selection of stakeholders	Interaction with stakeholders Management approach			
G4-26 Approach to the organisation of stakeholder relations	Organisation of interaction with stakeholders			
G4-27 Key themes and concerns raised by the stakeholders	Organisation of interaction with stakeholders			
<b>Overview of the report</b>				
G4-28 Reporting year	About the Report General information about the Report			
G4-29 Date of publication of the previous report	About the Report General information about the Report			
G4-30 Reporting cycle	About the Report General information about the Report			
G4-31 Contact person for inquiries about the report	About the report			

G4-32 GRI Content Index	About the Report			
G4-33 Policy and practice of organisation with regard to external acknowledgment of the report	About the Report Acknowledgment			
<b>Corporate governance:</b>				
G4-34 Corporate governance structure	Management bodies		HKEx Appendix 27 para 8	Please see also UC RUSAL Annual Report for 2016, Corporate Governance Report, p. 181-201
G4-35 Procedure for the delegation of authority to address economic, environmental and social issues from the highest authority to other staff members	Management of the aspects of sustainable development Governance structure		HKEx Appendix 27 para 10	
G4-36 Manager/managers responsible for economic, environmental and social issues	Management of the aspects of sustainable development Governance structure			
G4-37 Procedures for consultation on economic, environmental and social issues between stakeholders and the highest body	President Risk analysis Monitoring, reporting and performance evaluation Labour relations Management of the aspects of sustainable development Governance structure Employee communication mechanisms		HKEx Appendix 27 para 9 HKEx Appendix 27 B4.2	
G4-38 Composition of the highest corporate body and its committees	Board of Directors			Please see also UC RUSAL Annual Report for 2016, Corporate Governance Report, p. 182-187
G4-39 Position of the chairman of the highest body of corporate governance	Board of Directors			

G4-40 Procedures for nomination and selection of candidates for membership of the highest body of corporate governance and its committees. Selection criteria	Composition of the Board of Directors			Please see also UC RUSAL Annual Report for 2016, p. 182-188
G4-41 Procedures used by the highest authority to prevent conflicts of interest	Composition of the Board of Directors			Company position and related actions with regard to the conflict of interest are stated in the Code of Ethics, section 3.6 Conflict of Interest
G4-42 The role of the highest authority and executive management in formulating, approving and updating the formulation of the goals, values, mission, policies and objectives of the organisation	Board of Directors		HKEx Appendix 27 para 8	
G4-43 Measures used to develop and enhance the collective knowledge of members of the highest authority in relation to economic, environmental and social issues	Performance evaluation and training			
G4-44 Evaluation of the work of the highest body of corporate governance	Performance evaluation and training			
G4-45 The role of the highest corporate governance body in identifying and managing impacts, risks and management opportunities	Risk analysis		HKEx Appendix 27 para 9	Please see also UC RUSAL Annual Report for 2016, p. 192-199
G4-46 The role of the highest corporate governance body in analysing the effectiveness of the risk management practices used by the organisation	Monitoring, reporting and performance evaluation		HKEx Appendix 27 para 9	Please see also UC RUSAL Annual Report for 2016, p. 186

G4-47 How often does the highest corporate governance body analyse the economic, environmental and social impacts, risks and opportunities	Monitoring, reporting and performance evaluation		HKEx Appendix 27 para 9	
G4-48 Title of the person who officially checks and approves the report	About the report			
G4-49 Procedure for informing the highest corporate authority about critical issues	Risk analysis		HKEx Appendix 27 para 9	
G4-50 Nature and total number of critical issues brought to the attention of the highest corporate governance, mechanisms for their review and resolution	Management of the aspects of sustainable development Governance structure		HKEx Appendix 27 para 10	
G4-51 Rules of remuneration of the members of the higher corporate government authority and executive management	Compensation policy			Please see also UC RUSAL Annual Report for 2016, Corporate Governance Report, p. 176-177, 191
G4-52 Procedure for the determination of the compensation	Compensation policy			Please see also UC RUSAL Annual Report for 2016, Corporate Governance Report, p. 176-177, 191

<b>Ethics and integrity</b>				
G4-56 Organisation's values, principles, standards and norms of conduct, codes of conduct/codes of ethics	Ethics and human rights	Principle 1		
G4-57 Internal and external mechanisms for consultation on ethical and law-abiding behaviour, as well as on issues related to the manifestation of bad faith	Code of Ethics and ethics officers	Principle 1		Please see also UC RUSAL Annual Report for 2016, p. 8
G4-58 Internal and external mechanisms for reporting unethical or unlawful conduct/bad faith	Ethics and rights	Principle 1	HKEx Appendix 27 KPI B7.2	

<b>Specific standard reporting elements</b>				
<b>Economic category</b>				
<b>Economic performance</b>				
GRI Indicator	Report section	UN Global Compact	HKEx	Comment
G4-EMS Overview of management approaches	Quality management system UC RUSAL business system			
G4-EC1 Direct economic value created and distributed	Strategy			
G4-EC2 Financial aspects and other risks and opportunities for the organisation's activities related to climate change	Climate change	Principle 7		
G4-EC3 The coverage of organisation's commitments related to pension plans with fixed benefits	The workers of UC RUSAL participate in the pension plans of the countries of operation. The Company allocates funds for the future pensions of its employees pro rata to the amount of the payroll. Targeted funds have been established for this purpose in different countries			Please see also UC RUSAL Annual Report for 2016, p. 238, 281



G4-EC4 Financial assistance received from the state	Scientific and technological development Management approach			
G4-EC6 Share of senior managers in the material areas of operation of the organisation, recruited from the local population	Gender composition of workers			
<b>Indirect economic impact</b>				
G4-EC7 Development and impact of infrastructure investment and gratuitous services	Participation in the development of the territories of operation	Principle 8, 9		
G4-EC8 Material indirect economic impacts, including the area of impact Participation in the development of the territories of operation		Principle 8, 9	HKEx Appendix 27 KPI B8.1, B8, B8.2	
MM8 Number and share of sites, where artisanal or small-scale development is taking place				None

<b>Environmental category</b>				
GRI Indicator	Report section	UN Global Compact	HKEx	Comment
G4-EMS Overview of management approaches	Environmental protection. Approach Management structure			
<b>Materials</b>				
G4-EN2 Share of materials representing recycled or reusable waste	Waste	Principle 8		
<b>Energy</b>				
G4-EN5 Energy intensity	Energy consumption	8	HKEx Appendix 27 KPI A2.1 (part)	Partially. The information on the energy intensity of production and on the reduction of power expenses for production of 1 tonne of aluminium is given by separate production facilities
G4-EN6 Reduce energy consumption	Energy consumption	8	HKEx Appendix 27 KPI A2.3	

<b>Water</b>				
G4-EN8 Total number of drawn water by source	Water resources	Principle 8	HKEx Appendix 27 KPI A2.2	
G4-EN9 Water sources that are significantly influenced by the water drawing of the organisation	Water resources	Principle 8	HKEx Appendix 27 KPI A2.4 (part)	
G4-EN10 Share and total volume of water reused	Water resources	Principle 8	HKEx Appendix 27 KPI A2.4	
<b>Biodiversity</b>				
G4-EN11 Production sites owned, leased or administered by the organisation and located in protected natural territories and territories with high value of biodiversity beyond the boundaries of protected natural territories, or adjacent to such territories	Biodiversity	Principle 8		
<b>Emissions</b>				
G4-EN19 Cutting greenhouse gas emissions	Climate change	Principle 7, 8, 9	HKEx Appendix 27 KPI A1.5	
<b>Discharges and wastes</b>				
G4-EN22 Total volume of discharges indicating the quality of the drain water and the receiving facility	Water resources	Principle 8		
G4-EN23 Total waste mass by type and methods of treatment	Waste	Principle 8	HKEx Appendix 27 KPI A1.3 (part), A1.6 (part)	
MM1 Number of lands (owned or leased for production activities), disturbed and recultivated	Waste	Principle 8		

<b>Products and services</b>				
G4-EN27 Degree of reduction of the environmental impact of products and services	Environmental results of the introduction of new technologies and projects		HKEx Appendix 27 KPI A3.1 (part)	
<b>General information</b>				
G4-EN31 Total expenditure and investment in environmental protection by type	Investments in environmental protection	Principle 7, 8, 9		
<b>Social category</b>				
GRI Indicator	Report section	UN Global Compact	HKEx	Comment
<b>Labour practices and decent work subcategory</b>				
G4-EMS Overview of management approaches	Employees Management approach			
<b>Employment</b>				
G4-LA1 Total number and share of newly recruited staff as well as turnover of personnel by age group, sex and region	Staff structure and personnel movement	Principle 6	HKEx Appendix 27 KPI B1.2	The indicator is partially reflected
G4-LA2 Benefits granted to full-time employees	Social support Main results in 2016 Occupational medicine		HKEx Appendix 27 B1	UC RUSAL provides the same social package to all full-time employees
<b>Staff-management relationships</b>				
G4-LA4 Minimum period of notification for significant changes in the organisation's operations	Employee communication mechanisms	Principle 3		In accordance with the legislation of the countries of operation

<b>Health and safety in the workplace</b>				
G4-Overview of management approaches	Work safety			
G4-LA5 Share of all staff represented in the official joint committees on health and safety	Collective bargain agreements	Principle 3	HKEx Appendix 27 B2.3	
G4-LA6 Types and levels of industrial injuries, occupational diseases, lost day rate and absentee rate, and total number of fatalities related to work, by region and sex	Work safety Performance Occupational medicine	Principle 1	HKEx Appendix 27 KPI B2.1, B2.2	
G4-LA7 Workers with high injury rate and high risk of diseases associated with their occupation	Work safety Performance Work safety Actions Occupational medicine			
G4-LA8 Reflection of health and safety issues in formal agreements with trade unions	Social partnership Collective bargain agreements	Principle 1		
<b>Training and education</b>				
G4-LA10 Lifelong skills and education development programmes designed to support staff's ability to work, as well as to support them in completing their careers	Internal talent pool Education and development Functional academies Modular vocational training system		HKEx Appendix 27 KPI B3.1 (part)	
<b>Diversity and equal opportunities</b>				
G4-LA12 The composition of the organisation's governing bodies and major categories of staff with structure by gender, age group, minority group and other characteristics of diversity	Composition of the Board of Directors Gender composition of workers			Please see also UC RUSAL Annual Report for 2016, Corporate Governance Report, p. 190

<b>Assessment of suppliers' labour practices</b>				
G4-LA14 Share of new suppliers evaluated according to the criteria of the labour relationship practice	Requirements for suppliers in the area of health and safety		HKEx Appendix 27 KPI B5.2 (part)	
<b>Mechanisms for complaints about labour practices</b>				
G4-LA16 Number of complaints about labour practices filed, processed and settled through formal complaint mechanisms	Code of Ethics and ethics officers	Principle 1		
<b>Human rights</b>				
G4-HR2 Total number of hours of training of staff in policies or procedures related to the human rights aspects material for the operations of organisation, including the proportion of trained staff	Labour relations			
<b>Non-discrimination aspect</b>				
G4-HR3 Total number of cases of discrimination and corrective actions taken	Implementation of the human rights policy of the Company Provision with labour resources	Principle 6	HKEx Appendix 27 KPI B4, B5, B1	
<b>Freedom of association and collective bargaining aspect</b>				
G4-HR4 Identified business units and suppliers, whose right to use freedom of association and collective bargaining may be violated or at considerable risk, and actions taken to support these rights	Labour relations Employee communication mechanisms	Principle 3	HKEx Appendix 27 KPI B1	
<b>Child labour aspect</b>				
G4-HR5 Identified business units and suppliers with a significant risk of child labour	Implementation of the human rights policy of the Company Labour relations	Principle 5	HKEx Appendix 27 KPI B4.1-B4.2 (part)	Since the nature of the production excludes the risk of child labour, this aspect is considered to be irrelevant

<b>Forced or compulsory labour aspect</b>				
G4-HR6 Identified business units and suppliers with significant risk of forced or compulsory labour, as well as actions taken to eliminate all forms of forced and compulsory labour	Implementation of the human rights policy of the Company Labour relations	Principle 4	HKEx Appendix 27 KPI B4.1-B4.2 (part)	
<b>Security practices aspect</b>				
G4-HR7 Share of security officers trained in policies and procedures on human rights aspects related to the operations	Ethics and human rights Labour relations Security			
<b>Rights of indigenous and small peoples aspect</b>				
G4-HR8 Total number of cases of violations affecting the rights of indigenous and small peoples and the actions taken	Implementation of the human rights policy of the Company Labour relations Local communities			
MM5 Total number of works in the territories of indigenous and small peoples and related territories	Code of Ethics and ethics officers Local communities Results in 2016			
MM6 Number and description of significant land-use disputes and the rights of indigenous and small peoples				No such situations were identified during the reporting period
<b>Assessment aspect</b>				
G4-HR9 Total number and percentage of business units subject to human rights assessment	Ethics and human rights Management approach Labour relations		HKEx Appendix 27 KPI B4	
<b>Mechanisms for filing of complaints about human rights violations</b>				
G4-HR12 Number of complaints relating to human rights impact, filed, processed and settled through formal complaint mechanisms	Code of Ethics and ethics officers Hotline			
<b>Society subcategory</b>				
G4-EMS Overview of management approaches	Investing in community development Management approach			

<b>Local communities aspect</b>				
G4-SO1 Share of business units with implemented programmes of interaction with local communities, programmes of assessment of the impact on local communities and community development programmes	Investing in community development Management approach		HKEx Appendix 27 KPI B8 (part)	
<b>Fight with corruption aspect</b>				
G4-SO1 Percentage of business units with completed programmes of interaction with local communities and assessment of impact of operations on local communities and programmes of development of local communities	Investing in community development Management approach		HKEx Appendix 27 KPI B8 (part)	
G4-SO3 The total number and share of business units, for which the risk assessment of corruption was conducted and the significant risks identified	Fight against corruption and fraud prevention	Principle 10		
G4-SO4 Information on anti-corruption policies, practices and training	Fight against corruption and fraud prevention Implementation of the human rights policy of the Company	Principle 10	HKEx Appendix 27 KPI B7	
G4-SO5 Confirmed cases of corruption and actions taken	Fight against corruption and fraud prevention	Principle 10	HKEx Appendix 27 KPI B7, B7.1	
<b>Public policy aspect</b>				
G4-SO6 Total monetary expression of donations for political purposes by country and recipient/beneficiary				None
<b>Product liability subcategory</b>				
G4-EMS Overview of management approaches	Efficiency management Quality Management System Supply chain System of relations with suppliers Achievement of targets		HKEx Appendix 27 KPI B6.2	

<b>Health and safety of the consumer aspect</b>				
G4-PR1 Share of significant categories of products and services, whose impact on health and safety is assessed to identify opportunities for improvement	Work safety Management system			
G4-PR2 Total number of cases of non-compliance with regulatory requirements and voluntary codes regarding the impact on the health and safety of products and services	Interaction with consumers Management approach		HKEx Appendix 27 KPI B6 (part). B6.2	
<b>Marking of products and services aspect</b>				
G4-PR5 Results of customer satisfaction surveys	Customer satisfaction analysis		HKEx Appendix 27 KPI B6.2	