



RUSAL

SUSTAINABILITY REPORT 2018

PACE THROUGH THE RACE



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**SERVING
AN ACE**

01 STATEMENT
OF THE CHIEF
EXECUTIVE
OFFICER



STATEMENT OF THE CHIEF EXECUTIVE OFFICER

[102-14]



CEO of RUSAL
Evgenii Nikitin

DEAR FRIENDS,

I AM PLEASED TO PRESENT
RUSAL'S SUSTAINABILITY
REPORT 2018.

Last year, it is fair to say, that the Company faced considerable challenges. We came up against US sanctions and consequent market volatility, which inevitably impacted our performance and financial results. However, the Company remained steadfast in its ability to fulfil economic, environmental and social responsibility obligations in accordance with sustainability strategy, based on the Ten Principles of the UN Global Compact and the UN Sustainable Development Goals.

Supporting the Goal on climate action, we are investing in new green materials and discovering high-tech applications for aluminium and alloys in order to produce more products with a low carbon footprint. I would like to highlight that over 90% of the Company's metal is produced using renewable hydropower, which eliminates harmful emissions, and the Company is dedicated to further improving this figure. The production of aluminium using inert anodes, a carbon-free technology, is a revolutionary step for the aluminum industry and I am happy to report it is now at an advanced stage of development and pre-production testing.

In addition, we continue to develop our innovative low-carbon aluminium brand ALLOW, which was launched in 2017. The metal, produced under the ALLOW brand is independently verified as being within the declared carbon footprint level of 4 tonnes of CO₂ equivalent emissions per tonne of aluminium produced, which is quite an achievement considering the world average level is approximately three times more. Bloomberg Intelligence named RUSAL the cleanest producer among the top five global aluminium leaders, having reduced carbon emissions by 53% in 1990–2015, which demonstrates the progress we have made in this field and we are still working hard to improve on these figures.

Moreover, in 2018, RUSAL continued to cut direct specific greenhouse gas emissions at existing aluminium smelters as part of the Company's strategy to reduce emissions by 15% by 2025 as compared to the levels of 2014. During 2018, our emissions output was 7.5% lower than the levels registered in 2014. Last year, the accuracy of the Company's measurements of CO₂ emissions was verified by our auditor, KPMG.

In late 2018, the Company decided to make a special contribution to the UN's target to restore 350 million

hectares of forests around the world by 2030 in response to the damaging effects of climate change. We considered various options to launch a reforestation programme and by April 2019, the key parameters of the programme had been agreed and announced officially. The initiative will see 500,000 trees planted over an area of 120 hectares in the Krasnoyarsk region and a forest protection scheme for the Lower Yenisei forestry. An additional 500,000 trees will be planted by RUSAL in other regions later in the year.

We do understand, the progress in achieving Sustainable Development Goals requires joint efforts from all the market players, that is why we pay special attention to multi-stakeholder partnerships. I am proud to say that in June 2019, RUSAL's Managing Company and three production sites including the bauxite mine, alumina refinery and the aluminium smelter, were successfully certified against the Aluminium Stewardship Initiative (ASI) Performance Standard and ASI Chain of Custody Standard. The standards have been developed with the assistance of RUSAL, which joined the ASI in 2015. The ASI is a voluntary initiative aimed at addressing sustainability standards throughout the aluminium value chain. This is an important milestone for RUSAL and further proves that we are committed to being a leading, responsible aluminium producer.

Aiming at establishing high-quality education system RUSAL has continued to expand its partnership with specialist institutes, universities, and vocational schools. In 2017, we launched a programme 'New Generation' to find prospective employees from an external candidate pool, and by the end of 2018, RUSAL helped 400 graduates from across the country begin their careers at our Company. In addition, a number of major Siberian universities have opened faculties at the Company's key production sites, allowing them to more effectively train highly skilled metallurgists in an environment, which can guarantee employment opportunities and career progression.

RUSAL has a strong corporate culture, where human rights and ethical principles are core to the Company and form the values shared by all employees. In 2018, RUSAL developed its own human rights policy governing the provision of healthy and safe working conditions for all employees, prevention of any forms of discrimina-

tion, adherence to business ethics norms and rules. The policy was approved by RUSAL's Board of directors and was implemented in February 2019.

As a global market player RUSAL develops programs to ensure healthy living and promote well-being for residents in the countries of operations, which support the UN sustainable development goal. In this direction our significant engagement in the fight against the Ebola virus in the Republic of Guinea. In previous years, we have provided support, which enabled the construction of medical infrastructure and distribution of the Russian GamEvac-Combi vaccine. The Company's medical service assisted in the programme. In 2018, during the testing program at the Russian-Guinean Scientific Diagnostic Center for Epidemiology and Microbiology, RUSAL administered the vaccination against Ebola to two thousand local residents. The vaccine is currently in the final round of testing. The vaccination is an important tool in the fight against the spread of Ebola in Africa.

I am pleased to say that RUSAL's sustainability practices are considered to be among the most advanced in the market by leading independent associations and agencies. In January 2018, RUSAL's ESG practices received an award in Hong Kong by BDO Limited, representing the 5th biggest accounting network. In December, RUSAL's commitment to sustainability and best international practices was once again acknowledged, this time by Vigeo Eiris, a reputable international ratings agency. RUSAL was listed among the top 100 Best Emerging Markets performers.

This report has been prepared in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative, and takes into account the requirements of the Hong Kong Stock Exchange's Environmental, Social and Governance Reporting Guidelines and Aluminium Stewardship Initiative standards. The report also includes information on the Company's contribution to the UN's Sustainable Development Goals and its compliance with the principles of the UN Global Compact.

CEO of RUSAL
Evgenii Nikitin

TACKLING THE OBSTACLES



02 ABOUT THE
COMPANY

COMPANY PROFILE

102-1, 102-2, 102-7

RUSAL, together with its subsidiaries, is one of the largest producers of primary aluminium and alloys. In 2018, the Company accounted for 5.8 % of global production of aluminium and 6.2 % of alumina.^[102-1]

Its production facilities are located throughout the world, including Company^[102-7]:

- 10 aluminium smelters, of which nine are in Russia and one is in Sweden;
- eight alumina refineries, of which three are located in Russia, one in Ireland, one in Ukraine, one in Jamaica, one in Italy and one in Guinea;
- seven bauxite mines, of which two are in Russia, one in Jamaica, three in Guinea and one in Guyana;
- one nepheline mine in Russia;
- four foil mills, of which three in Russia and one in Armenia;
- four powder plants located in Russia;
- two silicon plants located in Russia;
- two wheel factories located in Russia.^[102-2]

The detailed structure of the Company's divisions is presented in the Appendix to the Report.

RUSAL's ordinary shares are listed on the Hong Kong Stock Exchange and Moscow Exchange.

Table 1. Direct economic value created and distributed in 2018^[201-1]

Direct economic value created	11,267,000,000.00	10,606,000,000.00
Revenue	10,280,000,000.00	9,969,000,000.00
Share of profits of associates and joint ventures	955,000,000.00	620,000,000.00
Interest income on loans	32,000,000.00	17,000,000.00
Economic value distributed	(9,234,000,000.00)	(9,053,000,000.00)
Operating costs	(8,202,000,000.00)	(7,766,000,000.00)
including employee wages	(739,000,000.00)	(718,000,000.00)
Retirement costs	(173,000,000.00)	(197,000,000.00)
Community investments	(22,000,000.00)	(24,000,000.00)
Payments to providers of capital	(501,000,000.00)	(886,000,000.00)
including dividends paid		(299,000,000.00)
including financial expenses	(501,000,000.00)	(587,000,000.00)
Payments to government by country	(336,000,000.00)	(180,000,000.00)
including income tax	(305,000,000.00)	(140,000,000.00)
Economic value retained	2,033,000,000.00	1,553,000,000.00

Table 2. General data on RUSAL for 2017–2018^[102-7]

Indices	2018	2017
Total number of employees at the end of the year, persons	64,057	62,020 ²
The number of business units at the end of the year	41	35
Total net sales at the end of the year	USD 10,280,000,000	USD 9,969,000,000
Capitalisation at the end of the year	USD 13,495,000,000	USD 12,923,000,000
including borrowed capital (loans and borrowings, including bonds)	USD 8,286,000,000	USD 8,479,000,000
including equity	USD 5,209,000,000	USD 4,444,000,000
Total volume of products supplied at the end of the year, in tonnes (sales of primary aluminium and alloys)	3,671,000	3,955,000

¹ More detailed data broken down by the Company's production facilities are presented in the Appendix to the Report. Data for 'Dian' are based on management accounting data.

² The difference in the number of employees in 2017 in comparison with its value featured in the Annual report is due to the clarification of the number of employees in Guyana.

PRODUCTS

102-2, 102-6

The Company sells its products mainly in Europe, North America, Southeast Asia, Japan, and Korea. Key customers of the Company are from the transportation, construction and packaging industries. ^[102-6]

RUSAL produces a broad line of products, with almost half of them (45 %) being high value-added products (aluminium sheet, ingots, wire rod, casting alloys, billets, etc.). ^[102-2]

Table 3. Types of the Company's products and their industry applications ^[102-2]

Product type	Industry application	Description
Primary aluminium	Transport, construction, electrical and packaging industries	Primary aluminium is produced in accordance with quality standards and specifications developed at the request of the customers.
High purity aluminium	Electronics, production of computer hard drives and capacitor foil	RUSAL is the only producer of high purity aluminium in Russia and other Commonwealth of Independent States (CIS) countries.
Aluminium alloys	Transport, construction, electrical and packaging industries	RUSAL produces a wide range of high quality aluminium alloys.
Foils and packaging	Food, pharmaceutical, construction, tobacco and perfume and cosmetics industries	RUSAL's production facilities produce foil with a gauge of 5 to 240 µm and a number of products based on it, a range of tape: from 250 µm to 1 mm, as well as cans and covers for food packaging.
Aluminium powders and pellets	Metallurgical, chemical, energy, mining and construction industries	RUSAL is the largest Russian producer of aluminium powder products.
Wire rod	Cable production, iron and steel industry, production of hardware items	RUSAL produces wire rod in accordance with the GOST and international technical specifications.
Alumina and bauxite	Intermediate products, from which aluminium is produced	High quality alumina is produced in the Bayer process.
Silicon	Metallurgical, chemical, electrical sectors, production of solar cells	RUSAL produces metallurgical and refined silicon. The product is registered in the REACH system.
Gallium	Production of chemical compounds used in solar energy and electronics industry	RUSAL produces high purity metallurgical gallium.
Corundum	Production of abrasive tools, ceramic and refractory products	RUSAL is one of the world's largest producers of white corundum.
Protectors from aluminium alloys	Shipbuilding, oil and gas, housing and utility sectors	The products are used for long-term protection against corrosion of metallic objects in aggressive environments (marine and bottom water, ground and reservoir waters).
Aluminium wheels	SKAD alloy wheels are installed on passenger cars	Discs are produced based on the latest technology and have passed an independent examination by TÜV SÜD Automotive GmbH, their use is allowed in the countries of Western Europe, the USA and Russia.

PRESENCE IN FINANCIAL MARKETS

102-5

The main shareholders of the Company in 2018 are En+Group, SUAL Partners and Glencore. As of the end of 2018, the free float amounted to 16.62 % of the total number of the Company's issued shares. Together with Samruk Holding, which is located in Kazakhstan, RUSAL owns Bogatyr Komir development production facility for the development of the Ekibastuz coal deposit. ^[102-5]

RUSAL holds 27.82 % of the shares in MMC Norilsk Nickel, the world's largest producer of nickel and palladium and one of the largest producers of platinum and copper. The Company's ordinary shares are traded on the Hong Kong Stock Exchange (stock code: 486) and on the Moscow Exchange (RUAL).

GEOGRAPHICAL STRUCTURE

102-3, 102-4

The Company operates in the following countries: Russia, Kazakhstan, Australia, Armenia, Guyana, Ireland, Sweden, Guinea, Italy, Nigeria, Jamaica^[102-4]. The headquarters are located in Russia (Moscow) and Cyprus (Limassol).^[102-3]

Image 1. Company's operations in the world^[102-4]

RUSSIA

- 12 Achinsk Alumina Refinery
- 13 Bogoslovsky Alumina Refinery
- 14 Boguchanskaya HPP (BEMO)
- 15 Boguchansky Aluminium Smelter (BEMO)
- 16 Boksitogorsk Alumina Refinery
- 17 Bratsk Aluminium Smelter
- 18 Irkutsk Aluminium Smelter
- 19 Kandalaksha Aluminium Smelter
- 20 Khakas Aluminium Smelter
- 21 Kia-Shaltyr Nepheline Mine
- 22 Krasnoturyinsk Powder Metallurgy
- 23 Krasnoyarsk Aluminium Smelter
- 24 Nadvoitsy Aluminium Smelter
- 25 North Urals Bauxite Mine
- 26 Novokuznetsk Aluminium Smelter
- 27 Sayana Foil
- 28 SAYANAL
- 29 Sayanogorsk Aluminium Smelter
- 30 Shelekhov Powder Metallurgy
- 31 Silicon (ZAO Kremniy), Shelekhov
- 32 SKAD wheels factory
- 33 Taishet Aluminium Smelter (project)
- 34 Timan Bauxite
- 35 Urals Alumina Refinery
- 36 Urals Foil
- 37 Urals Silicon
- 38 Volgograd Aluminium Smelter
- 39 Volgograd Powder Metallurgy

ARMENIA

- 01 Armenal

AUSTRALIA

- 02 QAL

GUINEA

- 03 Compagnie des bauxites de Kindia (CBK)
- 04 Dian Dian Project
- 05 Friguia Bauxite & Alumina Complex

GUYANA

- 06 Bauxite Company of Guyana (BCGI)

IRELAND

- 07 Aughinish Alumina

ITALY

- 08 Eurallumina

JAMAICA

- 09 Windalco

KAZAKHSTAN

- 10 LLP Bogatyr Komir

NIGERIA

- 11 ALSCON

SWEDEN

- 40 KUBAL

UKRAINE

- 41 Nikolaev Alumina Refinery



- | | | |
|-----------|---------|----------------|
| Aluminium | Foil | Nepheline ore |
| Alumina | Powders | Other business |
| Bauxite | Silicon | Wheels |

The background features a large, abstract geometric shape composed of overlapping, semi-transparent blue triangles and quadrilaterals. The colors range from light sky blue to deep navy blue, creating a layered, textured effect. The shape is positioned on the left side of the page, extending towards the center.

03 ABOUT THE REPORT

GENERAL INFORMATION ABOUT THE REPORT

102-50, 102-51, 102-52

This Sustainability Report of RUSAL (hereinafter, the Report) reflects the main results of the Company's sustainable development management activities for the period from January 1, 2017 to December 31, 2018. The Report also includes a description of management approaches, initiatives implemented and results achieved. ^[102-50]

The previous report was published in 2018 and disclosed the Company's results for the 2017 calendar year. The Company publishes sustainability reports annually. Electronic versions of reports are available on the corporate website of RUSAL: <https://rusal.ru/about/>. ^{[102-51], [102-52]}

MATERIAL TOPICS

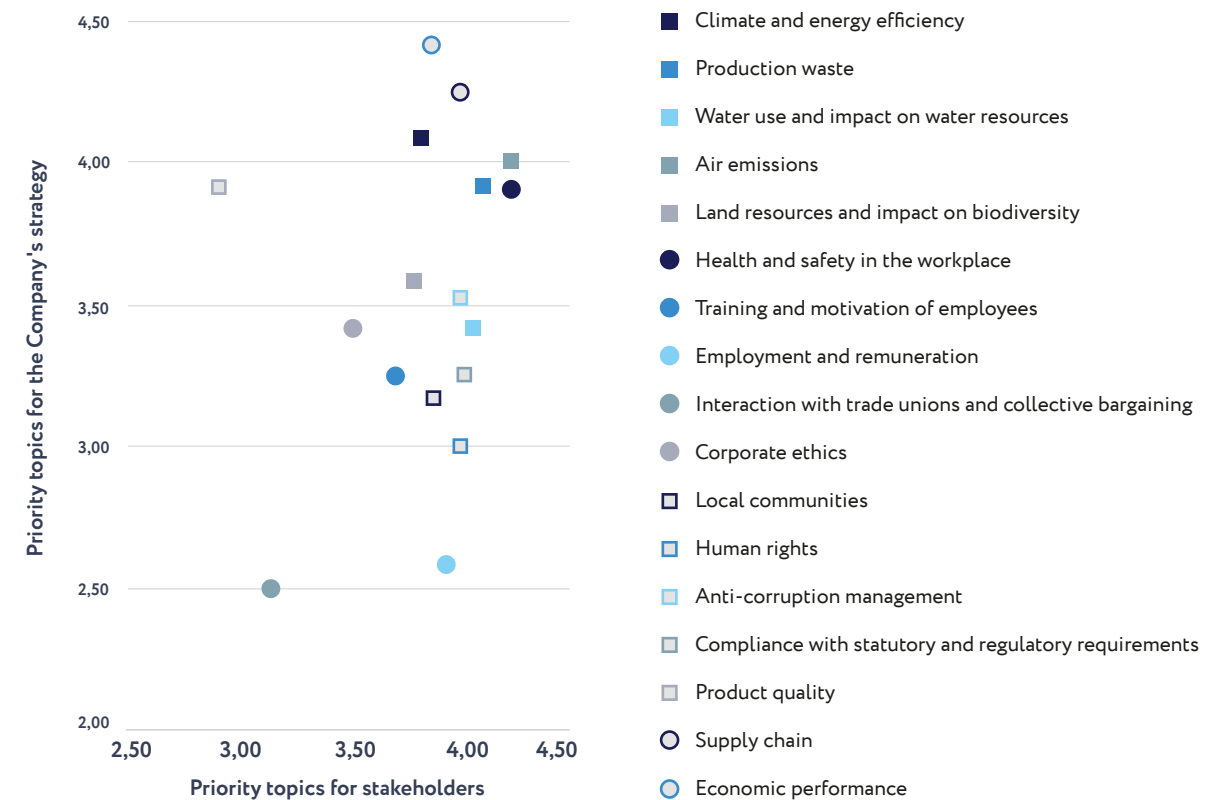
103-1, 102-47

To determine the topics that are of greatest importance for the Company and set the contents of the Report, the Report Writing Working Group formed of representatives from the departments responsible for ESG issues and for the key stakeholder relations conducted a procedure to identify and evaluate material topics. This process was carried out in three stages:

1. Compilation of a complete list of topics that can be reflected in the Report, based on international standards (including GRI Standards), analysis of issues raised by the stakeholders within regular business processes, and review of publications in publicly available sources.
2. The rating of sustainable development aspects by means of:
 - survey of external and domestic stakeholders (119 persons participated in the survey, including

- six representatives of the Report Writing Working Group and 113 representatives of key stakeholders);
 - review of material aspects identified by the international and Russian companies of the mining and metallurgical industry;
 - issues recognised as material by industry associations (including ASI Standard);
 - content of key sustainable development rating systems;
 - opinions of the Board of Directors.
3. Adoption of the list of material aspects by the participants of the Report Writing Working Group. Assessment of materiality was carried out in accordance with the requirements of the GRI Standards, within the framework of which 17 material topics were identified and a materiality matrix was compiled. ^[103-1]

Chart 1. Materiality matrix ^{[102-47], [103-1]}



REPORTING BOUNDARY

The information on sustainable development presented in this Report relates to the activities of RUSAL production facilities. To provide more meaningful information, the assets included in the Sustainability Report are presented below by product type, replacing the presentation by geographical region and department within the Company in the 2017 Sustainability Report. There is no material change in scope of the assets apart from inclusion of new material assets. ^[102-45]

Aluminium smelters

- KUBAL (Sweden)
- Alscon (Nigeria)
- Novokuznetsk Aluminium Smelter
- Bratsk Aluminium Smelter
- Irkutsk Aluminium Smelter
- Krasnoyarsk Aluminium Smelter
- Khakas Aluminium Smelter
- Sayanogorsk Aluminium Smelter
- Kandalaksha Aluminium Smelter
- Volgograd Aluminium Smelter
- Nadvoitsy Aluminium Smelter
- Kandalaksha Aluminium Smelter

Bauxite

- Friguia (Guinea)
- Kindia (Guinea)
- Bauxite Company of Guyana Inc. (Guyana)
- Boksit Timana
- North Urals Bauxite Mine
- Windalco (Jamaica)

Powders

- Powder Metallurgy – Krasnoturyinsk
- Powder Metallurgy – Shelekhov

Alumina refineries

- Aughinish Alumina (Ireland)
- Bogoslovsk Aluminium Smelter
- Ural Aluminium Smelter
- Friguia (Guinea)
- Achinsk Alumina Refinery
- Windalco (Jamaica)
- Boxitogorsk Alumina Refinery
- Mykolayiev Alumina Refinery (Ukraine)
- Dian-Dian (Guinea)

Foils

- SAYANAL
- Ural Foil
- ARMENAL (Armenia)
- Sayana Foil

Silicon

- ZAO Kremny
- Kremny Ural

Production of cryolites and cathodes

- South Ural Cryolite Plant

The contents of the Report were compiled taking into account the core principles of the GRI Standards: Table 4.

The principles forming the contents of the Report are set out below: ^[102-46]

Interaction with stakeholders	In compiling the contents of the Report, the opinions of stakeholders were taken into account, interaction with which occurs at all stages of the Company's operations. Before starting to create the Report, a survey of stakeholders was conducted to identify material topics. You can read more about material topics in Section 3.2 'Material Topics', and on interaction with stakeholders – in Section 4.2 'Interaction with Stakeholders'.
Sustainable development context	This Report covers topics in respect of the Company's activities in the economic, social and environmental areas. In addition to the performance of activities in these areas in 2018, objectives for the future are also presented. Chapter 8 'Scientific and Technological Development' presents the Company's projects and developments, the use of which will have a positive impact on the environment, the economies of the countries where the Company operates and the society.
Materiality	In determining the contents of the Report, an analysis of material topics the Company and its stakeholders was conducted. The Report covers in detail the results of the activities on the selected material topics.
Completeness	In preparing the Report, data were collected on all key indicators relevant to the Company and its stakeholders. The data include information on all production facilities of the Company.

DATA PREPARATION

[102-49]

102-48 (Revision of data), 102-49 (Changes in reporting)

There were no significant changes in the methods for calculating indicators in 2018. [102-48]

In 2018, there were changes in the structure of divisions. To put Taishet Aluminium Smelter into operation, an appropriate organisational structure was created. In order to increase the efficiency of production and sales activities, a new Downstream Division (DD) was created, which united the production facilities for the production of packaging products (RUSAL SAYANAL, RUSAL ARMENAL, Sayan Foil, Ural Foil, etc.), powder metallurgy (in Shelekhov, Krasnoturyinsk, Volgograd, etc.) and downstream (SKAD).

Thus, the following companies were included in the newly formed Downstream Division (DD):

- SUAL-PM LLC (in 2017 was part of the New Projects Directorate (NPD));
- PM Krasnoturyinsk (in 2017 was part of the NPD);
- SKAD CMP LLC (was purchased in 2017, was included in the accounting in 2018);
- RUSAL SAYANAL (in 2017 was part of the Packaging Division (PD));
- Ural Foil (UF), (in 2017 was part of the PD);

- RUSAL ARMENAL (in 2017 was part of the PD);
- RUSAL RESAL (in 2017 was part of the NPD).

RUSAL Volgograd was transferred from the New Projects Directorate to the Aluminium Division.

In order to enhance innovation activity of the Company and improve creativity of its staff, as well as to improve efficiency of operational costs and investments through implementation of the Theory of Inventive Problem Solving (TRIZ), the relevant Directorate was established within the Management Company. The Management Company is responsible for sales, procurement, financial management, personnel, and other cross-cutting functions.

In order to provide more in-depth disclosure of information, which is important for the stakeholders, the following material topics have been added:

- corporate ethics;
- human rights;
- supply chain.

Other changes in the list of material topics and the reasons for such changes are described in the table below.

Table 5. Material Topics in 2017 and 2018

Material Topics for 2017	Material Topics for 2018	Reasons for changes
Economic performance	Economic performance	–
Fight against corruption	Fight against corruption	–
Compliance with statutory and regulatory requirements	Compliance with statutory and regulatory requirements	–
Energy consumption and energy efficiency	Climate and energy efficiency	The topic has been reformulated for better coverage of the topic in question.
Effluents and waste, including recycling and reuse of waste	Production waste	The topic was previously divided into two parts. The part about discharges has now been included in the material topic 'Water Use and Impact on Water Resources'.

Material Topics for 2017	Material Topics for 2018	Reasons for changes
Water use and impact on water resources	Water use and impact on water resources	–
Air emissions including greenhouse gases	Air emissions	The topic name has been changed to make it more generic so as to cover more aspects of the Company's activities. The topic "Greenhouse gases" is included in the topic "Climate and energy efficiency"
Compliance with environmental legislation	–	The topic 'Compliance with Environmental Legislation' and the topic 'Compliance with Statutory and Regulatory Requirements' were combined due to overlap.
Land resources and impact on biodiversity	Land resources and impact on biodiversity	–
Health and safety in the workplace	Health and safety in the workplace	–
Product quality	Product quality	–
Training and education of employees	Training and motivation of employees	The topic has been reformulated for a better coverage of the topic in question.
Remuneration of employees compared with the market	Employment and remuneration	The topic has been combined with the topic 'Employment'.
Employment	–	The topic has been combined with the topic 'Remuneration of Employees Compared with the Market'.
Impact on local communities, including cooperation and development programmes	Local communities	The topic has been renamed to make it more generic so as to cover more aspects of the Company's activities.
Interaction with trade unions and collective bargaining	Interaction with trade unions and collective bargaining	The topic has been reformulated for a better coverage of the topic in question.
Investments in infrastructure, indirect impact on the economy of the regions where the Company operates	–	The topic has been removed from the list of material topics, since various aspects of this topic are covered in other relevant topics ('Local Communities', 'Employment', 'Economic Performance').

ENDURING
THE
DISTANCE



04 SUSTAINABLE
DEVELOPMENT
STRATEGY

MANAGEMENT OF SUSTAINABLE DEVELOPMENT ASPECTS

[HKEX KPI A3.1]

RUSAL takes a responsible approach to its business practices and assesses its impact on the environment and groups of stakeholders. The principles of sustainable development underlie the values and strategy of the Company, and improvement of indicators in the field of sustainable development is one of the most important tasks for the Company.

Company values:

- Respect for the personal rights and interests of our employees, the requirements of our customers, the cooperation and interaction terms put forward by our business partner and by society.
- Fairness, which means pay commensurate with performance and equal conditions for professional growth.
- Honesty in relations and disclosure of information we need to do our work.
- Efficiency defined as consistent achievement of maximum performance in everything we do.
- Courage to resist the things we cannot accept and assume personal responsibility for the consequences of our own decisions.
- Care expressed in our constant striving to protect people against any and all harm to their life or health and to protect the environment.
- Trust in our employees, which allows us to delegate authority and responsibility for making and implementing decisions.^[102-16]

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, RUSAL has the following objectives and targets:

- Goal 1: achievement of air emission standards established by laws of the countries of operations by production facilities of the Company by 2022;
- Goal 2: protecting the Group's interests in regulating greenhouse gas emissions and reducing their turnover.;
- Goal 3: establishment of closed recycled water supply systems for key production processes at the Company's production facilities by 2022;
- Goal 4: ensure safe disposal of industrial waste, its processing and use, taking into account technical capabilities and market needs;
- Goal 5: completely stop using the equipment and exclude waste containing polychlorinated biphenyls (PCBs) by 2022;
- Goal 6: fulfilment of obligations on reclamation of disturbed lands;
- Goal 7: by 2020, certify management systems at all production facilities selling products on the market for compliance with ISO 14001 standard;
- Goal 8: promotion of the creation of an advanced legal and regulatory framework for the protection of environment in the production of aluminium and alumina.

The corporate governance of the sustainable development and ESG-related aspects is the responsibility of the Board of Directors, as stated below. The management of the programmes and day-to-day activities in this area is implemented by the CEO, the Executive Committee, and the relevant business units of the subsidiaries. The management approach of RUSAL to sustainability and ESG-related aspects is governed by corporate codes and policies, including the Corporate Ethics Code, Human Rights Policy, Personnel policy, Anti-Corruption Policy of the Company, Policy to Combat Unethical Practices, Environmental Policy and others. The Business Partner Code establishes the principles observed by the Company in interaction with supply chain organisations.^{[102-16], [102-20], [102-29], [102-31]}

The Board of Directors retains overall responsibility for the Company's ESG governance, which includes:

- evaluating and determining the Company's ESG-related risks and opportunities;
- ensuring that appropriate and effective ESG risk management and internal control systems are in place;
- setting the Company's ESG management approach, strategy, priorities and objectives;
- reviewing the Company's performance periodically;
- approving disclosures in the Company's annual sustainability report.

The Board of Directors and the Board's committees oversee the implementation of all ESG-related corporate policies and evaluate its effectiveness and ESG-related risk management. Namely, the distribution of ESG-related governing roles of the Board and its Committees is as follows:

- The Board oversees the Anti-Corruption Compliance Policy and all related risks;
- The Audit Committee oversees the ESG-related risk management and internal controls,
- The Health, Safety and Environmental Committee oversees the Environmental Policy, Health and Safety Policy, environmental and climate-related risk management, as well as effective implementation of the health and safety programmes and risk management, including across the supply chain.
- The Corporate Governance and Nomination Committee oversees the Human Rights Policy.

The management bodies and the business units of the Management Company and subsidiaries are responsible for the development and implementation of policy and action plans on sustainable development aspects in accordance with their functions. The policy and key corporate documents are reviewed by the Executive Committee.

The responsibility for addressing economic, social and environmental aspects of sustainable development, as well as for 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. During 2018, 7 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 where the Company operates.^{[102-20], [102-29]}



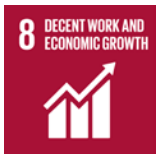
The work of RUSAL in the area of sustainable development and corporate social responsibility is based on best practices, international and Russian standards and principles, including:




- 10 principles of the UN Global Compact
- 17 Sustainable Development Goals of the UN;
- Provisions of the Social Charter of Russian Business; Social Charter of Russian Business is a set of fundamental principles of responsible business practices, in which the employee's relations with the employer, civil society institutions, government agencies, the local community, and principles related to environmental safety are identified. The Charter was adopted by the Russian Union of Industrialists and Entrepreneurs and is publicly supported by 265 Russian companies and groups, including by RUSAL;
- Global Reporting Initiative (GRI) concept and the industry-specific sustainability reporting standards developed by the Sustainability Accounting Standards Board (SASB);
- Provisions of the International Standard ISO 26000:2010.^[102-16]

On January 1, 2016, the official recording of the actions was launched to achieve 17 sustainable development goals set out in the UN document 'Transforming Our World: The 2030 Agenda for Sustainable Development' (SDG-2030), 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.

RUSAL is aware of the significance of all 17 goals and introduces approaches consistent with SDG-2030 into the management systems for aspects of sustainable development in the Company's operations. However, after conducting discussions and analysis of the Company's role in achieving SDG, key goals were identified, on the achievement of which RUSAL could have the greatest impact. The measures taken to achieve these priority SDG are described in more detail in the Report using the links provided in the table.

Table 6. Priority SDG and objectives

	Priority Sustainable Development Goals – 2030	Priority objectives	Section of the Report
	Goal 3: ensuring a healthy lifestyle and promoting well-being for all at any age	Combating the epidemics of AIDS, tuberculosis, malaria and tropical diseases, and other infectious diseases. Providing health care services, access to quality basic health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. Assistance in research and development of vaccines and drugs for treatment of infectious and non-communicable diseases.	10.7. Health
	Goal 4: inclusive and equitable quality education and promoting lifelong learning opportunities for all	Providing all women and men with access to affordable and high-quality vocational and higher education, including university education. Increase in the number of young and adult people with demanded skills, including vocational and technical skills necessary for employment, decent work and entrepreneurship. Worldwide increase in the number of scholarships offered to developing countries, especially the least developed countries.	11.6. Training and education 11.7. Provision with labour resources
	Goal 8: promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Increase productivity in the economy through diversification, technical modernisation and innovation, including by focus on high value-added sectors and labour-intensive sectors. Gradual increase in global efficiency in the use of resources in consumption and production systems and the desire to ensure that economic growth is not accompanied by environmental degradation. Reducing the proportion of young people who do not work, study or acquire professional skills. Protection of labour rights and promoting safe and secure working conditions for all workers.	8. Scientific and technological development 10. Health and Safety 11.6. Training and education 11.7. Provision with labour resources

	Priority Sustainable Development Goals – 2030	Priority objectives	Section of the Report
	Goal 12: ensuring the transition to rational consumption and production patterns	Rational development and effective use of natural resources. Reducing waste by taking measures to prevent their formation, reduction, recycling and reuse. Application of sustainable production methods and providing information on the rational use of resources in its reports.	8. Scientific and technological development 9. Environmental protection:
	Goal 13: taking urgent actions to combat climate change and its effects	Reducing direct and indirect energy greenhouse gas emissions. Enhance resilience and ability to adapt to climate hazards and natural disasters	9.8. Climate change
	Goal 15: protecting and restoring terrestrial ecosystems and promoting their rational use, rational forest management, combating desertification, halting and reversing land degradation and halting the loss of biodiversity	Conservation, restoration and rational use of terrestrial and inland freshwater ecosystems and their services, including forests, wetlands, mountains and drylands. Introduction of methods for the rational use of all types of forests, restoration of degraded forests and significant expansion of afforestation and reforestation. Taking measures to curb the degradation of natural habitats, protection of biological diversity.	9.4. Land resources and biodiversity 9.6. Water resources

INTERACTION WITH STAKEHOLDERS

Management Approach

RUSAL seeks to accommodate the expectations of stakeholders, including individuals or entities influencing, or directly or indirectly affected by, the Company's activity. For RUSAL, it is important to engage with stakeholders and conduct open dialogues with them. Key groups of stakeholders of the Company are ^[102-40]:

- shareholders and investors;
- customers and suppliers;
- employees and trade unions;
- federal and regional authorities;
- non-governmental organisations (NGOs)
- local communities.

The main documents regulating the relationship of RUSAL and the stakeholders are the Corporate Ethics Code, and the Business Partner Code. The Company maintains effective channels of communication that meet the needs of stakeholders. The interaction methods applied by the Company on an ongoing basis and identified areas of interest are described below.

RUSAL has extensive experience in interacting with the environmental community and other stakeholders on the issues of environmental protection. As mentioned above, the Company participates in a number of international initiatives.

The Company also regularly participates in the annual UN climate conferences. (For more details, see the 'Climate Change' section).

The Company continues to interact with the all-Russian environmental public movement Green Russia as part of the executed cooperation agreement. The agreement is aimed at the formulation and implementation of environmental decisions, the enjoyment of citizens' rights in a secure environment, and the preservation of nature for future generations. ^{[102-12], [102-13]}

Table 7. Methods of stakeholder engagement ^{[102-21], [102-43], [102-44]}

Stakeholder groups	Topics for interaction	Interaction methods
Shareholders and investors	<ul style="list-style-type: none"> – Performance; – Strategic business prospects; – Prudent risk management; – Corporate governance quality. 	<ul style="list-style-type: none"> – Presentations by the Company's management to the investment community and conference calls (at least once a quarter); – Publication on the corporate internet site of AGM agenda items (annually); – Meetings of Company leadership with analysts and investors, including through road show and industry conferences (at least 1–2 times per year); – Regular meetings with minority shareholders; – Annual general meeting of shareholders; – Financial and non-financial reporting (quarterly, annually).
Customers and suppliers	<ul style="list-style-type: none"> – Quality and reliability of product deliveries; – Access to bids and procurement, clarity and transparency of procurement procedures; – Nature of business relations; – Management of sustainable development aspects. 	<ul style="list-style-type: none"> – Information on tenders and procurement plans (as required); – Annual consumer satisfaction survey (annually); – Meetings with customers, including industry conferences, technical seminars and mutual visits of production facilities (systematically, as required); – Supplier certification and development system (continuously); – Claims system: weekly review of customer claims (continuously); – Procedures for monitoring compliance with contracts (continuously); – Respond to customer inquiries about the Company's sustainable development activities (upon receipt).
Employees and trade unions	<ul style="list-style-type: none"> – Remuneration and social guarantees; – Working conditions; – Career development opportunities; – Respect for employee rights. 	<ul style="list-style-type: none"> – Reports on the performance of the collective bargain agreement and the agreements in the area of work safety (annually); – Collective bargain agreement (once every 3 years); – Corporate mass media: magazine, social network (monthly) – Regular meetings with leadership and management (at least 1–2 times per year); – Management conferences (periodic); – Consideration of communications on the hotline (continuously); – Participation in the reputation study (annually);
Federal and regional authorities	<ul style="list-style-type: none"> – Payment of taxes; – Regulatory compliance; – Contribution to the development of the regions where the Company operates; – Creation/preservation of jobs; 	<ul style="list-style-type: none"> – Public hearings and consultations in the retrofitting and expansion of existing industries and construction of new facilities (as the projects are completed); – Dialogue with State authorities on legislative and regulatory issues (continuously); – Joint projects (as required).
Local communities: town residents, non-profit organisations, small business, professional and creative organisations, etc.	<ul style="list-style-type: none"> – Development of the regions where the Company operates; – Creation/preservation of jobs; – State of the environment in the locations of production facilities – Grant support for initiatives. 	<ul style="list-style-type: none"> – Public hearings and consultations in the retrofitting and expansion of existing industries and construction of new facilities (as the projects are completed); – Social and economic partnership agreements with a number of regional governments and municipalities; – The duration of agreements in various regions of operation – from one year to 3 years (with annual renewal).

PARTICIPATION IN INDUSTRY ORGANISATIONS

Being one of the largest producers of aluminium in the world, RUSAL takes part in a number of international organisations, including^[102-13]:

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

In addition, the Company participates in the activities of the Russian Union of Industrialists and Entrepreneurs (RSPP), the Inter-Regional Association for the Promotion of Safe Working Conditions "Etalon".

RUSAL actively participates in international projects and initiatives, including the environmental ones, which include:

- UN Global Compact;
- Aluminium Stewardship Initiative (ASI);
- Carbon Disclosure Project – CDP;
- Carbon Pricing Leadership Coalition – CPLC.
- In 2018, RUSAL joined UN Global Compact's initiative the Business Leadership Criteria on Carbon Pricing.

RUSAL makes a significant contribution to the development of the aluminium industry and promotion of

the principles of sustainable development in Russia. The Company became one of the initiators of a unique Russian initiative, the Climate Partnership of Russia. The partnership includes 21 Russian companies and organisations. 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 green technologies. (The partnership is described in more detail in Chapter 9.8. 'Climate change').

The Company is also an active member of Aluminium Association of Russia which unites producers, suppliers and consumers of aluminium. 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.^[102-13]

Aluminium Stewardship Initiative

In December 2015, RUSAL became a member of an international Aluminium Stewardship Initiative (ASI), which is a global non-governmental sustainable development initiative for the aluminium value chain. The key goal of ASI is to maximize the contribution of aluminium to the sustainable development.

RUSAL is an active contributor to the global sustainable development, the implementation of new standards (to produce aluminium in accordance with sustainable development principles), including best international practices.

In order to communicate with ASI, RUSAL's representative was nominated to the ASI Standards Committee. The Committee is established to develop, improve and approve the ASI Standards, as well as to settle the issues, concerning the certification of the organizations, joining ASI. RUSAL representatives are also members of the following Working groups: "Bio diversity and ecosystem services", "Greenhouse gases", "Environmental impact".

The implementation of ASI standards, which encompass the whole aluminium value chain from bauxite mining to aluminium production, is one of RUSAL's tools to adapt the best global practices of sustainable development.

RUSAL headquarters and 3 production facilities, including the Boksit Timana bauxite mine, Urals alumina refinery and Irkutsk aluminium smelter were successfully certified against the ASI Standards: ASI Performance Standard and ASI Chain of Custody Standard. The Company plans to certify all of its facilities in the future.

In order to ensure the compliance with the ASI Performance Standard and ASI Chain of Custody Standard, RUSAL manages internal audits.

EXECUTING THE STRATEGY



05 CORPORATE
GOVERNANCE

CORPORATE GOVERNANCE SYSTEM

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.

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.

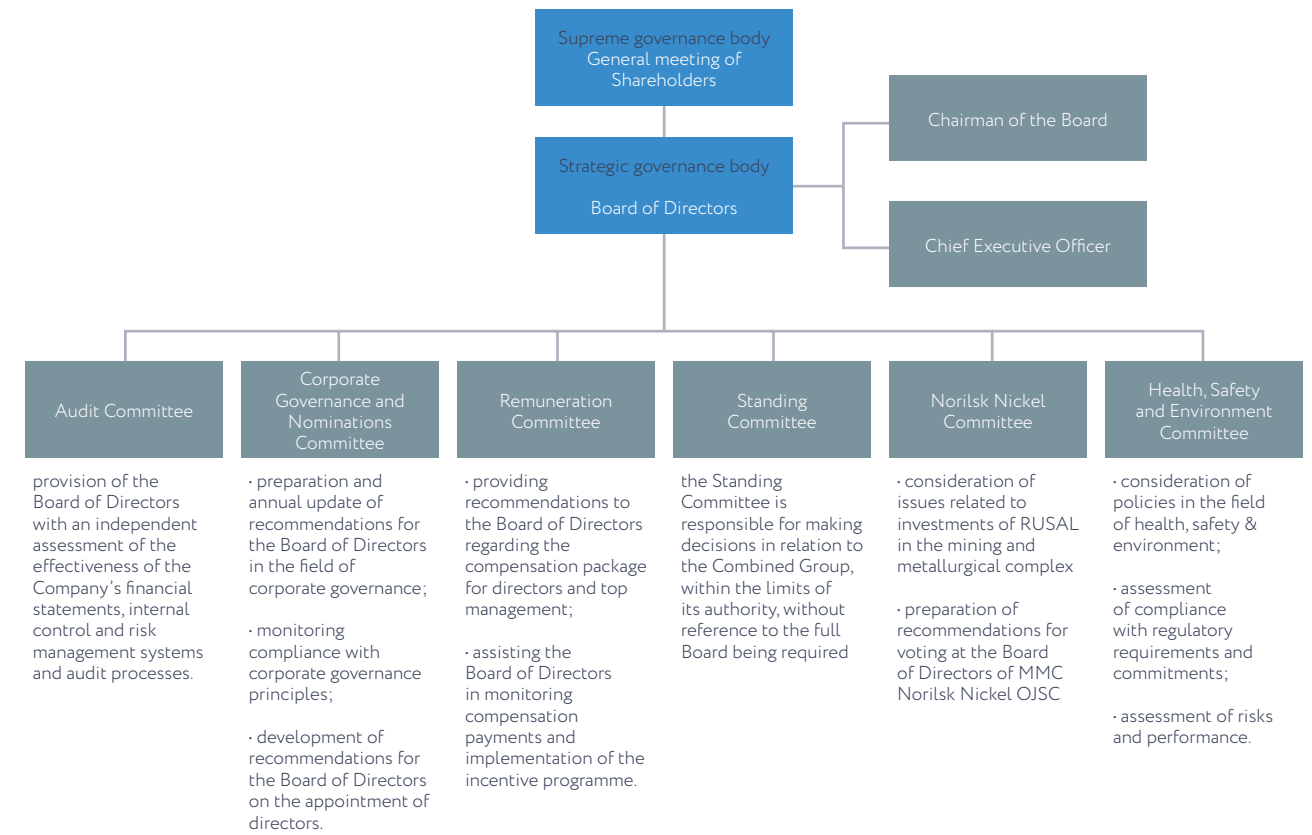
The Company is continually improving its corporate governance system by introducing best world practices and ensuring that the activity of the governing bodies complies with the requirements of the listing of stock exchanges, where the Company's financial instruments are traded.

In 2010, the Code for Securities Transactions by Directors of the Company and its Employees was adopted. The document was developed in accordance with the Rules Governing the Listing of Securities on the Hong Kong Stock Exchange.

GOVERNING BODIES

RUSAL develops and improves the corporate governance system, ensuring its compliance with the best international standards. In cooperation with the European Bank for Reconstruction and Development and the International Finance Corporation, RUSAL has developed and adopted corporate governance principles, the observance of which makes it possible to ensure high investment attractiveness of the Company and provide additional guarantees to all groups of persons participating in its operation.

Chart 2. Corporate governance structure of RUSAL [102-18], [102-22]



General Meeting of Shareholders

The supreme governing body of RUSAL is the General Meeting of Shareholders, due to which the shareholders have the opportunity to participate in the management of the Company and in the decision-making process on key issues of its activities.

Board of Directors

General governance of RUSAL's activities is carried out by the Board of Directors, whose duties and competence include ensuring sustainable development of the Company and shaping its strategy, as well as monitoring compliance with the principles of corporate governance, including protecting the interests of shareholders, partners and employees, business transparency, timely and full disclosure of information and effective interaction with the investment community.^{[102-24], [102-22]}

RUSAL recognises the importance and fully applies the principles of equality and diversity in the composition of the Board of Directors. As at the year ended 31.12.2018, the Board of Directors of RUSAL consists of 11 people – 10 men and one woman. 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 list of criteria can be extended). The ultimate decision is based on merit and contribution that the candidates have brought and will bring to the Board of Directors.^{[102-22], [102-24], [405-1]}

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.

Remuneration policies are determined based on the qualifications and performance of the employee, as well as complexity of his or her job. As a rule, the salary of each employee is reviewed annually in accordance with assessment of effectiveness and conditions of the local labour market. In 2018, the total amount of remuneration, including base salary, performance-based salary, salary for reward and award of directors, was approximately USD 15 million. All non-executive directors are entitled to receive remuneration of the director and additional commissions for membership in a committee of the Board of Directors or chairing the committee of the Board of Directors. For more information about remuneration of directors and five highest paid employees, see the Annual Report of RUSAL 2018.^[102-35]

The roles of the chairman of the Board of Directors and the Chief Executive Officer of RUSAL are segregated and are independent from each other. The Chairman is responsible for leadership of the Board of Directors and for creating the conditions necessary to allow the Board of Directors and individual Directors to operate effectively.^[102-23] The Chief Executive Officer is responsible for the day-to-day management of the Group and ensuring that the strategic decisions made by the Board of Directors are implemented. The role of the CEO is mainly related to control over implementation of policies determined by the Board of Directors, in particular in the areas of production and supply chain, financial management and corporate finance, sales and marketing, etc.^[102-24]

Executive bodies and senior management

The Board of Directors has delegated the day-to-day operation of the Company to executive Directors and the Executive Committee to ensure effectiveness and appropriateness of functions. The primary task of the Executive Committee is to assist the Chief Executive Officer and senior management with the operational management and to assist the Board of Directors in implementing the strategy of the Company and monitoring its performance. The Executive Committee meets regularly, but at least twice a month. The Chief Executive Officer formally reports the decisions and actions of the Executive Committee to the Board of Directors at meetings of the Board of Directors.^[102-19]

Additional functions and responsibilities of the Executive Committee include, but not limited to, the development of the Group's strategy for subsequent approval by the Board of Directors, as well as control and monitoring of financial performance and other matters. The Executive Committee is empowered to establish committees comprising its members, as well as other managers from time to time.^[102-13]

During 2018, the composition of the Board of Directors changed several times due to the inclusion of RUSAL in the sanctions list in April 2018 and lifting of such sanctions in January 2019, and each of such changes was publicly announced in compliance with the HKEx Listing Rules. At the end of the reporting year (December 31, 2018), the Board of Directors of RUSAL consisted of three executive directors, three non-executive directors and five independent directors. The composition of the Board of Directors offers sufficient independent checks and balances and an appropriate governance structure for the Company. There are six main committees under the Board of Directors. The responsibilities of the committees include preliminary consideration of issues falling within the competence of the Board of Directors, and providing recommendations on these topics.^{[102-22], [102-22], [405-1]}

The Board of Directors conducts a self-assessment of its performance on an annual basis. The results of such assessment are reviewed by the Corporate Governance and Nomination Committee. In this way, positive developments and areas for further improvement are identified. Pursuant to the Corporate Governance Code, all members of the Board of Directors must continually upgrade their professional knowledge and develop their skills.^{[102-26], [102-27], [102-28]}

RISK MANAGEMENT SYSTEM

In order to reduce the negative impact of potential threats and ensure consistent business development, the Company has built a risk management system that is an integral part of its corporate governance system. Its main objective is to choose the most effective methods for managing each identified risk and to make sure that the management and shareholders of the Company are kept informed of the risks the Company is facing.

The risk management system is an ongoing process at all levels of management aimed at accumulation and proliferation of knowledge about the risks within the Company. Guided by the precautionary principle, RUSAL also seeks to avoid harming the environment and conserve natural

resources. RUSAL assesses social and environmental risks and measures that are aimed at preventing and reducing the negative impact on the ecosystem and possible risks for the Company.^[102-11]

According to the Company's Risk Management Policy, control over the risk management process is carried out by the Directorate for Control, Internal Audit and Business Coordination.^[HKEX KPI A3.1]

The main internal instruments governing this area are:

- The Risk Management Policy that defines the overall concept and responsibilities of the staff;
- Risk management regulations describing the main tools and methods for identification, assessment and mitigation of the risks;
- Regulations on risk management by the employees (Transport and Logistics Directorate);
- Risk management regulations of the Alumina Division.

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.

In 2019, it is planned to update the existing Risk Management Regulations. The regulations for the Company will be finalised on the basis of pilot regulations prepared for one of the smelters. According to the Company's Risk Management Regulations, there are four main groups of risks^[102-15]:

- 1) operating risks: risks of direct or indirect damage to the Company occurred as a result of the core operating activities of the Company (inadequate or improper business processes, systems, or the human factor);
- 2) financial and market risks: risks related to financial operations of the Company and fluctuation of market factors (such as metal markets, interest rates and exchange rates);
- 3) corporate risks: risks of the Company's business environment, which could affect the performance of the Company's economic activities, including commercial, political, legal, and other risks;
- 4) project risks: risks arising during implementation of the Company's investment projects.

Risk assessment, including impact and probability, is conducted at the level of production facilities and divisions. Further, the risk map is consolidated at the level of the Company and reported to the Audit Committee at the Board of Directors, with the risk assessment being updated quarterly. Risk identification process involves the risk managers of the business units and direct owners of the risks and processes.^[102-30]

In 2018, the Company launched a project under the working title 'Risks – Reloading'. The new approach involves deeper risk profiling, identification and assessment of risk by Internal Audit and Business Analysis Department directly on production facilities. Also in 2018, as part of a pilot project, initial risk assessment was performed at a pilot production facility, and the managers of the Company owning the processes were trained. The objective of this project is to more closely integrate risk management into the decision-making process.

A number of risks associated with sustainable development are included in the corporate risk map, for example, risks in the field of labour protection and industrial safety and risks associated with social tensions and others. In relation to these risks, the relevant management measures are taken: programmes to reduce injuries at industrial sites, work with trade unions, etc.

In 2019, a large campaign is planned to train risk coordinators and process owners in the Aluminium Division and to issue a new risk management policy for the Company, risk management regulations for key smelters, and a distance learning programme on risk management for all employees. Introduction of a quantitative risk assessment based on the Monte Carlo method for the risks of investment projects, the most material risks in the corporate risk map, calculations of the maximum possible loss, etc. will also be implemented.



06 ETHICS AND
HUMAN RIGHTS

ETHICS

Management Approach

RUSAL takes a responsible approach to the issues of ethics and respect for human rights in relation to employees, counterparties, local communities in the regions where the Company operates. In this regard, employees of all business units of the Company must adhere to ethical principles of behaviour set forth in the Corporate Ethics Code, the Company's Anti-Corruption Policy, the Regulation on Preventing and Resolving Conflicts of Interest, the Business Partner Code and other policies, as well as the Company's regulations.

The business units, whose functions are to ensure compliance with ethical principles and human rights, are the Internal Audit and Business Analysis Department, Compliance Department, Communication and Social Projects Department.

In accordance with the Code of Corporate Ethics, production facilities authorise Commissioners for Corporate Ethics to work with appeals of employees on labour safety issues, compliance with labour laws, problems of internal interaction and other topics. The principal task of the officers is to communicate directly with the employees in difficult situations to find a coordinated solution and to implement it.^[102-17]

Respect for human rights

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 activities 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 activities of production facilities that are part of the Company (including by means of corporate ethics officers);
- 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 included in the standards of RUSAL, the Company's internal documents (labour contracts, corporate policies, labour safety regulations, etc.) and more extensive procedures that ensure compliance with legal requirements.^[102-17]

In 2018, the Company introduced the Human Rights Policy coordinating the following principles, which the Company fully complied with during the reporting period:

- non-discrimination on the grounds of gender, race and/or religion;
- avoiding the use of child and forced labour;
- 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.;
- compliance with the codes and regulations of business ethics and law, conducting its business without corruption; compliance with anti-money laundering legislation;
- implementation of measures necessary to reduce the impact of production on environment, including the conservation of fresh water to meet people's needs;
- compliance of the services provided and the goods supplied with quality and safety standards;
- respect for the cultural characteristics of the countries and regions where the Company operates.^[406-1]

Child and forced labour is prohibited by law in most countries where the Company operates. RUSAL sets the prohibition against child and forced labour as set out in the relevant laws, including the Constitution of the Russian Federation, the Labour Code of Russia, the Federal Law on Education #273-FZ, in the Corporate Code of Ethics, Human Rights Policy and in the Business Partner Code. It is stated that the Company does not use child labor and forced labor, even if it is allowed by law in those regions where the Company operates. The Company neither accepts nor tolerates any breach of this principle by any of its business partners, including its suppliers and contractors. The Company also have regular controls: conducting inspections of financial and economic activities of organisations, individual inspections by employees of the Internal Audit & Control Directorate, and internal audits. Since the establishment of the Company, there have been no signs of violation of these prohibitions and non-compliance of applicable laws and regulations relating to child and forced labour.^{[408-1], [409-1]}

Compliance of the entities in the supply chain of the Company with prohibition against child and forced labour is controlled via performing suppliers' audits by the Company's procurement department. The audits include

checkups of compliance with other ESG-related norms set out in the Business Partner Code of the Company. Between the introduction of the Business Partner Code in 2015 and the end of this reporting period, there was no evidence found of violation of these prohibitions within the supply chain of the Company.

Human rights education, mainly in terms of compliance with labour rights, is provided to human resource officers.

Trust service

Human rights violations are a type of violation of the code of ethics. RUSAL has policies that oblige employees to report all known cases of violation of the code of ethics and prohibit any form of prosecution of individuals reporting these violations. The Company has a mechanism that allows employees and third parties to report alleged cases of ethical violations, and the Company to process all such reports of alleged violations, investigate and take appropriate actions. Until 2018, this mechanism was the Trust Line, which operated at all production facilities of the Company. In 2018, a new system, 'Signal' trust service, was implemented at Russian production facilities of the Company. The "Signal" trust service will be launched in the Company's foreign production sites in 2019 and implemented in phases. The Trust Line will continue to operate until it is phased out.¹

The 'Signal' trust service allows you to submit reports of alleged violations in any of the following ways: by e-mail, by phone, to the mailbox, by filling out the form on the website. All such reports are directed to the Internal Audit and Business Analysis Department, which enters them into the register and decides whether an investigation and prioritisation is necessary. A report of alleged violation of the Code of Ethics is investigated by the Internal Audit and Business Analysis Department independently or with the involvement of the Security Department or is transferred to the Security Department. The results of the investigation are then recorded and necessary measures are taken in accordance with recommendations contained in the results of the investigation.

¹ Representatives of local communities and minority peoples can also report violations of their rights to the Company's trust service.

In 2018, the Company conducted a general review of the functioning of the trust service, the results of which indicate an increase in the number of reports made to the Trust Line due to the fact that the tool was becoming more widely known and was used more frequently. In 2017, 29 reports were received on the Trust Line, in 2018 'Signal' trust service received 53 reports. In the first two months of 2019, there were already 40 reports.

Chart 3. Reports received in 2018



According to the 53 reports received in 2018, inspections were carried out by employees of the departments from which the message was received, or by employees of other departments. Employees of other departments were involved in cases where specialized expertise was required to conduct an inspection or it was necessary to ensure independence and eliminate potential conflicts of interest. As a result of inspections:

- 8 labour law related reports were validated in whole or in part to be true. Such validated reports relate to conflict of interest, unfair independent contractor interaction practices, concealment of an accident involving a production facility's employee;
- Disciplinary penalties were imposed on 11 employees who had committed breaches, including demotion, reprimands, and deduction of financial penalty from the monthly salary or annual bonus, and dismissal of one of the employee in question.

To help popularise promote the trust service, the following were completed in 2018:

- employees of the production facilities of the Company were surveyed to analyse the effectiveness of Trust Line;
- as a way of informing employees, a contest was held for a new slogan for Trust Line resulting in the selection of the new name, the SignAL trust service and the slogan "We Do Care";
- a toll free trust service phone number was arranged at 8 (800) 234-56-40, complete with the internal phone number at (026) 56-40 and an email: signal@rusal.com;
- in conjunction with the Public Relations Directorate, a new brand was developed for the trust service and its website was redesigned;
- a plan has been approved for popularising the trust service;
- the August 2018 RUSAL Newsletter was published containing the first interview with the Head of the Directorate for Control, Internal Audit and Business Coordination. A series of articles was also planned to promote the trust service;
- infomercials were broadcast on RUSAL TV;
- image posters have been developed;
- sheet and pocket calendars with information about the working hours and contact details of the trust service were designed, printed and distributed to the production facilities of the Company.

INTERNAL AUDIT

Internal Audit System

Using advanced 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 internal control system aims to ensure 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 different jurisdictions;
- labour and social policy requirements of the Company;
- environmental protection requirements, etc.

The Company has about 40 regulatory documents that regulate internal control issues, including: Environmental Policy, Labour Protection, Industrial and Fire Safety Policy, Company Personnel Policy, Corporate Ethics Code, Anti-Corruption Policy, Business Partner Code, Regulations for Securities Transactions by Officials and Employees of the Company, Procurement Regulations.

The main authorised bodies that operate in this area are: Directorate for Control, Internal Audit, Business Coordination, Audit Committee and Review Commission.

Based on the findings of the inspection held at the end of the 2018, the Board of Directors confirmed that during the reporting period, internal control system operated in accordance with the requirements of the Corporate Governance Code.

The Directorate for Control, Internal Audit and Business Coordination is functionally subordinate to the Audit Committee of the Board of Directors, and administratively – to the General Director. The Directorate for Control, Internal Audit and Business Coordination reports quarterly to the Audit Committee of the Board of Directors on the results of scheduled and unscheduled audits and status of implementation of recommendations made by the owners of processes following internal audits. The main tasks of the Review Committee at production facilities are to oversee the efficiency of financial and economic activities, as well as to analyse and verify the financial statements of production facilities during the preparation of annual meetings of shareholders.

Compliance Function

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).

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;
- 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 RUSAL, Compliance Department is engaged in verifying reliability of suppliers in the framework of compliance procedures, verifies compliance with human rights and anti-corruption laws during the review of contracts. The Department monitors any transactions that are carried out in the Company. When a counterparty with whom the Company deals with is introduced into the electronic document management system, a review of the counterparty's documents is conducted, verification of the subject of the agreement and verification of compliance with the requirements applicable to the currency of settlements under the agreement are performed.

Major changes regarding compliance function are implemented in 2018:

- a position of Compliance Officer was introduced;
- a system has been built for coordinating transactions for compliance with the requirements of applicable law and local regulations on combating corruption, as well as monitoring compliance with sanctions restrictions.

Fight against corruption and fraud ^[205-1]

RUSAL makes every effort to prevent bribery of individuals or state officials. It is committed to doing business with integrity and it does not take part in any forms of unethical rewards or payments. The Company adopts policies which prohibit corruption and bribery, extortion, fraud and money laundering. The minimum standards of integrity for employees are set out in the Company's Anti-Corruption Compliance Policy, Corporate Ethics Code, Business Partner Code, Code of Conducting Securities Transactions by Relevant Officials of the Company, Regulation on Preventing and Resolving Conflicts of Interest, and Violation Information Policy.

The leading role in the prevention of corruption is vested in the Global Compliance Officer, the Directorate for Control, Internal Audit and Business Coordination and the Resource Protection Directorate, who in their respective roles coordinate the activities of the relevant business units at the production facilities of the Company.

RUSAL has introduced standard anti-corruption provisions that are included in contracts entered into by the Company in accordance with RUSAL's anti-corruption compliance policy. In case of suspected cases of corruption and fraud, employees and third parties can contact the 'Signal' trust service described earlier.

Also, in order to counter fraud in 2018, the number of personnel in the Internal Audit and Control Department was increased: a new inventory unit was formed, which deals with unscheduled field inventories and provides support in the framework of audits. In turn, the Internal Audit and Business Analysis Department checks the extent of vendor compliance with anti-corruption policies as part of the procurement audit.

Risks in the area of corruption and fraud are analysed and incorporated into the Company's Risk Map. ^[205-1]

RUSAL adheres to the principles of Transparency International, a non-governmental international anti-corruption organisation aimed at combating bribery. In 2018, the Company complied fully with applicable anti-corruption laws in the various jurisdictions the Company operates, some of these laws include:

- the US Foreign Corrupt Practices Act (FCPA),
- the U.K. Bribery Act,
- the PRC Anti-Corruption Laws,
- Russian Anti-Corruption Laws, and
- Jersey Anti-Corruption Laws.

The Company entered the top 10 list of most transparent companies in Russia in terms of its anti-corruption programmes, according to Transparency International. The Company also adheres to the principles of EITI (Extractive Industries Transparency Initiative).

SKILFUL
MANOEUVRING



07 PERFORMANCE
MANAGEMENT

QUALITY MANAGEMENT SYSTEM

Management Approach

In order to form a unified process approach to all aspects of the Company's activities, RUSAL has implemented a quality management system (QMS), which ensures efficient operation and interaction of business processes. Activities of RUSAL are also aimed at improving risk and opportunity management processes and at preventing problems in supply chain management. 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;
- purchase of raw materials and supplies;
- production;
- customer related processes;
- storage and delivery of products.

The main Russian and foreign production facilities of RUSAL have certificates of compliance with the requirements of ISO 9001. In 2018, the transition to the new version of the standard for the automotive industry IATF 16949 was successfully implemented. Six aluminium smelters: Krasnoyarsk Aluminium Smelter (KrAZ), Irkutsk Aluminium Smelter (IrkAZ), Sayanogorsk Aluminium Smelter (SAZ), Bratsk Aluminium Smelter (BrAZ), Novokuznetsk Aluminium Smelter (NkAZ), Casting and Mechanical Plant SKAD and five remote functions have certificates of compliance with international standard for automotive suppliers IATF 16949.

The quality management policy establishes uniform requirements and principles for all production facilities of the Company, and its implementation is supplemented by the presence of standards, regulations and guidelines that are subject to periodic review. In order to regulate activities in the Company's business units, quality management meetings and internal audits (QMS, process and product) are also held, which assess the state and identify areas for improvement.

The main areas in the field of quality management are defined in the Strategy for Quality Development for 2018–2021. They include:

- improving the quality of processes;
- perfect processes;
- focus programmes aimed at improving customer relations;
- developing relationships with suppliers;
- RUSAL business excellence model.

To achieve each of these goals, programmes have been developed that are assessed weekly on the principle of achieving the goals set. In 2018, an extensive internal audit schedule was implemented, which included 13 external and 132 internal trainings. Thus, 51,967 employees received training in quality management (215 were trained by external providers, 1,484 – by internal directorates, 50,270 were trained using the distance learning system).

Major projects

The **Perfect Process** initiative was launched with the aim of developing production processes that are focused on meeting basic customer requirements. This initiative involves a series of actions for the development of production processes to achieve the level of 'perfection'. Stages include:

- identification of key customer requirements;
- benchmarking on quality, defining gaps and opportunities;
- identification of special product characteristics;
- identification of special process parameters and their 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.

The Focus Improvement Programme for improving consumer relations, aimed at maintaining and developing cooperation with key or strategic consumers, continued its existence. The advantage of this programme is that it takes into account priorities of consumers when building stable relationship with them on non-commercial aspects. The programme establishes contact between the Company and consumers through regular direct communication and feedback, which helps to improve product performance and increase customer loyalty.

Analysis of the main causes of repeated claims and corrective actions to address the issues causing them is under the close attention of the heads of RUSAL facilities. To address them, the teams on solving the recurring claims were organised (Variability Reduction Teams – VRT). The status of solving problems with respect to repeated claims and the lessons learned are regularly reviewed by the Quality Steering Committee.

Table 8. 2018 key goals and results

Goal for 2018	Results in 2018	Goal for 2019
Replicate best practices among production facilities and divisions according to the results of perfect processes by alloy type at value-added products (VAP) production units	<ul style="list-style-type: none"> – Certification was carried out on the basis of a new version of IATF and DNV GL SHIP standard. – Successful internal tests for continuous production of parts (Run-at-Rate) for product validation and process of the Properzi line of Khakass Aluminium Smelter (SAZ) for Advanced Product Quality Planning (APQP) qualification with BMW have been carried out. – APQP feasibility and quota assessment with Bosch has been completed at Krasnoyarsk metallurgical plant (KRAMZ) for the production of ABS/ESP units. – As part of the initiative, operational standards for RUSAL products were developed taking into account the capabilities of the plants. 	Ensuring the maintenance of 39 implemented perfect processes, as well as expanding the perimeter of coverage with perfect processes along the whole chain of inter-divisional and intra-plant deliveries from raw materials to finished products.
Involvement of production personnel into applying quality tools and continuous improvement	<ul style="list-style-type: none"> – The 'Perfect Processes' initiative was launched, trainings on quality improvement and training of IATF experts were organised. 	Development of the process for the formation of Single Point Lessons and their integration into a single corporate database of Lessons Learnt Base for mandatory use in new projects, regardless of the area of responsibility.
Development of a system of sustainable direct and pass-through contacts with key customers to achieve the status of Master Supplier, strengthen the RUSAL brand and build a successful cooperation for the future	<ul style="list-style-type: none"> – Confirmed 47 'Master Supplier' statuses (of which 36 were in 2018). – The process of managing RUSAL ratings was organised through introduction of centralised and regular collection and analysis of ratings on QMD portal. – Technical task has been developed for subsequent incorporation into the Customer Relationship Management (CRM), taking into account available modules. 	As part of improving the system of interaction with customers, the Company expects to implement four pilot focus improvement programmes with strategic key customers for each type of product as corporate benchmarking.

Goal for 2018	Results in 2018	Goal for 2019
Integration of quality management tools and production processes through automation, statistical process management, employee motivation, and optimisation of control methods	<ul style="list-style-type: none"> - The Digital Quality project, perfect processes, focus improvement programmes and competency management were initiated. 	Ensuring integration of the procurement quality system (New Projects Directorate, Downstream Division, Engineering and Construction Division).
Management of customer specific requirements for products, processes and systems, including the requirements of the German Automobile Industry Quality Standard (VDA)	<ul style="list-style-type: none"> - The process of analysing Customer Specific Requirements (CSR) has been launched. - An audit of the process under VDA 6.3 and the product under VDA 6.5 has been implemented, 154 employees have been trained. - As a result of work of the VRT teams, there is a continuous decline in the total number of claims and the number of chronic claims. A chronic claim is a claim that has been received repeatedly by the type of defect by any business unit, namely: <ul style="list-style-type: none"> - periodically/regularly recurring product quality claim for a long time, which cannot be resolved within the framework of standard 8D approach; - to solve which an interfunctional VRT – Verifiability Reduction Team is formed, whose task is to comprehensively determine the causes of the problem, develop measures to contain, eliminate and prevent the problem of replication at all production facilities of RUSAL. - The duration of investigation of claims was reduced from 67 days in 2015 to 7 days in 2018. 	Optimisation of claim work with suppliers (baked anode blocks – BAB), coke, pitch, aluminium fluoride) and harmonisation of requirements when methods of controlling the characteristics of raw materials and materials are not comparable.

Chart 4. Number of consumer claims

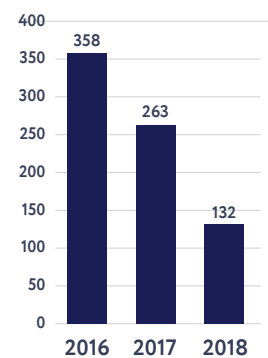
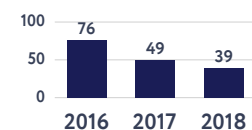


Chart 5. Number of chronic claims



Goal for 2018	Results in 2018	Goal for 2019
Building a Pilot TQM Improvement Model at Sayanogorsk Aluminium Smelter	<ul style="list-style-type: none"> - Annual full-time training was successfully completed, and nine IATF experts from each smelter of the Aluminium Division were certified. - 'Automated workplace' (AWP) software was developed for the management of competences in quality at SAZ. - Daily Management approach has been introduced according to the JUSE (Japanese Union of Scientists and Engineers) criteria at SAZ. 	Implementation of TQM (Total Quality Management) by RUSAL according to the 'Deming Prize' criteria at Sayanogorsk Aluminium Smelter (SAZ) followed by diagnostics from the JUSE (Japanese Union of Scientists and Engineers). Implementation of the best practices at aluminium smelters of the Aluminium Division under the guidance of trained IATF experts.
Implementation of the IATF project on the practical implementation of quality management tools and completion of the qualification of a team of experts at pilot plant	<ul style="list-style-type: none"> - 9 experts in 25 quality disciplines were certified. - Each expert carried out practical work on solving problems at the plant using quality management tools. - Each expert had an internship with the head of the quality service (QS). - The final certification and confirmation of the experts' competencies was carried out. 	The organisation of the process of managing new projects APQP qualifications for the return of positions in the global automotive market; ensuring successful implementation of APQP image qualification with one of the leading players in the market of Original equipment manufacturer (OEM) with BMW at SAZ.
Improving the knowledge and competencies of quality service managers at the production sites through the Quality College training programme	<ul style="list-style-type: none"> - 'College for quality' is an on-site full-time training of the Company's employees on the basics and tools of quality management (with a practical part in the form of homework). In the reporting period, the College for Quality project was implemented, during which the first two sessions were held in Krasnoyarsk for managers of the quality system of production facilities and divisions. - 19 quality management courses have been developed and 1,011 employees have received full-time training. 	Expansion of the perimeter of the College for Quality for managers and personnel reserve, as well as college cascading into the Downstream Division (production facilities for the production of foil and packaging, as well as powders and wheel disks) and the New Projects Directorate (NPD).
Ensuring a unified approach to quality management of incoming materials	<ul style="list-style-type: none"> - Ensuring a unified approach to quality management of incoming materials. 	
Deployment of requirements for suppliers for future product quality planning and management plan, as well as for APQP/PPAP and the procedure for dealing with nonconformances according to G8D methodology	<ul style="list-style-type: none"> - PPAP approved with suppliers (Full approval – 20, Interim approval – 8). - Fe80F, Ti80F, AlSr10, AlSr20 materials are excluded from the list of non-alternative due to certification of new suppliers. 	Organisation of a dedicated structure in the composition of QMD for APQP project management on qualifications of products, processes and systems.
Improving quality cost management	<ul style="list-style-type: none"> - The module for the formation of a report on the cost of quality has been developed and implemented in SAP. - Implemented sections: costs of certification, training, costs in ports, claims, travel expenses, costs of conducting external laboratory tests. - IT systems (SAP, Aldor, CRM) were improved for linking to items of quality costs, SAP BI was put into test mode of operation. 	

Goal for 2018	Results in 2018	Goal for 2019
Transition and certification under the new version of the automotive industry standard IATF 16949	Transition and certification successfully completed.	Organisation of the process of certification of suppliers according to IATF 16949 to expand the range of analogues for key types of raw materials and materials.
Creating digital QMS model	As part of the global programme 'Through Automation' in 2018, the Digital Quality project was initiated – automation of QMS processes, which includes audits, claim work with suppliers and consumers, 8D, potential failure mode and effect analysis (FMEA) and development of management plans, APQP. As the software products are introduced and replicated, the relevant processes will be updated.	Within the framework of the Through Automation project, it is planned to gradually introduce the Digital Quality area and integrate it with the existing information systems.

Plans for 2019

Table 9. Goals for 2019

Indicators	Units of measurement	Goal 2019
Period of customer claim investigation	Working days, not more than (average value)	10
Resolution of issues in claims, effectiveness level	Number of repeated claims, units	47
Promptness of review of consumer product orders	Working days, not more than (average value)	15
Timeliness for reporting on the production of pilot batches	Working days, not more than	10
Effectiveness of the elimination of internal non-conformances	Reduction in defects related to top-3 non-conformances	Reduction by 15 %
Perfect process	Number of new perfect processes	18 new projects Maintaining 39 projects
A focus improvement programme for key customers	quantity	34
Number of current master statuses from consumers	quantity	55
Corrective actions for significant non-conformances found by internal audit must be implemented within 30 days	% of completed actions	100

RUSAL BUSINESS SYSTEM

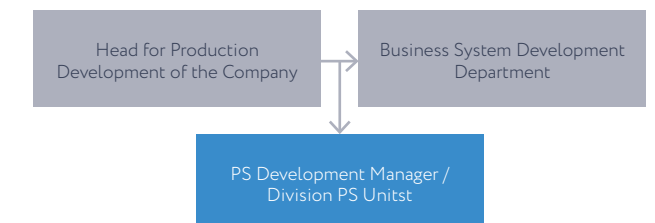
Approach

RUSAL Business System (BS) is the environment for the development of personnel and the creation of a culture aimed at the continuous improvement of the Company's production and business processes. It ensures system approach to the application of tools for increasing efficiency, promotes the introduction and proliferation of the production system of RUSAL.

BS is based on the TOYOTA Production System (TPS), which allows for continuous improvement of production and business processes, promptly responding to customer needs, and strives to remain an effective Company in the world market. A special feature of TPS is integration of production management and logistics with processes of interaction with customers and suppliers.

Thus, the objective of building and developing BS is to form end-to-end business chains from supplier to consumer, to establish effective management of their expectations and needs, as well as to introduce a culture of continuous improvements in production facilities. BS is set up on a Company-wide scale, including overseas assets.

Chart 6. Structure of the BS management



In 2018, the responsibilities of the Production Development Directorate were reduced while retaining the Department of the Business System Development, which, among other things, is responsible for logistics projects. The reduced functions of the Production Development Directorate were passed on to the divisional BS operation departments.

Results in 2018

The Company has a strategic objective of lowering the unit cost of production. Business system projects can make a significant contribution to its achievement by lowering transport costs, eliminating the cost of re-packaging, and by reducing claims from customers in terms of delivery schedules, effective maintenance and maintenance of equipment and other improvements.

In 2018, previous projects were continued and new projects were opened to reduce costs and improve the efficiency of equipment operation, and the following results were achieved.

Table 10. BS development Indicators

Indicators	2015	2016	2017	2018
Number of projects aimed at the development of BS (Company-level projects for improving logistics operations, quality, supplier development, etc.)	119	312	163	139
Number of on-site projects (production facility-level projects aimed at reducing losses, optimisation of equipment operation, etc.)	403	415	392	231
The total economic effect from the implementation of measures on BS introduction, USD mln	34.9	53.6	65.3	67.3

External partner engagement projects

RUSAL is also expanding its experience in the development of the business system by interacting with a number of external partners.

In 2018, RUSAL employees shared their experience in implementing BS with the following companies: Ingosstrakh Insurance Company, Sukhoi Civil Aircraft JSC, Russian Railways OJSC, Polymetals Production branch of Uralelectromed JSC, Krastsvetmet OJSC, Emelyanovo Airport LLC, etc. Projects were implemented with City Clinical Hospital No 51 and AltraVita clinic.

In 2018, work was started on the development of a business system with Sea port St Petersburg JSC. A visit was organised by the port's top managers to Rusal Aushinsh to familiarise themselves with the BS implementation experience. For the port's top management, a seminar was also held on familiarisation of the principles of BS US RUSAL, where the results of the most significant logistics projects were presented. Subsequently, a week-long practical training was held for the line managers of the port at the production site of the port to study the approaches and principles of the RUSAL BS.

RUSAL carried out a project to reduce the production cycle (Lead Time – LT) and create a backup supply chain, in which the experiment was carried out on transshipment of a shipload to Zarubino. Thus, a shipload was formed in the amount of 2,900 tonnes for Novelis Korea with destination Ulsan, South Korea. Production and shipment of BrAZ, KrAZ, SAZ were synchronised on dates for a uniform arrival at the port 7–14 days before the planned date of export. In fact, 2,889.49 tonnes (52 railcars) of slabs were produced and shipped, the port successfully handled the transshipment, and LT amounted to 63 days compared to 90 days before the project implementation.

Other initiatives

Steering committees

In order to develop a business system at production facilities, steering committees are introduced. In 2018, four field RUSAL business system steering committees were held with participation of heads of divisions and members of the Executive Committee:

1. RUSAL Bratsk PJSC, CHPP-6, Bratsk Hydroelectric Power Station, Irkutskenergo OJSC;
2. RUSAL Bratsk PJSC in Shelekhov, Kremny JSC and NITPP of Irkutskenergo PJSC, Cheremkhovsky coal;
3. RUSAL Krasnoturyinsk, SUBR JSC;
4. SKAD LLC, K&K LLC, RUSAL Krasnoyarsk JSC, KraMZ LLC.

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 RUSAL in Aluminium, Alumina and Downstream Divisions, as well as the New Projects Directorate.

Table 11. Results of operation of Kaizen workshops

Indicators	2015	2016	2017	2018
Number of proposals received from employees	5,311	10,863	14,417	13,627
Number of implemented proposals from employees	4,639	9,856	12,491	11,952
Number of kaizen workshops	10	10	10	10

'Improvement of the year' competition

Every year at the Company's production facilities, the contest 'Improvement of the Year' is held. In 2018, the competition was held in five categories: 'Security', 'Quality', 'Performance', 'Efficiency', as well as in the new special category 'TRIZ'. The proposals received from the employees are evaluated, the best are recognised as winning and implemented in production. Every year, implementation of the proposals received has an economic effect on RUSAL. In 2018, the economic effect from the introduction of improvements amounted to RUB 1,175,247 thousand (USD 18.7 million). The economic effect included the costs reduction and increase in production efficiency and income.

Table 12. Number of employees who took part in the competition

	2013	2014	2015	2016	2017	2018
Number of employees, persons	1,200	1,477	1,537	1,602	1,692	1,709

BS Principles 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 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.

The BS 250 personnel reserve training programme ensures the continuity of approaches to managing the implementation of the BS and accumulates the Company's experience. In 2018, 408 people took part in the BS-250 programme (third stage). 70 participants of 2016 recruitment completed the programme, of which 19 received diplomas with honours.

104 participants were appointed to higher positions, of whom seven were appointed to the position of the enterprise managing director. During the four years (2015–2018) of the programme implementation, 27 % of the total number of participants were appointed to higher positions.

As part of staff development programme and fulfilment of personal objectives, in 2018 (KPI) 439 employees were trained, of which 97 received practical training.

Table 13. Training of employees in the principles and tools of the BS

Indicators	2015	2016	2017	2018
Internal training, persons	1,213	3,780	2,280	6,588
External training, persons	207	27	44	121
Distance learning, persons	3,030	3,844	12,399	3,494
The number of practical trainings on various topics in the field of organisation and improvement of the production process, pcs.	32	306	84	780

In 2016, practical training was provided to the members of the Executive Committee and to the Kaizen team members of production facilities on the principles of the BS at the training sites and model sites of the model production facilities. All members of the Executive Committee, as well as 19 top managers were trained and qualified in the methods and approaches of the Business System. Since then, this practice has been applied when appointing employees to senior positions.

Plans for 2019

In 2019, the following initiatives are planned:

- organising and conducting plant and corporate stages of the contest 'Improvements of the Year 2019';
- organising and conducting audits of BS implementation at the Company's production facilities in accordance with the schedule for 2019;
- opening a project at RUSAL-Achinsk JSC to restore equipment operability and comply with technological regimes;
- jointly with the Human Resources Directorate (HRD), organising the programme 'Fundamentals of Industrial Design' (opening the SFU department), BS training, and also organising a cooperation programme with RUSAL Laboratory youth initiatives centre;
- organising methodological support for the programme to arrange interdivisional internships for the personnel reserve in 2019.

SUPPLY CHAIN

Approach and structure of the supply chain

As one of the world's largest producers of aluminium, 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.

Among the suppliers of RUSAL are the largest Russian and foreign companies (Russian Railways, KBM, Hebei Sitong and others). Most of them publish regular sustainability reports or have a formal position in key governance aspects. In turn, RUSAL acts as supplier to companies working in such industries as engineering, automobile production, metallurgy, chemical, transport, construction, electrical, food, packaging, etc. 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 RUSAL.^[102-9]

In 2018, the total volume of purchases of RUSAL from suppliers amounted to US \$ 8,828 million, of which 34 % of purchases were from local suppliers.^[204-1]

Supply chain management is the responsibility of a number of business units (depending on the type of raw materials and materials supplied): Business Support Directorate, Commercial Department of the Aluminium Division, Procurement Units of Aluminium Smelters.

In evaluating and selecting new suppliers, certification of raw materials and materials is carried out, Engineering and Technology Centre (ETC), Quality Management Directorate, and aluminium smelters take part in the approval of suppliers.

The Company uses the Business Partner Code as its supply chain policy that manages, amongst other things, quality as well as environmental and social risks associated with the supply chain. Suppliers are familiarised with the Business Partner Code through the official website of RUSAL on the Internet. Employees entering into transactions notify suppliers of the Business Partner Code and offer to join the Business Partner Code in writing.

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

- Quality agreement;
- Procurement regulations;
- Regulation for the Quality Certification of Suppliers of Raw Materials;
- Regulation for Auditing Manufacturers of Raw Materials and Materials;
- Regulations on supplier accreditation;
- Supplier rating assessment method;
- Guidelines for the development of QMS of suppliers;
- Methods of organising the accounting of raw materials and materials with deviations from the requirements of regulatory documents;
- Regulations on contractor management in the area of health and safety, fire and environment safety;
- Regulation on Supplier Accreditation System.

In 2018, the Supplier Audit Regulations were updated. Amendments were made in part of the document on conducting remote audits of new suppliers (prior to the beginning of certification). Also, in order to fulfil the requirements of IATF 16949, additional evaluation criteria were added to the Control Card.^[102-10]

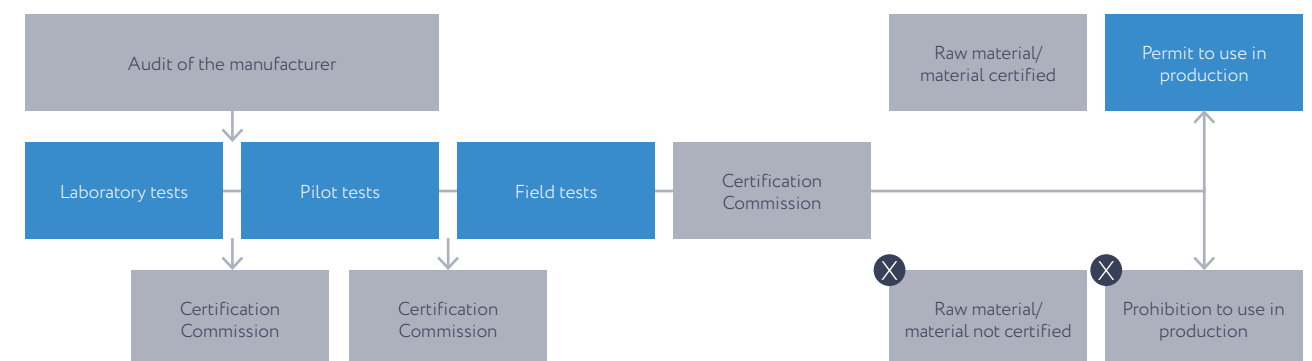
Certification of suppliers^{[308-1], [414-1]}

In evaluating and selecting new suppliers, certification of raw materials and materials is carried out, Engineering and Technology Centre (ETC), Quality Management Directorate, and aluminium smelters take part in the approval of suppliers.

In order to manage quality and technology risks in the supply chain, the Company certifies its suppliers in accordance with the requirements of IATF 16949 using the APQP approach (PPAP).

The stages of certification of suppliers of raw materials and materials for the production of primary products are as follows:

Image 2. Certification stages



The Company conducts audits of potential, new and existing suppliers of basic raw materials and materials. Before any certification tests and audit, the contract supervisor sends the supplier questionnaire to the supplier/potential supplier. The supplier questionnaire contains a 'Implementing the Basic Principles of Sustainable Development' section, which includes the status of accession to the Business Partner Code, as well as questions about implementation of the principles of sustainable development by the supplier, based on the Business Partner Code. Environmental and social criteria assessments are also introduced in the supplier assessment process. Among these criteria, there is the availability of international certifications such as ISO 14001 (Environmental Management System Certification), implementation of necessary actions to reduce environmental impact, compliance with legal requirements in the field of environmental protection, implementation of the basic principles of sustainable development, and others.

A special area of interaction with suppliers of services and works is Health, Safety & Environment (HSE), the requirements for which are also highlighted during the assessment. 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. Therefore, 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 RUSAL employees. In case of violation by contracting organisations of the terms of the contract, they will be subject to penalties up to termination. 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 on health, industrial and fire safety.

¹ Rouble expenses (aluminium smelters, silicon and YUKZ) were calculated at the average annual rate of the Central Bank – 62.6877 RUB/USD, at Kubal production facility – SEK at the average annual rate of 8.69 SEK/USD.

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

- Training in health, industrial and fire safety, first aid;
- Preliminary and periodic medical examinations;
- Production control of working conditions;
- Special audits of working conditions;
- Repair and construction works (as part of control of HSE compliance);
- Transport;
- development of internal HSE regulatory documents;
- Examination of industrial safety;
- provision of personal protective equipment and working clothes, washing and mending.

The audit results are scored, which serves as the bases for the approval or refusal of the organisation to continue to be engaged.

Image 3. Scoring zones

Green	over 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 RUSAL (55–69 %), the Company can provide support in the development of such organisations. Audit results have a useful effect on supplier development: The Company helps to address the identified weaknesses and optimise processes that help suppliers certify their management systems and offer new perspectives.

In 2018, 42 supplier audits were successfully conducted.

The increased control of the safe performance of works by contracting and subcontracting organisations is part of the corporate Plan for the reduction of injuries. At the end of the reporting period, there was a decrease in the number of fatal accidents involving employees of contractors from six accidents in 2017 to four accidents in 2018. However, due to an increase in the total number of accidents (18 accidents in 2018), the Company introduced the position of safety supervision managers for contractor organisations and continued to improve systems and processes.

In order to **develop and train** its suppliers, RUSAL conducts comprehensive internal and external training in the following areas:

- Training on QMS tools (SPC, MSA, PPAP documentation);
- 8D problem solving training;
- Training for requirements for RUSAL to suppliers, cascading consumers' requirements to suppliers.

Interaction with Customers

Interaction with Customers of the Company's strategic objectives is to develop a long-term relationship with customers by actively participating in the development of their new products, offering a wide variety of alloys tailored to the specific needs of each client. In 2018, the priority strategy was chosen for the development of sales in the domestic market and the market of loyal customers. RUSAL seeks to maximise fulfillment of customer needs and reduce the number of claims by using various tools and techniques. The interaction with customers are governed by such standards as 'Management of Customer Claims' and 'Definition and Implementation of Legal Requirements for Products when Analysing Customer Requests'.

The Company's business units are developing a system of direct contacts with key customers to achieve the status of 'Master Supplier' in order to strengthen the brand of RUSAL and build a successful partnership for the future.

Needs are identified, including through the implementation of the processes of the satisfaction analysis, customer analysis. Research identifying the level of customer satisfaction with products is conducted annually through questionnaires. The results of the study help to see opportunities for improvement and are taken into account in the development of future action plans.

In 2018, the process of customer satisfaction analysis was improved in terms of monitoring the action plans of the units to increase the satisfaction index. In addition, a PDCA (Plan-Do-Check-Act – Planning-Action-Check-Adjustment) methodology was implemented, consisting of a cyclically repeated decision-making process, also known as the Deming Cycle. Due to development of the analysis system and introduction of new initiatives, there is a positive trend in the level of customer satisfaction. In 2018, the average consumer satisfaction rating for the CIS was 9.5 points compared with 8.7 points in 2017.

Product responsibility

With product health and safety as part of its product responsibility policy, RUSAL adopts a two-part approach by using innovative technology and quality management systems (see Sections 7.1.2, 8.2.2 and 8.3 for details) to manage potential health and safety risks of its products.

As part of its product responsibility policy, RUSAL responsibly treats the confidentiality and protection, storage, processing and transmission of personal data. The Company complies with regulatory requirements relating to promotional activities. The finished products produced at the Company's production facilities are automatically labelled in accordance with the requirements of the state. The label includes a trademark or name of the producer, aluminium grade or alloy brand, melting number and other information.^[417-1]

To protect personal data in connection with the marketing of products, the Company uses the following documents:

- 'Information Security Policy';
- 'Regulations on the Protection, Storage, Processing and Transfer of Personal Data'.

In 2018, three claims were received related to the labelling: one on the Russian market, one on the Asian market, and one on the European market.^[417-2]

According to the Company's claim investigation procedure for 2018, claims for incorrect labeling were reviewed and acknowledged. The causes of the problems were as follows:

- Errors in the port when applying intraport identification with indelible paint on RUSAL products
- Lack of automatic marking of ingots at the Properzi production complex at SAZ
- Lack of control system of the first suitable ingot when the alloy is changed at the Properzi production complex at SAZ
- Errors when entering information in the export data system for similar products at different manufacturing plants

To prevent the occurrence of similar problems in the future, Aluminium Division, Transportation and Logistics Department and Sales Directorate jointly with the plants have developed and implemented corrective actions, including such system measures as:

- Issue of instructions to transshipment ports and prohibiting the use of indelible in-port marking on RUSAL products
- A change in the export data system to prevent incorrect information from being entered when placing orders in Sales Directorate
- Formation of a unified appearance of the Certificate of quality and weight for all manufacturing plants producing technical grade aluminum
- Introduction of the procedure for checking the first ingot when changing the alloy, as well as taking into account the risks of errors in branding in the production technology

During 2018, since the introduction of corrective measures, there were no repeated complaints about these problems. The monitoring of incoming claims is regularly conducted. When a re-occurrence of the previously dealt claim, the information about the claim is immediately escalated to the level of the Company's management, the corrective measures developed earlier are reviewed.

For 2017, claims for problems with labeling had other causes, related to other manufacturing plants and to other products. The corrective actions were performed in full; no re-occurrence in 2018 was registered.

Save as disclosed in the above, the Company was not informed by local authorities of any major violation of the relevant laws and regulations relating to health and safety, advertising, labelling and privacy matters of its products.

Packaging material used for the Company's finished products was found to be not material by representatives of stakeholders at the stakeholders' survey. The Company concurred with this view as the impact of packaging material used for the Company's finished products on the environment was rather insignificant compared with other environmental aspects. As a result, information on this aspect was not disclosed in this Report.

CUTTING
EDGE
INNOVATIONS

08 SCIENTIFIC AND
TECHNOLOGICAL
DEVELOPMENT



MANAGEMENT APPROACH

The strategic objective of RUSAL is to become efficient and environmentally friendly aluminium producer. To achieve this, the Company invests in its own engineering and technology base, developing innovative technologies and products, and retrofitting production facilities.

The Engineering and Technology Centre (ETC) of RUSAL is the main business unit of the Company in charge of scientific and technological development. It conducts research and development (R&D) and has successful experience in developing and implementing new technologies.

A large amount of research and development (R&D) in the development of products containing aluminium, was carried out in 2018 jointly by the National Research Technological University (NRTU) MISiS and Institute of Light Materials and Technologies of RUSAL (ILM&T) which was created in 2017. ILM&T became a second research centre of the Company and its key task is to develop and market new types of aluminium-based products and materials. Due to concentration of joint efforts, new spherical aluminium alloy powders for

additive technologies were successfully developed and mastered in the production of RUSAL, periodic meetings were organised to discuss the potential direction of development of materials based on aluminium and to develop further strategies for the development of new value-added products.

In order to improve the organisation of R&D planning, the effectiveness of their implementation and the improvement of the quality of the final scientific products, in 2018, the Regulations for planning, implementing and monitoring the implementation of R&D projects were updated.

In 2018, there were no changes in the main areas of RUSAL development, and therefore the Company continues to invest in:

- enhancement of raw material self-sufficiency;
- reduction of production costs and production efficiency growth;
- higher share of value-added products (aluminium alloys) in the total output.

TECHNOLOGICAL PROCESSES AND PRODUCTS

R&D projects contribute to the production of high value-added products, and 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. In 2018, the technology of red mud processing by alumina production facilities was modified with extraction of scandium oxide as a by-product in such a way that the degree of extraction was increased, and the consumption of basic reagents was reduced. As a result, the estimated cost of producing scandium oxide with industrial production was reduced to USD 480/ kg of Sc_2O_3 (55%), which was confirmed at the pilot plant (RUSAL Kamensk-Uralsky). Optimisation of the technology continues in the direction of creating additional improvements implemented at the laboratory level and allowing further cost reductions. The laboratory results are to be verified in the main production area in the first 6 months of 2019.

Products

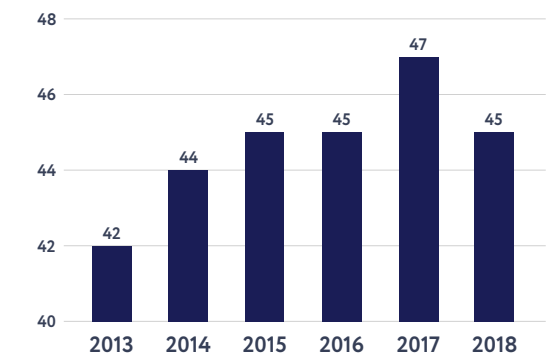
Value-Added Products

As a result of implementation of the Company's innovative development strategy and R&D, changes have occurred in the main areas of activity for the production of value-added products (VAP), which consist of:

- development of a line of cast alloys that do not require quenching;
- development and introduction of new aluminium materials for railway equipment;
- development and introduction of new materials based on aluminium for additive technologies and development of 3D printing technologies;
- expansion of the product line and development of new types of wire rod for electrical products and welding wire;
- development of areas of application of innovative scandium-containing aluminium alloys with lower cost.

The increase in the share of VAP to 55% at the Russian production facilities by 2020 is one of the key strategic objectives of the Company. However, in 2018, RUSAL could not achieve the expected growth in the share of VAP of 50–52% due to the sanctions imposed against the Company. In 2018, the volume of products with high added value amounted to 45% of the total sales (47% in 2017).

Chart 7. The share of value-added products from 2013 to 2018 in percentage of the Company's total sales



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

In 2018, a line of original alloys was developed for additive technologies, the parameters of their printing and subsequent processing, meeting the requirements of key customers from various branches of engineering. The developed alloys have increased 20–50% strength indicators in comparison with similar solutions available on the market. A number of alloys are also designed to operate at elevated temperatures. In addition, work is underway to optimise alloys, which increases the speed of pressing, and to develop new materials and alloys.

Aluminium casting alloys

The development of innovative casting aluminium alloys is one of the key areas, and as a result, work continues on testing new casting alloys in the Asian market. Together with colleagues from Europe – key manufacturers of automobiles and automotive components – a project is being implemented to create aluminium materials that do not require heat treatment for critical and large-sized elements of automobiles. The proposed solutions will provide lightweight rigid structures with high economic efficiency by simplifying the production cycle of the finished product.

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 sees great potential of using scandium alloys in the aerospace, transport and energy sectors.

Powder metallurgy

In 2018, studies on the development of complex technologies for printing and heat treatment of products from new aluminium alloys for additive technologies were completed, and therefore, comprehensive studies of the characteristics of certain materials are being carried out. New materials are being tested when printing in terms of European additive centres with a view to their further implementation when printing products. On the basis of the Institute of Light Materials and Technologies (ILM&T), a laboratory section for 3D printing has been created, providing a complete technological complex of manufacturing, starting from designing and creating a three-dimensional model to finishing technologies for finishing products. Parts were produced at the online request of customers made on the website.

Energy efficient equipment for the production of wire rod

Using ExtruForm technology, Irkutsk Aluminium Smelter (IrkAZ) mastered the production of wire rod for welding wire with magnesium content of 3%. Simulation of the process made it possible to select the required parameters ensuring the absence of defects in the rod. A line was upgraded for the production of alloys with high magnesium content, and in 2019 it is planned to master alloys with 5% magnesium for car spikes and 6% magnesium for welding wire.

Materials and processes

In 2018, work began on the design of production at Achinsk Alumina Refinery (AGK), namely the development of a financial and economic model, project documentation for construction, recommendations on environmental protection and safety of an experimental industrial site with a capacity of 5 tonnes of alumina per day.

In addition, a new production process has been developed for making highly dispersed precipitated aluminium hydroxide, a material that is used as a fire retardant. The stages from the laboratory to the industrial testing of highly dispersed precipitated aluminium hydroxide (VOGA) have already been completed, customers' opinion on the suitability of VOGA in the production of compounds has been received and the market in the Russian Federation has been determined for more than 15,000 tonnes per year, and implementation of the project for the creation of the first stage of 5,000 tonnes per annum on AGK.

The most important changes in comparison with 2017 are the creation of digital twins (mathematical models) of the technology of all alumina refineries belonging to the Company and modelling and selection of a more efficient mixing device for the raw pulp agitator at BAZ, reducing their incrustation. As part of fundamental CFD modelling research methodologies were developed for using the computational fluid dynamics (CFD) method to model the flocculation and decantation processes; the new methodologies are on a par with the best such methods currently available in the world.

PROJECTS AND INITIATIVES

102-11

Quality improvement

Research in the field of casting production has made it possible to achieve customer requirements for metal purity and improve the quality of casting alloys by reducing the hydrogen content to no more than 0.10 cm³/100 g melt and the content of non-metallic inclusions to no more than 1.6% of IA 500. Development and implementation of modern casting equipment allowed us to implement a project to improve the quality of wire rod by eliminating discontinuities and voids during crystallisation of the casting block. For key customers, certification of production technology for slabs from 1070 alloy was carried out, ensuring the complete absence of a 'fan structure' type defect.

Innovations in aluminium production

The Company conducts research and development and introduces new technologies and processes that help solve the tasks relevant for the aluminium industry. At the same time, the Company's specialists are guided by the precautionary principle, comprehensively assessing their potential danger to the environment or human health.^[102-11]

Energy-efficient potcells save the Company annually about 160.3 mln kWh, and therefore RUSAL actively continues to work on their development and implementation.

Of the new developments in 2018, it is necessary to note the creation of design documentation for import substitution of foreign materials in the design of potcells and reduction in the cost of their overhaul for RUSAL Krasnoyarsk JSC, RUSAL Sayanogorsk JSC, RUSAL Bratsk PJSC.

The full-scale implementation of a comprehensive programme to implement the Eco-Soderberg technology at the Company's aluminium smelters continues. Upgraded in 2018 at KrAZ – 254 potcells, at BrAZ – 66 potcells. To adapt the technology at NkAZ, the pilot area has been expanded to 20 potcells. In five potrooms at KRAZ the gas ducts under the potrooms have been equipped with state-of-the-art automated pneumatic impulse cleaners. The deployment of the Green Soederberg process reduces emissions of contaminants into the atmosphere to levels compliant with environmental regulations, while reducing the consumption of electricity, significantly cutting the amount of work in progress and increasing the service life of reduction cells.

An important event in 2018 is also the launch of the pilot area Eco-Soderberg at RUSAL Volgograd. Moreover, in 2018, technical solutions for the design of an industrial potcell with inert anodes were tested, such as a system for stabilising the heat balance and a power supply system for alumina. All tests were carried out on the industrial site of the Company's aluminium smelter, on prototypes of a potcell for a current of more than 120 kA.

As competition intensifies and customers are making ever stricter metal quality requirements, the Company launched a number of projects to achieve a competitive edge and maintain its market share:

Table 14. Key retrofitting projects

	Production facility	Project	Result/Target for 2017	Result/Target for 2018
Production of metallurgical products	Krasnoyarsk Aluminium Smelter	Construction of casting system for the production of slabs (completion of the project in 2018)	Organisation of new products production at the production facility – billets (up to 120 thousand tonnes per year), including those with large diameters – up to 457 mm, previously not produced by the Company. The technology for casting and soaking has been worked out, and experimental batches have been produced.	In 2018 KRAZ completed the construction of a new casting system for making homogenised billets in diameters from 8" to 18" cast using the Airslip technology, which should give an extra competitive edge to our Company and ensure that we can keep our customers. In 2019 work will continue to achieve design capacity at the system (120 thousand tonnes of product per year).
Reduction of Costs and Production Efficiency Growth	Bratsk Aluminium Smelter	Production and installation of units for the heating up and filling of cathode block assembly with cast iron (completion of the project in 2018)	Lower energy consumption of aluminium production by over 100 kWh/t per tonne of aluminium.	The project is completed. Reduction in energy consumption by 174 kWh per tonne of aluminium has been achieved.
	Volgograd Aluminium Smelter	Arrangement of the release of up to 104 thousand tonnes of baked anodes per year (the project is in the final stage)	Reducing dependence on foreign supplies.	VgAZ began experimental production of baked anodes. The project provides for the release of 104 thousand tonnes of baked anodes per year.
Increase in production	Irkutsk Aluminium Smelter	Project of amperage increase of the potline no 5 up to 330 kA (completion of the project in 2018)	Additional production of 6 thousand tonnes of aluminium per year.	In order to reduce electricity consumption per tonne of output and boost the output of crude aluminium the reduction amperage was increased on the fifth potline at IrkAZ. The APCS system was retrofitted, new re-designed dispensers were installed on the automated alumina point feeding system, the bag filters of the gas scrubbers have been replaced. Tests confirmed that the reduction cells can operate at an amperage of 332 KA.
	Volgograd Aluminium Smelter	A project is underway to launch two potrooms; in 2017, 117 reduction cells have been repaired and put into operation (at the final stage).	Resumption of aluminium production – 67.5 thousand tonnes per year.	The project was successfully completed in April 2018. 166 potcells have been put into operation. The annual aluminium production in 2018 was 63.9 thousand tonnes.
Calcined coke production	Irkutsk Aluminium Smelter	Launch of a retrofitted calcination furnace No 2 for the production of calcined coke for the production of calcined anodes (the project is in the final stage)	Import substitution of calcined coke for Sayanogorsk Aluminium Smelter at the level of 72 thousand tonnes/year.	In March 2018, IrkAZ's calcination kiln achieves design capacity of 9.5 tonnes per hour of calcined coke, marking the completion of the project aimed at retrofitting it. The kiln new output of 69.7 thousand tonnes per year of petroleum coke calcined in-house in 2018 allowed the Company to reduce the amount of imported petroleum coke it has to buy for the SAZ carbon plant. The quality of the calcined coke produced in-house meets all the requirements and matches the quality of the imported raw material.
Powder metallurgy	Joint Venture With Runaya Metsource Llp, India	Production of high-tech aluminium pastes and powders with a wide range of applications, including in innovative industries. In 2017, an agreement was executed to establish a joint venture in India. (production will start in 2018)	The design capacity of the production facility will be about 10 thousand tonnes of products per year.	Parties are continuing consultations on the choice of the best project implementation option.

Table 15. The results of the activities and plans for 2019

	Activity	Results of 2018	Plan for 2019
Automated process control systems (APCS) and infrastructure	Long-Term Programme to Increase Reliability of APCS Equipment	Modernisation of APCS systems, replacement of controllers, devices, flow meters and actuators was performed for 34 events	For 2019, more than 60 measures are planned to modernise the APCS systems, replace controllers, devices, flow meters and actuators
	Automated system for technological metering of electricity/Automated operations dispatch control system	A project has been launched to equip metering devices, to create an automated system for technical accounting of energy resources and dispatching control of electricity for the first stage (SAZ, AGK)	Completion of construction and start-up of commissioning
	Networks	A project was launched to upgrade the fiber-optic communication line of SAZ. A scheme has been developed for deploying communication channels based on mobile networks to quickly cover remote sites for stage 1 (SAZ, AGK)	The design of fiber-optic communication networks has been completed, the deployment of networks has begun. Full coverage of SAZ and AGK with mobile data networks
Production processes management system (Manufacturing Execution System – MES)	Production Management Centre (PMC)	The concept of PMC was developed, the development of technical implementation was launched	Implementation of the pilot PMC on KhAZ
	End-to-end functionality of MES (unified system for collecting and presenting technological information)	The choice of platform for the target system (single technological data storage; production scheduling; production analytics and reporting)	The implementation of the project on the first stage for SAZ, AGK
	Basic functionality MES (accounting for the production of Aluminium Division)	The development of a unified solution for the automation of the casting area and introduction of key modules at KrAZ, SAZ, BrAZ	Comprehensive deployment of a unified solution at key aluminium smelters
	Advanced MES functionality (machine learning)	The machine learning based prediction model has been tested in a pilot volume (KrAZ and BrAZ), and the applicability of predictive technologies has been confirmed.	Implementation of integrated machine learning models and introduction of relevant systems into commercial operation
	Laboratory (Laboratory Information Management System)	The implementation of a unified platform for the automation of laboratories on the first stage of SAZ, AGK	Commissioning of the first stage in SAZ, AGK
Corporate systems	Quality Management System	The target platform was selected and a project was launched to automate key processes of RUSAL quality management system.	Implementation of key quality management system modules for Aluminium Division has been completed
	Repairs and maintenance management	The project on mobile maintenance and repairs has been launched – automation of bypasses in the casting department of KrAZ and for pumping equipment of AGK	Circulation for casting departments of aluminium smelters and pumping equipment for alumina plants

ACHIEVING
HIGH
STANDARDS

09 ENVIRONMENT PROTECTION

103-1,103-2,103-3,307-1 Non-compliance with environmental laws and regulations)

APPROACH

RUSAL's environmental protection policy seeks to minimize the impact of the Company's operations on the environment and natural resources and comply with requirements of environmental laws and regulations to the maximum extent possible.

The activities of 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, RUSAL focuses primarily on the following environmental documents:

- 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.

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:

- emission of pollutants from stationary sources;
- discharge of pollutants into water;
- waste disposal.

With a view to minimizing the impact of the Company's operations on the environment and natural resources, the Company implements a strategy of consistently improving environmental performance and reducing climate impact:

- on newly commissioned facilities through the use of advanced and best available technologies;
- at existing enterprises with implementation of the following measures:
 - modernization of existing production in order to achieve indicators of the best available technologies;
 - replacement or modernization of outdated gas cleaning equipment;
 - construction of new gas treatment facilities with a "dry" method of gas purification of its own design;
 - introducing automated systems of pneumatic conveying of pure and fluorinated alumina in electrolysis housings to reduce lantern emissions;
 - creation of systems of closed circulating water supply or construction of modern sewage treatment plants to exclude discharge of wastewater without treatment, if it is impossible to create systems of closed water circulation;
 - construction of facilities for the preparation, processing, disposal, recycling and disposal of waste to the consumer;
 - construction of modern waste disposal facilities to ensure their long-term and reliable storage and/or burial;
 - replacement and disposal of electrical equipment containing polychlorinated biphenyls (PCBs);
 - conducting high-quality reclamation of disturbed lands and decommissioned waste disposal facilities;
 - development of technology for obtaining new products from waste for internal sale or sale to third parties;
 - operational improvements and improved manufacturing practices;
 - increasing knowledge and awareness of personnel about the impact on the environment, climate and opportunities to minimize this impact;
 - increasing personal responsibility of staff by establishing personal key performance indicators;
 - applying the internal carbon price when deciding on the implementation of development projects to minimize the risks of growth of the carbon footprint of products.

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. Corrective actions are developed and implemented to address these inconsistencies or discrepancies (detected violations).

During the Reporting Period, the Company was in compliance with the relevant laws and regulations that have a significant impact on the Company relating to the air and greenhouse gas emissions, discharges into water and land and generation of hazardous and non-hazardous waste. 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 made timely payments for adverse environmental impacts.

In 2018, there were no significant violations of relevant laws and regulations that have a significant impact on the Company or could lead to the emergence of risks for the Company's operations.

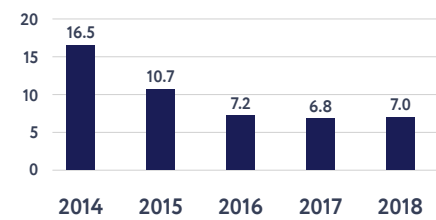
MAIN RESULTS

In 2018 there were no significant incidents connected with and significant fines and lawsuits related to spills, air, water and soil pollution. Environmental fines in 2018 were not substantial and amounted to USD 18 thousand, in 2017 – USD 36 thousand (~ 0.3 % of the amount of fees for Negative Environmental Impact).

Table 16. Fines for non-compliance with environmental legislation or environmental regulations. ^[307-1]

Year	Total amount of fines, USD	Number of fines
2018	17,582	25
2017	35,920	29

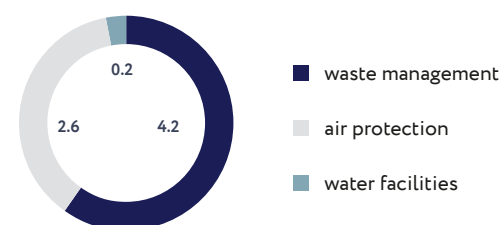
Chart 8. Environmental (state) charges for environmental pollution, USD million



In 2018, the amount of payments for environmental pollution increased by 3% compared to the previous period and amounted to \$ 7.0 million, which is mainly due to the inflation coefficient, which is taken into account when calculating fees in the Russian Federation. In the cost structure, the largest share is accounted for payments for waste disposal – 60%, payments for emissions into the atmospheric air made up 37%, to water bodies – 3%.

There were no significant incidents related to spills, pollution of the atmosphere, water resources and soil, as well as the associated fines and lawsuits.

Chart 9. Structure of environmental charges and fines for environmental pollution, USD million



In 2018, 97 inspections by environmental authorities were carried out at the Company’s enterprises, the number of inspections increased by 4% compared with 2017). The amount of environmental fines amounted to US \$ 18 thousand, in 2017 US \$ 36 thousand (~0.3% of the amount of payment for the negative impact on the environment).

PLANS FOR 2019

As an environmentally responsible company, 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 unmoulded 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 coal-tar pitch from coal to form anodes for the reduction area that reduce pyrene emissions by 10 to 15 times, to a minimum level

In 2019, among the important tasks and plans of the Company are noted:

Management and monitoring

The following tasks and plans are among the important ones for 2019:

- development of programs to improve the environmental performance of enterprises
- development of principles / recommendations for the gradual transition of RUSAL enterprises to rationing based on the best available technologies (BAT) and obtaining integrated permits
- consolidation of technological and hygienic regulation
- selection of optimal solutions for automatic production control

Air protection

- implementation of measures aimed at achieving the maximum permissible limits for emissions to atmospheric air
- construction and modernization of gas-purifying plants
- modernization of production in the framework of the project “Eco-Soderberg”

Climate change

- development of a corporate greenhouse gas emission control system
- carbon footprint accounting for the entire supply chain from bauxite to final products

Land resources

- reclamation of disturbed lands

Water resources

- minimizing risks of enterprise in the field of discharges into centralized sewage systems

Waste management

- carrying out transitional measures for the reconstruction and modernization of sludge fields, the construction of modern waste disposal facilities
- minimization of enterprise risks in the field of waste management
- work on the development and implementation of technologies for the processing and use of waste

LAND RESOURCES AND BIODIVERSITY

MM1, MM2, MM3, MM10
HKEX KPI A3.1

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

The enterprises of RUSAL are located in different regions and countries of the world, while the main production facilities of the Company are located in Siberia, which is an ecoregion with unique flora and fauna.

In accordance with the sustainable development principles, the Company aims at preserving biological diversity.

The Company conducts activities within the framework of the monitoring programme of anthropogenic (industrial) impact on the ecosystems of the State reserve "Stolby" in Krasnoyarsk. As part of the monitoring program, the study of ecosystem components such as soil, vegetation, water, sediments, as well as the state of snow cover is carried out. An integrated approach to the study of the chemical composition of various ecosystems allows to isolate those chemical elements that are pollutants and are introduced into the natural environment from the outside (aerogenic pollution from industry, transport, fuel energy), to separate them from those that are background for the reserve.

Together with the National Fund "Strana Zapovednaya" National Park "Shushenskiy Bor", nature Reserves "Khakassky" and "Sayano-Shushensky", the Company has been implementing during a number of years the project "Ecological monitoring" (Monitoring of protected areas) in the area under the influence of industrial facilities of the RUSAL group companies. The monitoring is carried out in the administrative districts of the Krasnoyarsk territory (Shushenskiy, Ermakovskiy, Kuraginskiy, Karatuzskaya, Minusinskaya) and the southern Republic of Khakassia. Field works were carried out on the territory of 18 pine forests located both in the area of impact of emissions of aluminum plants and outside. In addition

to determining the content of fluorine in the needles of Scots pine, the objects of research were also the leaves and branches of other species of trees. The results showed that in General the fluorine content in the vegetation and soil does not exceed the permissible values.

The staff of the Institute of biology, Komi scientific center, Urals branch of RAS are monitoring aquatic biological resources of the river Vym at the project area of Boksit Timana. The monitoring data of the fish population showed that the quality of water and the natural environment are not subject to intensive technogenic pollution. The analysis of the monitoring results showed that the depression of the main commercial fish species remains, the main cause of which is recognized as overfishing, which is not related to the activities of the enterprise.

The results of the monitoring allow to assess the state of the environment today and, if necessary, to adjust environmental activities and design solutions to reduce the negative impact of the development of industry in the region. No significant risks to biodiversity were identified as a result of the monitoring. Research materials are also a unique, regularly updated scientific database of natural areas of the Northern regions of Russia.

Disturbed lands

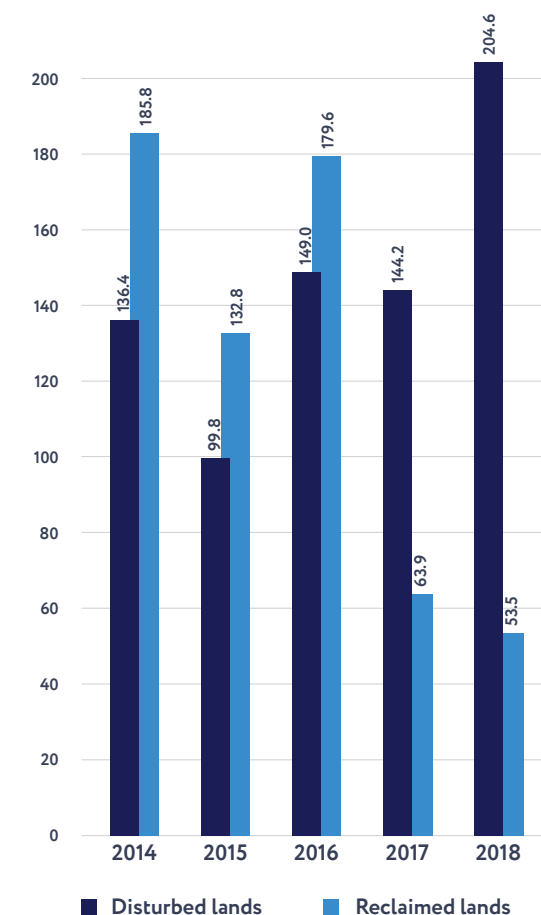
At the end of 2018, at the Company's enterprises, the total number of disturbed lands was 7,270 hectares (2017 – 6,817 hectares), including the following types:

- mud deposits, industrial waste landfills – 3 401 hectares (47%), (3 530 hectares in 2017);
- quarries and dumps – 3 394 hectares (47%), (2017 – 3 824 hectares);
- other areas requiring restoration – 475 hectares (2017 – 463 hectares).

Table 17. Area of disturbed and reclaimed land, hectares ^[G4 MM1]

Total area of disturbed, but not yet recultivated land of the open-cut mines at the beginning of the period	Total area of disturbed land of the open-cut mines during the reporting period	Total area of recultivated land of the open-cut mines for agreed end use during the reporting period	Total area of disturbed of the open-cut mines, but not yet recultivated land at the end of the period
2,742.55	204.63	53.47	2,849.22

Chart 10. Ratio of disturbed and recultivated land, hectares



The ratio of recultivated land to disturbed (remediation coefficient) – 0.33 (2017 – 0.44). The increase in the area of disturbed land in connection with the development of deposits at Boksit Timana and Dian-Dian projects.

In 2018, 28.7 million tons of overburden were formed, of which 19.8 million tons were placed, 8.8 million tons were used/transferred.

Table 18. Total overburden volumes and associated risks ^[G4 MM3]

Divisions	Volumes of formed overburden, tonnes
Aluminium Division	0
Alumina Division	28,132,944
New Projects Directorate	525,542
Downstream Division	0
Total	28,658,486

WATER RESOURCES

[HKEX KPI A3.1]

Approach

One of the Company's strategic goals is the creation of a closed water supply system at production capacities that will reduce the need for water use and reduce wastewater discharged.

The quality of wastewater discharges at production facilities of RUSAL is regulated by local legislation.

Results ^[HKEX KPI A2.2]

In 2018, RUSAL did not perform the water intake in the regions with the observed water deficit is not implemented. ^[303-1] The seawater intake, amounted to 22,864,880 m³ in 2017, and 25,471,600 m³ in 2018. ^[303-3] The sea water is used only in the Aluminium Division.

Table 19. Fresh water consumption, ^[303-5]

	Total water consumption	
	2018	2017
	3	
Aluminium Division	26,937.80	25,572.39
Alumina Division	115,127.16	123,366.99
New Projects Directorate	1,691.40	2,814.38
Downstream Division	3,754.05	3,363.38
Total	147,510.41	155,117.14

In 2018, there were no significant changes in water reserves as a result of RUSAL's business activities and the Company did not have any issue in sourcing water that is fit for production purposes.

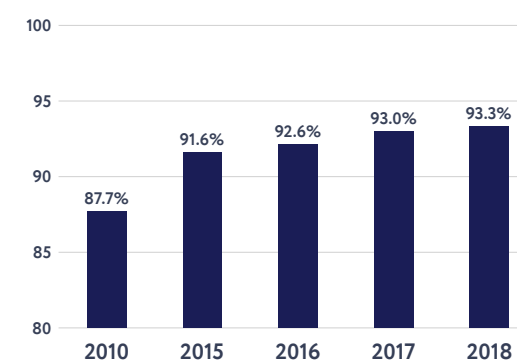
According to the legislation, there is a limit on water consumption and discharge which all production facilities have to observe and no violations on this aspect have been found. ^[306-5] Efficiency initiatives with the objective of creating closed recycled water supply systems for key production processes at the Company's production facilities are beginning to result in declining water consumption. The Company also proactively adopts water-saving measures including the use of recycled water, conducting regular inspection of water supply facilities to prevent leakage or wastage, monitoring water usage, investigating and taking remedial actions for abnormal water usage, as well as raising awareness of employees in water saving knowledge.

In 2018, the intake of fresh water decreased by 7.6 million m³ (4,5%) compared to 2017, and the consumption of fresh water for production needs decreased by 10% compared to 2017.

Reduction of fresh water consumption to 2008 – 82.6 million m³ (36%).

In 2018, the consumption of fresh water for production needs amounted to 6.7% of the total water consumption used for production needs (the sum of water consumption in the water circulation and reuse water supply systems and fresh water consumption), in 2017 – 7.0%, in 2016 – 7.4%, in 2015 – 8.4%. The strategic goal is set at 100% of enclosed water supply for the main production processes across the entire Company by 2022.

Chart 11. Share of recycled and re-supplied water intake



The main consumers of water resources remain alumina refineries, related to the technological specificity of alumina production. The share of alumina division accounts for 75% of freshwater consumption across the Company. The share of aluminium production in the volume of

water consumption during the reporting period was 16%. The average intensity of use of fresh water entirely at the Company enterprises is 39,5 m³ of water per each tonne of aluminium produced, including 21,4 m³ of water per tonne used directly for production needs.

Discharge of industrial wastewater in 2018 slightly increased compared to 2017 – by 0.6 million m³ (2%). Reduction of discharges compared to 2008 – 55.0 million m³ (62%)

The Company provides risk management measures, including those related to spills, which are described in detail in terms of risk management. ^[306-3] There are no significant risks associated with water use.

The main sources of water intake are: surface waters; underground sources; city networks; sea water (only at KUBAL production facility for cooling in the casting production and cleaning discharges).

Table 20. General water intake for the needs of the production facility^{1,2}

Source type	Unit of measurement	Year	Total water withdrawn (only fresh water)
Ground water facilities	m ³	2017	102,590.47
		2018	102,029.09
Underground	m ³	2017	24,423.80
		2018	14,931.92
Urban networks	m ³	2017	18,272.96
		2018	17,095.81
Other sources	m ³	2017	9,829.91
		2018	13,453.59
Total	m³	2017	155,117.14
		2018	147,510.41

¹ Data excludes seawater use. Seawater is used only at KUBAL.

² Data excluding BCGI, CBK, Friguia – these production facilities do not have accounting systems.

Chart 12. Trends in the drawing and use of fresh water for production needs, million cubic meters

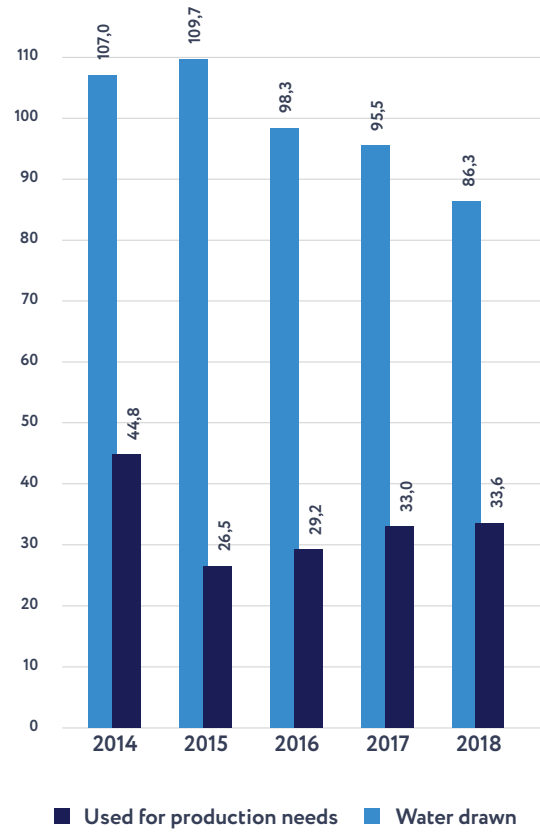
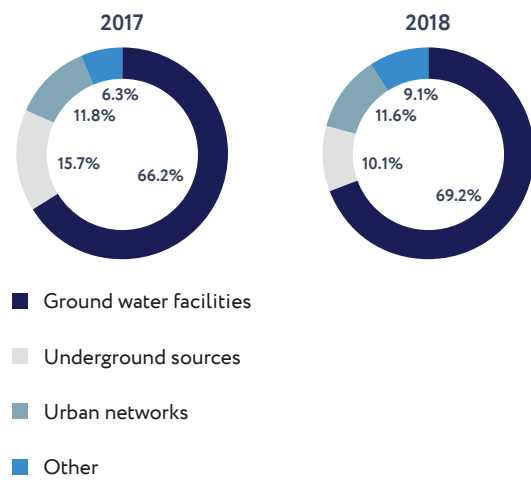


Chart 13. Water intake by source, %

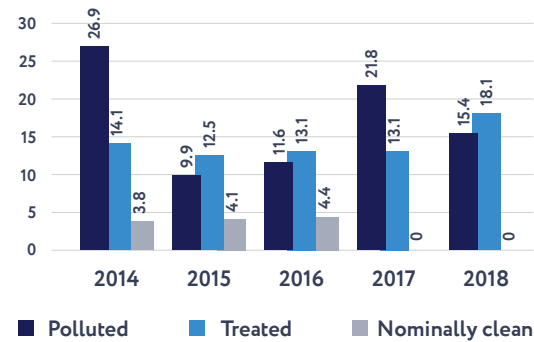


The discharge occurs only in surface water bodies. The following water categories are discharged: regulatory clean without treatment; regulatory cleared; polluted.³

Table 21. Total volume of wastewater discharges in megalitres broken down by types of water bodies-discharge points, thousand m³ [303-4]

	2018	2017
Aluminium Division	228.28	224.59
Alumina Division	33,327.97	32,785.04
New Projects Directorate	2.28	2.28
Downstream Division	0.00	0.00
Total water discharged	33,558.53	33,011.91

Chart 14. Dynamics of industrial wastewater discharges, million cubic metres



Data on unplanned discharges is collected only in the event of accidents, as a result of which an investigation takes place, the volume is determined, and appropriate mitigation measures are taken. In 2018, no such cases were recorded.^[306-1]

The Company annually assesses its impact on water resources through industrial environmental monitoring.^[303-1]

³ Career, mine, drainage and storm water are not taken into account in production and will not be reflected here.

ENERGY CONSUMPTION AND ENERGY EFFICIENCY

HKEX KPI A2.1, HKEX KPI A2.3

The Company seeks to continuously reduce the share of energy costs in the cost of production. Energy efficiency is one of the priorities that are taken into account when developing new technologies. The following measures are performed to achieve this goal:

- constant monitoring of energy consumption is carried out in order to control while searching for new technologies and accounting tools to realize possible energy savings;
- when carrying out major repairs, designing and operating equipment, the energy efficiency of the technologies used is assessed in order to find possible improvements;
- carrying out the design, overhaul, equipment operation, preference is given to those materials and equipment that in the future will provide reduction in energy consumption;
- other measures, including the control and reduction of heat losses, use of energy-saving lamps instead of incandescent lamps, etc.

The Company is committed to the efficient use of energy and the reduction of associated carbon emissions. During the reporting year, the Company's key energy efficiency initiatives, amongst others, included the use of renewable energy, such as hydropower in the Company's production process, purchasing electricity from carbon-free generation sources for primary aluminium production and reducing electric power consumption by aluminium smelters.

Data collection in respect of energy consumption and energy efficiency changed during the reporting period and enables the Report to include more granular disclosure in this section.

Chart 15. Gas consumption from non-renewable sources in 2017–2018, mln m³



Chart 16. Heavy oil consumption from non-renewable sources in 2017–2018, kilotonnes



Chart 17. Coal consumption from non-renewable sources in 2017–2018, kilotonnes



Table 22. Fuel consumption from non-renewable sources by type of fuel units of measure adopted in RUSAL ^[302-1]

Вид топлива	Год	Дизель	Мазут	Газойль	Сниженный природный газ	Керосин	Природный газ	Уголь
UoM		mWh	mWh	mWh	mWh	mWh	mWh	mWh
Total	2018	1,013,984	4,234,494	15,543	61,283	1,836	27,217,367	18,226,866

Table 23. Consumption of energy purchased or received in any way other than generation from non-renewable and renewable fuel ^[302-1]

Type of energy	Year	Electricity consumption	Consumption of heat
UoM		mWh	mWh
Total	2018	65,473,458	904,560

Table 24. The sale of energy in J, W/h or units, adopted in RUSAL ^{2 [302-1]}

Type of energy	Year	Sale of electricity	Sale of heat	Selling of steam
UoM		GWH	Thou Gcal	
Alumina refineries	2018	1,280	2,435	122
	2017	1,201	2,342	239
Bauxite	2018	0.7	0	0
	2017	0.7	0	0
Corundum products	2018	0	248	0.7
	2017	0	247	0.7
Total	2018	1,281	2,684	123
	2017	1,201	2,589	239

Table 25. Energy produced

	Year	Energy produced	Energy produced from renewable sources	Energy consumed out of own generation
UoM		mWh	mWh	mWh
Electricity	2018	4,450,348	127,692	3,699,317
Heat Energy		939,109	0	881,474
Steam Energy		22,893,813	0	15,832,576

Table 26. Energy intensity coefficient ^[302-3]

	Year	Unit measurements – MJ/kWh
Alumina refineries	2018	45.2
	2017	45.4
Bauxite	2018	47
	2017	51.8
Total	2018	92.2
	2017	97.3

In mid-2017, additional capacity was added, which increased electricity consumption as compared with 2018. At the same time, the Aluminium Division implements and develops energy efficiency measures every year in order to reduce energy consumption. ^[302-4] The major project among energy efficiency measures in 2018 was installment of 626 energy-saving electrolyzers, which consume by 160.3 million kWh less per year.

Energy consumption at the aluminium production reduced by 86,911,354 kWh as a result of implementation of policies and initiatives in the field of energy efficiency, namely due to technological measures in 2018. The average specific energy consumption at the aluminium production decreased by 23 kWh per a tonne of aluminium produced and amounted to 16,211 kWh per a tonne of aluminium produced. ^{[302-4], [HKEX KPI A2.3]}

¹ ОК «РУСАЛ» не потребляет энергию на охлаждение не потребляет пара.

² In RUSAL, there is no sale of energy for cooling.

AIR EMISSIONS AND AIR PROTECTION

305-7

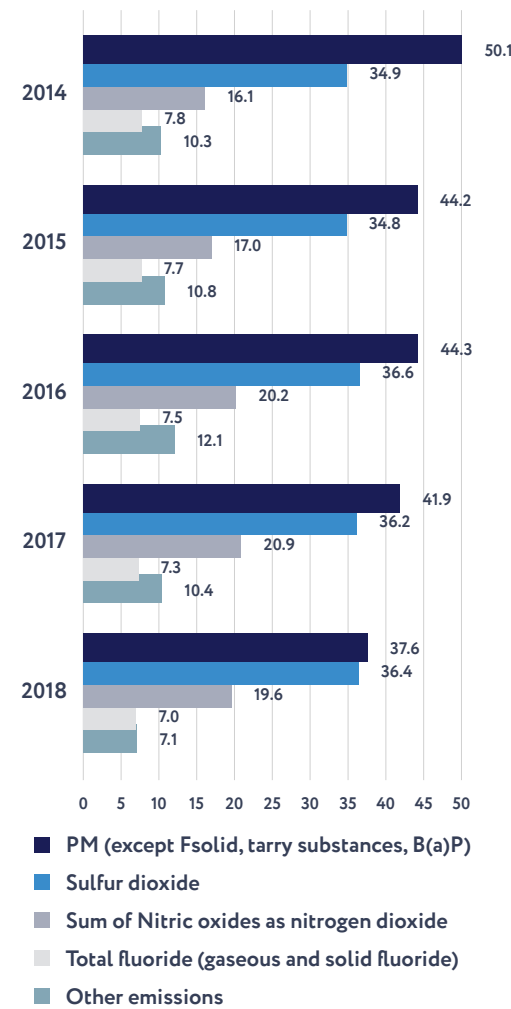
RUSAL strives to comply with environmental legislation requirements in all regions of its presence. In Russia, the company regulates emissions of pollutants into the air in accordance with the Federal Law "On Protection of Atmospheric Air". There were no significant violations of the relevant laws and regulations in all regions where the Company operates during the reporting year. The total financial penalties decreased by 50%, compared with the amount of USD 36,000 in 2017. A few reported breaches have been remedied by the Company and preventive measures put in place to reduce future occurrence.

As part of RUSAL's emissions policy, it uses operational control to implement the consolidation of air emissions, that is, the accounting of all emissions arising in the course of business activities controlled by the Company or its subsidiaries in terms of availability of permits to conduct activities. When implementing this approach, emissions arising from equity participation facilities are excluded from the calculation.

The following chart provides information on the emissions of the most common pollutants, which are subject to regulatory control under the environmental legislation of the countries where RUSAL operates.

Among the pollutants emitted into the air by 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 223.2 thousand tonnes (222.9 thousand tonnes in 2017), or 66.9% of the Company's total emissions. Emissions of this pollutant remained at the level of the previous corresponding period.

Chart 18. Air emissions of significant pollutants, for each of the following types of substances (throughout RUSAL), thousand tonnes. ^[305-7]



The volume of gross emissions was at almost the level of last year (-1.7%). A slight decrease is associated with the implementation of air protection measures at the Company's enterprises (construction of new and modernization of existing gas treatment facilities at the Company's enterprises).

The main effect on reducing emissions and achieving established limits is expected after the implementation of the planned environmental measures in 2022-2024.

CLIMATE CHANGE

HKEX KPI A1.5

As part of its greenhouse gas emissions policy, RUSAL seeks to conduct business in such a way as to minimise the impact of its production activities on the climate. For more than ten years, reducing greenhouse gas emissions is one of the main objectives of the Company's strategy, which includes events and initiatives in the domestic and foreign markets that help to achieve the plan.

Within the Company, there is the greenhouse gas emission regulatory unit of the HSE Department, which is responsible for the effective management of greenhouse gas emissions, improving plans and developing new methods to reduce emissions.

RUSAL is a member of many international climate change groups. RUSAL is also an active participant in the World Bank's initiative – Carbon Pricing Leadership Coalition (CPLC), a global initiative that provides public and private support for the implementation of a carbon pricing system. It is necessary to note the participation of RUSAL in the project of the International Aluminium Institute and the holding of dialogues with the World Resources Institute (WRI) to develop targets (the so-called 'base line') for the global aluminium industry. RUSAL is a member of the European Union Emissions Trading System (EU ETS). Within the framework of this system, the number of quotas that an operator can emit into the atmosphere is transmitted to an operator in a specific region of a participating country. If the operator

emits less than the established quota, the difference between the established quota and the actual amount of emissions can be sold. Under this system, emissions trading is carried out at Aughinish Alumina (Ireland) and KUBAL (Sweden).

Representatives of the Company are part of the expert group of the Russian delegation at the UN climate negotiations, in particular on market and non-market mechanisms to reduce greenhouse gas emissions. RUSAL also actively participates in events held on the sidelines of the UN climate conferences (see details below).

In the framework of participation in the process of forming the Russian internal climate policy, representatives of RUSAL participate in the activities of the Interdepartmental Working Group under the Presidential Administration on Climate Change and Sustainable Development, in the climate-related activities Russian Union of Industrialists and Entrepreneurs, and are also part of the working group under the Russian Ministry of Economic Development on state carbon regulation.

Since 2016, the Company has formed a working group on climate change from representatives of various structural divisions – to coordinate activities on various issues in the field of climate change.

The representative of RUSAL heads the Commission on the Economics of Climate Change and Sustainable Development under the Russian National Committee of the International Chamber of Commerce – ICC Russia, formed in 2018. The Commission formulates recommendations to businesses in the field of "green" financing, carbon regulation, energy efficiency, sustainable development, and the transition to a low-carbon economy.

In addition to international activities, RUSAL continues to participate in the domestic agenda of the Russian Federation – in particular, in the development of a law to regulate greenhouse gas emissions. The company is a member of the Ministry of Economic Development working group, supporting effective methods of state regulation. In 2015, RUSAL undertook to disclose information on greenhouse gas emissions produced by joining the global initiative Carbon Disclosure Project (CDP). Thus, internal work on climate risk assessment is conducted annually and is reflected in the CDP report, which is published and publicly available. At the end of 2018, RUSAL, along with just three other Russian companies, received a 'C' rating corresponding to the world average and well above the Russian average. However, the Company does not plan to stop at the achieved results and is working together with external consultants and receiving recommendations from the CDP on creating a strategy to improve the rating by 2020.

The calculation of greenhouse gas emissions at RUSAL is based on the following methodologies and standards:

- 1) The rules of monitoring and reporting of the European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations);
- 2) IPCC Guidelines for National Greenhouse Gas Inventories – 2006;
- 3) The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard);
- 4) 'Methodology of determination of direct greenhouse gas emissions in the production of primary aluminium', approved by RUSAL Instruction No RGM-17-R220 of April 7, 2017;
- 5) 'Methodology of determination of direct greenhouse gas emissions in alumina production, approved by RUSAL Instruction No RGM-17-R240 of April 14, 2017;
- 6) 'Methodological guidance on quantitative estimation of greenhouse gas emissions from the production of electric power supplied from the Russian energy system', approved by RUSAL Instruction No RGM-17-R225 of April 10, 2017. This methodological guidance establishes the procedure for the quantitative estimation of greenhouse gas emissions by regional and market methods from the production of electric power supplied from the energy system of the Russian Federation.

In 2018, the methodology for calculating direct emissions has not changed compared with that in 2017.

Goals

Up to 2025 RUSAL set itself seven strategic goals in the field of climate change, which allow the Company to annually improve its performance in terms of greenhouse gas emissions through long-term projects:

Table 27. Strategic goals in the field of climate change

Item	Goal by 2025	Performance in 2018
1.	To purchase at least 95 % of their electricity from hydroelectric power plants and other types of low carbon power generation for the aluminium smelters.	As part of the task of purchasing electricity from low carbon generation sources for aluminium smelters, the Company has already achieved its goal. In connection with this, the result of 2018 is to maintain indicators at the same level.
2.	Reduce direct specific greenhouse gas emissions by 15 % in existing aluminium smelters against the level of 2014.	In 2018, the reduction in specific GHG emissions was 7.5% compared with 2014.
3.	To reduce direct specific greenhouse gas emissions by 10 % as compared with 2014 by existing alumina production sites.	In 2018, the reduction in specific GHG emissions was 4 % compared with 2014.
4.	Reduce the specific electric power consumption by aluminium smelters by 7 % as compared with 2011	In 2018, a decrease of 3.8 % was achieved compared with 2011.
5.	Achieve the average of specific direct and indirect greenhouse gas emissions by the reduction department of no more than 2.7 tonnes of CO ₂ equivalent per tonne of aluminium	The goal was achieved in 2017. In 2018, the value was maintained.
6.	To use an internal carbon price when making strategic and investment decisions starting in 2017.	The goal of applying the internal carbon price is fulfilled and the mechanism is actively used in the Company. In 2018, the value was maintained.
7.	Support Russian and international initiatives and associations advocating active actions to prevent climate change and support of greenhouse gas emissions price setting as long as they are aligned with the strategic goals of the Company.	In 2018, RUSAL joined the UN Global Compact Business Leadership Criteria on Carbon Pricing campaign, becoming the first and so far the only member Company from Russia. RUSAL is also the only Russian Company supporting a working group on financial disclosure related to climate change (Task Force on Climate-related Financial Disclosures – TCFD).

The risks and financial aspects related to climate change are described in detail in the CDP report for 2018 and in the Appendix to this Report.^[201-2]

Actions to reduce carbon footprint

According to RUSAL’s long-term development strategy, there are the following strategic priorities and goals of the company:

- Retain the position of one of the most cost effective producers with the lowest carbon footprint in the industry;
- Improve environmental performance of production facilities.

The Company is actively implementing activities and initiatives to reduce greenhouse gas emissions.

Part of the solution to the problem of global warming is the production of aluminium based on renewable energy sources, as well as creation of new cutting-edge electrolysis technologies. RUSAL takes on the role of a leader in reducing the negative impact of the industry on global warming.

Among such projects one can single out the development of a new strategic brand of low carbon ALLOW aluminium. This brand allows the Company’s customers to increase their contribution to achieving global climate objectives. Aluminium under the ALLOW brand is not only a guarantee of a low carbon footprint, but also a demonstration of the complete transparency of our production process and reporting.

The Company is also continuously looking for opportunities to improve the efficiency of processes that help reduce the negative impact on the environment. In the reporting period, ecological modernisation was also continued. Among the main events it is necessary to note the organisation of the installation of an automatic system for feeding alumina and acentral distribution of alumina. At some plants, new-generation potcells with high energy efficiency (RA-400 and RA-550) are already being used and are being planned for use, and potcells operating on inert anodes are being developed and tested at pilot sites..

An important tool to promote an environmental strategy is to train employees in major issues and events of climate change through the use of Clean Step corporate educational programme.

Activities

RUSAL took part in the 24th UN Climate Conference – COP-24 (Katowice, Poland, December 2–14, 2018), including in the formation of the business program of the Russian pavilion – platforms for conducting presentations, expert discussions of representatives of government structures, public organizations, the scientific and business community from Russia and foreign countries. With the support of RUSAL, on December 11, a day of low-carbon materials and products was held in the Russian pavilion, during which Evgeny Nikitin, General Director of RUSAL, and other representatives of the Company and the Russian Partnership for Climate Preservation made presentations. Evgeny Nikitin informed about RUSAL’s climate strategy and the Company’s innovative developments that reduce the negative impact on the environment and climate. In addition, the topic of eco-education and eco-volunteering was covered.

RUSAL also took part in the Russian exhibition “Green Mosaic of Russia” in Katowice, where it presented information about the ALLOW brand, the Company’s volunteer programs and environmental education. On December 13, 2018, a round table was held organized by the Russian Federation on the topic “Russian Investments for the Transition to Low-GHG Emissions”, in which RUSAL also took part. RUSAL made a presentation at the Second Climate Forum of Russian Cities (Moscow, September 2018). As part of the event, a contest of best practices and solutions in the field of climate and environmental initiatives was held, where the RUSAL Green Wave of RUSAL Krasnoyarsk project was ranked third in the Best Eco-Volunteering Project category.

In October 2018, RUSAL participated in the verification of the reports of the Russian Federation under the UN Framework Convention on Climate Change (UNFCCC) and provided the international group of experts with detailed information on the Company’s policies and measures, carbon disclosure reporting in accordance with international standards, as well as ongoing work in environmental education and awareness.

Results in 2018 ^{[HKEX KPI A1.1], [HKEX KPI A1.2]}

Among the results of the Company's international climate change activities are the following:

- In 2018, reporting on greenhouse gases was aligned with the requirements of the Aluminium Carbon Footprint Technical Support Document developed by the International Aluminium Institute and verified by KPMG (see enclosed in the appendix).
- In 2018, RUSAL took part in the preparation of the CPLC publication 'Construction Industry value chain. How companies are using carbon pricing to address climate risks and find new opportunities' (Section about the aluminium industry and RUSAL)
- An assessment of direct climatic risks for companies in the territory of the Russian Federation was carried out and justification of adaptation measures were prepared. It has been established that in the regions where RUSAL operates various natural hazards associated with climate change are recorded. Potential risk is represented by dangerous hydrometeorological phenomena. Regarding dangerous hydrometeorological phenomena in the country, in 2016 and 2017 the leader was the Siberian Federal District, on the territory of which the largest aluminium smelters of RUSAL (Krasnoyarsk, Bratsk, Boguchansk, Sayanogorsk) are located. Strong winds, heavy precipitations and forest/steppe fires are among the dangerous hydrometeorological phenomena affecting the RUSAL's production process. Dangerous hydrometeorological phenomena can also affect the operation of hydroelectric power plants (HPPs) – a key source of energy in the production process of RUSAL (more than 95 % of the energy consumed in aluminium production). Observed and expected climate changes lead to an increase in the occurrence of these phenomena, which is potentially a source of additional risks. The primary adaptation measures can be specialised hydrometeorological services, obtaining advance information on the expected dangerous hydrometeorological phenomena, as well as a comprehensive analysis and consideration of climate risks in the design and reconstruction of production facilities. These measures are important to consider when building new facilities (updated Building Codes and Regulations – SNIps) and when developing emergency response plans (published in Fundamental and Applied Climatology, No 4, 2018).

The Company passed an audit conducted by an independent auditor KPMG, certifying the correctness of the calculation of greenhouse gas emissions. As part of the climate change goals, until 2025, RUSAL achieved certain positive results, namely, it achieved a reduction in greenhouse gas emissions in 2018 compared with the reference year. The Company has established 2014 as the reference year for tracking indicators of greenhouse gas emissions.

In the Russian Federation, greenhouse gas emissions from industrial enterprises in 2018 were not regulated by law. The Company's plants in Europe fully comply with the European greenhouse gas regulatory requirements.

Compared with the section on climate change in the sustainability report for 2017, we have included more granular data in the Report to enhance disclosure and increase understanding of the results achieved.

Table 28. Greenhouse gas emissions

Description	Value of the indicator	Change from previous year, %
Direct greenhouse gas emissions (Scope 1), total, tonnes of CO ₂ equivalent ¹	23,864,929	-8,2%
Indirect greenhouse gas emissions from power generation (Scope 2), total, tonnes of CO ₂ equivalent ²	1,994,749	-34,3%
Indirect non-energy greenhouse gas emissions, not from power generation (Scope 3), total, tonnes of CO ₂ equivalent ³	11,437,789	+6%
Direct and indirect greenhouse gas emissions (Scope 1, Scope 2, Scope 3), total, tonnes of CO ₂ equivalent	37,297,467 tonnes of CO ₂ equivalent	-6,4%
Specific indicator – greenhouse gas emissions per tonne of produced aluminium	9,61	-7,7%

1 Direct greenhouse gas emissions (Scope 1) – emissions, the sources of which are owned or controlled by the Company.

2 Indirect energy greenhouse gas emissions (Scope 2) – emissions resulting from the company's consumption of electricity and/or heat generated outside the Company, as well as emissions resulting from the provision of cooling services or the supply of steam energy for the Company.

3 Indirect non-energy greenhouse gas emissions (Scope 3) – all indirect emissions in the value chain that are not included in indirect energy greenhouse gas emissions (Scope 2).

Table 29. Climate-specific indicator – direct and indirect energy emissions of greenhouse gas per employee ^[305-4]

Description	Value of the indicator	Numerator of the indicator	Denominator of the indicator (only for intensity indicator)	% change from previous year
Direct and indirect greenhouse gas emissions from power generation (Scope 1 and Scope 2) (market) per employee of the Company	404	25,859,677 tonnes of CO ₂ equivalent	64,057	14

The values of direct emissions of greenhouse gases show a decrease in 2018 compared with 2017.

Table 30. Total direct emissions of greenhouse gases in CO₂ equivalent ^[305-1]

UoM	2018	2017
	tonnes in CO ₂ equivalent	
Aluminium smelters	8,727,655	9,064,796
Other production	15,137,274	16,945,225
Total	23,864,929	26,010,021

Direct greenhouse gas emissions in the production of primary aluminium include emissions in CO₂ equivalent from the electrolysis cells, from the production of anode paste (anodes), from stationary combustion of fuel, from mobile sources, from auxiliary processes.

Direct greenhouse gas emissions in the production of alumina include the release in CO₂ equivalent in the preparation of raw materials, in the sintering area, in the calcination area, in the production of soda products, from stationary combustion of fuel, from mobile sources, from auxiliary processes. ^[305-1]

Table 31. Gases taken into account in the calculations ^[305-1]

UoM	2018	2017
	tonnes in CO ₂ equivalent	
CO ₂	22,168,033	23,968,746
CH ₄	21,998	22,542
N ₂ O	49,099	55,973
Perfluorocarbon	1,625,800	1,962,760

The source of emission coefficient are specific emission factors for greenhouse gases of various types of raw materials (alumina, bauxite, aluminium fluoride, baked anodes, etc.), which are listed in GaBi and provided by suppliers of relevant types of raw materials. GaBi is a software for conducting product life cycle assessments.

Sources of global warming potential include:

1. IPCC Fourth Assessment Report (AR4 – 100 year);
2. Results of industrial laboratory control of raw materials;
3. Methodological guidelines and instructions on quantitative determination of greenhouse gas emissions by organisations engaged in economic and other activities in the Russian Federation.

Total indirect emissions of greenhouse gases in 2016 base year significantly exceeded the values of 2017 and 2018 and amounted to 4,920,179 tonnes in CO₂ equivalent. To calculate indirect energy emissions (Scope 2), RUSAL used both calculation methods: regional and market method. At the same time, the table of total amount of indirect greenhouse gas emissions presents data obtained by market method, as more accurate and reflecting the characteristics of the Company's energy sources.

Table 32. Total indirect greenhouse gas emissions from power generation (Scope 2), excluding any greenhouse gas operations ^[305-2]

UoM	2018	2017
	tonnes in CO ₂ equivalent	
Aluminium smelters	877,667	1,633,524
Other production facilities	1,117,081	1,403,963
Total	1,994,748	3,037,487

In 2018, RUSAL achieved positive results, namely, it reduced greenhouse gas emissions due to the activities carried out within the framework of implemented measures and initiatives to reduce greenhouse gas emissions. Total GHG emissions of the Company during the reporting year were 37,297,467 tonnes of CO₂ equivalent and showed a decrease compared with year 2017⁴.

Table 33. Volume of greenhouse gas emission reductions as a direct result of initiatives to reduce emissions in metric tonnes of CO₂ equivalent ^[305-5]

UoM	Changes in greenhouse gas emissions
	in metric tonnes of CO ₂ equivalent
Aluminium smelters	337,141
Other refineries	1,807,951
Total emissions	2,145,092

⁴ The difference in total gross emissions at the end of 2018 was calculated compared with the end of 2017.

WASTE

Approach

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

The Company's waste management policy sets out a number of objectives in hazardous and non-hazardous waste management:

1. For the hazardous waste management:
 - development and adoption of technologies that prevent the negative impact on the environment of existing waste disposal facilities of electrolysis operation (gas cleaning sludge, flotation tailings, lining waste);
 - land recultivation after decommissioning waste disposal facilities
2. For the non-hazardous waste:
 - construction of facilities for the preparation, processing, disposal, recycling and reclamation of waste;
 - construction of modern waste disposal facilities to ensure their long-term and reliable storage and/or burial;
 - conducting high-quality reclamation of disturbed lands and decommissioned waste disposal facilities;
 - development of technology for obtaining new products from waste for internal use or sale to third parties;

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

An increase or decrease in the volume of processing waste generated by enterprises directly depends on the volume of processing of red / nepheline mud and spent coal lining

Table 34. Accumulation of non-hazardous waste at the Company's enterprises

	2018		2017	
	mln. tonnes	%	mln. tonnes	%
Total accumulation of non-hazardous waste	939.0	100%	894	100%
Red/nepheline mud	429	46%	415	46%
Overburden	434.9	46%	403	45%
Spent pot lining	0.632	0.1%	0.726	0.1%

Table 35. Waste management, mln. tonnes¹ [306-2], [HKEK KPI A1.3]

Classes of waste	Year	Generated	Disposed	Recycled
Hazardous waste	2017	0,4	0,0	0,6
Non-hazardous waste		14,8	13,1	2,0
Total		15,2	13,1	2,6
Hazardous waste	2018	0,3	0,0	0,2
Non-hazardous waste		13,8	11,6	1,9
Total		14,0	11,7	2,0

There was no transboundary movement of hazardous waste in 2018. [306-4], [HKEK KPI A1.6]

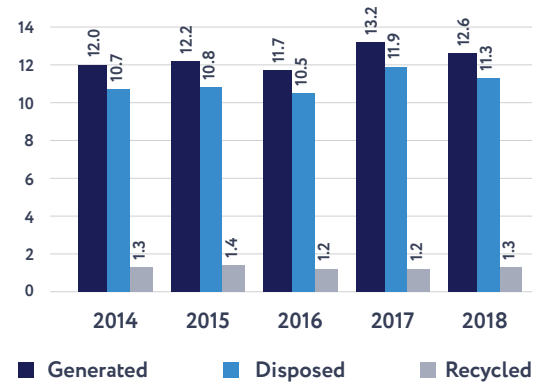
¹ Due to rounding, the total value may differ slightly from the sum of all row values

During the reporting period, the Company has complied with the relevant laws and regulations in respect of both hazardous and non-hazardous waste including the Federal Law "On Production and Consumption Waste" and Federal Law "On Environmental Protection". No irregularities were revealed during the reporting period.

Specific waste

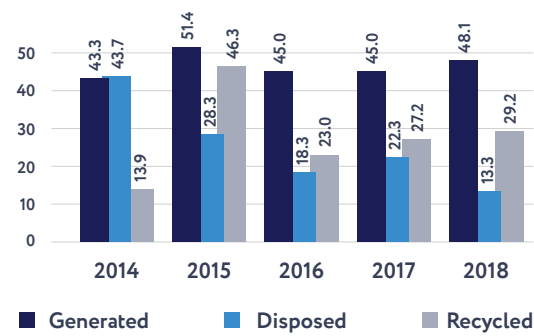
The main (significant) waste of production in the Company in terms of the generated volume is nepheline / red mud formed during the production of alumina (89.7% of the total amount of waste generated). Mud formation is directly related to the growth/decline of production and the percentage of alumina in the bauxite and nepheline ore processed.

Chart 19. Red mud from alumina production, million tonnes



The second most important production waste in the Company is spent pot lining of electrolyzers – a specific waste in the production of aluminum. The volume of waste lining formation is directly related to the number of overhauls of electrolyzers.

Chart 20. Spent pot lining, thousand tons¹



In 2018 compared to 2017, the share of spent pot lining processing did not change.

Table 36. Use of spent pot lining by the Aluminium smelters, %

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Krasnoyarsk	82,1	105,2	46,3	66,9	2,9	2,3	22,8	25	29,5	24,5	88,7
Bratsk	61,5	27,1	44,9	51,9	8,6	9,1	77,1	71,8	57	68,4	52,8
Novpkuznetsk	63,6	22,1	32,6	22,8	3,2	25,4	10,7	2,4	9,7	0,0	0,0
Sayanogorsk	119,3	37,4	19,1	436,8	143,7	1,1	2,5	0,0	0,0	0,0	0,0

The Company implements the following measures to increase the share of recyclable waste:

- processing of spent refractory lining (R & D);
- removal of sulphates from gas cleaning solutions – pilot plants at RUSAL Krasnoyarsk and RUSAL Novokuznetsk;
- extraction of scandium oxide from red mud; a pilot site for the production of Sc₂O₃ was created;
- a pilot-industrial plant for alkalization and dewatering of red mud was installed and mastered at the Ural Alumina Refinery.

¹ In 2015, at the Sayanogorsk aluminium smelter with the generated volume 5.3 thousand tons, 23.2 thousand tons, including previously accumulated, were transferred for processing.

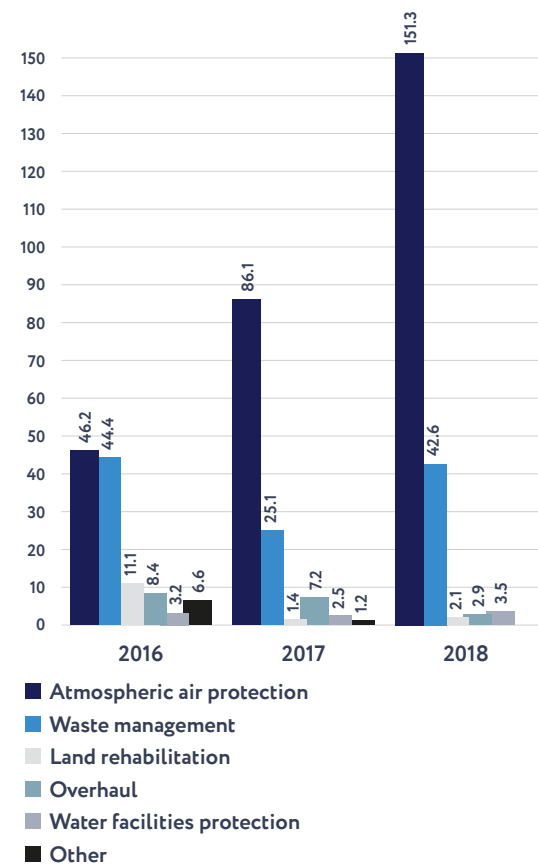
INVESTMENTS IN ENVIRONMENTAL PROTECTION

In 2018, 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 200 million, which was 70% larger than the amount of 2017.

In general, the pattern of allocation of funds to environmental protection areas remained unchanged. The largest share is still spent on the air protection measures and waste management –74% (USD 151.3 million) and 21% (USD 42.6 million), respectively. Waste management costs slightly increased from 20% (25,1 million) in 2017 to 21% (USD 42.6 million), while expenses for the protection of atmospheric air grew by 75% (up to 74,3%) to USD 151.3 million.

The largest projects in the reporting period in the field of environmental protection include the ongoing retrofitting of aluminium smelters, construction and retrofitting of gas treatment equipment, construction and reconstruction of waste disposal facilities.

Chart 21. Investments in environmental protection, USD million



Plans of environmental protection development for 2019 and medium term

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

Continued R&D in the areas related to the use of un-molded materials for electrolyzers lining; development of technology for processing carbon lining and flotation tailings; improving the technology for the extraction of sulfates at the second stage of gas purification and their further processing into marketable products; development of technology for environmentally friendly pitch.

In 2019, 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 standardization 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 standardization selection of optimal solutions for automatic production control

Impact on air

- implementation of activities aimed at achieving maximum permissible standards of impact on air
- retrofitting of gas treatment facilities
- retrofitting of production within the framework of the Eco-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

Waste

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

OVERWHELMING PROTECTION

10 HEALTH
AND SAFETY



APPROACH

The unchanged priority of RUSAL is the work safety of its employees, industrial and fire safety of production processes and production facilities.

In accordance with the policy standards of RUSAL in the field of labour protection, industrial and fire safety, each employee of the Company is obliged to:

- Realise personal responsibility for the life and health of himself and those around him;
- Understand the risks involved;
- Encourage the safe behaviour of their colleagues and contractors by personal example.

The activities of RUSAL in the field of labour protection are conducted in accordance with the laws of the countries where the Company operates, as well as with internal corporate regulations to ensure the implementation of all principles of the Company's policy relating to providing a safe working environment and protecting employees from occupational hazards.^[403-3]

The Company's policy in the field of labour protection, industrial and fire safety sets out the Company's corporate values for ensuring safe working conditions, and also contains the objectives, principles and obligations of RUSAL.

The legislation of the Russian Federation constantly undergoes changes in the HSE area, as a result of which RUSAL also regularly amends the Company's organisational documents in order to reflect the current regulatory and legal acts. Thus, in 2018, the Company began to use the checklists of the supervisory authorities of the Russian Federation to conduct internal checks for compliance with the requirements of labor protection, industrial and fire safety. In connection with the transition of state regulatory organisations to a risk-oriented approach during audits, the Company began updating the internal regulations relating to the conduct/maintenance of checks and audits. In the implementation of its business activities, RUSAL is focused on the following internal documents in the field of labour protection:

- Regulations for unified reporting on labour protection, industrial and fire safety;
- Regulations for internal investigation and analysis of accidents in the field of labour protection, industrial and fire safety;
- Regulations for accounting, investigation and analysis of incidents related to the safety of production;
- Regulations for the management of industrial safety licences and licences (permits) for the environment of the Company;
- Regulations on the management of contractors in the field of HSE, environmental protection;
- Regulations on the organisation and conduct of a special assessment of working conditions at the Company's production facilities located in the territory of the Russian Federation;
- Regulation 'Planning and accounting of costs for labour protection, industrial and fire safety.'









In 2019, a full revision of the policy and its regulations is planned. In 2018, the Regulations on the organisation and conduct of a special audit of working conditions (SAWC) at the Company's production facilities located in the Russian Federation, which was adjusted in accordance with updates in the legislation of the Russian Federation and reissued, was already amended. SAWC covers all activities of RUSAL, as well as all categories of workers. The improvement of SAWC was based on the results of audits, inspections, injury rates and the state of HSE at industrial sites.

Any employee can identify dangerous activities and dangerous conditions. In turn, information can be communicated to management on production job assignments, checklists, hot line, production meetings, days of labour protection, etc.^[403-4]

The regulations of the unified reporting on labour protection, industrial and fire safety unify the requirements for the collection, preparation and provision of information for all business units.

The cardinal rules, which set forth the requirements for the behaviour of workers in order to prevent accidents, became an integral part of the Health, Safety & Environment system at RUSAL. The placement of these rules is carried out in different formats throughout the production facility, the discussion of the rules in the course of induction training programmes motivates employees to follow them, and also changes the perception and values of the Company's people.

Image 4. Cardinal Rules of Work Safety

			
<p>Do not stay in places where harmful and hazardous production factors are present without prescribed personal protection equipment</p>	<p>Do not enter a hazard zone marked with banners, tapes, signs and markings</p>	<p>Do not carry out repair work on the equipment that was not de-energised, not stopped, not fenced</p>	<p>Do not carry out hazardous work without a work permit</p>
			
<p>Do not operate faulty, not inspected lifting structures</p>	<p>Do not work at a height without fall management equipment, with faulty and/or non-stationary scaffolding</p>	<p>Do not attend the workplace in the state of intoxication by alcohol, narcotics or any toxic substance</p>	<p>Do not use electronic mobile devices while operating machines/mechanisms</p>

CONTROL SYSTEM

[403-1]

The Company strives to meet the highest standards in the field of industrial safety and take reasonable steps to ensure the health at the workplace. RUSAL is committed to creating a safe and supportive working environment at the enterprises, providing workers with full information about their working conditions and ensuring the right to working conditions for our employees that meet safety and hygiene requirements. The ultimate goal of the Company's approach, as set out in the regulatory policies regarding labor protection, industrial and fire safety, is to achieve zero injuries.

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 RUSAL business;
- Competency and responsibility of the employees is the foundation for safe work;
- The safe behaviour of the 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.

Goals

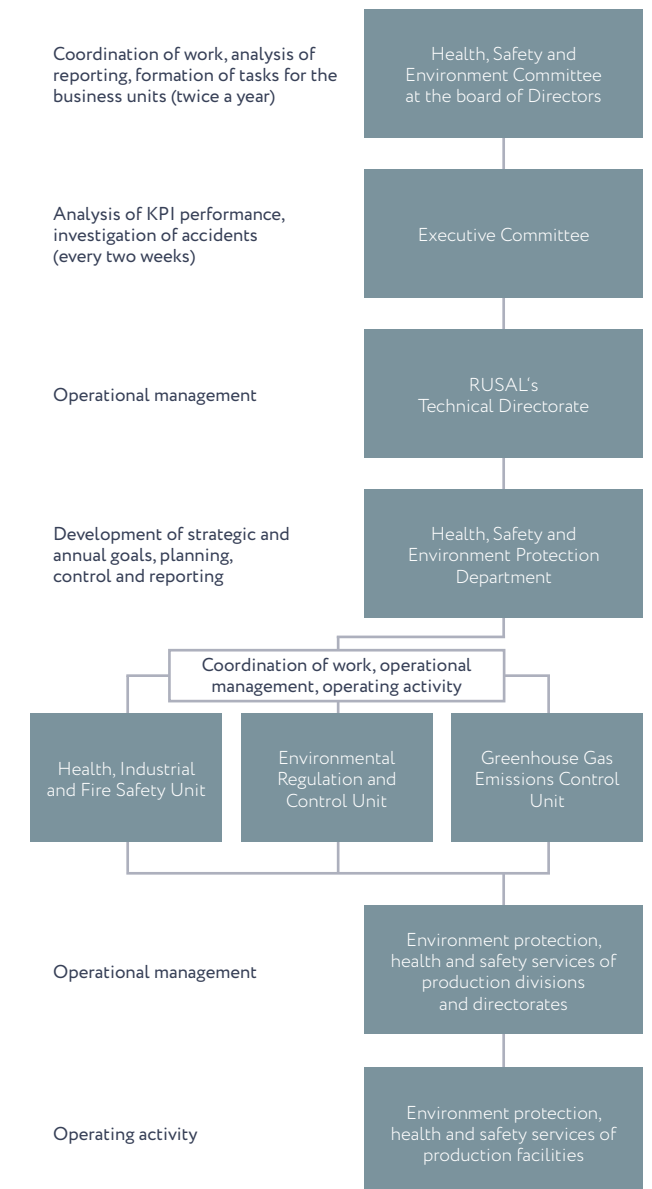
- To strive to eliminate injuries and risk of emergency situations and fire;
- To ensure compliance of equipment and production processes with legal and regulatory requirements of occupational health, industrial and fire safety;
- To ensure personnel safety and health in the workplace and improve workplace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

For RUSAL, the management of labour protection, industrial and fire safety is one of the main priorities of the activity. The Company's management is aware of its responsibility to preserve the life and health of its employees, considering activities in the field of occupational safety, industrial and fire safety, as an integral part of business. Vertical system for the management of health, industrial and fire safety (HSE MS) is designed in such a way that all employees and contractors of the Company are involved in its processes and implementation of necessary measures is done most effectively.

HSE MS was created on the basis of the concept of occupational risk management, which allows the Company to coordinate labour protection activities and prevent cases that harm professional health of employees. In order to achieve its objectives, HSE MS operates at each production facility and includes the following activities:

- Risk management;
- Development of an emergency response plan and emergency procedures;
- Procedure for creating budgets for health, industrial safety and safety measures;
- A system of reporting of accidents and lessons learned;
- A system for ranking and setting the key indicators of HSE assessment and assessment of their achievement;
- Training of staff according to the requirements of the law of the countries where the Company operates and the Company's regulatory documents;
- A system of corporate electronic distance learning and training in safe working methods.

Image 5. HSE Management structure



To guarantee high quality of the state of the labour protection system, control is carried out at several levels of management:

Image 6. Structure of HSE MS



RUSAL also continuously monitors the efficiency of the system by:

- Internal and external audits, design and implementation of corrective actions;
- Auditing the management system in accordance with the requirements of international certifications (OHSAS 18001: 2007);
- Weekly informing the members of the Company's Executive Board about accidents in the field of occupational safety, industrial and fire safety in order to take timely corrective actions to prevent similar accidents in the future;
- by analysing Monthly/quarterly/annually statistical data on then injuries and comparing with data for imilar periods of previous years using the following indicators:
 - Fatality;
 - Lost Time Accident Frequency Rate (LTAFR);
 - Lost Time Incident Severity Rate (LTISR);
 - Accidents due to the violation of industrial safety requirements.

In 2018, within the framework of OHSAS 18001:2007 recertification, 39 internal audits on 39 production sites of the Company and four external audits (RUSAL Global Management, Novokuznetsk Aluminium Smelter, Sayanogorsk Aluminium Smelter, Volgograd Aluminium Smelter) were conducted, as a result of which all issued certificates were confirmed.

In 2019, the Company will continue to work on the harmonization of internal documents with the requirements of the international standard ISO 45001

RISK IDENTIFICATION

[403-2]

In its work on identification and risk management, the Company is guided by the provisions and requirements of the regulatory acts of the countries where it operates. In the Russian Federation, such acts include orders of the Ministry of Labour, instructions of Gosgortekhnadzor, requirements of the State Standard (GOST) and others. The Company also has internal regulations that control activities related to risk identification.

To address issues related to the elimination of hazards in the production and risk minimisation, the Company's employees have access through the following sources of information and channels of communication:

- Website of the Health, Safety and Environment Department (HSE), sites of production facilities (internal and external in the Internet);
- System on notifying leadership about accidents at the Company;
- Hotlines;
- 'Boxes of trust' – special mailboxes that employees can use to send written messages, including anonymous messages;
- Information stands on labour protection.

Risk management status is monitored by production facilities on a quarterly basis, reflecting the quarterly changes in the risk map of the Company's business units and corporate risk map. The Directorate for Control, Internal Audit and Business Coordination on a quarterly basis informs the management and the Board of Directors of the Company about introduced changes and measures to reduce the negative effect on existing or realised risks.

The effectiveness of risk identification and management is one of the elements of a special assessment of working conditions (SAWC), where this work is aimed at eliminating risks or reducing them to a safe level. The well-established mechanism of the risk identification process improves HSE Management System, reducing the possibility of incidents and other emergencies.

Image 7. Risk management process



Identification of hazards is carried out on the basis of the classification of hazard signs to be identified, developed taking into account the specifics of production. Depending on the level of risk, the risk management method and measures for their management are chosen. Effectiveness of the decisions made directly affects the level of injuries and frequency of occurrence (similarity) of accidents. One of the criteria for the continuous improvement of HSE Management System is the lack of repeatability of similar risks when they are identified in comparison with the previous period.

Risk assessment maps are updated:

- Within the period established by the organisation (in the form of review of the results of these processes), but at least once every five years;
- In case of changes in the activities carried out or in the applicable legal requirements for labour protection, industrial safety and other requirements of stakeholders;
- After the occurrence of accidents (microtrauma, accidents, occupational diseases, incidents and outages);
- In case of discrepancy (individual work);
- When engaging in the performance of work of a new contracting organisation;
- When revising the instructions on labour protection;
- In case of technology changes, introduction of new technical devices.

PERFORMANCE RESULTS

The choice of risk assessment method depends on the complexity of the activity/process/work, and the degree of human participation. Selected risk assessment method should correspond to the activity/process/work and be sufficient to evaluate all the significant risks associated with this activity/work.

Image 8. Algorithm of actions in assessing risks associated with production hazards



For the same identified hazard, several measures can be taken to eliminate or reduce the risk, corresponding to different points in the above hierarchy.

Corrective actions are developed taking into account risk level categories:

1. High (risk level is unacceptable and cannot be justified under any context);
2. Medium (risk level must be reduced to acceptable level taking into account costs);
3. Low (risk level is acceptable and does not require further action).

Labour protection risk management system at RUSAL is adapted to the characteristics of vulnerable groups of employees (with health issues, language barriers, etc.). All corporate level guidance documents have been translated into the official languages of the countries where the Company operates and made available to employees upon signature. Employees responsible for

labour protection are fluent in the official language of the country where the Company operates. Employees at risk for certain parameters of health status are observed in accordance with the Regulation on the procedure for the formation and work with risk groups, which means:

1. Performance of periodic medical examinations (PME);
2. Analysis of the results of PME
3. Identification of employees with medical contraindications to work;
4. Ensuring proper employment or dismissal in accordance with the requirements of the Labour Code of the Russian Federation of employees who have medical contraindications to work;
5. Collection of monthly and quarterly information about employed (dismissed) workers who have medical contraindications to work;
6. Constant monitoring of the health status of workers with common diseases (without contraindications) in the Company's business units.

In 2018, 327 audits were carried out at RUSAL production facilities by the supervisory authorities. The results of the audits confirm compliance with the requirements of the relevant laws and regulations in the areas of health, industrial and fire safety and sanitary and epidemiological welfare, including those relevant laws and regulations that have a significant impact on the Company in the area of health, industrial and fire safety. The Company was not aware of any significant violations of relevant laws and regulations in relation to providing a safe working environment and protecting employees from occupational hazards.

RUSAL continued in 2018 to actively work on the prevention, response and minimisation of consequences of emergency situations (ES).

In 2018, at RUSAL Krasnoyarsk JSC, RUSAL Achinsk JSC, a branch of RUS-Engineering LLC in Krasnoyarsk, a branch of RUS-Engineering LLC in Achinsk, a pilot project was launched to create an automated information system RUSAL Industrial Health and Safety (AIS SPA – RUSAL) based on '1C: Production safety. Complex' software. The objectives of this project:

- Providing remote monitoring of labour protection, industrial, fire and environmental safety;
- Implementation of operational risk assessment of outages, accidents and other incidents;
- Combining a single end-to-end methodology for core business processes in the field of labour protection, industrial, fire and environmental safety;
- Ensuring the formation of common data sources in the form of common reference books;
- Improving the efficiency and optimisation of all functional units using the system.

As a result, in 2018, such stages of project implementation as 'Conceptual Design', 'Technical Design', 'Detailed Engineering', as well as preparation for training users of the system were completed.

In addition to innovative programmes, long-term projects were also implemented, the results of which have a positive effect on the reduction of injuries for several periods.

Data on injuries are not broken down by region and business areas due to a significant difference in the ratio of the number of production facilities by country and

the number of employees by production facilities. The existence of such big differences makes it inappropriate to compare indicators that depend on data on the number of employees.

Speaking about the number of fatal accidents with the employees, only 1 out of four fatal accidents occurred in Russia (25%). In comparison with the previous reporting periods, there is a positive trend in this indicator: in 2017, there were 7 fatal accidents (100% in Russia), and in 2016 – 8 fatal accidents, of which 7 (87,5%) occurred in Russia. All cases were investigated and measures were developed and implemented in order to prevent the reoccurrence of such cases.

On November 15, 2018, there was a tragic case of death at RUSAL Volgograd of one person during an explosion while performing an operation on loading the mixer with aluminium powder. The Company took this situation seriously and conducted a detailed investigation that helped to establish the causes. Upon completion of the investigation, measures were developed and conducted to prevent similar incidents in the future:

1. Elimination of the use of extended flexible transporting hoses when supplying aluminium powder;
2. Conducting training for line managers and introduction of a safety management system for production processes (technological risks);
3. Deploying a system of regular audits of the safety management system of production processes;
4. Searching for practically applicable technical solutions for continuous automatic control of the amount of electrostatic voltage on certain parts of the process equipment and (or) in a stream of transferable aluminium powder;
5. Searching for practically applicable technical solutions for the removal of electrostatic charge of the flow of aluminium powder.

LTAFR indicators

This indicator is calculated as the ratio of the amount of injuries with temporary disability (LTI) and injuries that caused the death of the injured (Fatality) to man hours actually worked (MHAW)¹ 200,000.

¹ The nominal foreign currency exchange rate used for recalculating operating expenses of RUSAL was 62.3 roubles per US dollar in 2018.

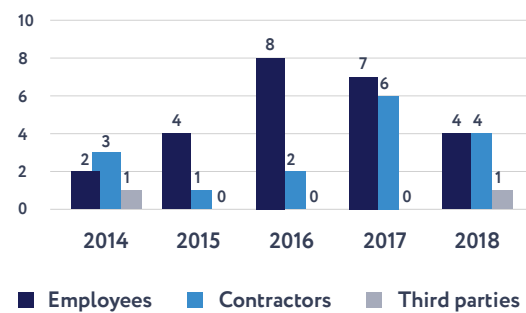
TRAINING

[403-5]

Table 37. Lost Time Accident Frequency Rate (LTAFR) at RUSAL and the global aluminium industry indicator (according to the International Aluminium Institute) in 2013–2018 ^[403-9]

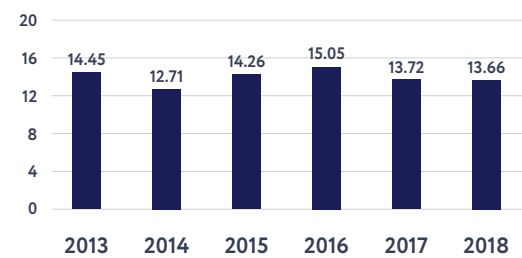
LTAFR	2013	2014	2015	2016	2017	2018
RUSAL	0.22	0.19	0.17	0.18	0.15	0.16
Global aluminium industry as a whole	0.34	0.24	0.26	0.26	0.38	0.22

Chart 22. The number of fatal accidents in 2013–2018 ^[403-9]



In connection with the increasing incidents of violation of labor protection requirements by employees of contracting / subcontracting organizations at the Company's enterprises and in order to strengthen control over them, in 2018, 23 new full-time employees were introduced: reliable control of the compliance with the principles of OHIFS in the contracting organizations. It has contributed to stricter control of HSE compliance at contracting organizations.

Chart 24. Lost time incident severity rate among employees in 2013–2018 ^[403-9]



Since 2016, there has been a trend towards a decrease in the severity rate of injuries with disability.

Training in HSE is provided for all employees, and industrial safety briefings are also carried out on a mandatory basis – introductory (in the office for newly hired employees), primary (on the work place at the plant before beginning the first working day), 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 not less than once a year on occupational health, and every three years on industrial safety.

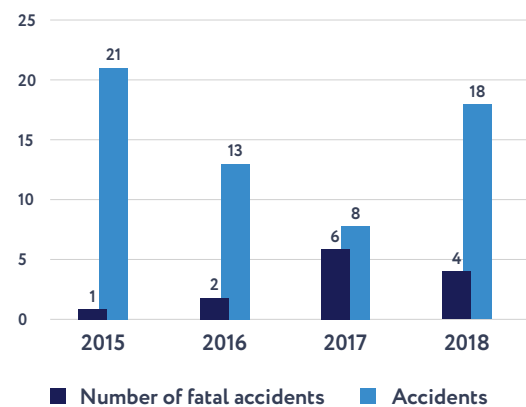
Mentoring is used at the Company's production facilities to allow workers to develop and acquire the necessary skills. A newly employed worker is assigned to an experienced professional who not only controls his actions in the HSE area, but also helps the worker develop a culture of safe conduct.

The framework of training future line managers the Talent Pool project includes coverage of HSE issues.

The Company continues to operate a distance learning system, containing 18 training courses and programmes in the area of HSE.

RUSAL continuously invests in improving the health and safety management system.²

Chart 23. Statistics on accident occurrences with contractor's employees



² From 2017, the calculation of indicators related to operating costs has been changed. Indicators in this Report are presented excluding investment costs. ^[102-40]

SPECIAL SAFETY PROGRAMMES

To attract additional attention to occupational safety at work, RUSAL implements various thematic events (contests, round tables, corporate meetings), and also participates in conferences, forums, and all-Russian exhibitions on labor protection (“All-Russian Week of Occupational Safety”, “Health and Safety” exhibition).

In 2018, all the planned labour protection measures were implemented:

- 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.

Another element of HSE activity is the development of plans to reduce hazardous and dangerous production factors at workplaces in all production facilities, for which responsible persons are also appointed and deadlines are set. Such plans are being negotiated with trade unions and approved by top managers.

An important part of labour protection is the inculcation of safety culture to employees. The Company regularly conducts widespread behavioural safety audits, which are conducted constantly, in 2018, 339,859 dangerous situations were identified, of which 18,078 were related to dangerous actions. Measures were taken to resolve all identified cases.

Resolution of dangerous situations (DS) were achieved in the first instance in 98 % of such cases, the risks in the remaining 2 % of the cases were turned into acceptable risk and subsequently eliminated. Cases of dangerous actions (DA) were resolved 100 % in the first instance. Preventative conversations, extra training and testing of labour protection knowledge, imposition of penalties up to dismissal are applied to violators.

Table 38. Identified dangerous situations and actions

Year	2014	2015	2016	2017	2018
Dangerous situations	377,902	365,893	361,120	339,521	339,859
Dangerous actions	22,127	21,288	23,222	18,230	18,078

Table 39. Projects on Health and Safety improvement ^[403-5]

Project title	Project description	Project performance in 2018
The project to improve the quality of training of crane operators at SAZ	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.	<ul style="list-style-type: none"> – Production training foremen were assigned, 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. – In 2018, due to training measures taken, no accidents occurred with personnel who worked with lifting mechanisms
The project ‘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, Nykolayiv Alumina Refinery (NGZ) has developed a project of safety in the use of loading machines. The project contributes to the improvement of working conditions and occupational safety in the production facility, prevention of injuries and health of workers, as well as safety of basic production facilities.	<ul style="list-style-type: none"> – The project included a questionnaire for the employees to evaluate working conditions through queries and developed a number of proactive measures. – As a result of the measures undertaken, the risks of dangerous situations with loading machines are minimised. – 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.
Project “Safe Series”	Creation of a reference series of electrolysis pot rooms (KrAZ potrooms No. 5 and 6)	<ul style="list-style-type: none"> – Within the framework of the project, stationary anchor lines were installed in the electrolysis pot rooms to ensure safe work at height on the crane runways; – All cranes of the electrolysis pot rooms are equipped with an evacuation system from a height; – Additional training was conducted for staff to assess risks and identify dangerous actions, dangerous situations
Project on transition to remote crane control	Improving working conditions and removing personnel from hazardous working conditions	Within the framework of the project at KrAZ and BrAZ, in the anode masses warehouses, grab cranes were transferred to remote control.

HEALTH

403-1, 403-4, 403-5

Project title	Project description	Project performance in 2018
The project of 'Safety of Third Parties on Guinean Railways' at the Compagnie des Bauxites de Kindia (CBK)	An analysis of the injuries of third parties on the sections of the railway of 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. In connection with the reopening of the complex Friguia in 2018, this project was resumed on the railroad city of Friguia.	In 2018, the following measures were implemented at the enterprises of the CBK and Frigia as part of a project in the Republic of Guinea: 1. The agreement were concluded with the private security firms for the protection of railways and with the police to protect the interests of enterprises in the investigation of incidents. 2. Explanatory work was conducted among the local population living along the railway, in terms of compliance with safety measures. 3. Cleaned drainage channels, cleaning of vegetation along the railway tracks, carried out the repair of the upper structure of the track. 4. Restoration and repair of bridges and fences. 5. Restored / renewed warning signs at road crossings and pedestrian crossings. 6. A number of road crossings, pedestrian crossings and barriers were repaired. 7. Training / instruction of train drivers on compliance with traffic regulations was conducted. 8. Project activities were implemented to ensure sustainable communication along the railway line. 9. As they were discovered, road crossings illegally organized by local residents were eliminated. Accident statistics since the start of the project is listed below. In 2018 the goal of accidents on the railway fatalities. Excess on 1 case.

Additional measures to reduce injuries:

- Equipment of work safety cabinets with complementary training equipment for practical training;
- installation of spherical mirrors in the hazardous areas of the production facilities;
- purchase and installation of training areas when working at height;
- Purchase and installation of the systems of rescue and evacuation from height of crane drivers;
- purchase and installation of the systems of protection against falling from heights during cell maintenance;
- Purchase and installation of the locking systems of LOCKOUT type.

RUSAL's 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.

Medical business units of RUSAL

RUSAL's own corporate medical service plays a leading role in the prevention of occupational and production-related diseases and treatment of the Company's employees. All medical business units of the Company are equipped with laboratory and instrumentation equipment, as well as ambulance transport, and staffed with skilled medical personnel.^[403-1]

There is the RUSAL Medical Centre (RMC) in the Russian Federation, whose main task is to provide highly qualified preventive and emergency medical care, as well as to conduct periodic medical examinations in accordance with the legislation of the Russian Federation. RMC manages a network of 14 medical institutions located in the 9 regions where the Company operates and services over 45 thousand people. Treatment facilities of RMC have 560 employees. RMC provides medical services to the population in the area of presence in nine branches, four of them also work for the population.

All production facilities of RUSAL in Guinea have their own medical service.

Compagnie des Bauxites de Kindia (CBK) has two early treatment centres and three 24/7 posts which examine workers before shift and provide, if necessary, emergency medical care. The early treatment centres have doctors of various fields, including obstetrician-gynaecologist, who receive patient, and a vaccination room. In accordance with the collective agreement, doctors of the early treatment centres provide services to CBK employees and their family members free of charge, as well as provide emergency aid to local residents. Every year, more than 12,000 children consulted and are treated by the medical service of CBK, about 2,000 children are vaccinated against various infectious diseases, and more than 500 newborns are born in the maternity ward.

The medical service of the Friguia bauxite and alumina complex (BAC) consists of two health centres and a hospital with 120 beds. The hospital has surgical and therapeutic departments, maternity hospital equipped with incubators. Since RUSAL's arrival to Friguia in 2006, over seven thousand newborns have been born in the hospital's maternity department. In accordance with the collective agreement, the hospital of Friguia provides services to workers and family members, mothers of the city and provides advice and first aid to residents of Fria free of charge. Every year, it serves about eight thousand patients.

Medical facilities are also available at facilities in Guyana, Nigeria, Ireland and Jamaica.

Inter-Departmental Occupational Risk Management Programme

The Company implements together with Rospotrebnadzor, the Social Security Fund and the regional centres of occupational pathology a Comprehensive Interdepartmental Programme for the Management of Occupational Hazards. The programme includes the following components/main aspects:

- 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 healthy lifestyle programmes;
- 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.

Disease Prevention Programmes ^{[403-4], [403-5]}

Since September 2018, a programme for the prevention of diseases with temporary disability has been implemented, which will last until the end of 2019. The programme is carried out using low-cost technologies such as targeted lectures on major nosologies, memos, bulletins, videos, presentations.

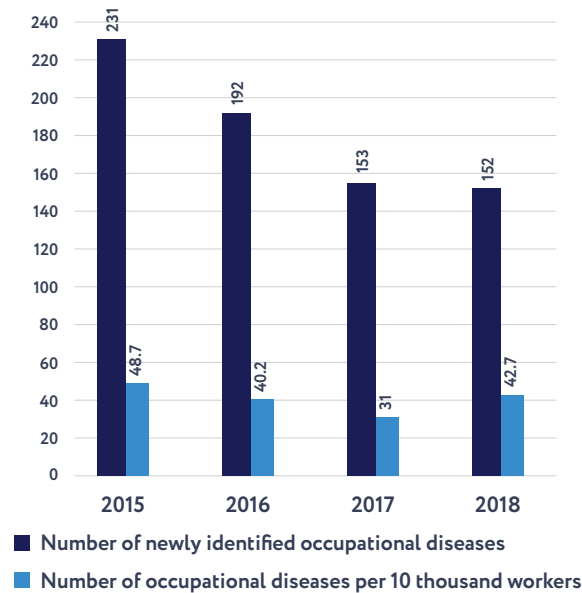
In addition, in 2018, information days on diabetes prevention were organised: during the month preventive measures were held at industrial sites in the area of RMC's presence, including informing employees and providing relevant materials.

Annually, in anticipation of World AIDS Day, awareness days on HIV prevention are also held.

Health Improvement Performance Results

Regular work to improve working conditions at RUSAL in 2018 resulted in a reduction in the number of occupational diseases and diseases of sensorineural hearing loss. According to statistics for the past five years, the number of established occupational diseases among employees decreased by 84 cases, reaching a value of 153 diseases in 2018 (compared with 237 in 2014). A slight increase (by 5 cases – 3.4 %) from 148 in 2017 to 153 in 2018 of the number of established occupational diseases is associated with high-quality medical examinations with participation of the Moscow Scientific and Research Institute of Occupational Medicine, as well as hospitalisation of miners to the clinic of occupational diseases for in-depth examination and treatment. It was an in-depth examination of employees that allowed to identify 2-3 occupational diseases for one employee, which is reflected in the general statistics of occupational diseases.

Chart 25. Dynamics of the number of occupational diseases



The programme of prevention of sensorineural hearing loss has reduced by 5 the number of cases of this disease detected among employees in 2018 compared with 2017. Based on statistical data of the detected disease of sensorineural hearing loss in 2018, there were 29 cases, and in 2017 – 24 cases.

In 2018, pre-shift medical examinations were also automated at industrial sites in the area of presence of RMC, which allows improving the quality and speed of passing such examinations by employees. First-aid training programme was also introduced and is being implemented. In order to implement the programme, mannequins were purchased for the training of employees.

Chart 26. Structure of occupational diseases, cases

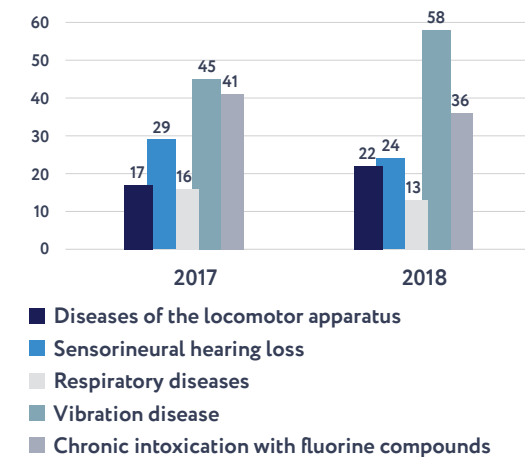
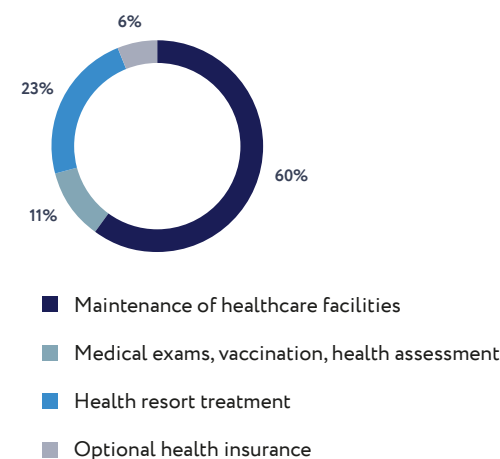


Chart 27. Company expenses for healthcare, RUB mln



Employee vaccination

Annual vaccinations of employees are carried out at the Company's production facilities in 2018 in order to prevent respiratory diseases. 29,027 employees were vaccinated against influenza. By comparison, in 2017, 28,632 employees were vaccinated against influenza.

Vaccination against tick-borne encephalitis, as well as against pneumococcal infection, which is one of the main causes of acute respiratory diseases in the workplace, are carried out in the production facilities of the Company. Moreover, through the efforts of Russian-Guinean Scientific Diagnostic Center for Epidemiology and Microbiology (set up by the RUSAL the Republic of Guinea in 2015), volunteers are vaccinated with the Russian vaccine against Ebola GamEvak-Combi with the support of the Company.

Fight against Ebola in the Republic of Guinea

Having achieved positive results in the fight against the Ebola virus in Guinea, RUSAL continues to take an active part in the improvement of the health care in this country. The research and clinical diagnostic centre for epidemiology and microbiology, which has been opened in Guinea with the support of RUSAL, is one of the most advanced 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.

RCDCEMS continues post-approval studies of the Russian drug against Ebola GamEvak-Combi. The testing programme includes the vaccination of volunteers and monitoring of their health and immune development during one year. By November 2018, 2000 volunteers were vaccinated, which corresponds to implementation of the vaccination programme. Preclinical and clinical studies of the vaccine have demonstrated its safety and more effective stimulation of the immune system compared with foreign analogues. In addition, one of the main advantages of the Russian vaccine is the easier temperature storage mode. The confirmation of the effectiveness of the vaccine in the course of research will allow using it worldwide to prevent the spread of the deadly fever.

TEAMING UP
FOR A SHARED
FUTURE



11 EMPLOYEES

MANAGEMENT APPROACH

Based on the generally accepted principles and norms of international law, and in accordance with the national legislation of the countries of presence, the Company strictly follows the basic principles of legal regulation of labour relations as part of its personnel policy:

- Equal rights and opportunities for workers, non-discrimination on any basis, refusal to use child and forced labor;
- Ensuring the right of every employee to fair and safe working conditions, the right to rest;
- Ensuring the right of each employee to the timely and full payment of fair wages;
- Ensuring the right of workers to unite in order to protect their rights and interests;
- Ensuring the right of workers to participate in the management of the organization in the forms prescribed by law;
- Ensuring the right of workers to the participate in the collective bargaining;
- Ensuring the right of worker to receive compensation for the harm caused to him or her during the performance of his or her job duties;
- Obligation of the parties to the employment contract to comply with the terms of the contract and fulfill their duties;
- Ensuring the right of trade union representatives to exercise trade union control over the activities of the employer in terms of compliance with labour legislation;
- Ensuring the right of workers to protect their dignity during the period of employment;
- Ensuring the right to compulsory social insurance of employees.

The Company provides all the necessary resources for career development to those employees who are productive, with high potential, loyal to the Company and motivated to develop. The first stage of readiness for career development is a stable and high-quality performance by an employee of official duties (maintenance goals), as well as the successful completion of periodic certification at a professional minimum.

During the reporting period, the Company complied with the relevant laws and regulations that have a significant impact on the Company in relation to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.

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 diversity and the dynamic development of the Company. The strategic objective of RUSAL is to be a better employer, a Company that has a professional team, results-oriented and open to new opportunities.

RUSAL carefully approaches the issue of staff recruitment and tries to adhere to an understandable and transparent system. The employment process includes several mandatory steps: Passing an interview with an employee of the HR business unit, assessment of skills and competencies (tests, case solving, completing various other tasks, etc.), passing an interview with an immediate supervisor, and background check by the Security Service.

RUSAL selects personnel in different geographies and video interviews are actively used to communicate with candidates. During the selection, special attention is paid to assessing the professional and personal qualities of candidates. Candidates are provided with detailed information about job responsibilities, tasks, corporate culture in the Company, and career opportunities.

COLLECTIVE BARGAINING AGREEMENTS

The working body of the social partnership is RUSAL Social Council consisting of representatives of the Company and workers' representatives (the trade union), which annually discusses the Company's work and plans, performance of the terms of the collective bargain agreement and other matters. The meetings of the 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. The meetings discuss issues related to labour relations, social security, benefits and guarantees. In 2018, two council meetings were held.

The goals and objectives in the field of social partnership are implemented by the HR Directorate. The

main tasks of the Directorate in this part is to maintain social stability in the areas where the Company operates, maintaining an effective social partnership with trade union.

Collective bargain agreements in Russia and similar agreements in other countries of operations regulate labour relations and social security of workers, including wages, hours of work and rest, health and safety, social guarantees and benefits, and other issues. In Russia, collective bargain agreements are made 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.

Table 40. Number and percentage of employees of RUSAL covered by collective agreements ^[102-41]

Value	2017	2018
Number of employees, persons	39,869	40,506
The number of all employees covered by collective agreements, persons	37,615	38,280
Share of all employees covered by collective agreements,%	94%	95%

Within the framework of collective bargaining agreements, the Company fulfils the following undertaken obligations:

- The minimum wage in excess of the statutory
- Wage indexation;
- The procedure and terms of payment of wages
- Provision of subsidised health resort treatment;
- Financial assistance to employees and unemployed retirees of the production facility;
- Cultural and sports events;
- Transportation of workers to/from work;
- Provision of quality meals to the workers;
- Mandatory and periodic medical examinations, medical insurance;

THE MECHANISMS OF EMPLOYEE APPEALS

418-1

RUSAL employees can contact the direct supervisor, the authorised 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 ^[418-1]:

- The managers of the production facilities hold regular (weekly/monthly) meetings with workers and review personal matters;
- monthly information days are held at the production facilities with the participation of directors of business areas
- Employees can send electronic messages through their account, call the hotline, or use a message 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;
- the collective bargain reporting meetings are held annually. Employees' representatives are involved in 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 Guyana and Guinea, issues of interest to 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.

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.

Moreover, in 2017, a system for setting and evaluating the implementation of personal key performance indicators (KPI) of the employees was introduced. With this communication between a supervisor and a subordinate employee, feedback is constantly provided on his/her performance and objectives are set for the reporting period. To determine the level of satisfaction/involvement of staff in production facilities, monitoring using the following quantitative assessment methods is carried out: face-to-face surveys, questionnaires, computer surveys. Employees are asked to evaluate working conditions, training programmes, quality of services provided by the medical centre or the catering operator.

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 and takes decision in the form of minutes of the meeting. The decision of the LDC is binding. The Company does not apply prosecution or other pressure to its employees, who have used the complaint and communication mechanisms.

STAFF STRUCTURE AND STAFF MOVEMENT

102-8, 401-1

Table 41. Staff structure, persons ^[102-8]

Year	2017	2018	2017	2018
	Employed with permanent contract		Employed with fixed-term contract	
Russia	50,846	52,450	1,969	2,281
women	11,726	12,026	871	1,017
men	39,120	40,424	1,099	1,264
Other countries	7,189	7,216	2,015	2,110
women	1,006	1,032	170	1,202
men	6,183	6,184	1,845	908
	Full-time employment		Part-time employment	
Russia	52,759	54,671	57	60
women	12,558	13,003	39	39
men	40,197	41,667	22	21
Other countries	9,177	9,305	27	21
women	1,168	1,231	7	2
men	8,009	8,074	20	19

Data collection for RUSAL divisions is based on the average number of employees, with the exception of Kindia and Compagnie de Bauxite et d'Alumine de Dian-Dian S.A. in Guinea, as well as Windalco in Jamaica, where the payroll number at the end of the reporting period is used

Table 42. Total number of new dismissed employees ^[401-1]

Age	Up to 30		30-50		Over 50		Всего новых сотрудников	
Year	2017	2018	2017	2018	2017	2018	2017	2018
Total number of new staff who joined the company during the reporting period, persons								
Russia	1,976	2,208	2,111	1,990	272	200	4,398	4,359
women	261	294	364	444	52	33	771	677
men	1,715	1,914	1,747	1,546	220	167	3,627	3,682
Other countries	395	365	573	397	127	107	1,095	869
women	43	54	55	55	16	10	114	119
men	352	311	518	342	111	97	981	750
Total number of employees who left the company during the reporting period, persons								
Russia	982	1,126	1,423	1,734	986	1,006	3,391	3,866
women	108	133	218	264	296	284	622	681
men	874	993	1,205	1,470	690	722	2,769	3,185
Other countries	237	202	387	395	258	294	882	891
women	31	29	40	40	28	18	99	87
men	206	173	347	355	230	276	783	804

TRAINING AND EDUCATION

HKEX KPI B3 (Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities)

Approach

A strong corporate culture, where development and training of employees is given special attention and upholding the values and ethical principles of the Company is a priority for RUSAL. It is important for the Company to attract the best specialists, as well as to nurture their development and growth in order to enhance their professional competencies. To achieve these objectives, the Company uses a variety of training tools that offer programmes for both workers and senior managers. Cooperation programmes with specialised universities are conducted simultaneously, which contributes to the improvement of the quality of general and higher education and to a more specific definition of the set of competencies that an advanced engineer should have.

The Company's personnel training and development system covers all categories of industrial and office workers and all levels of management: from workers/specialists to top managers.

The main principles of the system of training and professional development are:

- **Operational necessity.** The need for training is determined on the basis of the results of the analysis of the necessary competencies (current and prospective) and the current level of professional development of the employee (based on the results of evaluating the effectiveness of his/her work), or by virtue of other reasonable production needs. Training in the Company is aimed at acquiring new skills and competencies as well as at improving existing skills and competencies;
- **Choosing the best teaching methods and programs that meet international standards.** The Company seeks to organize personnel training using the best modern training methods;
- **Training and development of young workers.** Training programs are designed depending on the goals and audience of training, using different methods, forms and means of training.

The Company's personnel training and development activities are regulated by the following main corporate documents:

- **Personnel policy;**
- **Regulations on training and education of personnel of the Company;**
- **Regulation on talent pool.**

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.

As part of the corporate university, a competency assessment centre has been established, which allows remote assessment of both personal qualities, leadership competencies and professional knowledge/skills. Assessment of leadership competencies is carried out on the basis of a refined competency model using a professional personal questionnaire and cognitive tests. Both tools (questionnaire and tests) were introduced in the assessment in 2018 to replace '360 degrees' personnel assessment tool.

Employees of the Company have access to various types of internal training courses^[404-2]. Opportunities for vocational training are offered, including training of a new profession (mastering new functions, raising the level of a profession), as well as vocational retraining (training in second, related professions). In addition to internal training, full funding is offered for advanced training courses or educational programmes provided by third-party organisations, based on the received and agreed applications (seminars, trainings, conferences, etc.). In accordance with the requirements of the regulatory documents of state bodies of the Russian Federation, the Company timely organises mandatory trainings for its employees.^[404-2]

Corporate training and development system^[404-2]

Functional academies

Functional academies give the employees the opportunity to upgrade skills in professional areas to perform their production and successful tasks successfully. Training is conducted in a variety of formats: face-to-face, remote, group, individual, training sessions of external and internal providers, internships at overseas production facilities.

In 2018, special attention was paid to the quality management system in the implementation of programmes. RUSAL Sayanogorsk launched the project 'Personnel Competence Management'. Also in 2018, the College for Quality project was launched. More information about these projects can be found in the 'Performance Management' chapter.

Modular vocational training system

RUSAL is actively pursuing the introduction of modular training programmes for working professions to obtain a higher level of training. Training is carried out under 35 modular programmes, including mandatory training programmes and additional programmes to upgrade skills and professional excellence. (GRI 404-2)

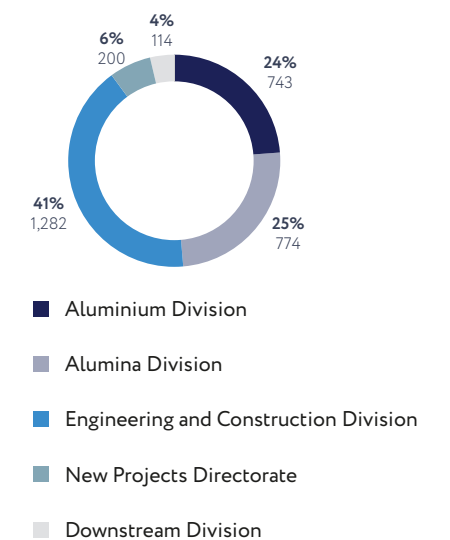
In 2018, a three-module training programme for BS250+ was launched. BS250+ is continuation of the BS250 programme, which is carried out for the best high-potential graduates of the programme, who showed better results than other participants during the BS250 and are ready for relocation, as well as further rotation within the Company. The programme consists of separate Intermediate/advanced/expert composite modules with production cases based on the best and current practices of the Company. Two of three modules of the training programme were completed by employees of the aluminium division in 2018.

Technological Minimum project

'Technological Minimum' is another training programme, which includes the study of six general and 16 special training modules. General modules are studied depending on the level of position, and specialised – depending on the belonging to a particular division or directorate.

The knowledge of the technological minimum is assessed through examination tests by means computer-based testing in distance learning system. In 2018, 3,113 specialists were involved in the assessment.

Chart 28. Specialists involved



According to the results of the assessment of compliance of existing personnel education with the requirements for qualifications for key positions, the "Technological minimum for employees of plant administration buildings" project was developed with a planned phased implementation starting in November 2018.

Distance learning system

The most accessible way to upgrade skills is through distance learning system (DLS), which allows staff to be trained both on-the-job and remotely.^[404-2]

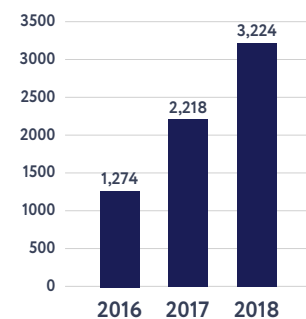
More than 300 e-courses on management, logistics, foreign languages, time planning, presentations, stress management, office management and other topics are included in the distance learning system. The courses

are intended for the professionals in blue-collar jobs, management personnel and university students studying in the specialties relevant for RUSAL. The system allows to carry out remote tests and polls, track the performance of the educational process and obtain feedback. In 2018, the transfer of distance learning system to the new version of software, Prometey 5.0, was completed with access to it from the corporate information network and the Internet.

Table 43. Main results in 2018

As part of work of the functional academies in 2018, 3,224 people were trained (68 % more than last year), of which 1,283 people were trained under the quality management system.

Chart 29. Number of students trained in functional academies



RUSAL opened the first centre of youth initiatives "RUSAL Laboratory" at the Siberian Federal University (SFU) in February 2018. The laboratory was attended by 50 students of the Siberian Federal University who worked on 5 production tasks prepared by the Company's production facilities. In December 2018, the equipping of such centres at the Siberian State Industrial University, Irkutsk National Research University and Volgograd Technical University was completed.

In order to organise effective interaction with young people, the regulation on work with young people and organisation of youth councils was also developed and agreed. The regulations describe the main activities of youth councils, performance indicators, methods of support and the principles of budgeting the costs of implementing action programmes.

The 'New Generation' programme continued its operation. In 2018, 142 new interns were accepted at the production facilities of RUSAL, of which 55 completed their internship and were transferred to become permanent staff. 78 people continue their internship in 2019, while the remaining nine interns did not complete the internship and were not accepted to become staff. Since April 2018, recruitment for the programme was suspended and resumed only in August, as a result, fewer interns were recruited than planned.

Training programmes for process engineers have been developed and placed in the distance learning system, employees are trained.

The base department was opened in Sayanogorsk. The programme for working with targeted students continues its operation.

In 2018, RUSAL trained 147 employees on TRIZ. For the further implementation of the training, 16 internal trainers were also trained (final certification was held in 2019).

An important channel for training on TRIZ is a corporate distance learning system, where video tutorials on the basics of TRIZ with a total duration of more than 4 hours were posted. Another way to disseminate knowledge on TRIZ was the introduction of the function of training for outsourcing in NPC JSC, which occurred in December 2018. It is important to note that the TRIZ category was added to the 'Improvement of the Year' competition.

The Programme for Training of 100 Students from Guinea, in which young people from this country aged 18 to 35 are studying at leading Russian universities, has been launched in full. Students receive education in the following universities:

- Siberian Federal University (Krasnoyarsk): 36 people;
- Ural Federal University (Yekaterinburg): 19 people;
- Peoples' Friendship University of Russia: 6 people;
- Moscow Aviation Institute: 5 people;
- Russian University of Transport (Moscow): 5 people;
- Moscow State Institute of Steel and Alloys (MISiS): 10 people;
- Kuznetsk Industrial Vocational School (Novokuznetsk): 19 people.

Objectives for 2019

In 2019 it is planned to carry out the following tasks:

Interaction with universities:

- to ensure interaction with the Siberian Federal University on the opening of the basic departments in Bratsk, Achinsk starting from September 2019;
- to ensure the inclusion of TRIZ, BS, QMS programmes in the training programmes for target and non-target students in Siberian Federal University, Irkutsk National Research Technical University, Siberian State Industrial University;
- to ensure the development/launch of undergraduate and graduate programmes in single-industry towns by December 31, 2019.

Talent pool programmes:

- implement a modular training programme for the development of professional knowledge (production technology, quality) for KR UD, UD-1;
- implement BS 250+ modular programme for graduates of the BS divisions, the Aluminium Division, the Alumina Division, the Downstream Division;
- increase the number of reservists with 'ready for appointment' degree in the first year by 10%.

Commercial training:

- implement a modular training programme in conjunction with the Sales Directorate (SD), Quality Assurance Department (QAD), Downstream Division (DD), Production Development Department (PDD) of commercial personnel for seven groups, four sessions for each group;
- implement a modular procurement staff training programme for at least 500 people by December 31, 2019 in conjunction with the Directorate for Control, Internal Audit and Business Coordination (DCIABC).

PROVISION WITH LABOUR RESOURCES

RUSAL cooperates with educational institutions that provide training to mining and metallurgical professionals to create an external talent pool. 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 facilities of the Company. The following programmes are aimed at preparing future specialists:

- targeted selection and scholarships for students;
- international student education programmes;
- educational project 'RUSAL to the Russian Schools';
- 'Internal Talent Pool' programme.

Targeted selection programme and scholarships for students

The targeted selection programme is aimed at providing production facilities with a talent pool of skilled young engineers. The programme provides an opportunity for school graduates to apply for and study at the university in the Company-relevant specialties. It 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, RUSAL Business System and the Code of Ethics. The participants of the programme undergo internships at the production facilities annually.

Educational project 'RUSAL to the Russian Schools'

Educational project 'RUSAL to the Russian Schools' is based on distance learning system of the Company and ensures the functioning of the system of continuous education 'school – educational institution for vocational training – industrial production facility'. Computer courses and manuals available online can be used in the educational process by teachers of schools, colleges and universities. The project contributes to the implementation of the principle of 'education throughout life' expanding the knowledge and skills of the pupils and students.

Currently, more than 150 organisations of educational institutions are participating in the programme: Kamensk-Uralsky Polytechnic College, 4 universities in Irkutsk, Krasnoturyinsk, Krasnoyarsk and Novokuznetsk. (<https://sdorsr.rusal.ru/>)

'Internal Talent Pool' programme

Internal Talent Pool programme is aimed at achieving the critical strategic objective of RUSAL – to prepare a pool of professional, highly qualified employees for all managerial positions. A list of key positions that have a maximum impact on the Company's performance is approved for the programme, and an assessment of the risk of vacancies in these positions is being conducted. To determine the level of readiness of a reservist to work in a higher position, the developed scale of competences is used.

Succession candidates improve competencies such as 'formation of professional team', 'cooperation and collaboration', 'business thinking', 'achieving results', 'striving for improvements', etc.

According to the results of the programme in 2018:

- The number of reservists with 'ready for appointment' degree has increased in comparison with 2017 and amounts to 28.4%;
- The number of reservists with 'ready to be appointed in 3–5 years' degree also increased in comparison with 2017 and is 19%.

The personnel reserve adequacy ratio in 2018 was 1.5.

According to the results of the functioning of the programme in 2018, 80% of the positions of the Managing Director are provided by reservists with 'ready for appointment' degree. The number of inter-divisional internships was 12%. It should be noted that the budget for the implementation of the programme was reduced due to the imposition of sanctions on April 6, 2018; therefore, in 2019 a broader implementation of the programme is planned.

Recruitment outside of Russia

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

In 2018, the number of key positions for the personnel reserve of foreign production facilities was determined at 54. Interviews were made with candidates for the reserve and assessment of personal and managerial competencies. Personnel reserve was formed out of 49 successful candidates. Work is underway to select candidates for key positions.

MOTIVATION AND REMUNERATION

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 individual results and overall performance of the Company.

Table 44. The ratio of the standard entry-level wage rate for employees of different sexes to the established minimum wage in key regions of the Company's presence ^{[102-35], [102-36], [401-2]}

Country of presence	The size of the average standard wage rate for the entry-level employees, thousand rubles.		Average minimal wage rate in the region		The ratio of the standard entry-level wage rate for employees of different sexes to the established minimum wage rate in key regions of the Company's presence	
	2018	2017	2018	2017	2018	2017
Russia	25.819	23.560	16.247	11.819	1.589	1.993
Republic of Armenia	12.551	11.624	9.234	8.631	1.359	1.347
Ukraine	18.986	15.481	8.550	7.017	2.221	2.206
Jamaica	43.624	41.946	30.333	26.867	1.438	1.561
Guinea	12.540	9.413	2.782	2.782	4.508	3.383
Ireland	204.903	173.288	118.380	99.374	1.731	1.744
Guyana	34.248	25.374	14.820	12.299	2.311	2.063
Nigeria	9.072	8.254	3.596	3.348	2.523	2.465

RUSAL is a member of an industry tariff agreement (ITA) for the mining and metallurgical complex of the Russian Federation, the parties to which are representatives of employers united in the Association of Industrialists of the Mining and Metallurgical Complex of Russia (AMROS), and representatives of employees, who are represented by the Mining and Metallurgical Trade Union of Russia (MMTUR). As part of the ITA, the issues of socio-economic situation of workers, improvement of working conditions at workplaces, provision of benefits and guarantees are discussed. RUSAL fulfils the requirements of the ITA at all production facilities in the Russian Federation.^[102-36] The discussion with the union on the conditions of the ITA and its signing for the future period will be held in December 2019.



JOINING
THE
FORCES

12 INVESTING
IN COMMUNITY
DEVELOPMENT

MANAGEMENT APPROACH

RUSAL makes a significant contribution to improving the quality of life for residents in the territories of its operations, as well as supports community initiatives and implements programmes to support local communities.

The Company implements community investments in a number of key areas which include social infrastructure and urban environment for comfortable living of the local residents; assistance to socially vulnerable groups of the population; sport and healthy lifestyle, recreation; volunteering, including corporate volunteering; social entrepreneurship; education for youth; healthcare services. The community engagement and investing is regulated by the internal Social investing regulation.

The following two areas of social investment are priorities for the Company:

- Participation in creating a comfortable urban environment by supporting the construction and reconstruction of social infrastructure facilities and modern public and recreational spaces;
- Development of corporate volunteering, broad involvement in volunteer activities of employees of enterprises and residents of the regions of operation.

The social investment strategy is coordinated by the Social Policy Committee set up on the corporate level which prioritizes social investments and financing directions, forms budgeting of the Company's social programs and determines the strategy of positioning social projects.

The Social Policy Committee formulates and approves the budget for the year, the amount of program funding, the content of social programs and projects within target programs (if any), taking into account the priorities and goals of the Company in each of the regions where the Company operates.

The main tool for implementation of the social policy of RUSAL is the Centre for Social Programmes (CSP), the corporate charity fund. Another important initiative of RUSAL is autonomous non-profit organisation Centre for Innovations in Social Sphere (CISS). The task of the Centre is to manage the programme for development of social entrepreneurship and educational programmes and services.

Social investment management is carried out by the Public relations Directorate of the Company.

To comply with the declared principles of social investment management, the CSP regularly conducts an internal assessment of its activities and the implementation of social programmes and projects, which includes:

- assessment of the effectiveness of social and charitable activities of UC RUSAL in the territories of the Company's presence;
- comprehensive assessment of the social sphere in the areas of the Company's presence, the Company's contribution to the development of the territory;
- assessment of the reputational characteristics and general perception of the company RUSAL in the areas of presence;
- evaluation of the effectiveness and efficiency of the implementation of certain social programs of the Company for a certain period of implementation;
- evaluation of the effectiveness of managing the implementation of social programs and charitable activities.

The regulation of the management of social investments and the activities of CSPs are recorded in the programme design passports and the charter of CSP.

To take into account the views of stakeholders and receiving feedback for planning and implementing social investment programmes, RUSAL provides study of social situation in the regions before planning community investment as part of its policy on community engagement. The studies include local community engagement via focus group interviews, resident polls, revealing and prioritizing the needs of the residents and city communities. Among the regular events for community engagement are discussions, communication platforms, thematic meetings, forums, round tables, seminars, master classes, working groups with participation of government representatives, entrepreneurs, heads of social institutions, NPOs, active citizens.

During the project competitions, public presentations are organised where the short-list competitors present their projects at a public event to the experts and stakeholders and answer their questions. This form of the projects presentation is a part of multilevel evaluations of the project applications. Top managers of industrial sites, heads of municipal administrations, representatives of the legislature and regional NPOs are engaged as experts for project evaluation.

In 2018, with the support of a grant funding from the President of the Russian Federation for the development of civil society, the work has been continued on conducting social research in Novokuznetsk, Achinsk, Belogorsk, Krasnoturyinsk, Kamensk-Uralsky in collaboration with the Urbanica Institute of Territorial Planning. As part of the research, residents were surveyed, and city planning simulations were held where the involved social groups discussed and elaborated ideas and initiatives. The research also included the study of the territories of the cities and the public institutions and conduction of the focus groups and a series of meetings with key stakeholders among whom were government officials, relevant municipal department representatives, retirees, working residents, young mothers, schoolchildren and students.

In addition, work is carried out on information support of the Fund's activities, aimed at promoting ongoing projects and programmes among stakeholders, experts, partners and the general public, as well as engagement of new participants in social, volunteer, environmental and educational projects and grant competitions.

Relocation program

In 2018, continued the programme of relocation of the village Chekanosky in which families from the village moved into apartments built by RUSAL. RUSAL is implementing simultaneously with the relocation demolitions works of the old buildings and recultivation of the land in the settlement Chekanovsky. Since 2014, 525 residential buildings have been demolished. The total amount of funding for the programme since 2008 to the current date amounted to more than 1 billion rubles.

By the end of 2019, it is planned to demolish all houses in the sanitary protection zone of the Bratsk aluminum plant, as well as to relocate all the local population.

INVESTMENTS IN THE DEVELOPMENT OF LOCAL COMMUNITIES IN RUSSIA

[413-1]

In Russia, the social investment of the Company is carried out in the form of four social programmes:

- ‘RUSAL Territory’ is a programme for the social and economic development of the territories of operation;
- ‘Helping is Easy’ is a programme to support and develop corporate and city-wide volunteering;
- ‘Social Entrepreneurship’ is a programme of support and development of small entrepreneurship;
- ‘School of urban changes’ is a programme of formation and training of initiative groups.

Table 45. Description of social programmes implemented in Russia in 2018

Value	RUSAL Territory	Helping is Easy	Social Entrepreneurship	School of Urban Changes
Relevance: number of applications received from residents/organisations (pcs.) / number of participants at the Schools of Social Entrepreneurship, (persons)	411	Volunteering Green wave	10	
Quality: Number of grants awarded or interest-free loans issued	120	Volunteering: 55 Green wave: 34 Total: 89	5	
Coverage: Number of settlements, in which the financed projects are being implemented	8	Volunteering: 16 Green wave: 14 Total: 17	4	
Sustainability: share of co-financing from partners, % of the total programme budget	59%	Volunteering: 37% Green wave: 100%		62%

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.

In the reporting period, a system of internal monitoring of implemented projects-winners of the RUSAL Territory competition was developed, implemented and tested, including methodological recommendations

and regulatory documents of the foundation, including a checklist for managers, instructions to grantees on the provision of reports on project implementation. There is also an electronic system for monitoring implementation of the projects of the RUSAL Territory programme on www.grants.fcsp.ru grant platform, involving a dialogue with the foundation, posting photo reports, press releases, publications of current events, final informative reports and co-financing reports in electronic form.

As a result of the monitoring, the CSP staff evaluated 70 implemented projects – the winners of the RUSAL Territory 2016–2017 competitions in 19 localities according to five sets of criteria:

- project implementation efficiency;
- project sustainability;
- project impact on the development of the territory;
- project contribution to the development of the organisation;
- information about the support of the project by RUSAL.

The evaluation system of projects and programmes developed by CSP awarded the Company the third place in ANPO ‘Evolution and Philanthropy’ category for support and development of innovations in the social sphere and in ‘For the Approach to Assessing Social Results of Charitable Projects and Programmes’ of the ‘Leaders of Corporate Charity’ contest in 2018.

In 2018, CSP’s total received funding amounted to RUB 1,000,235,487, including the Company’s support for social programmes operated by CSP and CISS, income from services and rent, donations from the Company’s production facilities, governmental grants and subsidies for social projects implementation. Expenses for 2018 amounted to RUB 986,469,396. The total number of direct beneficiaries of the Company’s social programmes in Russia was 83,210, more than 4,500 volunteers were attracted, 933 events were held, which were supported by 270 partners.

One of the main objectives of the development of the Company’s charitable foundation in 2018 was setting up a new online system for submitting, evaluating and implementing projects based on personal accounts of applicants, experts and programme managers, refining the electronic platform, monitoring project implementation and feedback by grantees, developing online component of the School of urban changes: development and launch of a course on social engineering, corporate volunteering.

In 2018, the development of www.fcsp.ru website continued. On the ‘School of Urban Changes’ online platform (www.fcsp.ru/edu):

1. new training courses on social engineering and corporate volunteering were added;
2. sections devoted to the accelerator of the school of urban changes and the form for accepting applications for the competition for social entrepreneurs appeared;
3. the page for the submission of grant applications, online expertise and online voting <https://grants.fcsp.ru> continued to operate.

Due to this, the attendance of the CSP website has increased significantly compared with 2017. According to reports, ‘Visitors’ indicator on ‘Yandex.Metrics’ service increased by 336%, ‘Visits’ – by 311%, and the growth in the number of site page views was 546% – in 2018 this figure reached 1.09 million.

SOCIAL PROGRAMMES IMPLEMENTATION IN RUSSIA

413-1

Table 46. Social programmes in Russia

Programme name	Programme description	Performance in 2018
The RUSAL Territory programme	RUSAL Territory programme is aimed at improving 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, retrofitting of social infrastructure facilities and organisation of cultural, developmental and sporting events. The Company carries out regular activities within the framework of the "RUSAL Territory" program, namely:	<ul style="list-style-type: none"> - During the implementation of the winning projects in 2018, 19 infrastructure facilities were created in eight territories in four regions. - Within the framework of projects implemented by grantees, 83,210 people became direct beneficiaries, 933 events were held with 270 partners involved. - From December 2017 to April 2018, a competitive selection of territorial development projects was held, for which 411 applications were submitted. A remote expert examination of projects was carried out by an expert council of 111 experts, which included seven federal experts and 33 representatives of industrial sites and the Company. - The contest included an online voting, in which 75,523 residents took part (26% more than in 2017), public presentations of 156 projects took place in 11 cities. Following the results of public presentations, the results of 120 projects evaluation of were prepared for consideration and determination of winners for the competition commission. - In 2018, RUSAL implemented a major project to create modern, comfortable and safe public spaces for residents and tourists in the historic center of Krasnoyarsk. The project began with a survey and analysis of existing public spaces, then a new concept of planning and functionality for the city center was developed, including Revolution square, Surikov garden and Central Park of the city, and a new architectural project was prepared for the district and further implemented. At the practical stage, new small architectural objects were created, illuminated and landscaped. As a result, the renovated area has become a favorite walking place for residents and one of the attractions of the city for tourists. More than a hundred thousand people visited the renovated area on weekends and holidays. Implementing this project, the Company shared with the regional authorities a modern approach to the reconstruction of public spaces in Krasnoyarsk.
RUSAL FestivAL project	RUSAL FestivAL is a large-scale social and cultural project, which brings together numerous thematic events in the towns of operations of the Company. It is aimed at forming the interest of the residents to the culture, art, science and invention, healthy lifestyle.	<ul style="list-style-type: none"> - Tours of students and graduates of the Moscow Art Theater Studio School in the framework of the RUSAL FestivAL#Theatre project in 2018 were held in seven cities of Russia (Sayanogorsk, Bratsk, Achinsk, Shelekhov, Ukhta, Syktyvkar, Krasnoyarsk). - A master class was held in Syktyvkar by the artistic director of the theater 'Iyulansambl' and the Vsevolod Meyerhold Centre, a teacher at the Moscow Art Theater Studio School, director Viktor Ryzhakov. - A creative meeting was held in Krasnoyarsk with the honoured artist of the Russian Federation, director of the Moscow Art Theater Studio School Igor Zolotovitsky. - In four cities of Siberia (Krasnoyarsk, Irkutsk, Abakan, Bratsk), screening auditions of young people and selection of candidates for admission to the Moscow Art Theater Studio School were held.

Programme name	Programme description	Performance in 2018
The 'Helping is Easy' programme	For the development of corporate and urban volunteering, a programme called 'Helping is Easy' was created, which is aimed at involving active citizens in voluntary and socially meaningful activities. The Company carries out the following activities within the programme:	<ul style="list-style-type: none"> - In December 2018, the expert council summed up the results of the grant competition 'Helping is Easy - 2018'. In 16 cities and regions of the Company's presence, 55 volunteer initiatives received grant support totalling RUB 2.6 million, and RUB 1.5 million of co-financing. - A large-scale social study was conducted on the development trends of corporate volunteering in the Company, in which more than 2,000 employees took part. Its results enables the commencement of developing a new system of motivation for corporate volunteers. - The New Year Marathon united 19 cities and more than 1,100 volunteers. As part of the marathon, about 400 events were organised, as a result of which 6,070 people and 107 organisations received targeted assistance. - The transition continues from a large number of small events at the level of subordinate institutions to larger urban formats with the involvement of partners. Traditional large events organised by CSP employees have become an integral event in the cities. There is a noticeable increase in the interest of partners and volunteers to these events, including the 'Energy of Our Hearts' sports festival in Achinsk, 'Yenisei Day' in Sayanogorsk and Krasnoyarsk, 'Let's do it!' and 'Help-Games' in Novokuznetsk, 'Veloquest' in Krasnoturyinsk, 'World Jam' in Kamensk-Uralsky.
'Yenisei Day' environmental marathon	'Yenisei Day' is a large-scale environmental volunteer project. Within the framework of the campaign, volunteers and quests, educational lectures and seminars, and creative workshops are held.	<ul style="list-style-type: none"> - 'Yenisei Day' environmental marathon was held in Krasnoyarsk, Sayanogorsk and Achinsk. - The event was held with the support of the Presidential Grants Foundation, which allocated RUB 2.5 million for its holding. - More than 2,000 volunteers took part in ecological quests of the marathon. - More than 60 partner companies were involved in organising and conducting the marathon. - In 2018, the project was awarded for its activities at professional competitions: winning the contest 'Climate Development Leaders' of the Environmental Management and Environmental Protection Department of the city of Moscow in the category 'Best Eco-Volunteering Project', winning the regional stage of the 'Volunteers of Russia' competition in the Krasnoyarsk Territory in the 'Working with Help' category, second place in the 'Leaders of Corporate Charity' competition in 'The best project, revealing the policies and principles of social investments of the Company' category.

Programme name	Programme description	Performance in 2018
Events of the Green Wave ecological marathon	Grant competition on landscaping and improvement. As part of the contest, organisations and initiative residents can offer their ideas on landscaping and improvement of local urban spaces. The maximum grant amount for the implementation of each winning project is RUB 50,000.	<ul style="list-style-type: none"> - In 2018, a record number of applications was submitted for the grant competition - 334, 1of which 170 projects aimed at improving public spaces, were accepted for consideration by the expert council. - As a result, 34 projects were supported, for a total amount of RUB 1,395,007. - There is an increase in well-developed projects among applications compared with the previous year. This conclusion was made on the basis of the opinions of experts, who noted that there were a lot of non-standard, new for cities, landscaping and improvement ideas that could pay off even after the end of financing. Improving the quality of applications was achieved, including through the involvement of the expert community. - Dense activity and work with potential applicants allowed not only to attract the attention of new participants, but also to track down and recommend typical errors of project teams for improvement at the stage of writing applications. - The number of corporate volunteers at RUSAL industrial site, as well as CSP partners, was significantly increased among the participants of the competition as part of the activities of the National Council on Corporate Volunteering (NCCV). Their active involvement in projects and events CSP help maintaining interest in volunteering, as well as activity among volunteers.
Social Entrepreneurship Programme	The objective of the programme is to create conditions for the work of social entrepreneurs, organise resource centres based on CISS, teach the technologies for launching, promote and develop business projects in the social sphere.	<p>In 2018, a mechanism of grant financing was developed and implemented within the framework of competition for projects of social entrepreneurs (the maximum grant amount is RUB 100 thousand). A total of 15 applications were filed, 10 of which underwent the technical examination. According to the results of expert evaluation, it was decided to support five projects for a total amount of RUB 516,323.</p> <p>Winning social and business projects are aimed at:</p> <ul style="list-style-type: none"> - provision of hippotherapy services for children diagnosed with cerebral palsy (CP) in Krasnoyarsk; - creation of a special bike rental for children with disabilities and organisation of work of a patronage mini-hotel with the services of a nurse, nanny and housekeeper in Kamensk-Uralsky; - opening a cooking school for children with special needs in Novokuznetsk; - equipment of an office for the rehabilitation of children with speech disorders at the recreation and development centre in Nazarov, Krasnoyarsk Territory.
Project «Let's go skiing!»	In 2016 in cooperation with En+ Group and the Russian Ski Federation, the Company developed a project "Let's go skiing!". Goal of the project - promotion of the healthy style of life among residents and employees by involving them in ski racing in the regions of Company's presence.	<p>Within the framework of the project, RUSAL established partnerships with regional sports administrations and ski racing federations, assisted junior ski teams with 940 units of ski equipment, supported the preparation and launch of training courses, which were attended by 402 ski coaches who work with young children and younger teams.</p> <ul style="list-style-type: none"> - The Company held mass sports events and such events as 15 mass ski festivals attended by 52,000 local residents, and CUP competitions for more than 1,900 young athletes. - In 2018, the Company developed and launched an online distance learning platform to distribute the project's training course; supported the development and launch of production in Russia of snowplows for cross-country ski rinks. The machines will be produced and delivered to the regions where the Company operates.

Programme name	Programme description	Performance in 2018
Online School of Social Entrepreneurship (SSE)	Online School of Social Entrepreneurship (SSE) is an online platform that gives initiative residents the opportunity to get a quality business education and independently develop a project to solve vital social problems.	<ul style="list-style-type: none"> - In 2018, two sets of students (December - March, October - December) were recruited for the «Social Entrepreneurship» distance course of the School of Urban Changes. The course was held online and was performed on the Bitrix platform. Training on the course was carried out free of charge, but those wishing to receive a certificate on the results of the course and successful certification of advanced training paid RUB 900. As a result, 1,367 participants registered for the programme, 12 people (five in the first set and seven in the second) paid for the training, but only 5 of them completed the full course and received a certificate of advanced training (one in the first set and four in the second). - Two sets of students were recruited for the «Social Engineering» distance course (April-June, September-November). As part of the course, one can learn the basics of social design, methods and technologies of project management, as well as practice to apply for CSP grant competitions or find a mentor (partner) for implementing the project.
School of Urban Changes	The School of Urban Changes programme was introduced in 2017 as part of the RUSAL Territory competition. The objective of the programme is the formation and training of action teams that are interested in solving the current social issues of the region and at creating communities of active citizens for the development of voluntary work and social entrepreneurship. In 2018, the School of Urban Changes was singled out into a separate social and educational programme, combining all educational initiatives with target groups in all social programmes of the Company.	<ul style="list-style-type: none"> - As a result of implementation of the programme in 2018, 119 face-to-face events were held for a total amount of RUB 3.88 million with the participation of 3,128 people, and also 79 experts from St Petersburg, Moscow, Tyumen, Novosibirsk, Yekaterinburg, Barnaul, and 66 partners were involved. - A special achievement was the receipt by the Social and Educational Programme 'The School of Urban Changes' of the third place in the category of the Ministry of Economic Development of the Russian Federation 'The best programme (project) promoting the infrastructure development of non-profit organisations, charity and volunteering in the region of operation of the Company' in the «Leaders of Corporate Charity-2018» competition.

Program development plan in 2019:

- Implementation of more than 87 landscaping projects under the "Green Wave" - 2019 program.
- Improvement of the online platform to improve the quality of project monitoring.
- Further development of social partners, organizing training through the "Online school of urban change" platform for current and potential participants of CSP programs in order to improve the quality of preparation of applications and expand opportunities for obtaining funding, including from the resources of local and regional budgets.
- Competition of projects of social entrepreneurs, including independent examination of projects by regional and federal experts.
- School of urban change-offline events within the framework of the school of social entrepreneurship residents and online courses to improve the competence of social entrepreneurs in project management.

INVESTMENTS IN THE DEVELOPMENT OF LOCAL COMMUNITIES OUTSIDE RUSSIA

Guinea

RUSAL is one the largest foreign investors in Guinea, not only in bauxite mining but also in the social sphere. RUSAL has been fulfilling its social mission in Guinea through infrastructure development projects (road construction, water and electricity supply system improvement) and by improving living standards of local communities (education and sport incentives, school maintenance and provisions, medical programmes for personnel and local communities).

Table 47. Social projects conducted in Guinea in 2018

Project/Area	Contents
Scholarship programme	For many years RUSAL has been contributing to the education of Guinean experts granting scholarships to young students of that country. In 2018, following the 'RUSAL-2018 Scholarship' competition 101 talented young Guineans from 18 to 25 years of age became award winners and were selected to obtain a degree in the leading colleges of Russia free of charge. RUSAL will cover all training, transportation and accommodation costs. The 'RUSAL-2018 Scholarship' educational programme is intended to last for six years and RUSAL is going to invest over USD 8 mln in the education of Guinean miners, railway experts, economists, contractors, doctors and executive officers.
Ebola vaccine	RUSAL has built a Russian and Guinean Scientific Epidemiology and Microbiology Diagnostic and Treatment Centre in Kindia, which serves as a clinical site for Ebola vaccine field trials. In August 2017, GamEvakCombi vaccine against Ebola invented in Russia was first tested here. The start of the volunteer vaccination in Guinea brought hope to peoples of West Africa to get protected from the deadly virus. On 27 November 2018 the Centre of RUSAL vaccinated 2,000th (the last) member of the GamEvakCombi trial programme. Dr. Sakoba Keita, General Director of the National Agency for Health Security of Guinea, spoke positively of clinical tests, having mentioned high tolerability of the Russian vaccine and an absence of severe adverse side effects. Section 'Ebola epidemic control in Guinea' contains full information about the cooperation in this regard.

Project/Area	Contents
Medical department	All productions of RUSAL in Guinea have their own medical department. There are two health centres and three 24/7 medical stations in Compagnie des bauxites de Guinée (CBG), which examine workers going on a shift and render first aid, if necessary. Every year over 12,000 children receive consultations and treatment in the CBG health centres; approximately 2,000 children get inoculated against various contagious diseases; over 500 infants are born in the maternity ward. The medical service of Friguia bauxite and alumina complex consists of two health centres and a hospital with 120 beds. The hospital accommodates a surgery department, a medical ward and a maternity ward. Over 7,000 infants have been born in the maternity ward since RUSAL first appeared in Friguia in 2006. Under the labour contract the Friguia hospital admits employees and their families and expectant mothers from the town free of charge and renders consultancy services and first aid to citizens of Fria town. The hospital treats approximately 8,000 patients annually.
Infrastructure projects	RUSAL's sustainability priority in Guinea is provision of drinking water, electricity, medicine and education to remote communities. The Company is engaged in the development of education in Mambia and Frigiagbe, constructs and furnishes schools in a number of populated areas. For example, in 2018, RUSAL constructed and furnished an elementary school in Mambia (Mambia-centre). Also, the Company purchased equipment for a school in Balaya and arranged meals during school exams. RUSAL invests in basic infrastructure in Guinea, in particular, to supply drinking water to communities. In 2018, the Company invested in drilling of six artesian wells in Mambia and Frigiagbe, Kindia region. Moreover, three artesian wells were bored in Fria (Boké region). Also, in 2018, the Company purchased equipment and sent it to a medical centre in Gbinkily, Kindia region.
Cultural projects	The Company respects the culture and customs of the country and assists in constructing of religious facilities (mosques and churches) in Conakry and in Kindia by conveying construction materials and financing mosques before religious holidays.
Equality and anti-poverty projects	In 2018, RUSAL provided financial support to six organisations within the Mambia Producers' Union and six Frigiagbe women's production teams to fight poverty and ensure gender equality as part of the social and economic development efforts in the regions where the Company operated.

Guyana

Since the beginning of its operations in Guyana in 2005, 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 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 Company permanently leases vehicles to provide transportation between the village of Mapletown and the town of Linden both for the employees and mem-

bers of their families, and for specific groups of local residents. Monthly free fuel is provided to ensure power generation in the nearby settlement Ituni, where more than 400 people live.

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 longterm land lease agreement with the local tribes and has been providing social assistance every year.

Social programmes and charitable actions of the Company contributed to the formation of close interaction with the local community in the country of operation.

Table 48. Social projects conducted in Guyana in 2018

Project/Area	Contents
Support For Indigenous People	In 2018, the Company supported the organisation of the month of cultural heritage of the indigenous people from the Hururu community. A number of charity actions for the high school in the Hururu village were carried out, including the transfer to the educational institution of sports equipment and tabletop games.
Education	The company finances the work of five teachers of the primary school in Aroaima. Both the children of employees and pupils from neighboring towns are enrolled in the school. The company also provided prizes for the winners of the school contest of knowledge. Regular financial assistance is provided to the preschool children's institution located in the same village. The Company permanently rents vehicles and provides fuel to ensure the delivery of 125 pupils to and from school both by land and water. In 2018, the international scholarship project, in which a group of Guyana youth was enrolled in People's Friendship University of Russia, was completed. The project was financed by RUSAL. After homecoming, five alumni of the university were employed at the Bauxite Company of Guyana.
Development Of Mass Sports	The Company is a permanent sponsor of sports competitions. BCGI organises traditional Mini Olympiads involving teams from all business units. The company also facilitated the football and cricket competitions, to which the teams of residents from the neighbouring settlements were invited. Sports equipment and implements were purchased for local teams.

Jamaica

WINDALCO continues to invest in projects as part of its Corporate Social Responsibility (CSR) mandate. These projects and activities are aimed at enhancing development, education, and social and economic growth, and most importantly, at fostering a harmonious relationship between the Company and its host communities.

However, in 2018, the level of investment in social projects was reduced as a result of sanctions imposed on Rusal on April 6, 2017. Despite the sanctions, WINDALCO continued with some programmes in the fulfillment of its social responsibilities.

Table 49. Social projects conducted in Jamaica in 2018

Project/Area	Contents
UTech Engineering Scholarship Programme	Scholarships were awarded to five final year engineering students at the University of Technology. The annual scholarships are intended to help students complete their final year engineering research projects as well as help to cover tuition costs ahead of graduation.
Local Scholarship Programme	In 2018, the company continued its annual local scholarship and grants programme. Under that initiative, 41 students attending tertiary institutions across the island were awarded bursaries to assist with college/university tuition. Students were selected based on their academic performance, financial need, and involvement in extra-curricular activities as well as based on their knowledge of the bauxite industry.
Grade Six Achievement Test Scholarship	Seven students were awarded full one-year scholarships for matriculating to secondary school after passing the Grade Six Achievement Test. As part of the application process, students were also required to write an essay explaining the importance of railway safety.
International Scholarship Programme	The Company also continued its support and maintenance of 25 Jamaican students studying at Siberian Federal University in Krasnoyarsk. In addition to tuition and accommodation costs, WINDALCO also provides a special scholarship to help with the personal upkeep of students.
Back to School Activities	In August 2018, the Company provided book vouchers to several students in host communities.
Donations to Educational & Medical Institutions	Several donations were made to schools in and outside of WINDALCO's operational areas to assist with specific initiatives being undertaken by those institutions. Donations were made to assist with the development of early childhood institutions and to assist with sporting activities. Donations were also made to the Spanish Town Hospital and the St. Christopher's School for the Deaf and the Medical Pathology Lab in Mandeville through Charitable Organization United Way of Jamaica.

Ireland

Alumina plant RUSAL Aughinish, situated on a 1,300 acre site on the Shannon Estuary, is situated in the heart of a rural farming community. There are several small towns nearby with close links to the refinery. The Company

maintains a good relationship with local communities and provides support of a variety of social projects and events.

Table 50. Social projects conducted in Ireland in 2018

Project/Area	Contents
Sports and Leisure	Regular sport makes a great contribution to the health and fitness. RUSAL Aughinish provided support and sponsorship to a large number of local Gaelic Athletics Association Clubs. These clubs provide training in rural communities in hurling, Gaelic football and handball. In addition, RUSAL Aughinish provided sponsorship to a variety of local sports clubs in the following fields: golf, soccer, tennis, boxing, cycling and triathlon. Our employees and their children are active participants in these clubs as players and volunteer trainers.
Art and culture	St Patrick's Day is a major festival throughout Ireland. In 2018, RUSAL Aughinish provided support to the local town of Askeaton's St Patrick's Day Festival. Moreover, RUSAL Aughinish has invested further in its nature trails which are a valued local amenity. The nature trails have a wide range of wildflowers and wildlife with birdhides to allow children to explore nature. It is an amenity that is utilised by local schools and Birdwatch Ireland.
Education	Limerick for Engineering encourages primary and post-primary students to explore the world of STEM (Science, Technology, Engineering & Mathematics) while also promoting engineering as a career choice. RUSAL Aughinish participated in the Limerick for Engineering Showcase, which gave students the opportunity to meet with industry professionals who provided information about their chosen fields as well as demonstrating some interesting technology they work with. Company representatives also visited local schools and gave talks and demonstrations regarding engineering and RUSAL Aughinish. The Company also supported fundraising charity events in local primary schools, which are attended by the children of employees.

Project/Area	Contents
Community	Every year the Company supports the local community Borrigone Robertstown Family Fun Day. This is a traditional Irish family festival including activities for all ages and interests from singing to sports. RUSAL Aughinish provides support to a number of local clubs and associations, including Senior Citizens Group, Irish Countrywomen's Association to the local Scouts. We are also delighted to be able to support the local community councils in their efforts to maintain and develop the local area.
Charity	RUSAL Aughinish's annual charity 10 km run and 6 km walk take place on the Aughinish Nature Trails. Employees and neighbours from our local communities participate in charity fund raising nominated by employees. In 2018, the designated charity was the organization that works with people who are in suicidal distress and promotes positive mental health in the local community. The Company also sponsored a number of charitable causes where employees were working to raise funds for projects in local hospitals, hospices and support charities.

In 2018, the total funding that the Company directed to social investments and charitable projects amounted USD 22,2 million.

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13 APPENDIX

APPENDIX

Verification of the data presented in the Report and selection of all material topics in the Report were carried out by the relevant business units of RUSAL. The Report was approved by members of the Executive Committee and the Board of Directors.^[102-32]

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GRI INDEX

In preparing the Sustainability Report of UC RUSAL, we used the GRI Standards 2018 Sustainability Reporting Guidelines (the core level of disclosure), as well as the Stock Exchange of Hong Kong Listing Rules and ASI Standards.^[102-54]

GRI Standards provide companies with the opportunity to use the globally recognized mechanism for measuring and publishing environmental, social and managerial indicators. GRI collaborates with the United

Nations Environment Program (UNEP), and the UN Global Compact.

Indicators with the name G4-MMxx refer to the Industry-specific application to the Standards – G4 Mining & Metals Sector Supplement.

The table includes links to sections of the Report where the information required by GRI, HKEX and ASI is disclosed.

RUSAL's Sustainability report 2018: GRI Index

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
102-1	Name of the organization	2.1 Company profile	10				
102-2	Activities, brands, products, and services	2.1 Company profile 2.2 Products	10, 12				
102-3	Location of headquarters	2.3 Geographical structure	14				
102-4	Location of operations	2.3 Geographical structure	14				
102-5	Ownership and legal form	2.4 Presence in financial markets	13				
102-6	Markets served	2.2 Products	12				
102-7	Scale of the organization	2.1 Company profile	10, 11				
102-8	Information on employees and other workers	11.4 Staff structure and staff movement	128			KPI B.1.1	
102-9	Supply chain	7.3.1 Approach and structure of the supply chain	60			KPI B.5.1	
102-10	Significant changes to the organization and its supply chain	7.3.1 Approach and structure of the supply chain	60				
102-11	Precautionary Principle or approach	5.3 Risk management system 8.3 Projects and initiatives	40, 69				
102-12	External initiatives	4.2 Interaction with stakeholders	30				
102-13	Membership of associations	4.2 Interaction with stakeholders 4.3 Participation in industry organisations 5.2 Governing bodies	30, 32, 33, 39				
102-14	Statement from senior decision-maker	1. Statement of the Chief Executive Officer	6				Para 9, 10

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
102-15	Key impacts, risks, and opportunities	5.3 Risk management system	41	Partial disclosure		Para 9, 10	
102-16	Values, principles, standards, and norms of behavior	4.1 Management of sustainable development aspects	26, 27				
102-17	Mechanisms for advice and concerns about ethics	6.1.1 Management approach 6.1.2 Respect for human rights	44			KPI B7.2	
102-18	Governance structure	5.2 Governing bodies	37				
102-19	Delegating authority	5.2 Governing bodies	39	Partial disclosure			
102-20	Executive-level responsibility for economic, environmental, and social topics	4.1 Management of sustainable development aspects	26, 27	Partial disclosure			
102-21	Consulting stakeholders on economic, environmental, and social topics	4.2 Interaction with stakeholders 12.1 Management approach	31				
102-22	Composition of the highest governance body and its committees	5.2 Management approach	37, 38, 39	Additional information can be found in the 2018 UC RUSAL Annual Report			
102-23	Chair of the highest governance body	5.2 Governing bodies	38				
102-24	Nominating and selecting the highest governance body	5.2 Governing bodies	38	Partial disclosure			
102-25	Conflict of interest	6.1.2 Respect for human rights 6.1.3 Trust service	44, 46, 49	Partial disclosure			
102-26	Role of highest governance body in setting purpose, values, and strategy	5.2 Governing bodies	38, 39	Partial disclosure		Para 8	
102-27	Collective knowledge of highest governance body	5.2 Governing bodies	39	Partial disclosure			
102-28	Evaluating the highest governance body's performance	5.2 Governing bodies	39				
102-29	Identifying and managing economic, environmental, and social impacts	4.1 Management of sustainable development aspects	26, 27			Para 9, 10	Criteria 3.1
102-30	Effectiveness of risk management processes	5.3 Risk management system	41	Partial disclosure		Para 9, 10	
102-31	Review of economic, environmental, and social topics	4.1 Management of sustainable development aspects	26			Para 9, 10	Criteria 3.1
102-32	Highest governance body's role in sustainability reporting	13. Appendix	156			Para 8	
102-33	Communicating critical concerns	5.2 Governing bodies 5.3 Risk management system		Partial disclosure			

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
102-35	Remuneration policies	5.2 Governing bodies, 11.7 Motivation and remuneration	38, 136	Partial disclosure			
102-36	Process for determining remuneration	11.7 Motivation and remuneration	137				
102-40	List of stakeholder groups	4.2 Interaction with stakeholders	30			Para 6	
102-41	Collective bargaining agreements	11.2 Collective bargaining agreements	126				
102-42	Identifying and selecting stakeholders	4.2 Interaction with stakeholders				Para 6	
102-43	Approach to stakeholder engagement	4.2 Interaction with stakeholders	31			Para 6 KPI B6.2	
102-44	Key topics and concerns raised	4.2 Interaction with stakeholders	31			Para 6 KPI B6.2	
102-45	Entities included in the consolidated financial statements	3.3 Reporting boundaries	20			Para 9, 10	
102-46	Defining report content and topic Boundaries	3.3 Reporting boundaries	21				
102-47	List of material topics	3.2 Material topics	19				
102-48	Restatements of information	3.4 Data preparation	22, 114				
102-49	Changes in reporting	3.4 Data preparation	22			Para 9, 10	
102-50	Reporting period	3.1 General information about the report	18				
102-51	Date of most recent report	3.1 General information about the report	18				
102-52	Reporting cycle	3.1 General information about the report	18				
102-53	Contact point for questions regarding the report	13. Appendix	156				
102-54	Claims of reporting in accordance with the GRI Standards	Appendix					
102-55	Explanation of the material topic and its Boundary	Appendix					
102-56	Process for determining remuneration			External assurance was not performed		Para 7	
103-1	List of stakeholder groups	3.2 Material topics	19, 75			Para 9, 10 Aspect A1 Emissions: General Disclosure KPI A3.1	

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
103-2	The management approach and its components	5.1 Corporate governance system 6.1.1 Management approach 6.2.3 Fight against corruption and fraud 7.3.1 Approach and structure of the supply chain 8.1 Management approach 9.1 Approach 9.4 Land resources and biodiversity 9.5 Water resources 9.6 Energy consumption and energy efficiency 9.7 Air emissions and air protection 9.8 Climate change 9.9 Waste 10.1 Approach 10.2 Control system 11.1 Management approach 11.5.1 Approach 12.1 Management approach	75	Partial disclosure		Para 9, 10 Aspect A1 KPI A1.5 KPI A1.6 Aspect A2 KPI A2.3 KPI A2.4 Aspect A3 KPI A3.1 Aspect B1 Aspect B2 Aspect B3 Aspect B4 Aspect B5 Aspect B6 Aspect B7	Criteria 3.1
103-3	Assessment of management approach	5.2 Governing bodies 5.3 Risk management system 6.2.1 Internal audit system 7.1.1 Management approach 7.2.1 Approach	75	Partial disclosure		Para 9, 10	
201-1	Direct economic value generated and distributed	2.1 Company profile	11			KPI B8.2	
201-2	Financial implications and other risks and opportunities due to climate change	9.8 Climate change	92				
202-1	Proportion of spending on local suppliers	11.7 Motivation and remuneration		Partial disclosure			
203-1	Operations assessed for risks related to corruption	12.2 Investments in the development of local communities in Russia 12.3 Social programmes Implementation in Russia		Partial disclosure		KPI B8.1	
204-1	Recycled input materials used	7.3.1 Approach and structure of the supply chain	60				
205-1	Energy consumption within the organization	6.1.2 Respect for human rights	49	Partial disclosure			
302-1	Energy intensity	9.6 Energy consumption and energy efficiency	86			KPI A2.1	
302-3	Reduction of energy consumption	9.6 Energy consumption and energy efficiency	87			KPI A2.1	
302-4	Reductions in energy requirements of products and services	9.6 Energy consumption and energy efficiency	87	Partial disclosure		KPI A2.3	
303-1	Interactions with water as a shared resource	9.5 Water resources	82, 84			KPI A2.5	Criteria 6.2
303-2	Management of water discharge-related impacts	9.5 Water resources				KPI A3.1	Criteria 6.2

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
303-3	Water withdrawal	9.5 Water resources	82			KPI A2.4	Criteria 6.2
303-4	Water discharge	9.5 Water resources	84	Partial disclosure			Criteria 6.2
303-5	Water consumption	9.5 Water resources	82			KPI A2.2	Criteria 6.2 Criteria 7.3
304-1	Direct (Scope 1) GHG emissions	9.4 Land resources and biodiversity					Criteria 8.2
304-2	Energy indirect (Scope 2) GHG emissions	9.4 Land resources and biodiversity		Partial disclosure		KPI A3.1	Criteria 8.2
304-3	GHG emissions intensity	9.4 Land resources and biodiversity		Partial disclosure			Criteria 8.2
305-1	Reduction of GHG emissions	9.8 Climate change	95, 96			KPI A1.1 KPI A1.2	Criteria 5.1
305-2	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	9.8 Climate change	96	Partial disclosure		KPI A1.1 KPI A1.2	Criteria 5.1
305-4	Water discharge by quality and destination	9.8 Climate change	95	Partial disclosure		KPI A1.2	Criteria 5.1
305-5	Waste by type and disposal method	9.8 Climate change	97	Partial disclosure		KPI A1.5	Criteria 5.1
305-7	Significant spills	9.7 Air emissions and air protection	88, 89			KPI A1.1	Criteria 6.1
306-1	Transport of hazardous waste	9.5 Water resources	84				Criteria 6.2
306-2	Water bodies affected by water discharges and/or runoff	9.9 Waste	99			KPI A1.3 KPI A1.4 KPI A1.6	Criteria 6.5
306-3	Non-compliance with environmental laws and regulations	9.5 Water resources	83			KPI A3.1	Criteria 6.4
306-4	New suppliers that were screened using environmental criteria	9.9 Waste	99			KPI A1.6	
306-5	New employee hires and employee turnover	9.5 Water resources	82			KPI A3.1	Criteria 6.2 Criteria 7.3
307-1	Direct economic value generated and distributed	9.2 Main results	75, 78			Aspect A1 Emissions: General Disclosure	Criteria 3.2
308-1	Financial implications and other risks and opportunities due to climate change	7.3.2 Certification of suppliers	61	Partial disclosure		KPI B5.2	
401-1	Proportion of spending on local suppliers	11.4 Staff structure and staff movement	128, 129	Partial disclosure		KPI B1.2	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	11.7 Motivation and remuneration	137	Partial disclosure			

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
402-1	Minimum notice periods regarding operational changes	11.3 The mechanisms of employee appeals		Partial disclosure			
403-1	Occupational health and safety management system	10.2 Control system	109, 119				
403-2	Hazard identification, risk assessment, and incident investigation	10.3 Risk identification	111			KPI B2.1	
403-3	Occupational health services	10.1 Approach	106				
403-4	Worker participation, consultation, and communication on occupational health and safety	10.1 Approach 10.7.3 Disease prevention programmes	107, 119, 120	Partial disclosure			
403-5	Worker training on occupational health and safety	10.4 Performance results 10.6 Special safety programmes 10.7.3 Disease prevention programmes	115, 117, 119, 120				
403-6	Promotion of worker health	10.3 Risk identification 10.7 Health		Partial disclosure			
403-8	Work-related injuries	10.1 Approach		Partial disclosure			
403-9	Programs for upgrading employee skills and transition assistance programs	10.4 Performance results	114	Partial disclosure			
403-10	Diversity of governance bodies and employees	10.7.1 Medical business units of RUSAL 10.7.2 Inter-Departmental Occupational Risk Management Programme 10.7.3 Disease prevention programmes					
404-2	Incidents of discrimination and corrective actions taken	11.5.1 Approach 11.5.2 Corporate training and development system	131, 132	Partial disclosure		Aspect B3 Development and Training: General Disclosure	
405-1	Operations and suppliers at significant risk for incidents of child labor	5.2 Governing bodies	38, 39	Partial disclosure		KPI B1.1	
406-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	6.1.2 Respect for human rights	45				
408-1	Operations with local community engagement, impact assessments, and development programs	6.1.2 Respect for human rights	45			KPI B4.1 KPI B4.2	
409-1	New suppliers that were screened using social criteria	6.1.2 Respect for human rights	45			KPI B4.1 KPI B4.2	

Indicators	Description	Cross-Reference	Pages	Comments, or Additional Information	UN Global Compact	HKEX	ASI
413-1	Requirements for product and service information and labeling	12.2 Investments in the development of local communities in Russia 12.3 Social programmes Implementation in Russia	142, 144				
414-1	Incidents of non-compliance concerning product and service information and labeling	7.3.2 Certification of suppliers	61	Partial disclosure		KPI B5.2	
417-1	Amount of land disturbed or rehabilitated	7.3.4 Product responsibility	63	Partial disclosure			
417-2	The number and percentage of total sales identified as requiring biodiversity management plans according to stated criteria, and the number of those sites with plans in place	7.3.4 Product responsibility	63	Partial disclosure		Aspect B6 Product Responsibility: General Disclosure	
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data.	11.3 The mechanisms of employee appeals	127	Partial disclosure		Aspect B6 Product Responsibility: General Disclosure KPI B6.2	
MM1	Number of strikes and lock-outs exceeding one week's duration, by country	9.4 Land resources and biodiversity 12.5 Relocation programmes	80, 81	Partial disclosure			Criteria 8.2
MM2	Number and percentage of operations with closure plans	9.4 Land resources and biodiversity	80	Partial disclosure			Criteria 8.2
MM3	Occupational health and safety management system	9.4 Land resources and biodiversity	80, 81	Partial disclosure			Criteria 8.2
MM10	Hazard identification, risk assessment, and incident investigation	12.5 Resettlement programmes	80	Partial disclosure			

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14 ABBREVIATIONS

ABBREVIATIONS

8D (8 Discipline) – Methods for solving local problems in processes

Accident – accidents due to the violation of industrial safety requirements

Accident – Traffic accident

AES – Administrative and economic support

AFA – Aluminium Facility Agreement

AGK – Achinsk Alumina Refinery

AIDS – Acquired Immune Deficiency Syndrome

AIS SPA – RUSAL – Automated Information System ‘Safety of Production Activities – UC RUSAL’

ALLOW – Low Carbon Aluminium Brand

AM – Asynchronous motor

AMROS – Association of Industrialists of the Mining and Metallurgical Complex of Russia

ANPO – Autonomous Non-Profit Organisation

AODCS – Automated operations dispatch control system

APCS – Automated process control systems

APQP – Advanced product quality planning

ARM – Automated Workstation

ARP – Accident Response Action Plan

ASI – Aluminium Stewardship Initiative

ASTME – Automated system for technological metering of electricity

BAB – Baked anode blocks

BAC – Bauxite-alumina complex

BAZ – Bogosovsk Aluminium Smelter

BCGI – Bauxite Company of Guyana Inc

BrAZ – Bratsk Aluminium Smelter

BS – Business System

BS250+ is continuation of the BS250 programme, which is carried out for the best high-potential graduates of the programme, who showed the results different from other participants during the BS250 and are ready to relocation, as well as further rotation within the Company.

Capcem – Mix for dry shotcrete

CAPEX – Capital expenditure

CBK – Compagnie des Bauxites de Kindia

CDP – Carbon Disclosure Project

CFD – Computational fluid dynamics

Chronic claim – a claim that has been received repeatedly by the type of defect by any business unit, namely: periodically/regularly recurring product quality claim for a long time, which cannot be resolved within the framework of the standard 8D approach; to solve which an interfunctional VRT-Veriability Reduction Team is formed, whose task is to comprehensively determine the causes of the problem, develop measures to contain, eliminate and prevent the problem of replication at all production facilities of UC RUSAL.

CIS – Commonwealth of Independent States

CISS – Centre for Innovations in Social Sphere

Claim – a written notice from the Consumer or other participants in the supply chain about the supply of products with nonconformances

CMP – Casting and Mechanical Plant

CNIA – China Nonferrous Metals Industry Association

CO – Charitable organisation

College for quality – an on-site full-time training of the Company’s employees on the basics and tools of quality (with a practical part in the form of homework)	FS – Fire Safety
CP – Cerebral palsy	FWCC – Federal Waste Classification Catalogue
CPLC – Carbon Pricing Leadership Coalition	G8D – Global Eight Disciplines
CRM – Customer Relationship Management	GB&GWU – Guyana Bauxite and General Workers’ Union
CSP – Centre for Social Programmes	GOST – State Standard
CSR – Customer Specific Requirements	GPM – lifting mechanism
DA – Dangerous action	GRI – Global Reporting Initiative
DCIABC – Directorate for Control, Internal Audit and Business Coordination	GSM – General meeting of shareholders
DD – Downstream Division	GTC – gas treatment centre
DLS – Distance Learning System	HCS – Housing and communal services
DMK – Dnipro Metallurgical Complex	HIV – Human Immunodeficiency Virus
DP – Dangerous phenomena	HKEX – Hong Kong Stock Exchange
DS – Dangerous situation	HPP – Hydroelectric Power Station
E – Emergency	HR – HR Directorate
EAA – European Aluminium Association	HSE – Health, Safety & Environment
EHSE – Examination of Health, Safety & Environment	HSE MS – System for the management of health, industrial and fire safety (HSE Management System)
EITI – Extractive Industries Transparency Initiative	IAI – International Aluminium Institute
ERP – Emergency response plan	IATF – International Automotive Task Force
ES – Emergency Situation	IHL – industrial hygienic laboratory;
ESOP – Electronic goal setting and evaluation system	ILM&T – Institute of Lightweight Materials and Technologies
ETC – Engineering and Technology Centre	INRTU – Irkutsk National Research Technical University
Fatality – the number of fatal injuries	IrkAZ – Irkutsk Aluminium Smelter
FMEA – Failure Mode and Effects Analysis	AGK – Achinsk Alumina Refinery

ISO – International Organisation for Standardisation	MSU – Moscow State University named after M.V. Lomonosov
ITA – Industry Tariff Agreement	MU – Medical unit
JSC – Joint-stock Company	NCCV – National Council for Corporate Volunteering
JUSE – Japanese Union of Scientists and Engineers	NGOs – Non-Governmental Organisations
K&K – Abbreviation of the names of the parent companies (Krasnoyarsk Metallurgical Plant and the German Company ‘Komos’)	NGZ – Mykolayiv Alumina Refinery
KhAZ – Khakas Aluminium Smelter	NkAZ – Novokuznetsk Aluminium Smelter
KPI – Key Performance Indicators	NPD – New Projects Directorate
KrAZ – Krasnoyarsk Aluminium Smelter	NPO – Non-Profit Organisation
LC RF – Labour Code of the Russian Federation	NUBM – North Urals Bauxite Mine
LDC – Labour Disputes Commission	NUST MISiS – National University of Science and Technology ‘MISiS’
LG – Local Government	OEM – Original equipment manufacturer
LHO – Limited health opportunities	OHSAS 18001: 2007 – Occupational health and safety management systems – Requirement. Requirements)
LT – Lead Time	PayDox – Electronic Document Management, Business Process and Collaboration Management
LTAFR – Lost Time Accident Frequency Rate	PCB – Polychlorinated biphenyls
LTI – Lost time injury (injury with temporary disability)	PD – Packaging Division
LTISR – Lost time injury frequency rate	PDCA – Plan-Do-Check-Act (Planning-Action-Check-Adjustment)
MBV – Mixture for shotcrete	PDD – Production Development Directorate
MC – Management Company	PGI-2 track-repair Train – train intended for mechanisation of track work in mines that are not hazardous for gas and dust, having rail tracks with a gauge of 750 mm and R18, R24 and R33 rails
MD – Managing Director	PM – Particulate matters
MES – Manufacturing Execution System	PMC – Production Management Centre
MHAW – Man Hours Actually Worked	PME – Performance of medical examinations
MIIT – Russian University of Transport	PO – Software
MISiS – Moscow State Institute of Steel and Alloys	PPAP – Production Part Approval Process
MM – Mass Media	PPE – Personal Protective Equipment
MMTUR – Mining and Metallurgical Trade Union of Russia	
MSA – Measurement System Analysis	

PQD QMD – Procurement Quality Department of the Quality Management Directorate

PSW – Part Submission Warrant

QAD – Quality Assurance Department

QMS – Quality Management System

QS – Quality Service

R&D – research, development and experimental works.

RCDCEMS – Research and Clinical Diagnostic Centre for Epidemiology and Microbiology

RE – Respect of the environment

REACH – Registration, Evaluation and Authorisation of Chemicals (European Union regulations governing the production and circulation of all chemicals, including their mandatory registration)

RI – Research Institute

RMC – RUSAL Medical Centre LLC

RPC – People’s Republic of China

RUIE – Russian Union of Industrialists and Entrepreneurs

SAP – Software with which one can automate the professional activities of representatives of different specialisations

SASB – Sustainability Accounting Standards Board

SAWC – Special audit of working conditions

SAZ – Sayanogorsk Aluminium Smelter

SD – Sales Directorate.

SDG UN – United Nations Sustainable Development Goals

SFU – Siberian Federal University

SibSIU – Siberian State Industrial University

SKAD – Company for the production of cast aluminium discs under the brand name SKAD

SNiP – Building Codes and Regulations

SPC – Statistical process control

SSC – Shared Service Centre

SSE – School of Social Entrepreneurship

SUC – ‘School of Urban Changes’ programme

TCFD – Task Force on Climate-related Financial Disclosures

TP – Talent pool

TPS – Toyota Production System

TQM – Total Quality Management

TRIZ – Theory of Inventive Problem Solving

TSZh – Homeowners association

UAZ – Ural Alumina Refinery

UC RUSAL – United Company RUSAL

UF – Ural Foil

UN Global Compact – United Nations Global Compact

UNEP COM – Russian National Committee for the United Nations Environment Programme

UNFCCC – United Nations Framework Convention on Climate Change

US Treasury – Department of the Treasury of the United States of America

VAP – Value Added Products

VDA – German Automobile Industry Quality Standard

VgAZ – Volgograd Aluminium Smelter

VMI – Voluntary medical insurance

VOC – Volatile Organic Compounds

VOGA – Highly dispersed precipitated aluminium hydroxide

VRT – Variability Reduction Teams

WIP – Work in Progress

WRI – World Resources Institute