



RusHydro

**CORPORATE
SOCIAL RESPONSIBILITY
AND SUSTAINABILITY REPORT
FOR THE YEAR 2016**

Approved
by the decision
of the Board of Directors
of PJSC RusHydro
(Minutes No.256
of September 1, 2017)



CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY REPORT BY RUSHYDRO GROUP FOR THE YEAR 2016

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REPORT INFORMATION

The 2016 RusHydro Group Corporate Social Responsibility and Sustainability Report (hereinafter referred to as the Report) reflects the results of the Group's activities in the field of labour protection, industrial and environmental safety, social and economic development of the regions, stakeholders' interaction and other aspects of sustainable development and corporate social responsibility in the period from 01/01/2016 to 31/12/2016. **(102-50)**

Reports in the field of corporate social responsibility and sustainable development are issued by RusHydro Group annually, this Report is already the ninth. **(102-52)**

This report has been prepared in accordance with the GRI Standards: Core option and the GRI Electric Utilities Sector Supplement for the companies were used. **(102-54)**

In 2016, GRI introduced an updated version of the manual - GRI Standards. Officially, the standard will come into force on July 1, 2018, but it is encouraged to start its implementation from 2017. RusHydro is preparing its 2016 Report in accordance with the GRI Standards and, thus, will become one of the «pioneer» companies in the field of non-financial reporting.

The previous 2015 Corporate Social Responsibility and Sustainability Report was prepared in accordance with the GRI G4¹ (Core option). It can be found on the [Company's website](#). **(102-51)**

TERMINOLOGY

«*PJSC RusHydro*» or «*the Company*» refers to PJSC RusHydro, including the Executive Office and branches of PJSC RusHydro.

«*RAO ES of the East*» or «*the Holding*» refers to PJSC RAO ES of the East, including subsidiaries.

«*RusHydro Group*» or «*the Group*»² refers to PJSC RusHydro, as well as subsidiaries of PJSC RusHydro included in the Report boundaries (including RAO ES of the East). The list of legal entities included in the list below is in the Report Boundaries subsection.

EXTERNAL CERTIFICATION OF THE REPORT (102-56)

The report was independently audited in accordance with the International Standard on Assurance Engagements (ISAE) 3000 «Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information». JSC PricewaterhouseCoopers Audit acted as an independent auditor (see the audit opinion in [Appendix 5](#). Conclusion on the Professional Audit of the Report. In addition, the Report passed the procedure of public certification by the Council on Non-Financial Reporting of the Russian Union of Industrialists and Entrepreneurs (RUIE). The conclusion of the RUIE Council on non-financial reporting and recommendations for improving the quality of the reporting can be found in [Appendix 4. Certificate of Public Certification of the Report by the RUIE Council on Non-Financial Reporting](#). In the current reporting period, the Company tried to take into account the RUIE

recommendations obtained on the basis of the public assurance of the RusHydro non-financial reporting for the year 2015 [Appendix 3. Accounting for the Recommendations of Stakeholders Expressed at the Public Hearings](#).

The report was also tested by GRI Content Index Service: the content index received confirmation of accuracy - all the information included conforms to the GRI Standards.

As part of the Report preparation in 2017, Public hearings on the Draft Report were held, where representatives of the major stakeholder groups took part. This procedure was carried out by the Group for the second time, and in preparing the Report, the Group tried to take into account the recommendations of the stakeholders received following the public hearings held in 2016.

The table of accounting for recommendations and requests of the interested parties is given in [Appendix 2. Minutes of Public Hearings on Corporate Social Responsibility and Sustainability Report of RusHydro Group for the year 2016](#)

The implemented recommendations of the stakeholders and the RUIE Council on non-financial reporting are highlighted in the Report:



Considered recommendations of the RUIE Council for the Report for 2015



Considered recommendations of the stakeholders provided during the public hearings on the Report for 2015



Considered recommendations of the RUIE Council for the Report for 2016



Considered recommendations of the stakeholders provided during the public hearings on the Report for 2016

¹ The report is registered in GRI's public sustainability reporting database www.database.globalreporting.org.

² In the text of the Report, there may be RusHydro or RusHydro Holding: PJSC RusHydro, as well as subsidiaries. The complete list and structure of the RusHydro's assets can be found at: www.rushydro.ru/company/structure.

REPORT BOUNDARIES

The main subsidiaries of the Group (102-7) fall within the Report boundaries, the list of which is given in the tables below. The Group's subsidiaries outside the Report boundaries are not essential for the purposes of the Report disclosures. The full list of legal entities included in the organizational structure of RusHydro Group see in the [Annual Report of JSC RusHydro for 2016, p.16. \(102-45\)](#)

In 2016, RusHydro Group sold LLC Energy Retail Company of Bashkortostan (LLC ESKB). In addition, the stake of RusHydro Group in the charter capital of PJSC RAO ES of the East increased up to 99.98% in connection with the implementation of voluntary offer transactions and the forced repurchase of shares of PJSC RAO ES of the East. (102-10)

List of the companies of RusHydro Group (Executive Office, subsidiaries and branches of PJSC RusHydro except for the companies of RAO ES of the East (within the boundaries of the Report) and their activities) (102-45)

Electricity generation companies	Companies engaged in electricity generation facilities construction	Supply (sales) companies	Institute (research and design) companies	Repair and construction companies
PJSC RusHydro executive administration and branches:	JSC CHPP in Sovetskaya Gavan	JSC ESK RusHydro	JSC Vedenev VNIIG	JSC Hydromont VCC
JSC Geoterm	JSC Yakutskaya SDPP-2	PJSC Krasnoyarskenergosbyt	JSC NIIES	LLC Montazhenergo
JSC PauzhetskayaGeoPP	JSC Sakhalinskaya SDPP-2	PJSC RERC (Ryazan Energy Retail Company)	JSC Lengidroproject	JSC Ust-Srednekanskaya
PJSC Kolymaenergo	JSC SulakHydroCascade	JSC Chuvash Energy Retail Company	JSC HydroprojectInstitute	GESstroy
PJSC KamHEK	JSC Nizhne-Bureyskaya HPP		JSC MOSOBLHYDROPROJECT	JSC ESCO UES
CJSC MEK (the Republic of Armenia)	JSC Ust-Srednekanskaya HPP			JSC ChirkeyGESstroy
JSC Boguchanskaya HPP ¹	LLC SHPP of Stavropol Region and KCR			
JSC Blagoveshchenskaya CHPP ²	JSC Zagorskaya PSPP-2			
	JSC SHPP of KBR			
	JSC Zaramagskye HPPs			

List of the companies of RAO ES of the East (within the boundaries of the Report), their activities (102-45)

Electricity and heat generation companies	Repair and construction companies	Other companies that are essential for CSR
PJSC RAO ES of the East	JSC KRAC	JSC FEDC (electricity distribution)
JSC FEGC (as well as supply)	JSC KPRC	PJSC FEEC (supply)
PJSC Yakutskenergo	JSC Neriungrienergoremont	JSC LUR (coal mining)
JSC Sakhaenergo		
JSC Teploenergoservice		
PJSC Magadanenergo		
JSC Chukotenergo		
PJSC Kamchatskenergo		
JSC KSEN		
PJSC Sakhalinenergo		
PJSC Mobile energy (Peredvizhnaya energetika)		

¹ Boguchanskaya HPP is not a part of RusHydro Group, it is a joint venture.

² Central heating and power plant, which generates heat energy in addition to electricity.



DEFINITION OF THE REPORT'S CONTENT

GRI Standards require the companies to disclose information in their Report on the aspects that reflect significant economic, environmental and social impact of the organization or have a significant impact on the stakeholders' assessments and decisions. In order to determine the list of such aspects in RusHydro, a procedure for determining significant aspects was carried out in 2017.

While determining the content and the scope of information included in the Report, the Company was guided by the GRI Standards' report preparation principles.

Stage 1. Drawing up a preliminary list of aspects for prioritization. The list was compiled on the basis of the GRI Standards and GRI Electric Utilities Sector Supplement, amended by topics relevant to the UN-2030 Sustainable Development Goals and the National Energy Agenda. The number of aspects on the preliminary list was 50. The preliminary list of aspects is different from the list used in the previous reporting cycle, which affected the final list of aspects. Please, see the previous list of significant aspects at *RusHydro Group Corporate Social Responsibility and Sustainability Report for 2015, p. 8. (102-49)*

While determining the content and the scope of information included in the Report, the Company was guided by the GRI Standards' report preparation principles.

1

DRAWING UP A PRELIMINARY LIST OF ASPECTS

GRI Standards
 GRI Sector Supplement
 Specificity of hydropower industry

2

PRIORITIZATION OF ASPECTS

Questioning RusHydro managers (18 people)
 Questioning external stakeholders (25 people)

3

IDENTIFICATION OF MATERIAL ASPECTS

Materiality matrix construction
 based on the results of the questionnaires

4

ADDITION OF THE LIST OF MATERIAL ASPECTS

Taking into account the stakeholders' inquires from last year's Public Hearings
 The Working Group's decision on the preparation of the Report



Stage 2. Prioritization of aspects. In order to prioritize the aspects from the preliminary list, a survey among the stakeholders' representatives and RusHydro managers was conducted. The interviewed managers (18 people) assessed the dependence of each aspect on the Group's activity on a scale from 1 to 5.

In turn, representatives of external stakeholders (investment analysts, representatives of government bodies, local communities, environmental organizations, universities, suppliers and business partners, etc. - 25 people in total) assessed the importance of the aspect for the Group's activities on a scale from 1 to 5. All survey participants

could amend the list with the aspects that, in their opinion, should be disclosed in the Report.

Stage 3. Materiality matrix construction and identification of material aspects. Materiality matrix was built based on the results of the survey of external stakeholders and RusHydro managers. The aspects located on the upper right part of the diagram (20 aspects in total) were recognized as essential.

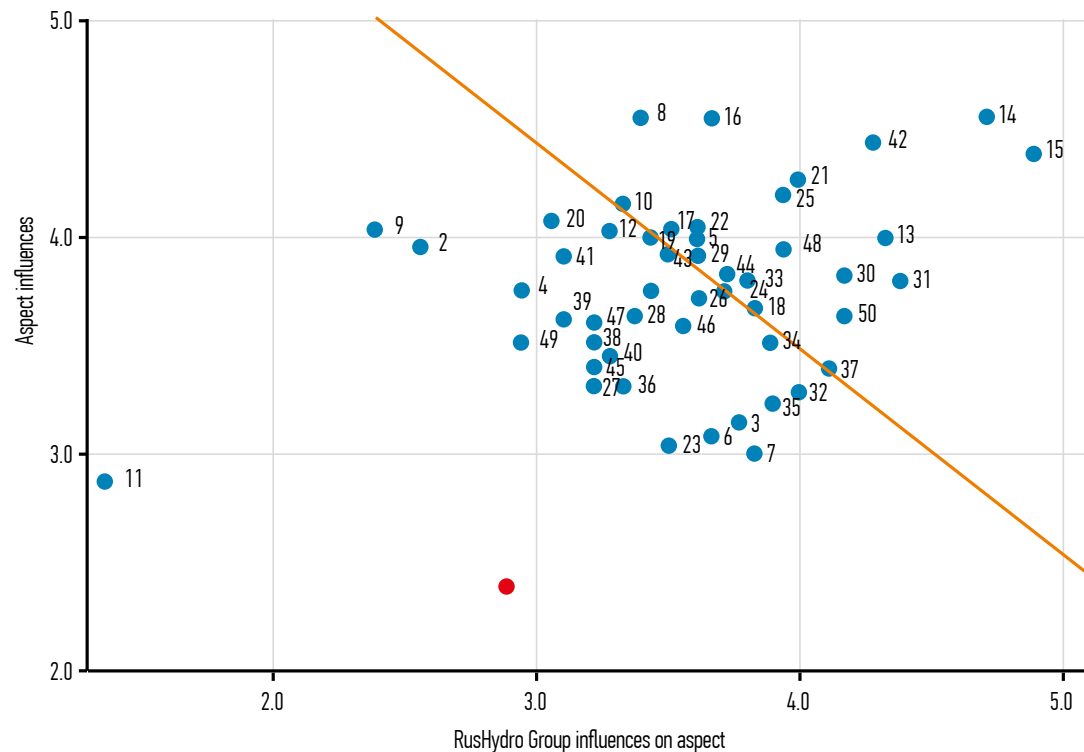
Stage 4. Addition of the list of material aspects. According to the decision of the Working Group (employees of RusHydro Group, responsible for the Report preparation), the following aspects were added:

1. Generation and distribution of direct economic value - an integral indicator on the economic impact of the Company.
2. Biodiversity impact management strategy- as requested by the stakeholders.
3. The strategy of reducing the greenhouse emission.
4. Strategy for reducing harmful emissions into the atmosphere. (102-46)

DISCLAIMER REGARDING FORWARD-LOOKING STATEMENTS

The report contains information about the plans and intentions of RusHydro Group for the medium and long term. Plans and intentions are predictive in nature and their feasibility depends, inter alia, on a number of economic, political and legal factors that are beyond the Company's area of influence (financial, economic and political situation, key markets, changes in taxes, customs and environmental legislation, etc.). For this reason, the actual performance indicators for future years may differ from the forward-looking statements published in this Report.

Materiality matrix (102-46)





Material aspects (102-47)

Nº	Aspects
1	<i>Generation and distribution of direct economic value</i>
2	Risks and opportunities for the company's activities related to climate change
3	Company's liabilities related to pension plans and established benefits
4	Financial assistance received from the state
5	Indirect economic impact on the economic development of the locations of operation
6	Ratio of standard entry level wage by gender compared to local minimum wage at locations of operation
7	Proportion of executives hired from the local community at locations of operation
8	Solutions to ensure the commissioning of new capacities and replacement of outgoing ones
9	Efficiency of the energy system
10	Research and development and costs
11	Measures to decommission nuclear power plants
12	Construction of new power facilities in Russia and abroad
13	Quality control at the stage of design and construction of power facilities
14	Safety and reliability of hydraulic structures and infrastructure facilities of thermal stations
15	Industrial control of compliance with industrial safety requirements at hazardous production facilities
16	System of prevention and liquidation of natural disasters and emergencies (including floods, high and low water levels)
17	Risk-assessment methods for risks associated with corruption, the criteria used in assessing these risks
18	Communication and training on anti-corruption methods
19	Incidents of corruption and anti-corruption actions taken
20	Actions for anti-competitive behaviour and monopoly practices
21	Compliance with the requirements of environmental legislation
22	Assessment of suppliers for compliance with environmental regulations
23	Reduction of the consumption of raw materials
24	Use of recycled materials after processing
25	Improving energy efficiency

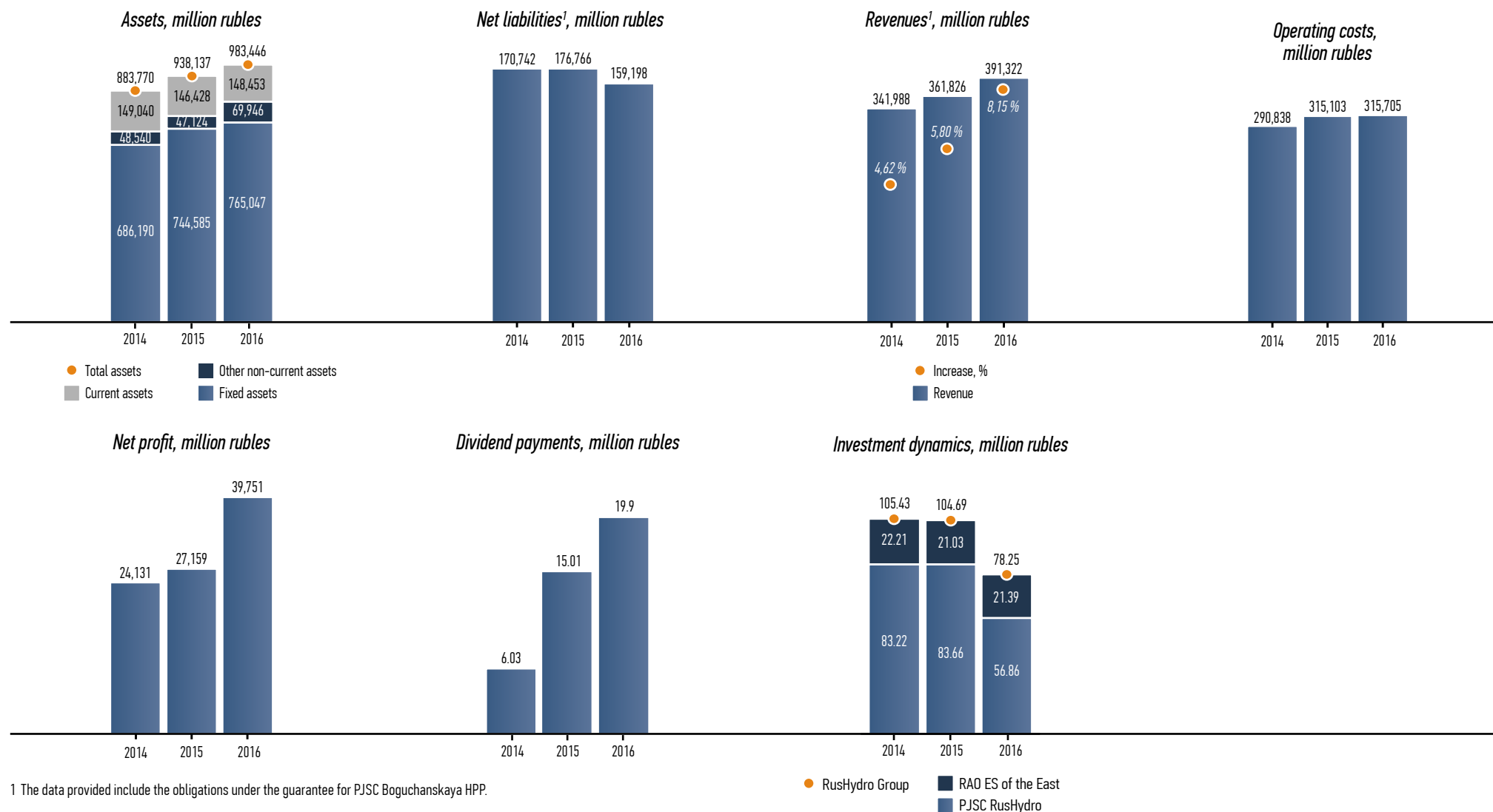
Nº	Aspects
26	<i>Biodiversity management strategy</i>
27	<i>Strategy for reducing greenhouse gas emissions</i>
28	<i>Strategy for reducing harmful emissions into the atmosphere</i>
29	Strategy for reducing discharges into sewage and organization of the waste storage
30	Development of fair labor practices and compliance with the requirements of labor legislation
31	Staff training and education
32	Mechanisms of filing appeals against violations in the field of labor practices
33	Policies and requirements for the protection of workers' health and safety
34	Health and safety topics covered in formal agreements with trade unions
35	Efforts to ban child labor
36	Efforts to ban forced labor
37	Security personnel training on human rights
38	Respect for the rights of indigenous peoples
39	Promoting respect for fundamental human rights
40	Suppliers assessment for violations of human rights and other legislation
41	Community engagement programs
42	Disaster action plan / emergency plan
43	Ensuring participation of the local communities representatives in the decision-making process
44	Participation in the development and lobbying public policy
45	Participation in charity events to achieve political goals
46	Prevention of violations of social and economic legislation
47	Reducing the impact of services on health and consumer safety
48	Reduction of injuries and deaths caused by the Company's assets
49	Compliance with the standards of product and service information and labeling
50	Compliance with the personal data protection requirements

* The material aspects defined at stage 3 are shown in bold.



KEY INDICATORS (102-7)

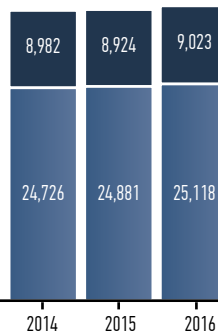
FINANCIAL AND ECONOMIC RESULTS





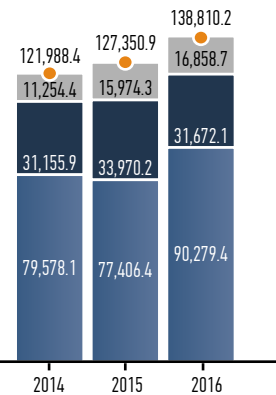
OPERATIONAL INDICATORS

Installed capacity², MW



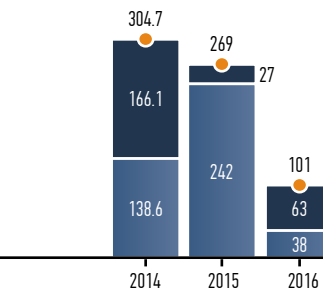
■ RAO ES of the East
■ PJSC RusHydro, subsidiaries and branches (excluding RAO ES of the East)

Power generation², million kWh



● RusHydro Group, total
■ RAO ES of the East
■ PJSC RusHydro
■ Others

Energy Saving and Energy Efficiency Improvement effect, thousand kWh



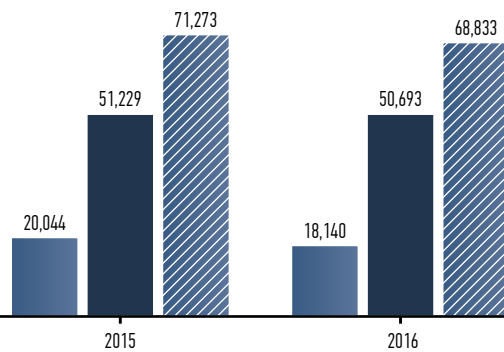
● Total
■ Additional production (Energy Efficiency Improvement effect)
■ The effect of «Energy resources saving» (The effect «Energy»)

¹ The data provided include PJSC Boguchanskaya HPP (owned by PJSC RusHydro and UC RUSAL), HPP-2 of PJSC KamGEK and doesn't include HPP-3 of PJSC KamGEK, which are in the trust management of PJSC RusHydro.



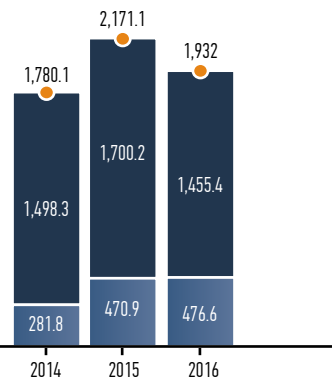
SOCIAL RESPONSIBILITY PERFORMANCE

Headcount of employees of RusHydro Group, persons



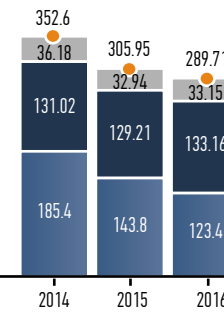
- PJSC RusHydro, subsidiaries and branches (excluding RAO ES of the East)
- RAO ES of the East
- ▨ RusHydro Group

Labor protection costs of RusHydro Group, million rubles



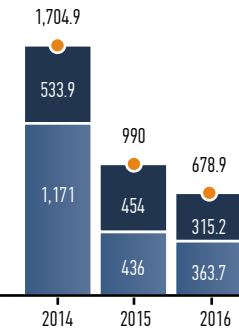
- Total
- RAO ES of the East
- PJSC RusHydro, subsidiaries and branches (excluding RAO ES of the East)

Expenses for development of human resources of RusHydro Group, million rubles



- Total
- Subsidiaries of PJSC RusHydro (Excluding RAO ES of the East)
- RAO ES of the East
- PJSC RusHydro

Charity expenses of PJSC RusHydro and RAO ES of the East¹, million rubles



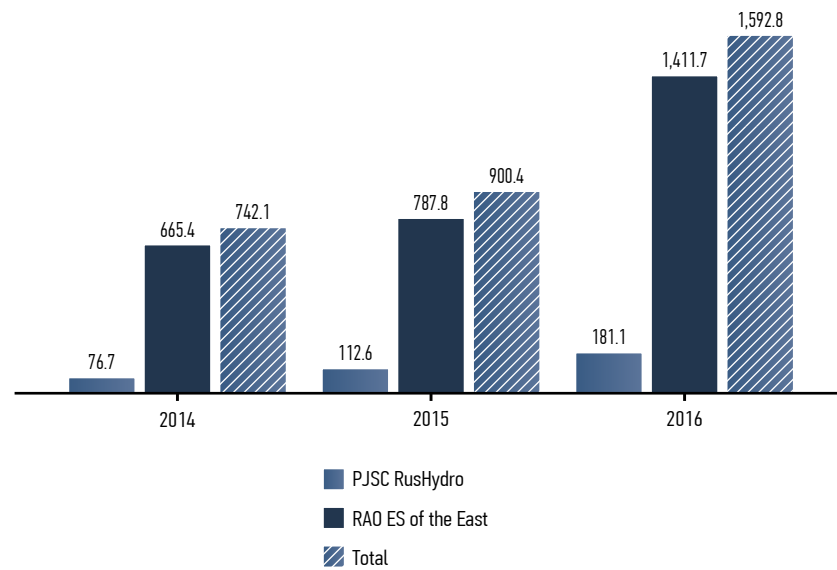
- Total
- PJSC RusHydro
- RAO ES of the East

¹ The difference in the amounts of financing in 2014-2016 is associated with a one-time financial support to HC Dynamo (500 million rubles in 2014) The company therefore was involved in the implementation of the state sports support program.

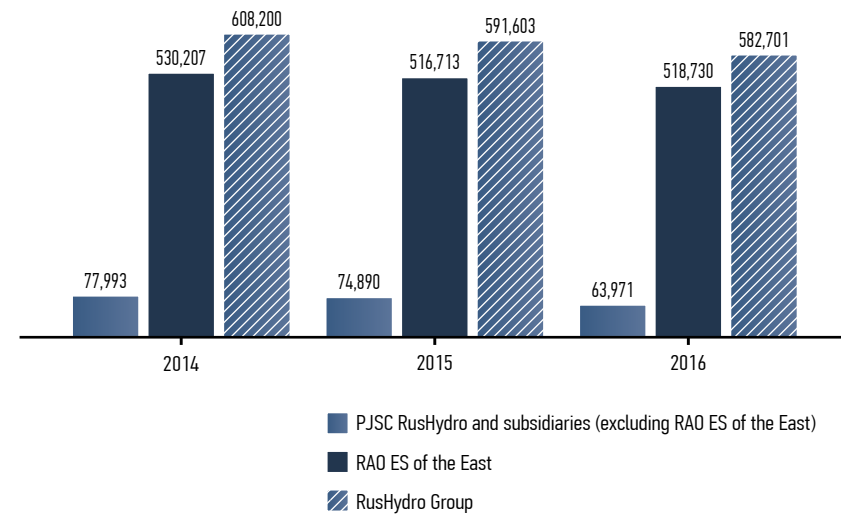


ENVIRONMENTAL PROTECTION RESULTS

Total amount of environmental protection expenses of PJSC RusHydro and RAO ES of th million rubles



Total volume of waste water discharge in water objects, thousand m³



STATEMENT OF THE MANAGEMENT BOARD CHAIRMAN – GENERAL DIRECTOR



Dear Readers, Colleagues and Partners!

I'm happy to present to your attention the ninth Report on Corporate Social Responsibility of RusHydro Group. Our company is the largest energy holding in Russia, which comprises more than 410 facilities with the total capacity of 38.9 GW, it is one of the leading companies in domestic energy industry. Hydropower plants of JSC RusHydro provide most of Russian regions with renewable energy, while subsidiaries of RusHydro Group supply electricity and heat almost to the entire Far East.

2016 became a peak year for RusHydro in terms of main indicators. The electricity generation reached its maximum value for the whole history of the Group's operation - 138.8 billion kWh. Despite the difficult economic situation, the volume of RusHydro revenue amounted to record 391 billion rubles, and the volume of paid dividends for 2016 amounted to unprecedented 19.9 billion rubles. In addition, we reduced the debt ratio by selling a number of non-core assets, optimized a number of expense items without compromising the stable operation of power plants.

In 2016, we worked to resolve the issue of arrears of the enterprises belonging to RAO ES of the East, and we adopted the optimal decision in early 2017 - to increase the authorized capital of the Company by 55 billion rubles. The funds raised were used to refinance current loan obligations of the Far East energy sector.

The past year was also marked with new RusHydro facilities commissioning. The second stage of Blagoveshchenskaya CHPP construction in the Far East was completed; Zelenchukskaya HPP-PSPP and Zaragizhskaya HPP in the North Caucasus were launched - all this helped to give a new impulse to these regions' economic development. In addition, we are developing alternative energy sources: in 2016, three solar power plants were put into operation in Yakutia.

RusHydro continues to update obsolete capacities. Since 2011, we have been implementing the Integrated Modernization Program, according to which more than half of the main equipment should be replaced by 2025. Due to the Program activities, the Company's capacity increased by 66.5 MW in 2016 and by 267 MW for five-year period, which is comparable to the launch of a new hydropower plant.

In July 2016, the new RusHydro Development Strategy was approved, which determined the main directions of the Company's activities for the period up to 2020 with a perspective for up to 2025. Among the priorities there are reliable and uninterrupted operation of power facilities, construction of new facilities (primarily in the Far East), efficiency improvement by production and management processes optimization. We have set tasks of a large scale for ourselves. The construction of hydropower plants Nizhne-Bureyskaya and Ust-Srednekanskaya and thermal stations in Yakutsk, Sovetskaya Gavan, Vladivostok and Sakhalin are continuing.

One of the key aspects of the RusHydro's activity is social responsibility: the HPP's reservoirs are a source of water for household and drinking needs, which stimulate the development of agriculture and transport, while the Group's enterprises are the largest employers in the regions. In 2016, the Company's hydropower engineers supported considerably the regions of RusHydro presence in such essential spheres as the development of education, ecology and assistance to socially vulnerable groups. Last year, thanks to RusHydro, new eco-trails and educational sites appeared, children's books were published and hundreds of thousands of rubles were collected for those who need help.

In 2016, we were the first to conduct public hearings on a non-financial report. These and other events brought fruitful results: in January 2017, PJSC RusHydro was included in the FTSE4GOOD Emerging Index, which unites emerging market companies - leaders in the field of sustainable development.

It should be pointed out that the RusHydro's success in 2016 was achieved through the adoption of the right management decisions, professionalism of the employees of branches and subsidiaries, and business processes optimization. Therefore, I would like to thank the teams of plants, scientific and design institutes, subsidiaries and Executive Office for their work, and to address the words of special gratitude to the veterans of our industry, because thanks to their work and talent the domestic energy industry works like a charm and continues its development.

I am confident that in 2017 we will continue to improve the efficiency of generating facilities and the reliability of energy supply to consumers, contributing to the development of renewable energy and regional development.

Nikolay Shulginov

*Chairman of the Management Board –
General Director, PJSC RusHydro*

(102-14)



KEY EVENTS



FEBRUARY

- The Russian Institute of Directors confirmed the corporate governance rating of PJSC RusHydro – Level 8 «Good Corporate Governance Practices» National corporate governance rating is an indicator of the corporate governance quality, it helps to compare the level of corporate governance development and the risks associated with it. The rating is a tool for evaluating and improving the corporate governance practice in the Company and improving interaction with the stakeholders.

APRIL

- The Board of Directors of PJSC RusHydro approved a new version of the Environmental Policy of PJSC RusHydro
Environmental Policy defines the key tasks for environmental protection activities. The document is the ground for planning and implementing environmental measures, creation and development of the environmental management system in PJSC RusHydro and its subsidiaries.



- The Board of Directors of PJSC RusHydro approved a revised version of the RusHydro Code of Corporate Conduct
The new version of the document takes into account the recommendations of the Corporate Governance Code approved by the Bank of Russia, as well as other requirements and recommendations issued by the regulatory bodies.
- Construction workers of the Nizhne-Bureyskaya HPP blocked the Bureya river in the Amur region
This is the most important stage of the Nizhne-Bureyskaya HPP construction, after which the waters of the river pass exclusively through the weir dam.

JUNE

- The Board of Directors of PJSC RusHydro approved the RusHydro Group Development Strategy for the period up to 2020 with a perspective for up to 2025
Unlike the previous document, the new Strategy defines goals and directions of growth for the entire RusHydro Group, including the Far Eastern assets.



- The leaders of RusHydro and Voith Hydro laid a symbolic stone in the foundation of a new plant in the city of Balakovo
The Volgagidro plant, a joint venture of RusHydro and Voith Hydro, is going to be part of Voith Hydro's international production system. Under the license agreement, the new plant can apply unique developments and technologies for the equipment design and production.
- Annual General Meeting of the Shareholders of PJSC RusHydro approved a record dividend (for 2015) – 15.01 billion rubles, that is two and a half times more than a year before

OCTOBER

- A solar power station with a capacity of 36 kW was put into operation in the village of Verkhnyaya Amga in Yakutia
The new power facility allows giving up the usage of the high-cost diesel generation in the summer time.



NOVEMBER

- **Two new solar power plants with the total capacity of 100 kW were put into operation in the villages of Innyah and Delgay in Yakutia**
Solar power plants are integrated into existing power supply systems, based on diesel power plants.
- **RusHydro Group completed the deal to sell the dams of HPP of the Angarsk cascade**
The dams of HPP of the Angarsk cascade were acquired by LLC Telmamskaya HPP (100% subsidiary of JSC EuroSibEnergo). The selling price of the dams amounts to 10.95 billion rubles, including VAT. The transaction allowed PJSC RusHydro to get a significant source of cash, improve the balance sheet and financial results and maximize the RusHydro Group's business value from dam management in comparison with the lease of dams.
- **RusHydro Group completed the deal to sell 100% of the shares of the energy supply company JSC ESK**
Purchasers were Russian legal entities, members of

the group PJSC Inter RAO. The transaction amount was 4,100 million rubles. Settlements of the transaction were completed in the first quarter of 2017.

DECEMBER

- **Zelenchukskaya HPP-PSPP was put into operation in Karachay-Cherkessia**
In the result of putting Zelenchukskaya HPP-PSPP into operation, the level of the republic's own electricity supply increases to 45%, as well as the quality of the region's energy supply. Zelenchukskaya HPP-PSPP is the first new pumped storage power plant with water heads of 220-230 meters. The average electricity production is 162 million kW*h.
- **Zaragizhskaya HPP was put into operation in Kabardino-Balkaria**
Zaragizhskaya HPP allows to significantly reduce the energy deficit in the region. The plant has the installed capacity of 30.6 MW and the average electricity production of 114 million kWh. Its unique feature is the absence of a dam, the pressure on hydro turbines is created due to the natural fall

of the terrain. During the construction of the HPP, valuable land was not flooded and resettlement of the local population was not required.

EVENTS AFTER REPORT DATE (JANUARY – JUNE 2017)

JANUARY

- PJSC RusHydro was included into the new FTSE sustainability index

FTSE are stock indexes developed by an independent agency FTSE Russel. The new FTSE4Good Index Series is designed to measure the performance of the companies demonstrating strong Environmental, Social and Governance (ESG) practices. The FTSE indexes are among the most influential stock indicators.

FEBRUARY

- After five years of Complex Modernization Program implementation the overall capacity of HPPs increased by 267 MW

The Program of Complex Modernization covers all branches and a number of subsidiaries of RusHydro. During five years of its implementation, 39 hydro turbines, 23 hydrogenerators, 41 transformers, more than 6,000 auxiliary and electrical equipment units were fully replaced. In addition, a large

number of equipment was reconstructed with the replacement of individual units. As part of the Program, an agreement was concluded to replace all hydroelectric generators of the Votkinskaya HPP and the Rybinskaya HPP, as well as the turbines of the Saratovskaya HPP, the Novosibirskaya HPP, the Zhigulevskaya HPP and Volzhskaya HPP.

MARCH

- RusHydro completed the deal on refunding the loan portfolio of RAO ES of the East companies via equity financing raised from VTB Bank
PJSC VTB and PJSC RusHydro signed an agreement on the provision of 55 billion rubles equity finance. The raised funds were fully directed to pay off the debt load of the Far Eastern energy companies. PJSC RusHydro and PJSC VTB signed a non-deliverable forward contract for shares of PJSC RusHydro for a 5-year period.

APRIL

- From April 1, 2017, the management system of RAO ES of the East (RusHydro subsidiary structure) has changed. The management of the Holding's subsidiaries was transferred to the RusHydro Far East Division.
The integration of headquarters of PJSC RAO ES of the East and PJSC RusHydro is one of implementation stages of the RusHydro Group Strategy, it is aimed at improving the financial status of the Far Eastern energy industry and the quality of its management.
- **The unique security and rescue mission «Mazai» aimed at prevention of the death of wild animals**

took place in the flood zone of the reservoir of Nizhne-Bureyskaya HPP.

Naturalists, employees of the Bureysky Nature Park and volunteers took part in this activity. With the assistance from power engineers, the participants monitored the reservoir, moreover they repelled animals from the flooding zone, caught and transported them to safe places.

MAY

- PJSC RusHydro has confirmed its participation in the Anti-Corruption Charter of Russian Business
PJSC RusHydro has sent a declaration to the Russian Union of Industrialists and Entrepreneurs (RUIE) on compliance with the provisions of the Anti-Corruption Charter of Russian Business. The Declaration lists the on-going anti-corruption measures of the Company and ascertains that the internal documents of PJSC RusHydro are adopted to prevent and combat corruption and are consistent with the Charter. After consideration, the Company's participation in the Anti-Corruption Charter of Russian Business has been extended for two years.

JUNE

- PJSC RusHydro and SC Rosatom signed a cooperation agreement
At the St.Petersburg International Economic Forum, SC Rosatom and RusHydro signed a cooperation agreement. In the framework of the agreement, the parties plan joint activities in technologies for renewables and electric energy accumulation systems.

- **The Northern Ossetian branch of PJSC RusHydro and A.N.Severtsov Institute of Ecology and Evolution (RAS) signed an agreement on restoration of the leopard population**

The parties signed an agreement on scientific and technical cooperation to restore the population of the Asiatic leopards in the Republic of North Ossetia-Alania. Leopard is listed in Annex I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and it is included in the Red Book of the Russian Federation as the endangered species.

AWARDS AND ACHIEVEMENTS

CORPORATE

International rating agency Standard&Poor's

The credit ratings forecast for PJSC RusHydro was changed from Stable to Positive. The Company's long-term credit rating was established at 'BB' level of the international scale, the short-term credit rating – at 'B' level and the national scale rating at 'ruAA' level.

Rating of the largest Russian companies in terms of sales RAEX («Expert RA»)

PJSC RusHydro took 32nd place in the rating.

Platts Top 250 Global Energy Company Rankings (2016 Platts Top 250 Global Energy Company Rankings)

PJSC RusHydro took 127th place in Top 250 Global Energy Company Rankings in the Platts ranking.

The contest «Best Corporate Media 2016» organized by the Association of Directors of Communications and Corporate Media of Russia

The winner in the nomination «Printed media. Internal Corporate Newspapers» is the newspaper «RusHydro Bulletin» («VESTNIK RusHydro»).

International Forum on Energy Efficiency and Energy Conservation «ENES-2016» (103-3)

The Minister of Energy of the Russian Federation presented a letter of thanks to the employees of the RusHydro Dagestan branch, the Omarovs working dynasty for their contribution to the development of the energy industry of the Russian Federation. The Omarovs are hereditary hydropower workers. The total length of their family work in the industry is 120 years.

REPORTING

All-Russian competition of the Russian Union of Industrialists and Entrepreneurs (RUIE) «Leaders of Russian business: dynamics and responsibility – 2016»

Victory in the nomination «For the high quality of sustainability reporting».

International competition of corporate communications «MarCom Awards 2016»

Annual report RusHydro for 2015 received gold awards in two categories of the international competition «MarCom Awards 2016» – «Best annual report of the corporation» and «Best electronic annual report».

International competition Report Watch Best Annual Reports

The position of PJSC RusHydro in the Report Watch Best Annual Reports rating increased by 36 points compared to the previous year.

The Rating of annual reports of the International Rating Agency RAEX («Expert RA»)

The annual report of PJSC RusHydro for 2015 was awarded the highest rating of «5 stars»

The rating of corporate transparency of the largest Russian companies – 2016

PJSC RusHydro took the 6th place (Premium level) in the national rating of corporate transparency of the largest Russian companies

ENVIRONMENTAL

Rating «Environmental initiatives of Russian companies in the media. Fuel and energy complex and Metallurgy» prepared by the Modern Media Research Institute together with the «Living Planet» TV channel (103-3)

Thanks to environmental projects (the federal charitable campaign «oBEREGAi», the project «Ecological trails» and the action «Week of water») PJSC RusHydro entered the top 10 of the rating.

The second All-Russian competition «MediaFEC» (103-3)

The project «Bureyskiy Compromise» devoted to minimizing the environmental impact during the construction of the Nizhne-Bureyskaya HPP became a winner in the nomination «Social and Environmental Initiative».

SOCIAL

IV National Program «The Best Social Projects of Russia» (103-3)

The program of social and professional adaptation of the orphan children «Young Energy» of Corporate Hydropower University of RusHydro (KorUnG) became one of the winners of the IV national program «The Best Social Projects of Russia» (diploma in the nomination «Projects in Support of Socially Vulnerable Population»).

The rating of employer's attractiveness RAEX («Expert RA») (103-3)

The agency confirmed the RusHydro's employer rating as A.hr «High level of employer's attractiveness»

The second All-Russian competition «MediaFEC»

The project of information coverage of All-Russian competition among operational personnel of the HPPs was recognized the best in the nomination «Popularization of FEC Professions».

All-Russian competition for the best projects in the field of work with graduates and young professionals «GRADUATE AWARDS-2016»

The project of Corporate Hydropower University of RusHydro (KorUnG) «Summer Energy School» took the first place in the nomination «Best program for work with schoolchildren», and «Project for capacity development of young specialists of PJSC RusHydro» took the first place in the nomination «Best program for work with young professionals».




INNOVATIVE

Competition of the Ministry of Energy of the Russian Federation «The New Idea»

A member of the RusHydro staff reserve Stanislav Filipas won the competition. His project «Application of the software and hardware complex S-2000 for the operational personnel training» became the best innovative project in the electric power industry.

Digital Communications AWARDS-2017

The RusHydro winning projects are «Damming of the Bureya River in the Nizhnie-Bureyskaya HPP line» in the nomination Digital-Media & Tools Longread (Material of Large Volume) and Timelaps “Modernization of hydro turbines of Novosibirskaya HPP (Branch of PJSC RusHydro) on the example of the hydro unit No.5» in the nomination Academic Digital Study/Best Student Work.



CHAPTER 1.
**STRATEGIC
REVIEW**

LEADERSHIP

38,868.1 MW installed capacity
3rd place among the world's largest hydrogeneration companies*

STRATEGIC VIEW

In 2016, the Development Strategy of the RusHydro Group was approved for the period until 2020 with a perspective for up to 2025. It defined the goals and development directions for the entire RusHydro Group, including its Far Eastern assets

SOCIAL RESPONSIBILITY



In January 2017, the stocks of the RusHydro Group were included into the FTSE4Good Emerging Index

INTERNATIONAL COOPERATION



DIALOGUE WITH STAKEHOLDERS

In 2016, the public hearings were held on the 2015 Report on Corporate Social Responsibility and Sustainability of RusHydro Group. The event was attended by representatives of the key Group stakeholders. Their recommendations were included in the 2016 Report on Corporate Social Responsibility and Sustainability

«In 2016, our main goal was to increase the efficiency of the Group's activities with an emphasis on the development based on own resources. The optimization was launched to cover hundreds of business processes, the efficiency of procurements was increased, the operational and inefficient investment costs as well as non-production costs were reduced. The second task was to improve RAO ES of the East performance. We implemented a number of measures to stabilize the work of energy assets in this region - both in terms of restructurisation of the debt burden, and improvement of tariff regulation.»

N. Shulginov,

Chairman of the Management Board -
General Director of PJSC RusHydro

* The total installed capacity of companies with the overwhelming majority of hydro generating assets is taken into account.



1.1. ABOUT RUSHYDRO GROUP

1.1.1. RUSHYDRO IN 2016

Public Joint-Stock Company «Federal Hydro-Generating Company – RusHydro» (RusHydro Group, RusHydro, Group, Company) is the largest Company in the field of power generation, the first nationwide and the third worldwide in terms of hydro power generation. RusHydro Group is the leader in renewable sources-based electricity production. The Company develops generation on the basis of water stream, tide, solar, wind and geo-thermal energy. **(102-1)**

The RusHydro Group companies are core companies and key state institutions of the electric power industry. In accordance with the Presidential Decree No 1009 of 04.08.2004, since 2012, PJSC RusHydro is included in the list of strategic enterprises and strategic joint-stock companies.

RUSHYDRO BUSINESS

The main economic activities of the RusHydro Group companies are production of electricity by hydro-power plants, production of electricity by thermal power plants, transmission, distribution and supply (retail) of electrical energy. **(102-2)**

The RusHydro Group's activities are characterized by a vast geographic footprint: from Murmansk Region to Primorsky Krai, from Chukotka to the Republic of Dagestan. The Group is also engaged in international operations managing the Sevan-Hrazdan Cascade of HPPs in Armenia. **(102-4)** The Company is registered in Krasnoyarsk, but the headquarter is located in Moscow. **(102-3)**

The RusHydro Group operates within the Unified Energy System of Russia (UES). The installed capacity of the Group's assets amounts to 38.9 GW, including electric energy of PJSC RAO ES of the East and the newest hydropower plant in Russia - Boguchanskaya HPP built and operated together with UC Rusal.

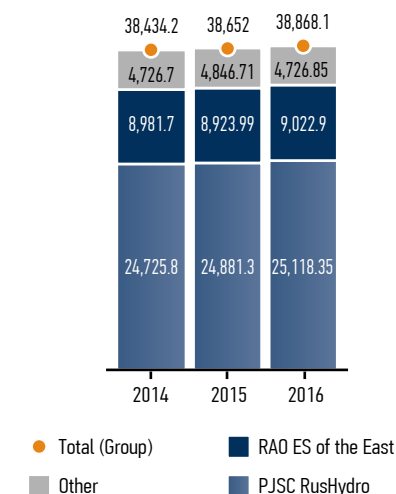
Nowadays, the Group integrates 400 electric energy facilities. Among them, there are more than 90 renewable energy source (RES) facilities, including the largest Sayano-Shushenskaya HPP, whose capacity amounts to 6,721 MW (together with Mainsky hydro-power complex). RusHydro also includes nine plants of Volga-Kama Cascade with a total installed capacity of more than 10,000 MW, Zeiskaya HPP (1,330 MW), Bureiskaya HPP (2,010 MW), Novosibirskaya HPP (475 MW). The Company's assets also feature geothermal power plants in Kamchatka, Kislogubskaya power plant, the only tidal power generation facility in Russia, and a highly manoeuvrable Zagorskaya Pumped Storage Hydropower Plant (PSPP) in the Moscow Region.

One of the most important Group assets is RAO ES of the East – a subgroup representing the energy system of the Far East of Russia. The installed electric capacity of the Far East power plants of PJSC RAO ES of the East is 9,023 MW, the installed thermal capacity is 18,133 Gcal/h.

The Group also includes CJSC IEC that owns Sevan-Hrazdan Cascade HPP in Armenia (seven power plants with total installed capacity of 562 MW).

According to the results of the year 2016, the total installed capacity of the Group increased by 237.1 MW and as for 31.12.2016, it was 38,868.1 MW. The installed capacity of RAO ES of the East is 9,022.9 MW. The increase in the installed capacity of PJSC RusHydro branches was due to the commissioning of the new hydroelectric power plants:

Installed capacity¹, MW



Zelenchukskaya HPP-PSPP (140.0 MW) and Zaragizhskaya HPP (30.6 MW). Moreover, in 2016, the increase in available capacity was also ensured by completion of works on technical re-equipment and reconstruction.

In 2016, the second phase of Blagoveshchenskaya CHPP construction was completed. In August 2017, Nizhne-Bureyskaya HPP (320 MW) was put into operation in the Amur Region, also it is planned to launch the first stage of Yakutsk TPP-2 with the electricity generation capacity of 193.5 MW and thermal capacity of 467 Gcal/h. In 2018, it is planned to launch the first phase of the Sakhalin SDPP-2, as well

¹ The data is provided inclusive of PJSC «Boguchanskaya HPP» (owned by PJSC RusHydro and UC RUSAL), inclusive of HPP-2 of PJSC KamGEC, excluding HPP-1 and HPP-3 of PJSC KamGEC, which are under trust management of PJSC RusHydro.



as the TPP in Sovietskaya Gavan in the Far East.

In 2016, the electricity output of RusHydro Group amounted to 138.8 billion kWh, which is 9.2% higher than in 2015. The increase in production is due to the actual hydrological conditions developed during the reporting period and caused

by high inflow to the reservoirs of Siberia and the Far East.

The total revenue of the Group in 2016 increased by 8.2 % compared with the year 2015, from 361,826 million roubles to 391,322 million roubles.

To ensure the main activities, the Group constructs new generating facilities, repairs and maintains operating facilities, and carries out scientific and project activities.

Installed capacity of RusHydro Group by primary energy sources (EU1)

Energy source	Installed capacity, MW
Water source	30,233.6
TPP, total	8,340.5
RES	294
TOTAL	38,868.1

Installed capacity of RusHydro Group by control modes (EU1)

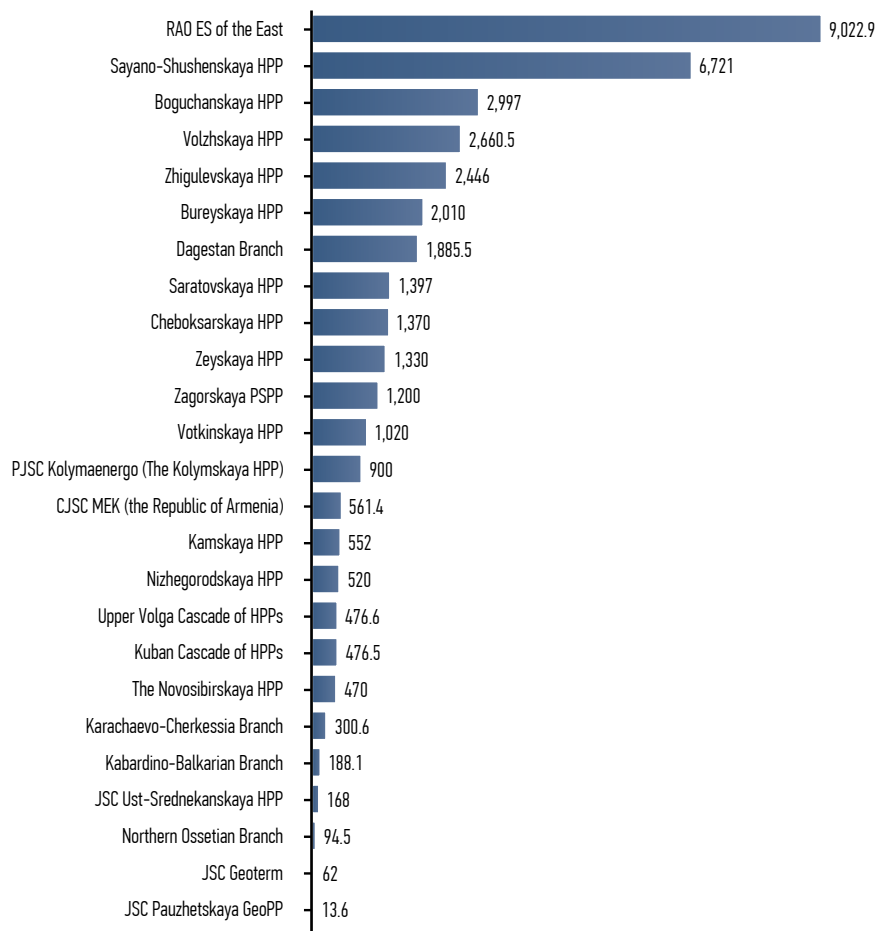
Control mode	Installed capacity, MW
The first price zone	17,927.4
The second price zone	10,398.3
Non-price zones and isolated power systems	9,981.1
Armenia (market zone)	561.4
Total	38,868.1

Actual energy production by energy sources and control modes (EU2)

Primary energy sources	Energy production, GWh	Heat production, GJ	Heat supply, thousand Gcal
Water source	108,985.5	917,179.1	
Other	29,824.7	131,866,182.0	31,494.2
TOTAL	138,810.2	132,783,361.1	
Control mode/geographical region	Energy production, GWh	Heat production, GJ	
Siberia	43,177.5		
Far East	47,615.9	132,783,361.1	
Centre of Russia	39,372.2		
South and North Caucasus	8,644.6		
TOTAL	138,810.2	132,783,361.1	



*Installed capacity of RusHydro Group's assets as of December 31, 2016
(excluding Small HPPs), MW*

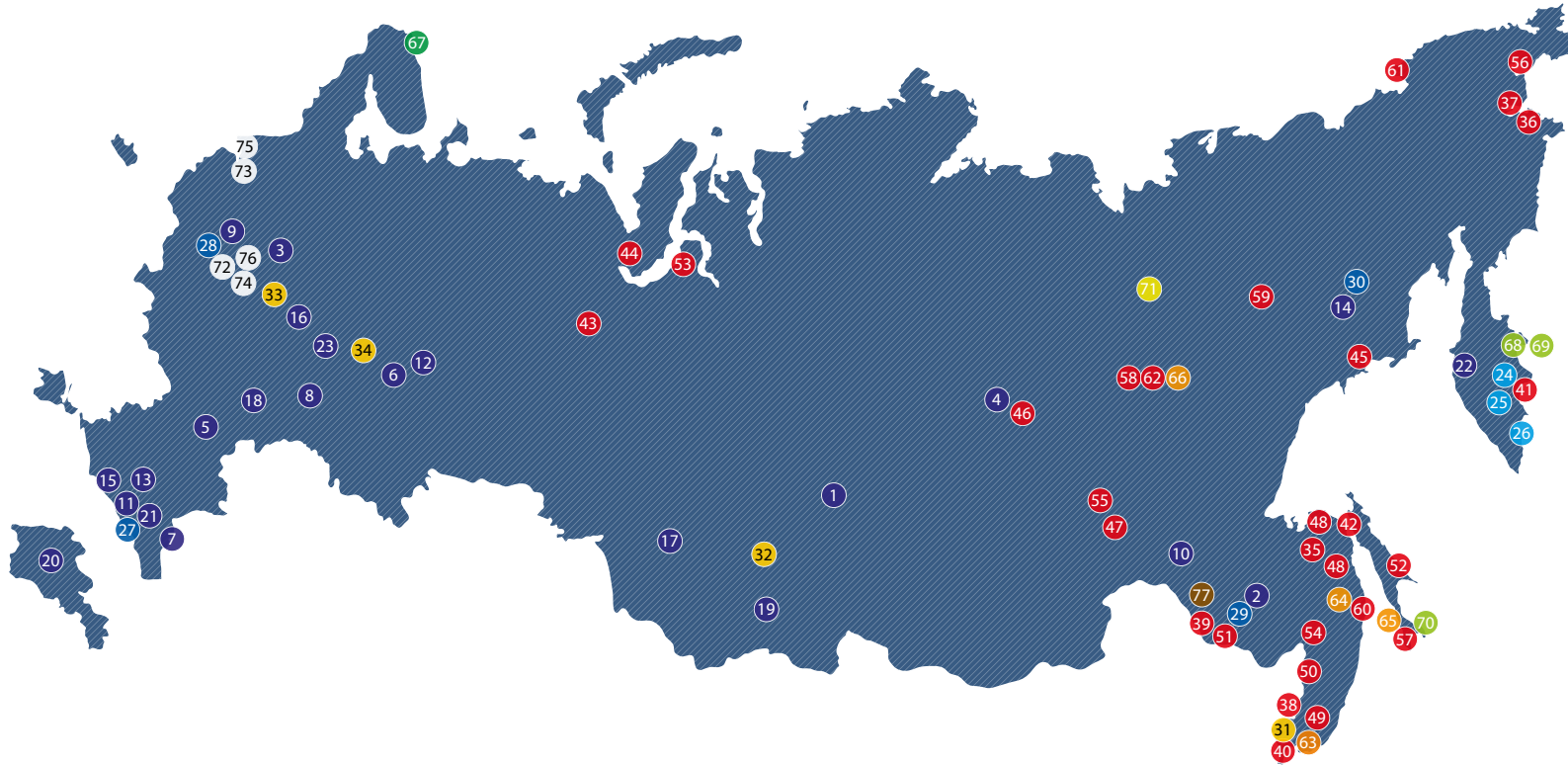


*Planned capacity in accordance with the projected demand for electric energy by energy sources and control modes
thousand kW (EU10)*

	2017	2018	2019	2020	2021	2022	2023
Total by Energy System of Russia							
Demand for capacity	183,704.0	185,337.0	187,311.0	189,214.0	191,019.0	192,880.0	194,652.0
Satisfying the demand	216,243.9	219,796.5	222,304.3	220,881.1	222,802.9	222,572.9	224,081.9
Own surplus (+) deficit (-) of reserves	32,539.5	34,459.7	34,993.4	31,667.5	31,784.3	29,692.5	29,430.2
Unified Energy System of the Centre:							
Demand for capacity	19,192.0	19,332.0	19,418.0	19,518.0	19,682.0	19,872.0	20,038.0
Satisfying the demand	216,243.9	219,796.5	222,304.3	220,881.1	222,802.9	222,572.9	224,081.9
Own surplus (+) deficit (-) of reserves	32,539.5	34,459.7	34,993.4	31,667.5	31,784.3	29,692.5	29,430.2
Unified Energy System of the Northwest:							
Demand for capacity	19,192.0	19,332.0	19,418.0	19,518.0	19,682.0	19,872.0	20,038.0
Satisfying the demand	20,193.0	21,168.8	21,417.6	20,611.6	21,829.4	21,851.4	21,873.4
Own surplus (+) deficit (-) of reserves	1,001.0	1,836.8	1,999.6	1,093.6	2,147.4	1,979.4	1,835.4
Unified Energy System of the mid-Volga Region:							
Demand for capacity	19,016.0	19,104.0	19,172.0	19,243.0	19,390.0	19,522.0	19,641.0
Satisfying the demand	25,632.9	25,538.3	25,774.3	25,501.1	25,526.1	25,526.1	25,526.1
Own surplus (+) deficit (-) of reserves	6,617.0	6,433.9	6,602.2	6,258.3	6,136.1	6,003.7	5,885.3
Unified Energy System of the South:							
Demand for capacity	17,956.0	18,168.0	18,484.0	18,682	18,907.0	19,193.0	19,355.0
Satisfying the demand	20,402.4	21,806.8	22,338.8	22,338.8	22,338.8	22,338.8	22,338.8
Own surplus (+) deficit (-) of reserves	2,446.4	3,638.8	3,854.8	3,656.5	3,431.8	3,145.8	2,983.8
Unified Energy System of the Ural:							
Demand for capacity	43,194.0	43,463.0	43,804.0	44,057.8	44,494.3	44,959.0	45,364.0
Satisfying the demand	49,399.6	49,352.2	49,438.8	49,409.5	49,587.5	50,097.5	50,274.5
Own surplus (+) deficit (-) of reserves	6,205.6	5,889.2	5,634.8	5,351.7	5,093.2	5,138.5	4,910.5
Unified Energy System of the Siberia:							
Demand for capacity	32,851.0	33,376.0	34,224.0	35,160	35,460	35,618	35,772.0
Satisfying the demand	37,783.6	38,328.5	38,747.5	39,289.5	39,539.5	39,777.5	39,837.5
Own surplus (+) deficit (-) of reserves	4,932.6	4,952.5	4,523.5	4,129.2	4,079.6	4,160.0	4,065.5
Unified Energy System of the East:							
Demand for capacity	6,944.0	7,397.0	7,536.0	7,627.0	7,757.0	7,918.0	8,234.0
Satisfying the demand	10,762.4	11,268.9	11,238.9	11,171.9	11,422.9	11,422.9	11,422.9
Own surplus (+) deficit (-) of reserves	3,818.4	3,871.9	3,702.9	3,544.9	3,665.9	3,504.9	3,188.9



Geography of activities



● Operating PPs MW	12 Kamskaya HPP.....549	● Geo PPs MBr	33 Ryazan power supply company
1 Boguchanskaya HPP.....2 997	13 HPP of Karachayevo-Cherkess branch.....160.6	24 Verhne-Mutnovskaya GeoPP.....12	34 Chuvash power supply company
2 Bureyskaya HPP.....2 010	14 Kolymskaya HPP.....900	25 Mutnovskaya GeoPP.....50	● Thermal PPs MBr
3 Cascade of Verhnevolzhskie HPPs.....476.6	15 Cascade of Kubanskiye HPPs.....476.5	26 Pauzhetskaya GeoPP.....12+2.5	35 Amurskaya CHPP.....285
4 Cascade of Vilyuyskie HPPs.....680	16 Nizhegorodskaya HPP.....520	● HPPs under construction MBr	36 Anadyskaya Gas Engine CHPP.....36.65
5 Volzhskaya HPP.....2 650	17 Novosibirskaya HPP.....465	27 Zaramagskye HPPs.....342	37 Anadyskaya CHPP.....56
6 Votkinskaya HPP.....1 020	18 Saratovskaya HPP.....1 391	28 Zagorskaya PSPP-2.....840	38 Artemovskaya CHPP.....400
7 HPP of Dagestanian branch.....1 785.5	19 Sayano-Shushenskaya HPP.....6 721	29 Nizhne-Bureyskaya HPP.....320	39 Blagoveschenskaya CHPP.....280
8 Zhigulevskaya HPP.....2 404	20 Sevan-Razdanskiy Cascade of HPPs.....561.41	30 Ust-Srednekanskaya HPP.....570	40 Vladivostokskaya CHPPs.....542
9 Zagorskaya PSHP.....1 200	21 HPP of North Ossetian branch.....79.5	● Retail companies	41 Kamchatskaya CHPPs.....392.5
10 Zeyskaya HPP.....1 330	22 Tolmachevskie HPPs.....45.2	31 Far Eastern power company	42 Komsomolskiye CHPPs.....582.5
11 HPP of Kabardino-Balkarskiy branch.....157.5	23 Cheboksarskaya HPP.....1 370	32 Krasnoyarskenergosbyt	43 Kyzym (mobile PP).....72

44 Labytnangi (mobile PC).....73	45 Magadanskaya CHPP.....96	46 Mirminskaya TPP.....72	47 Neryunginskaya TPP.....570
48 Nikolaevskaya CHPP.....130.6	49 Partizanskaya TPP.....203	50 Primorskaya TPP.....1 467	51 Raichikhinskaya TPP.....102
52 Sakhalinskaya TPP.....168	53 Urengoy (mobile PP).....72	54 Khabarovskie CHPPs.....1 155	55 Chulmanskaya CHPP.....48
56 Evgekinotskaya TPP.....34	57 Yuzhno-Sakhalinskaya CHPP.....455	58 Yakutskaya TPP.....368	59 Arkagalinskaya TPP.....224
60 Maya TPP.....81	61 Chaunskaya CHPP.....34.5	62 Yakutskaya TPP.....12	● Thermal PPs under construction MBr
63 Vostochnaya TPP.....139.5	64 Sovgavanskaya CHPP.....120	65 Sakhalinskaya TPP-2.....120	66 Yakutskaya TPP-2.....193
67 Tidal PP..... MBr	68 WPP in Ust-Kamchatsk.....1.1	69 Nikolskoe sett. WDS.....0.55	70 Novikovo sett. WDS.....0.4
71 Solar PP..... MBr	● Batagayskaya SPP1	○ Research and design organizations	72 Mosoblhydroproject
73 Vedeneev VNIIG	74 Hydroproject institute	75 Lenhydroproject	76 NIEES
● Electric grid companies	77 Far Eastern Distribution Company		



1.1.2. ELECTRICITY AND CAPACITY MARKET OVERVIEW (102-6)

The assets stock makes RusHydro Group a unique generating company in the world ranked the third among the world's largest hydropower companies (in terms of installed capacity).

The wholesale electricity and capacity market within the territory of the Russian Federation is divided into the Wholesale market for electricity and power (WMEP) and Retail market for electricity and power (RMEP). According to the requirements of the legislation, all stations with installed capacity over 25 MW perform electricity sales on the WMEP. Stations whose capacity is 5-25 MW can choose to operate either on WMEP or RMEP.

The RusHydro companies operate on wholesale electricity and capacity market and on retail markets of electricity and heat.

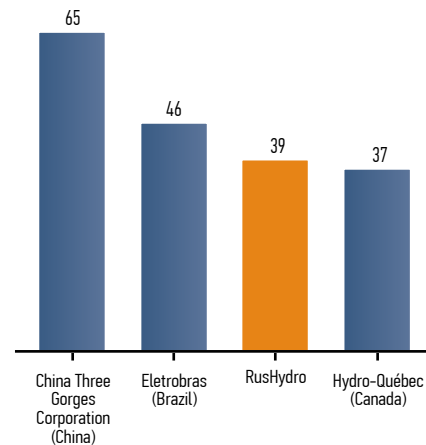
The Company operates under such conditions when the industry is divided into price and non-price zones of the UES, as well as isolated power systems operating on the basis of regulated tariffs. The first price zone includes the territories of the European part of Russia and the Urals, while the second price zone includes Siberia. The WMEP's non-price zones include: the Arkhangelsk and Kaliningrad Regions, the Komi Republic and the territories of the Far East, where the energy (capacity) wholesale is operated under special terms. The rules of the retail electricity markets apply on the territories of the country that are not united in price and non-price zones. (EU23)

During 2016, all electric energy in the price zones of the wholesale market was sold by RusHydro Group companies at unregulated (market) prices, excluding energy to be supplied to population and equated consumers, as well as consumers in the North Caucasus and the Republic of Tuva.

Within the retail markets, electric energy purchased at the Wholesale Electric Energy Market, as well as electricity of generating companies that are not participants of the wholesale market is sold to ultimate customer.

The companies of RAO ES of the East operate in the non-price zone of the Far East of Russia and in the isolated power systems. The prices are established on the basis of national rules and regulations on electricity and heat tariffs in the Russian Federation. The zone of free-of-control prices is absent in the Far Eastern Federal District.

*Installed capacity
of the world's major peer group companies
in 2016¹, GW*



WECM price and non-price zones



1 – the first price zone;
 2 – the second price zone;
 3, 4, 5 – non-price zones and isolated power systems.

Participants of WMEP and REMP

Participants of the Wholesale market for electricity and power (WMEP)	Participants of the Retail market for electricity and power (REMP)
<ul style="list-style-type: none"> Generating companies and electricity sales organizations Big consumers of electricity Guaranteeing suppliers that have received the status of wholesale market entities NP «Market Council» Commercial operator and other organizations that ensure functioning of the commercial infrastructure of the market Organizations that ensure functioning of the technological infrastructure of the market (Organization for the management of a unified national (all-Russian) electric grid, a system operator) 	<ul style="list-style-type: none"> Consumers Public utility service providers Last resort suppliers Energy sales and energy supply organizations Electricity (capacity) producers in retail markets Grid companies Operational and dispatching management entities of the electric power sector, and exercising operational and dispatch management in retail markets (the system operator and operational and dispatching management entities in technologically isolated territorial electric power systems).



Length of overhead and underground electricity transmission lines and distribution lines by control mode (EU4)

Length of electricity transmission lines, km (in chains)			
WMEP - controlled prices		RMEP- controlled prices	
Overhead power transmission line			
110 kV	8,035.7	220 kV	4,471.4
		110 kV	6,889.4
35 kV	8,801.4	35 kV	6,814.5
Underground power line			
110 (10) kV	40	110 (10) kV	1.6
35 kV	83.5	35 kV	2.8
Length of distribution lines, km (in chains)			
WMEP - controlled prices		RMEP- controlled prices	
Overhead power transmission line			
6 (10) kV	20,532.8	6 (10) kV	11,378.8
0.4 kV	20,325.4	0.4 kV	11,729.8
Underground power line			
6 (10) kV	1,224.2	6 (10) kV	1,916.9
0.4 kV	1,055.5	0.4 kV	1,360.6

Number and installed capacity of transforming sub-stations (EU4)

	Number of transforming sub-stations, pc	Installed capacity of transforming sub-stations, MVA
WMEP - controlled prices		
110 kV	242	7,338.3
35 kV	465	4,318.8
6 (10) kV	10,727	3,411.3
RMEP- controlled prices		
220 kV	28	3,620.3
110 kV	140	4,563.3
35 kV	321	1,595.8
6 (10) kV	9,234	3,296.9

THERMAL POWER MARKET

The RAO ES of the East subsidiaries are participants of thermal power retail markets on their territories. In accordance with the Russian legislation, thermal power sale is fully regulated.

Prices (tariffs) for heat supplied by the power companies to consumers of all categories are approved by the executive authorities of the sub-federal units of the Russian Federation involved in the state regulation of tariffs on the basis of the tariff limit set by the Federal Tariff Service of Russia. (EU23)

DEVELOPMENT OF RENEWABLE ENERGY SOURCES

RusHydro Group considers the use of traditional and non-traditional renewable sources (RES) of energy as a priority of its business and steadily increases the installed generation capacity through construction of new hydroelectric power stations and commissioning of new energy generating capacities.

RusHydro was one of the first companies developing projects based on the use of RES (renewable energy sources) in Russia. Together with its subsidiary company RAO ES of the East, the Group develops such RES areas as solar, wind, geothermal energy and small hydro power plants. RusHydro's Innovation Development Program names energy efficiency improvement via expanding the use of other RES (wind power and geo-thermal, etc.) as one of the Company's strategic goals.

[Read more about the RusHydro Group activities in terms of renewable energy sources in 4.4. Development of renewable energy.](#)



1.2. RUSHYDRO STRATEGY



1.2.1. THE COMPANY'S MISSION AND VALUES

The Company's mission is an efficient use of water resources to ensure reliability of Russia's Unified Energy System (UES), as well as creation of favourable conditions for the social and economic development of the Far Eastern regions by providing reliable access to energy infrastructure for the existing and prospective consumers.

The Company's values:

Clean energy – environmental safety and respect for natural resources.

Engineering culture – safe and reliable operation of the assets.

Prosperous society – reliability and infrastructure development, sustainable use of water resources, development of the hydro generation potential and expanded use of renewable energy sources that promote development of the territories, economic growth and increase in welfare and prosperity of society.

Responsible business – social policy that supports personnel and residents of the regions where the Company operates.

Leading company – ensuring the Company's success and leadership by combining efforts of the personnel, resources and business components in the pursuit of excellence in every activity.

Unified team – fair remuneration and development opportunities for employees to achieve the Company's competitive advantages in different areas of its activity (team spirit, self-expression and personal fulfilment for each team member).

Developing environment – new technologies and unlimited development opportunities.

Young energy – professional development of the Russian youth when still at school.

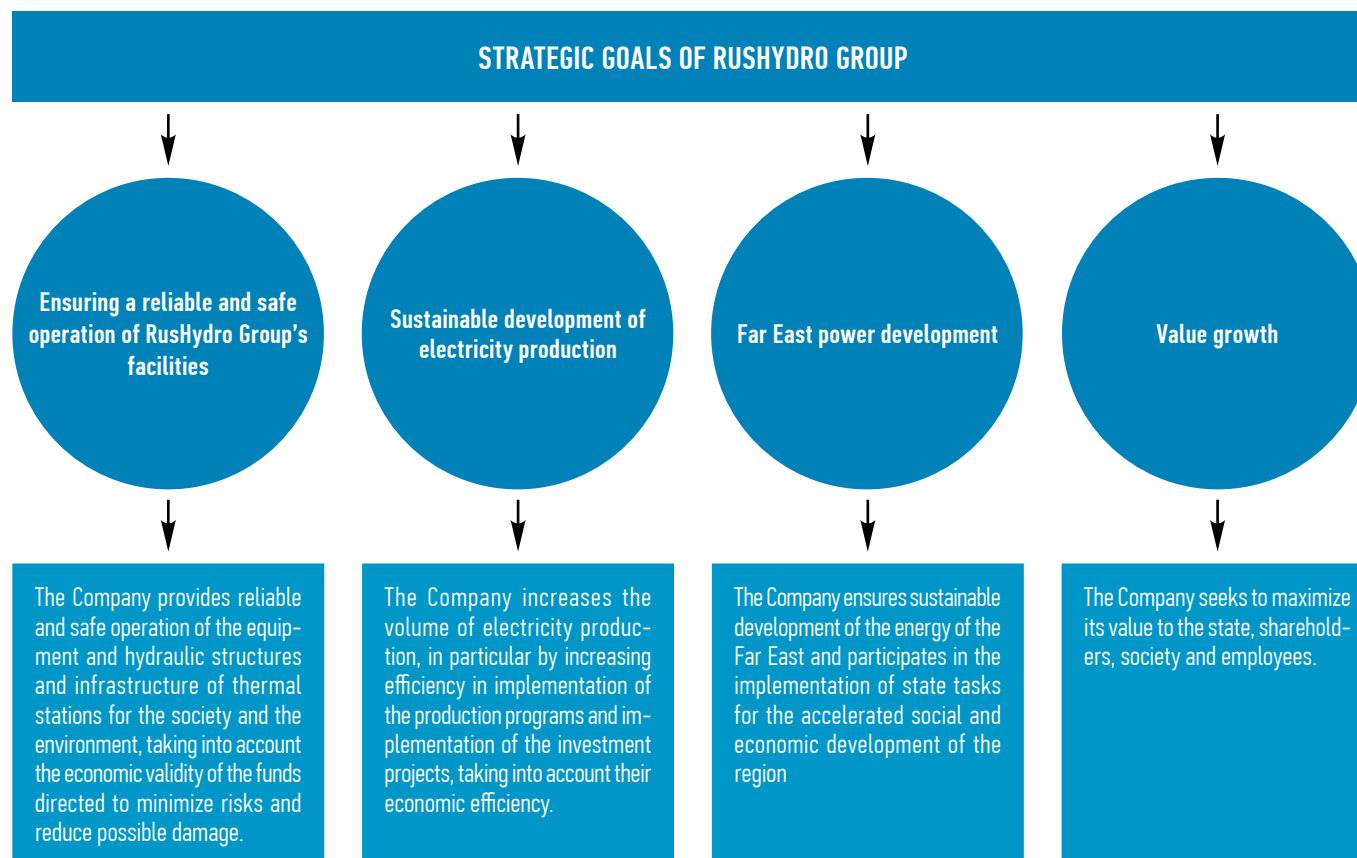
1.2.2. THE DEVELOPMENT STRATEGY OF RUSHYDRO GROUP FOR THE PERIOD UNTIL 2020, WITH A PERSPECTIVE UP TO 2025

In June 2016, the Board of Directors of PJSC RusHydro approved the Development Strategy of RusHydro Group for the period until 2020, with a perspective for up to 2025¹. The Strategy was developed in accordance with the following documents:

- Concept of the long-term social and economic development of the Russian Federation until 2020;
- National Security Strategy of the Russian Federation;
- Long-term forecast of Russia's economic development until 2030;
- Draft Energy Strategy of Russia until 2035;
- Scheme and program of development of the Unified Energy System of Russia for 2015 - 2021;
- General layout of electricity generation facilities' locations until 2020;
- Regional social and economic development strategies and regional energy strategies;
- Sector strategies.

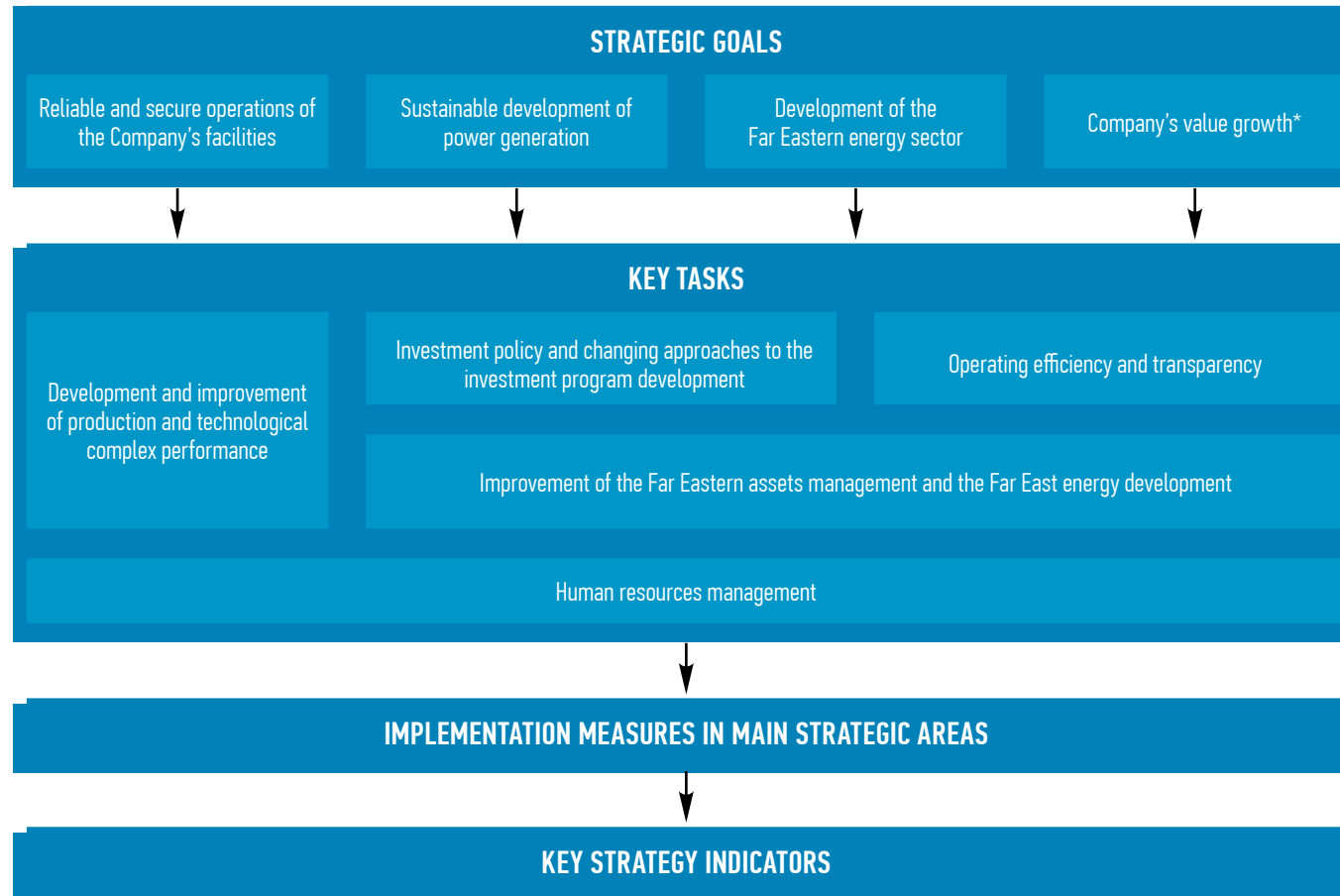
The new Strategy defines the goals and development directions for the entire RusHydro Group. In 2016, the development of the Far Eastern regions became a new priority strategic goal.

In accordance with the Company Strategy, specific tasks were formulated for the goals achievement. Some tasks serve simultaneously several goals, other serve just one of them. For example, the task «Human resources management» is aimed at achieving all goals, but the task «Operating efficiency and transparency» is aimed only at achieving the Company's value growth.



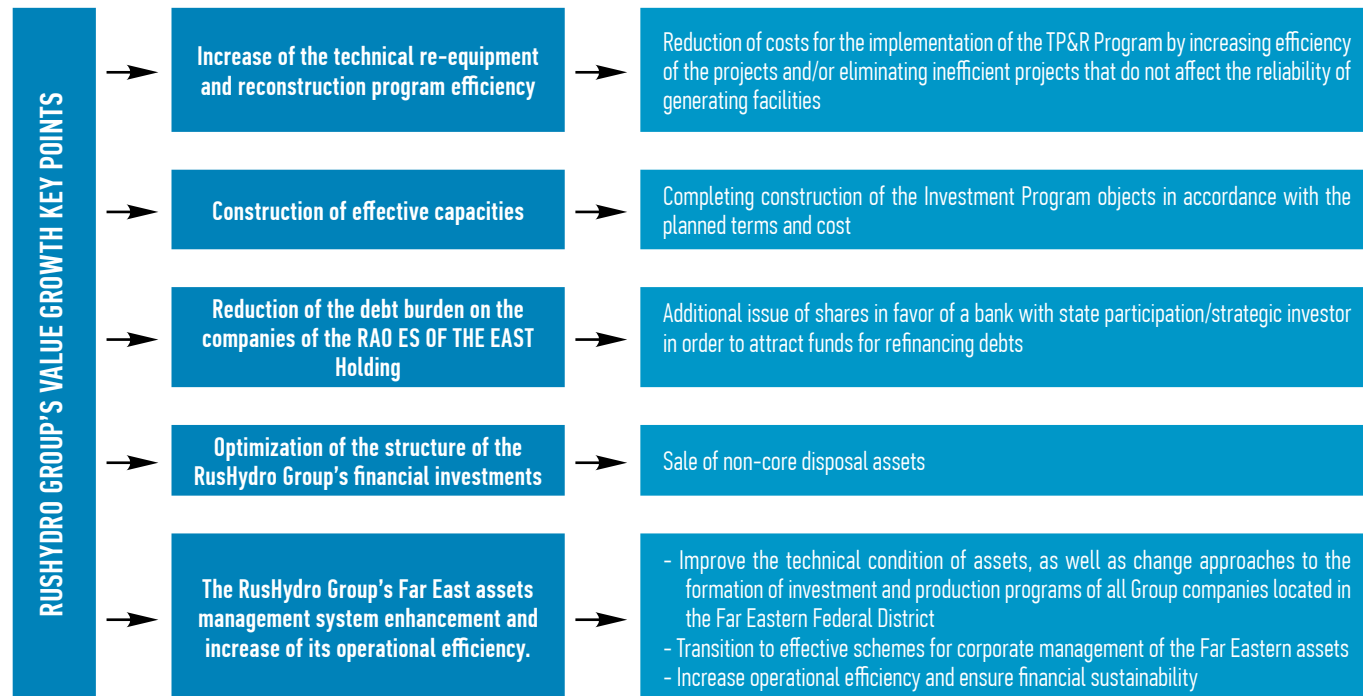


Interrelation of strategic goals, objectives in principal activities, measures and key indicators of the Strategy





Key points of growth





STRATEGY IMPLEMENTATION MECHANISMS

The Company has introduced a strategic management system that links the processes of strategic management with the motivation system. The system is formed taking into account the recommendations of the Federal Agency for State Property Management for the development of key strategic documents¹.

The main Strategy implementation tools are the Long-Term Development Program of RusHydro Group and the Strategy Implementation Plan, which include Company's development priorities as well as annual tasks and indicators aimed at achieving the Company's strategic goals.



THE DEVELOPMENT STRATEGY OF RUSHYDRO GROUP AND THE ENERGY STRATEGY OF THE RUSSIAN FEDERATION FOR THE PERIOD UNTIL 2035



Long-Term Development Program of RusHydro Group is based on the Energy Strategy project of the Russian Federation for the period until 2035, in whose development PJSC RusHydro has taken an active part. The central element of the national strategy is the transition from resource-based to resource-innovative development of the fuel and energy complex. A particular emphasis is made on the need for deep and comprehensive modernization of the fuel and energy complex in Russia.

e tasks outlined in the Energy Strategy of the Russian Federation for the period until 2035, and RusHydro's contribution to their achievement

Sector wide task	RusHydro measures and projects
Electric power and heat power industry	
Decommissioning of economically inefficient, obsolete power equipment with the introduction of a necessary amount of new capacities, mainly based on the use of domestic technologies and equipment, together with keeping priority of electric and thermal energy generation in a combined mode	The HPP Complex Modernization Program, technical re-equipment and reconstruction (TP&R) Read more in 2.4 <i>Modernization, technical upgrade and reconstruction</i>
Modernization and development of the Unified Energy System of Russia (UES) with the consequent inclusion of the unified power system of the East and a number of isolated power systems (taking into account possible technical and economic consequences) while ensuring reliability of electricity supply in combination with the systems intellectualization	«Far East power development» is one of the Group strategic goals In 2016, by increasing the charter capital of the Company, funds to refinance current loan obligations of the Far Eastern energy sector were attracted
Optimizing the structure and loading the electricity and heat generating capacities by types of generation (taking into account the equipment manoeuvrability) and types of energy resources used as the basis for improving the structure of the fuel and energy balance of the country and regions	An important part of the Company's Investment Program is the increase in hydro generating capacities
Non-conventional renewable energy sources	
Introduction of new generating capacities, functioning on the basis of non-conventional renewable energy sources under condition of their economic efficiency	Over the past five years, the Group put into operation 16 solar stations with the capacity of 1.47 MW and three wind plants with the capacity of 2.2 MW in Yakutia
Development of the domestic scientific and technical base and mastering of the advanced technologies in the field of the use of non-conventional renewable energy sources, increase in production of the main generating and auxiliary equipment for non-conventional renewable energy sources in Russia	Among the RusHydro innovation projects, there is development, implementation and research of the multifunctional complex efficiency that provides 100% of the energy supply of the village of Verkhnyaya Amga of Aldan ulus on the basis of renewable energy sources

¹ Recommendations of the Federal Agency for State Property Management No.00-11/18576 of 29.04.2014



1.2.3. RUSHYDRO GROUP'S LONG-TERM DEVELOPMENT PROGRAM



Long-Term Development Program is a key tool in the vertical system of strategic planning in companies with State participation. The RusHydro Group Long-Term Development Program for the 2016–2020 (hereinafter referred to as LDP) is aimed at improving the Group's efficiency and upgrading the governance system by the Russian Federation, the major shareholder of the Company.

The LDP¹ for 2016–2020 is drawn up in accordance with the instructions of the President of the Russian Federation² and the Government of the Russian Federation³ and approved by the decision of the Board of Directors of PJSC RusHydro. LDP is formed on the basis the Development Strategy of RusHydro Group for the period until 2020 with a perspective for up to 2025, the consolidated RusHydro Group Business Plan and the program documents of RusHydro Group (PJSC RusHydro and PJSC RAO ES of the East):

production programs, investment programs, innovative development programs.

The LDP defines the main principles and directions that ensure an effective development of RusHydro Group. The document contains proposals to improve the PJSC RusHydro's operating and investment efficiency, and competitiveness of PJSC RAO ES of East Holding. The LDP also includes measures to enhance corporate governance management, human resources management, the systems of antiterrorist, information and economic security and development of international activities. Moreover, the LDP contains risk analysis of measures implementation, key performance indicators and the methodology for calculating and evaluating KPIs of the LDP.

The goals of the LDP coincide with the goals of the Development Strategy of RusHydro Group for the period until

2020 with a perspective for up to 2025. The key priority areas of development and goals are:

- development and improvement of the management efficiency in production and technological complexes;
- investment policy and change of the approaches to an investment program development;
- enhancement of the effectiveness of the Far East asset management system and development of the power system in the Far East;
- increase in operational efficiency and transparency of activities;
- development of the human potential.

Control of the LDP implementation is carried out in accordance with the Standard for control of the LDP implementation⁴ and the Technical task for conducting an audit of the LDP implementation⁵. The functional specification for the program control is prepared taking into account the approximate functional specification developed by the Ministry of Economic Development of Russia. Based on this standard, since 2016, the independent auditor has been checking the program implementation on an annual basis.

1 Minutes No. 244 of 23.11.2016 (with amendments approved by Minutes No. 251 of 18.04.2017)2

2 Order No. Pr-3086 of 27.12.2013

3 Minutes No. 3 of 30.01.2014, Directives of the Government of the Russian Federation No. 4955 p-P13 of 17.07.2014

4 Minutes No. 206 of 21.11.2014

5 Minutes No.227 of 16.11.2015

KEY PERFORMANCE INDICATORS

The system of key performance indicators (hereinafter referred to as KPIs) of PJSC RusHydro is aimed at enhancement of efficiency of the Company's performance and achievement of the goals set by the shareholder, and includes the indicators in accordance with the LDP and Business Plan for the year of 2016.



The KPIs of PJSC RusHydro includes seven annual KPIs: four financial and economic indicators, two sectoral ones and an integrated KPI for innovation (Read more in 3.3.1. *Innovative development management*).

In 2016, all KPIs were fulfilled, except one – «Fulfilling capacity commissioning timetable and plan for finance and disbursement».

KPIs of the LDP of RusHydro Group include 10 indicators, among them there is prevention of accidents at work and maximum number of accidents in RusHydro Group, purchase share from small- and medium-sized business entities.

[Read more about the key performance indicators in RusHydro Group, PJSC RusHydro and RAO ES of the East in the 2016 Annual Report of PJSC RusHydro, page 23.](#)



1.3. SUSTAINABLE DEVELOPMENT MANAGEMENT



1.3.1. CONNECTION BETWEEN COMPANY STRATEGY AND UN SUSTAINABLE DEVELOPMENT GOALS

RusHydro shares the understanding of sustainable development definition, formulated by the UN:

According to the World Commission UN of Environment and Development, «Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs».

The Company sticks to the understanding of corporate social responsibility (hereinafter referred to as CSR), formulated in the standard ISO 26000. According to the standard, social responsibility is the responsibility of an organization for the impacts of its decision and activities on society and environment, through transparency and ethical behavior that:

- contributes to sustainable development, including health and welfare of society;
- takes into account expectations of the stakeholders;
- is in compliance with applicable law and consistent with international norms of behaviour;
- is integrated throughout the organization and applied in its relationships.

In its turn, the corporate social responsibility of the Company is the business management practice that implements the principles and guidelines for achieving sustainable development. The concept of CSR includes three aspects of needs, known as the «triple bottom line»: economic prosperity and efficient production, development of both social and cultural systems, environmental protection and minimization of environmental impact.

Corporate social responsibility is the important Company value and it is reflected in the mission of PJSC RusHydro:

- efficient use of water resources;
- creating conditions for ensuring the reliability of the Unified Energy System of Russia;
- creating conditions for the social and economic development of the Far East regions by ensuring the availability of energy infrastructure.

RusHydro Group sees its primary social responsibility in the uninterrupted supply of electricity to the population. It correlates with one of the Company's strategic goals, which is in reliable and secure operation of the Company's facilities considering the economic feasibility of funds allocated to mitigate risks.

To achieve these objectives, the Group implements a large-scale work, which is based on a balanced management of economic, social and environmental aspects of its activities.




THE RUSHYDRO GROUP BUSINESS AND UN SUSTAINABLE DEVELOPMENT GOALS

The activities of RusHydro Group in CSR are aimed at achieving the number of sustainable development goals (SDGs) adopted by the United Nations in September 2015.

Sustainable Development Goals and the RusHydro Group Responsibility

Цель	Ответственность Группы РусГидро
 Good health and well-being	<ul style="list-style-type: none"> • Development and maintenance of a stable operation of the labor protection, industrial and fire safety systems • Employee's insurance of workers for accidents at work and occupational diseases
 Quality education	<ul style="list-style-type: none"> • Development of employees' professional competences • Promotion of the development of secondary and higher education through cooperation with the universities
 Clean water and sanitation	<ul style="list-style-type: none"> • Creation and operation of treatment facilities • Control and reduction of polluted water discharges
 Affordable clean energy	<ul style="list-style-type: none"> • Guarantee of energy security in the Russian Federation • Increase in energy efficiency • Increase of the renewable energy sources share in the energy balance • Development of alternative renewable energy generation
 Decent work and economic growth	<ul style="list-style-type: none"> • Maximization of value/cost for the state, shareholders, society and employees • Responsible human resource management • Employment of the population and decent wages
 Industry, innovation and infrastructure	<ul style="list-style-type: none"> • Implementation of the Complex Modernization Program • Conducting R&D by the RusHydro Research and Development Complex • Construction of new power facilities for meeting the population's demand for energy • Development of the Far East energy infrastructure
 Sustainable cities and communities	<ul style="list-style-type: none"> • Guarantee of reliable and safe operation of production facilities • Emergency prevention and control • Construction and financing of social infrastructure facilities • Relief measures in the event of natural disasters or other calamities

Цель	Ответственность Группы РусГидро
 Responsible consumption and production	<ul style="list-style-type: none"> • Development of a cautious approach to resource exploitation among consumers, including the younger generation • Safe production, quality control of generating facilities during the construction and operation phases • Efficient utilization of energy and water resources
 Climate action	<ul style="list-style-type: none"> • Compliance with environmental legislation • Minimization of the impact on the environment, including the climate • Minimization of air emission (for companies of RAO ES of the East)
 Life below water	<ul style="list-style-type: none"> • Conservation and restoration of fishery resources of water bodies • Water efficiency • Clear waste from water bodies banks
 Life on land	<ul style="list-style-type: none"> • Compliance with environmental legislation • Efficient use of environmental resources • Protection of biological diversity
 Peace, justice and institutions	<ul style="list-style-type: none"> • Fight corruption • Compliance with legal requirements • Transparency of business • Timely settlement of taxes
 Partnerships for the goals	<ul style="list-style-type: none"> • Meaningful cooperation with stakeholders • Environmental cooperation • Increase in transparency and accountability



1.3.2. INTERACTION WITH THE STAKEHOLDERS

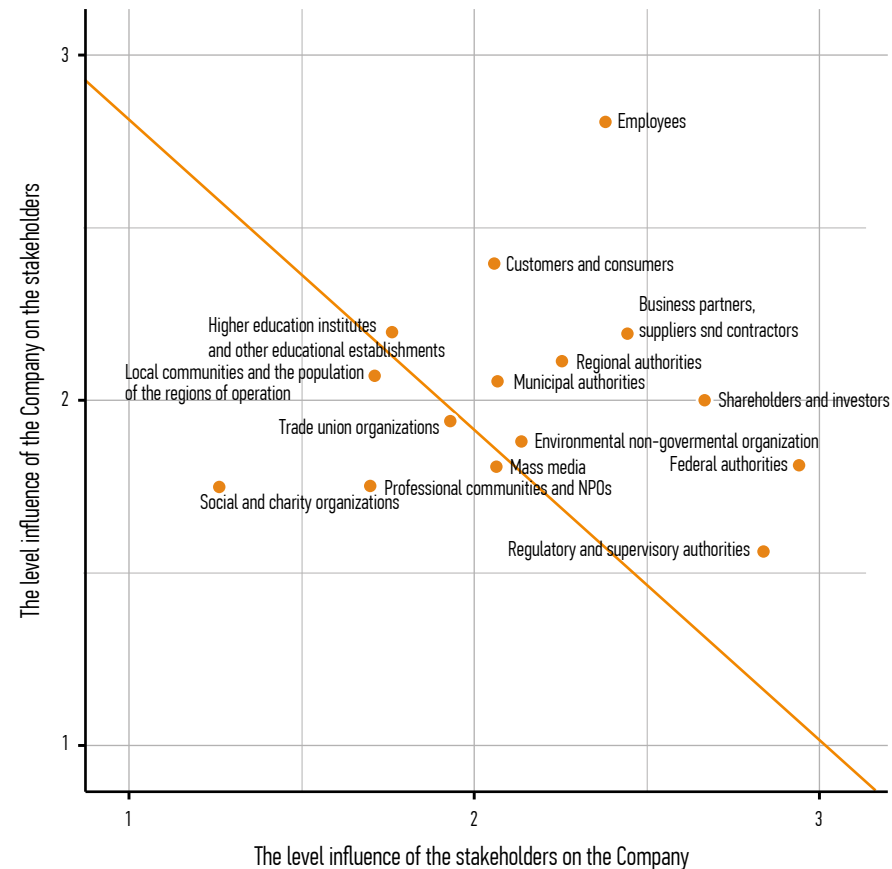
RusHydro Group has an impact on a wide range of stakeholders and intends to build a mutually beneficial long-term cooperation with all of them.

The list of stakeholder groups engaged by the organization is defined biennially by the survey among the Company management.

In 2016, the Map of the key stakeholder groups of RusHydro Group was updated. For this purpose, the heads of the Company departments and their deputies (16 in total) were asked about the degree of influence of each of the stakeholder group on the Company's activities and the degree of impact of the Group's activities on each of the stakeholder groups (on a scale from one to three). Stakeholder groups at the upper right corner of the Map above the cut line were recognized as the key stakeholders. (102-42)

On July 26, 2017, Public hearings on the 2016 Report of RusHydro Group were held. The various groups of stakeholders participated in the event. Representatives expressed their views on the completeness and materiality of the information presented in the report and gave their recommendations for the report improvements. (See [Appendix 2. Minutes of Public Hearings on Corporate Social Responsibility and Sustainability Report of RusHydro Group for the year 2016](#), [Appendix 3. Accounting for the Recommendations of Stakeholders Expressed at the Public Hearings](#)).

Stakeholders Map (102-40)





Mechanisms of interaction with the key stakeholders of RusHydro Group (102-43)

Stakeholders	Stakeholders' interests	Main mechanisms of interaction
Federal, regional and municipal authorities	<ul style="list-style-type: none"> • Guarantee of a reliable and uninterrupted power supply • Support for the development of the presence regions • Development and modernization of the electric power industry • Development of renewable and alternative energy sources 	<ul style="list-style-type: none"> • Agreements on social and economic cooperation with the constituent entities of the Russian Federation • Contributions to the development of the presence regions • Public hearings on plant construction projects • Work in joint committees, commissions, expert groups on the fuel and power sector development issues
Shareholders and investors	<ul style="list-style-type: none"> • Economic efficiency • Company' business continuity • Transparency of business processes 	<ul style="list-style-type: none"> • Meetings of the shareholders and other corporate events • IR-presentations and IR-events • Publication of reports
Employees	<ul style="list-style-type: none"> • Professional development and career advancement • Safe working conditions • Respectable remunerations 	<ul style="list-style-type: none"> • Personnel development • Social support for employees • Information and communication through internal channels • Interaction with trade union organizations
Regulatory and supervisory authorities	<ul style="list-style-type: none"> • Compliance with the requirements of Russian and international legislation 	<ul style="list-style-type: none"> • Submission of reports • Development of proposals to improve legislation
Business partners, suppliers and contractors	<ul style="list-style-type: none"> • Fair competition and responsible conduct on the market • Transparency of activities, including transparency of procurement activities 	<ul style="list-style-type: none"> • Forums, exhibitions, conferences, dialogs • Open and competitive procurement procedures • Joint projects
Customers and consumers	<ul style="list-style-type: none"> • Reliable electricity supply • Improvement of the products and services quality • High standards of service 	<ul style="list-style-type: none"> • On-line consultation on the retail companies' websites • «Whistleblowing Line» • Mobile service centres • Virtual reception office • Contact centre • Personal accounts of consumers' guaranteeing suppliers • Development of client offices
Environmental non-governmental organizations	<ul style="list-style-type: none"> • Development and modernization of the electric power industry • Compliance with the environmental protection legislation • Transparency of business 	<ul style="list-style-type: none"> • Cooperation with specialized Russian and international organizations • Cooperation with NGOs
Higher education institutes and other educational establishments	<ul style="list-style-type: none"> • Target training • Development of sectoral science • Development of innovative technologies, including those reducing negative impact on the environment 	<ul style="list-style-type: none"> • Cooperation in the field of scientific and research activities • Training, retraining and development of personnel • R&D orders



INTERACTION WITH KEY STAKEHOLDER GROUPS IN 2016

INVESTORS (102-44)

The Company has been actively interacting with the participants of the stock market and have been working on improvement of the information disclosure. In early 2017, RusHydro moved to the first level of securities listing. Within the framework of the interaction with the investment community, the following activities have been implemented in 2016:

- More than 200 individual and group meetings with the managers of the largest international and Russian investment funds
- Four quarterly conference calls with management for analysts, investors and rating agencies
- A visit of a group of investors and analysts to one of the most advanced hydroelectric power plants of the Company – Boguchanskaya HPP (in June 2016)
- Analyst and Investor Day with the participation of analysts, portfolio managers and media (December 2016)

The main topics for discussions were the Group's strategic priorities and future plans. The updated Strategy of RusHydro Group was explained and the mechanism was developed by the Company to address the high debt burden of RAO ES of the East by attracting 55 billion of rubles into the share capital from Bank VTB (PJSC), as well as conclusion of a five-year forward contract.

Read more about the refinancing of debt on loans and borrowings of RAO ES of the East in 2016 Annual Report of PJSC RusHydro, pp. 49-50.

Moreover, during the reporting period, the Company continued working with analytical agencies specializing in

assessing the compliance of public companies with the criteria of environmental, social responsibility and corporate governance practices (ESG):

- Robeco SAM (developer of DJ Sustainability Index – Dow Jones Sustainability Index),
- MCSI (one of the world's leading providers of information and indexes on shares and debt market tools, it is also the developer of ESG-related indexes family),
- Evalueserve (FTSE Low Carbon Economy project developer, which assesses the business in terms of its contribution to the reduction of greenhouse gas emissions),
- Sustainalytics (independent agency responsible for the analysis of public companies in terms of ESG criteria)
- CDP (Carbon Disclosure Project, a global project aimed at disclosing the reports on greenhouse gas emissions by public companies).
- Russian Union of Industrialists and Entrepreneurs (RUIE) – RusHydro is included into the sustainability and corporate social responsibility indices «Responsibility and Transparency» and «Sustainable Development Vector».

GOVERNMENT AUTHORITIES (102-44)

RusHydro Group cooperates with federal and regional government authorities of the Russian Federation.

The key objectives of government relations are development

In January 2017, the stocks of the RusHydro Group were included into the index FTSE4Good Emerging (developed by an independent agency FTSE Russel) for tracking the value of shares of companies which demonstrate strong Environmental, Social and Governance (ESG) practices. **(103-3)**

of partnership to enhance the competitiveness of national and regional economies, social development of the regions on the basis of statutory compliance and transparency of the Group's activities. **(103-1)**

Managers of PJSC RusHydro take part in the work of the following commissions and working groups under the President and the Government of the Russian Federation on the development of fuel and energy complex and social and economic development of the regions of the Russian Federation:

- Presidential Commission on development strategy of fuel and energy complex and environmental safety;
- Government Commission on development of electric power industry;
- Government Commission on fuel and energy complex and energy efficiency improvement of the economy;
- Government Commission on social and economic development of the Far East and Baikal regions;
- Government Commission on social and economic development of the Northern Caucasia Federal District;
- State Commission on development of the Arctic;
- Government Commission on safety of power supply (federal headquarters);
- Inter-agency working group preparing suggestions intended to improve efficiency, of the activities of power industry organizations;
- Government Commission of Ministry of the Russian Federation for the Development of the Far East;
- Working group on sustainable operation of water utilization systems and hydro-meteorological activities of the Russian Federation;
- Government Commission on the natural resource use and environmental protection.

Besides, the work is carried out with the relevant and other committees of the Federal Assembly of the Russian Federation on matters affecting the activities of PJSC RusHydro. **(103-2)**

In 2016, specialists of PJSC RusHydro participated in parliamentary hearings, «round tables» and a number of advanced meetings of the Russian Federal Assembly committees with the participation of representatives of the federal authorities of the Russian Federation and the authorities of the RF constituent entities, as well as representatives of energy companies, on matters directly related to the Company's activities, including on the following draft laws:

- «On Amendments to Articles 51, 55 of the Urban Development Code of the Russian Federation»;
- «On Amendments to the Federal Law «On Electric Power Industry in terms of changing the tariff setting mode in the Far Eastern Federal District»;
- «On Heat Supply» and on amendments to separate legislative acts on improving the system of relations in the field of the heat supply». **(103-2)**

As a result of the participation of the RusHydro's representatives in the activities of the Federal Assembly of the Russian Federation, the Company has submitted comments and suggestions, which were taken into account while finalizing the relevant draft legislation. **(103-3)**

The Company does not transfer money for the political goals. **(415-1)**

REGIONAL AUTHORITIES (102-44)

Recognizing the need for mutually beneficial cooperation with regional and municipal authorities aimed at sustainable social and economic development of the regions and increase in the efficiency of its activities in the regions, the Company enters into cooperation agreements with



territorial authorities.

As of 31.12. 2016, the agreements on cooperation of RusHydro Group were concluded with the authorities of the following regions:

- Dagestan Republic,
- Khakassia Republic,
- Kamchatka Region,
- Amur Region,
- Volgograd Region,
- Irkutsk Region,
- Moscow Region,
- Sverdlovsk Region.

The Group is convinced that sustainable contacts with territorial authorities in the implementation of regional programs of social and economic development and investment projects of PJSC RusHydro will serve as a guarantee of successful operations in the regions. **(103-2)**

BUSINESS (INTERNATIONAL) PARTNERS (102-44)

Development of international activities is one of the RusHydro Group's priorities.

The main objectives of the Company international activities are:

- attracting investments, advanced and innovative technologies and equipment to support the RusHydro's projects;
- expanding the RusHydro's presence on foreign markets taking into account its unique long-term accumulated experience in the field of design, construction and operation of hydropower facilities.

RusHydro Group focuses on long-term and mutually advantageous cooperation with foreign partners that is in the

best interests of the stakeholders. The main directions of international activities are:

- representation of the interests of RusHydro Group and the Russian power industry in political, industrial and business areas;
- bilateral cooperation with foreign energy companies and energy equipment producers, including development of joint ventures and nationalization of products on the territory of Russia;
- cooperation with intergovernmental organizations and sectoral and business associations;
- attraction of foreign investments to the RusHydro's projects;
- exchange in experience, innovations, and new technologies in hydropower, thermal power, RES, and heat supply;
- foreign market promotion of the competences of the RusHydro's scientific and design project on hydropower and RES
- monitoring of processes in the global energy industry.

In the reporting year, the Company continued cooperation with the largest foreign companies, and also concluded a number of new agreements. The largest world generating and engineering companies and the power equipment producers including Mitsui, KOMAIHALTEC, Kawasaki Heavy Industries and Sojitz, Voith Hydro, GE, PowerChina and ZHEFU are the main partners of RusHydro.

Together with the Japanese companies Mitsui, KOMAIHALTEC, Kawasaki Heavy Industries and Sojitz, the possibilities of joint implementation of projects in the field of development of HPPs, PSPs, wind and geothermal power facilities, as well as production of liquefied hydrogen, are being explored. The cooperation with Voith Hydro on the project of nationalization of products and modernization

of the equipment of the hydroelectric power plants and modernization of Saratovskaya HPP is continuing. As part of the comprehensive modernization of the PJSC RusHydro's assets in the field of thermal generation in the Far East of Russia, the cooperation with energy companies and power equipment manufacturers from Japan, China, the United States and other countries is carried out.

In the field of hydropower and RES, in 2016, the RusHydro's engineering organizations successfully completed the contracts on provision of design services at facilities in Turkey and Vietnam. In reporting year, a number of contracts and agreements on provision of engineering services were concluded within implementation of some energy projects, namely, design of the technical water supply system of the Kudankulam NPP in India and design of the Rogunskaya HPP in Tajikistan.

RUSHYDRO'S PARTICIPATION IN INTERNATIONAL ORGANIZATIONS (102-44, 102-13)

One of the mechanisms of the development of the RusHydro Group's international business is participation in the work of intergovernmental commissions on trade, economic, scientific and technical cooperation between the Russian Federation and foreign countries with the subsequent establishment of working contacts with foreign business partners. PJSC RusHydro pays a considerable attention to participation in the activity of international power organizations. RusHydro has its representatives in a number of non-profit partnerships and international organizations-members of such organizations as:

- Global Sustainable Electricity Partnership;
- International Hydropower Association;
- Russian-Chinese Business Council;
- World Energy Council (where the participant is the RusHydro Group's subsidiary company JSC Lengidroproject);

- International Commission on Large Dams (where the participant is the RusHydro Group's subsidiary company JSC Vedeneyev VNIIG).

Moreover, the Company cooperates with international government organizations and integration associations including Eurasian Economic Union (EEU), CIS Electric Power Council (CIS EPC), Asia Pacific Economic Cooperation (APEC), Shanghai Cooperation Organization (SCO), BRICS, etc.

RUSHYDRO'S MEMBERSHIP IN RUSSIAN INDUSTRY ORGANIZATIONS (102-44)

RusHydro Group is a member of Russian industry associations and non-profit partnerships:

- Association NP Market Council;
- Association of land and real estate owners and investors (NPASIN);
- Hydropower of Russia Non-Commercial Partnership;
- Russian Union of Industrialists and Entrepreneurs (RUIE);
- NPP Power Industry Veterans Council;
- Innovation and R&D Directors Club (iR&Dclub);
- NP EnergoStroyAlyans;
- Science and Engineering Board of UES;
- All-Russian association of electric power industry employers;
- NP Russian heat supply;
- Association of suppliers of last resort and of supply (retail) companies (GPIESK);
- Association EnergyProject;
- SRO of Design engineers;
- SRO NP Interregional union of special design engineering



Main business-to-business documents signed in 2016 (102-44)

Agreement	Area of cooperation	Advantages
Agreement on technological cooperation between PJSC RusHydro and Mitsui & Co., Ltd (02.09.2016)	Cooperation in the field of joint development of strategic cooperation for implementation of new projects using technologies and expertise of the Japanese side.	Possibilities of attraction of investments and modern international technologies
Memorandum of Understanding on the implementation of cooperation projects between PJSC RusHydro and Mitsui & Co, Ltd (16.12.2016)	Cooperation and joint implementation of potential projects mainly in the field of thermal, hydro, wind, geothermal energy and production of liquefied hydrogen.	Possibilities of attraction of investments and modern international technologies
Memorandum of Understanding on Acquisition of Treasury stocks of PJSC RusHydro between PJSC RusHydro, Mitsui and Japan Bank for International Cooperation (JBIC) (02.09.2016)	Implementation of acquisition of treasury stocks of PJSC RusHydro.	Fund raising for implementation of projects within the territory of the Russian Federation
Memorandum of Intent between PJSC RusHydro, Mitsui and KOMAIHALTEC Ink (16.12.2016)	Implementation of potential joint wind energy projects (within the framework of the RES Development Program). For this purpose, the Parties intend to reduce the cost of RES projects by producing wind power plants (WPPs) or WPPs element (elements) on the territory of the Russian Federation.	Attraction of investments and modern international technologies
Agreement between PJSC RusHydro, Kawasaki Heavy Industries, Ltd and Sojitz Corporation on cooperation to expand the use of GTUs during implementation of projects in the Far Eastern Federal District (16.12.2016)	Cooperation to expand the use of GTUs during implementation of projects on the territory of the Far Eastern Federal District. According to this agreement, Kawasaki undertakes to certify the GTU's manufactured equipment in accordance with the Russian standards, and establish together with Sojitz a service company in the Far Eastern Federal District in 2017 to maintain this equipment.	Attraction of modern international technologies and equipment
Declaration of intent on cooperation in the field of RES development between PJSC RusHydro, the Republic of Sakha (Yakutia) and the New Energy and Industrial Technology Development Organization of Japan (NEDO) (16.12.2016)	Cooperation in the implementation of mutually beneficial Russian-Japanese projects in isolated energy areas of the Russian Federation.	Possibilities of attraction of modern international technologies
Memorandum on modernization of hydroturbines at Saratovskaya HPP between PJSC RusHydro, Voith Hydro and LLC VolgaGidro (16.06.2016)	Optimization of 10% of the contractual value of production operations, performed at PLC VolgaGidro. Modernization of 21 hydroturbines and hydroelectric unit No. 24 of Saratovskaya HPP («turn-key»).	Attraction of modern international technologies and equipment

(NP SPETSPROYEKT);

- National Association of Procurement Institutions (NAIZ);
- Employers' Union of Khabarovsk Krai (SRHK);
- NP Union of Energy Engineers (NP SIE);
- The Corporate Educational and Scientific Centre of the Unified Energy System (membership recalled in 2017).

In 2016, RusHydro Group sponsored and actively participated in the East Economic Forum, which was an efficient platform for establishment and strengthening of relations with foreign partners, in particular, with Asia-Pacific countries, and attraction of the investors to the Far East energy infrastructure development projects. Another traditional international platform for RusHydro's presence is the St. Petersburg International Economic Forum. (102-12)

SUPPLIERS AND CONTRACTORS (102-44)

As one of the main generating companies of the country, RusHydro Group is a large customer of goods, works and services. The Group purchases high quality products, this allows it to ensure reliability and sustainability of its operations. In addition, the Company seeks to attract small and medium-sized businesses. In 2016, the Company implemented measures aimed at increasing transparency and centralization of the procurement system. (*Read more about the Company's procurement activities in 3.1.2. Procurement management*).

In 2016, the major event on interaction with suppliers was the conference «Supplier's Day», which was held on October 28 in Moscow. Its goal was to familiarize the market participants with the RusHydro's procurement system, the basic requirements for suppliers, the future directions of purchasing under the new conditions. Among the participants were representatives of the Ministry of Energy of the Russian Federation, the Ministry for Development of the Russian Far East, the Federal Antimonopoly Service of



PJSC RusHydro participation in the development of occupational standards

Representatives of PJSC RusHydro are members of the Council on Qualifications in the Electric Power Industry (ESPC). The Company is actively engaged in the development of occupational standards for the electric power industry and creation of the national system of qualifications.

The major work on the development of occupational standards for hydropower industry was carried out in 2014 and 2015. With the participation of PJSC RusHydro, 14 occupational standards were developed and approved. One of them was approved in 2016.

The branch of PJSC RusHydro, Corporate Hydropower University of RusHydro (KorUnG), conducts the development and introduces training programs based on the occupational standards for hydropower industry approved by the Ministry of Education of the Russian Federation.

In 2017, PJSC RusHydro is planning to continue work on professional and public accreditation of training programs on the basis of occupational standards, as well as to update the already approved occupational standards, which must be happening every three years.

Russia and the Federal Corporation for the Development of Small and Medium Enterprises, as well as more than 300 representatives of domestic and foreign companies – current and potential partners of the Group.

EMPLOYEES (102-44)

Human capital is one of the key resources of the Group. Being a responsible employer, RusHydro provides decent wages and social guarantees to the employees, interacts with trade union organizations, regularly conducts training and evaluation of the personnel.

Read more in 5.1 Human resources development

HIGHER EDUCATION INSTITUTES AND OTHER EDUCATIONAL ESTABLISHMENTS (102-44)

PJSC RusHydro actively interacts with institutions of secondary and higher education in terms of preparation and selection of future personnel.

In accordance with the Cooperation Agreement signed between PJSC RusHydro and the Moscow Power Engineering Institute (MPEI), the Hydropower Engineering and RES department is established in the MEI.

In addition, the Group has a Corporate Elevator system, which includes projects for school and university students.

Read more in 5.1 Human resources development

CUSTOMERS AND CONSUMERS (102-44)

Development of the retail energy sales business to ensure quality services and uninterrupted power supply to the consumers is one of the RusHydro's strategic development trends. The Group's energy supply (retail) activities are consolidated under the management of the subsidiary PJSC «Energy Supply Company RusHydro» (ESC RusHydro). The electricity is supplied through the controlled retail companies (PJSC Krasnoyarskenergosbyt, PJSC RESK and JSC Chuvashskaya Power Supply Company and PJSC FEEC).



There is a United Call Center, a platform that all customers (individuals) of the RusHydro

Charters, principles and initiatives supported by the Company (102-12)

Title	Year of association	Countries where the document is used
Declaration on Water Reservoirs for Sustainable Development (ICOLD)	2012	International document
Social Charter of Russian Business (Russian Union of Industrialists and Entrepreneurs)	2013	Russia
Anti-corruption Charter (Russian Union of Industrialists and Entrepreneurs)	2013	Russia
Concept of Long-term Economic Development of the Russian Federation until 2020	2008	Russia
Assessment Methods for the Compliance of Hydropower Projects to the Sustainable Development Criteria (IHA)	2011	International document
Russian Federation Power Sector Tariff Agreement for 2016-2018	2016	Russia

energy retail companies can address. This platform allows to control quality of the operators' work and makes the customers' communication with energy retail companies more comfortable. Also, the call center is used to work with non-payers: they receive a reminder from the operators or in an automatic call mode.

The growing accounts receivable of the consumers remained one of the most relevant problems. The information on the offending organizations in terms of payment, as well as the planned outages are posted on the websites of energy retail companies, in order to attract public attention to the problem of non-payments for the electricity.

In order to stimulate the payment discipline of the consumers and to develop an effective dialogue between electricity suppliers and the consumers of electricity, housing and public utilities, a federal action «Reliable Partner» has been held in the Group since 2014. The RusHydro's initiative is supported by the Ministry of Energy of the Russian Federation and by the Federation Council of the Federal Assembly of the Russian Federation.



Requirements for suppliers and contractors

In the process of procurement, PJSC RusHydro imposes requirements on suppliers and contractors for labour protection and environmental safety.

The contracts on PJSC RusHydro cooperation with contractors must specify the requirements for compliance with existing environmental and sanitary-epidemiological norms, as well as technical regulations for the waste management.

For example, «Specifications for management of the production and consumption waste» was adopted at the branch of PJSC RusHydro «Votkinskaya HPP», that defines the environmental responsibility of contractors in this area.

Read more about the RusHydro Group's responsibility for the product in 3.1.4 Financial discipline and fair business practices



PJSC RusHydro has a successful experience of cooperation with prospective energy-intensive industrial consumers, whose goal is to contract new generation and consumption facilities to hedge the risks of serious fluctuations in prices for electricity required for the operation of new enterprises during long-term period, as well as to implement joint investment projects.

Non-regulated contracts on purchase and sale of electricity and power between new generators and consumers can be an effective tool for raising borrowed funds under the terms of project financing. This practice is mutually beneficial for both producers and consumers of electric energy, as it allows to determine the price (the price formula) of electric energy in advance and fix it for a long period sufficient for the return of the investments and ensuring the accepted parameters of the economic efficiency of investment projects.

A database of potential consumers of electricity and power was created and agreements on cooperation with prospective energy-intensive consumers were signed as part of the ongoing work to contract the RusHydro Group's generating capacities in the regions, where the new construction of generating facilities is planned, particularly, in the Far East regions.

There is a special section for potential consumers on the corporate website of PJSC RusHydro, where the Company offers industrial consumers to fill out an application with a description of the main characteristics of the existing or prospective enterprise with a view to discuss possible ways of cooperation.

Main agreements with potential energy-intensive industrial consumers signed in 2016 (102-44)

Advantages	Area of cooperation	Agreement
Agreement on cooperation No. 1010-224-24-2016 of 02.09.2016 between PJSC RusHydro and PJSC Polyus in the framework of East Economic Forum-2016	The agreement is aimed at creation of conditions for mutually beneficial cooperation for reliable energy supply of the existing enterprises and promising projects of Polyus Group, as well as ensuring the efficiency of operation of the existing generating capacities of RusHydro Group and commissioning of the prospective ones.	To ensure the capacity of the Ust-Srednekanskaya HPP, which is under construction in the Magadan Region by providing energy supply of the PJSC Polyus's project for the development of the Natalka gold ore deposit, which is interlinked with the construction project of the Ust-Srednekanskaya HPP



1.3.3. CORPORATE SOCIAL RESPONSIBILITY MANAGEMENT

The key issues of sustainable development are discussed at the meetings of the Board of Directors and the Company Management. An important role in the sustainable development management of RusHydro Group is played by the Committee for Reliability, Energy Efficiency and Innovation of the Board of Directors. It considers the issues of the long-term planning of the development of hydro-power and other RES-based generation, issues of the functional policies development (for example, technical policy, environmental policy, energy saving policy and energy efficiency policy), and corporate standards development in the field of technical regulation, etc.

Implementation of the activities focused on sustainable development is performed by the Special Units in the area of their functional responsibility:

- social responsibility – the Personnel Management Unit;
- interaction with public authorities in the regions of presence and creation of the favourable social climate for the Company's effective development – the Unit of interaction with public authorities and civil society, administrative support and international cooperation;
- economic responsibility – the Unit of economic planning and investments, the Unit of production activities, the Unit of capital construction and engineering activities, the Unit of financial and corporate and legal administration;
- generation of electric power, enhancement of energy efficiency and ecological responsibility – the Unit of production activities.

The Company has adopted a number of corporate documents to regulate the CSR:

CSR Aspect	Regulatory Documents
Sustainable production	<ul style="list-style-type: none"> • Development Strategy of RusHydro Group for the period until 2020, with a perspective for up to 2025 • Long-term Development Program of RusHydro Group for 2016-2020. • RusHydro Group Technical Policy • Provision on the working group for technical Regulation of PJSC RusHydro • Directive on the management of investments in the form of capital investments • Provision on Standardization System of PJSC RusHydro • Provision on the Internal Control System Management of PJSC RusHydro
Procurements	<ul style="list-style-type: none"> • Provision on procurement policy for the needs of PJSC RusHydro • Provision on procurement policy for the needs of PJSC RAO ES of the East • Methods of evaluation of the goodwill and financial condition of the procurement procedures participants of PJSC RAO ES of the East
Business Ethics and Anti-corruption	<ul style="list-style-type: none"> • Code of Corporate Ethics of PJSC RusHydro • Conflict of Interest Management Policy of PJSC RusHydro • Helpline of PJSC RusHydro • Provision on Insider Information of PJSC RusHydro • Anti-corruption Policy of PJSC RusHydro • Local normative documents (acts).
Environmental Impact	<ul style="list-style-type: none"> • Environmental Policy of PJSC RusHydro • Environmental Policy of PJSC RAO ES of the East • Energy Saving and Energy Efficiency Improvement Programme of PJSC RusHydro for the period up to 2020 • Policy of Energy Saving and Energy Efficiency • Improvement of RAO ES of the East
Occupational Safety and Health	<ul style="list-style-type: none"> • RusHydro Group's Labour Protection Policy • Occupational Health and Safety Policy of PJSC RAO ES of the East
Charity	<ul style="list-style-type: none"> • Charity and Sponsorship Policy of PJSC RusHydro • Charity and Sponsorship Policy of PJSC RAO ES of the East
Innovation Development	<ul style="list-style-type: none"> • The RusHydro Group Innovative Development Program for 2016-2020 with a perspective for up to 2025 • RAO ES of the East Innovative Development Program for 2016-2020 perspective for up to 2025 • Concept of the scientific and design complex reformation of PJSC RusHydro
Human Resources Management	<ul style="list-style-type: none"> • Social Policy of PJSC RusHydro • Provision on the organization of the trainings for the employees of PJSC RusHydro • Provision on the performance appraisal of the personnel of the Branches of PJSC RusHydro • Provision on creation of the database of the candidates for the positions in PJSC RusHydro branches • Provision on the work with employee pool of PJSC RusHydro • Concept of pro-active human resources development «From the New School to the Workplace»



1.3.4. BUSINESS ETHICS

Corporate Governance Code of PJSC RusHydro was updated in 2016 and represents the main document, which contains the Company's ethical norms. The document contains the basic principles and rules of ethics, recommendatory ethical standards for employees and members of the Board of Directors, and is compulsory for familiarization to new employees. If the Code is violated by a member of the Management or the Board of Directors, the violation is subject to review by the Personnel and Remuneration Committee. If the Code is violated by new employees, the violation is reviewed in accordance with the procedure established by local regulatory documents (acts). **(102-16)**

PJSC RusHydro Corporate Governance Code gives definition of conflict of interests for employees and members of the Board of Directors and specifies the obligation of the Board of Directors members to act within the Company interests, to avoid the conflict of interests and to inform annually about their affiliation. This practice aims at revealing and preventing of conflict of interests during decision-making at the Board of Directors level and it helps to implement the precaution principle at the Management and the Board of Directors level. In 2016, a revised Conflict of Interest Policy of PJSC RusHydro and Provision on the clearing of conflict of interest in PJSC RusHydro were adopted.

HELPLINE (102-17)

Since 2012, Helpline has been permanently in operation in the Company web-site (<http://www.rushydro.ru/form/>). It is a communication channel for applications of the PJSC RusHydro employees and third persons related to the issues of corruption and suppression of illegal actions. It concerns bribery, abuse of power, illegal use of official position against the Company's interests to obtain benefits and emergence of conflict of interests.

In 2016, the revised Rules of Helpline operation and the Regulations for appeals reception, consideration and response preparation were approved. The new versions of the Rules contain the list of priority issues related to the reception and consideration of the appeals, adoption of appropriate measures (if necessary) and preparation of responses.

ANTI-CORRUPTION

Rejection of any form of corruption is one of the basic ethical principles of the Company. All the Company employees and members of the Board of Directors must meet the terms of the Russian legislation and international law in the field of anti-corruption efforts. All interactions of the RusHydro Group companies with the representatives of government bodies are taking place strictly within the framework of procedures and regulatory legal acts developed by the state structures, which makes possible to exclude informal relations that create conditions for corruption practices. **(103-1)**

The regulatory framework of anti-corruption activities is based on:

- Anti-corruption Policy;
- Corporate Governance Code;
- Conflict of Interest Management Policy;
- Integrated Program on Anti-Corruption Activities (synchronized with the National Anti-Corruption Plan for 2016-2017);
- Local normative documents (acts). **(103-2)**

PJSC RusHydro systematically works to prevent and detect corruption at the RusHydro companies and to eliminate the

corruption's reasons. For implementation of the Integrated Program, the Chairman of the Management Board (the General Director of PJSC RusHydro) annually approves the plan of measures, records the targets for a year and the officials' personal responsibility for achievement of these goals.

As of 31.12.2016, 51% of the subsidiaries of RusHydro Group (25 companies) adopted the Anti-Corruption Policy and the Conflict of Interest Management Policy. The rest 14% of subsidiaries (7 companies) have these documents under approval.

The major lines in anti-corruption activity are measures aimed at prevention of facts of corruption. Among them, there are detection and prevention of conflicts of interest, monitoring of corruption risks. Based on the results of risk analysis, the Company develops and introduces procedures for corruption management that comply with international requirements, and monitors their compliance. In-process monitoring of the Integrated Program compliance is performed by Internal Control and Risk Management Director - Chief Company Auditor.

PJSC RusHydro is a member of Anti-Corruption Charter of the Russian Business adopted by business community in 2012 in terms of implementation of National Anti-Corruption Plan.

In 2016, the main objective in the field of anti-corruption activities of the Company was implementation of a set of measures envisaged by the Anti-Corruption Charter of Russian Business and the Methodological Recommenda-

tions for the Development and Adoption by Organizations of Measures to Prevent and Combat Corruption (developed by the Ministry of Labour of the Russian Federation and approved by the Presidium of the Council under the President of the Russian Federation on Combating Corruption).

In 2016, PJSC RusHydro systematically included into its activities the development and implementation of comprehensive and consistent measures to prevent, eliminate (minimize) the reasons and conditions that generate corruption. In 2016, the Company adopted the complex Anti-Corruption Program of PJSC RusHydro. **(103-2)**

In 2016, as part of the measures under the Integrated Program of Anti-Corruption Activities of PJSC RusHydro, employees of the executive office, branches and subsidiaries on the positions exposed to corruption risks were tested under anti-corruption legislation of the Russian Federation.

326 employees took part in the testing, including:

- 83 employees of the Company's executive office;
- 136 employees of the Company's branches;
- 107 employees of the subsidiaries. **(103-3)**

Since December 1st, 2016, the local regulatory documents (acts) of PJSC RusHydro (Anti-corruption Policy of PJSC RusHydro, Conflict of Interest Management Policy of PJSC RusHydro, Helpline of PJSC RusHydro) were introduced in PJSC RAO ES of the East.

In 2016, Helpline received 196 appeals, 95 of them were accepted for consideration (the rest were not considered as not meeting the criteria established by the Rules of Helpline operation), five of them are under consideration.

In 13 cases, measures of organizational impact were taken: preventive conversation, staff training, claim related work



Key actions of PJSC RusHydro in the field of combating corruption in 2016 (103-2)

and improvement of activities. Based on the results of the official inspections / investigations on appeals to the «Helpline» one person was dismissed, four people were brought to disciplinary responsibility. (103-3)

In 2016, no criminal cases related to corruption were brought against PJSC RusHydro and its employees. In 2016, there were no cases of non-renewal of contracts with business partners because of corruption-related violations and legal actions against the companies of the Group or their employees related to corruption practices. (205-3)

PREVENTION OF THE USE OF INSIDER INFORMATION

The Provision on Insider Information is in force in PJSC RusHydro. The document regulates the Company's compliance with the Russian legislation on prevention of an illegal use of insider information and market manipulation. The Provision has been developed taking into account the international practices of corporate governance, including the requirements of the Disclosure and Transparency Rules of the UK Financial Conduct Authority.

The list of insider information is published at the corporate website in Russian and English languages (www.rushydro.ru and www.eng.rushydro.ru). The Company publishes information related to the insiders in Russian language in newsfeed of the authorized information agency Interfax (www.e-disclosure.ru) and in English in RNS newsfeed (<http://www.londonstockexchange.com/exchange/news/market-news/market-newshome.html>).

Direction	Measure
Improvement of the local normative acts base of RusHydro	<ul style="list-style-type: none"> The Management approved the Complex anti-corruption program of PJSC RusHydro (Minutes No. 967pr of 18.03.2016) The revised Conflict of Interest Policy of PJSC RusHydro was approved by the Board of Directors on 07.04.2016 (Minutes No. 235 of 08.04.2016) Anti-corruption policy of PJSC RusHydro was approved by the Board of Directors on 07.04.2016 (Minutes No. 235 of 08.04.2016) The revised Rules of operation of the Helpline of PJSC RusHydro was approved (Order No. 296 of 25.04.2016) The revised Rules for consideration of appeals and preparation of responses to the appeals from the Helpline was approved (Order No. 296 of 25.04.2016) The revised provision on the clearing of conflict of interest in PJSC RusHydro was approved (Order No. 428 of 09.06.2016) Provision on Commercial Secret of PJSC RusHydro is developed and is now under approval
Prevention of corruption	<ul style="list-style-type: none"> Informing of RusHydro employees and stakeholders on ethical principles, anti-corruption policy and intolerance of the Company against violators of ethical principles. Issue of thematic publications in the corporate newspaper «Vestnik RusHydro», on the website and in the Company's blog Publication of the «Questionnaire on Conflict of Interest» and limiting criteria on consideration of the appeals received by the Helpline on RusHydro's website Publication of Anti-corruption policy, Complex anti-corruption program, information on the results of anti-corruption activities, methodological materials on the external and internal websites of PJSC RusHydro. Development and coordination of posters and banners on anti-corruption topics for posting on the website and in the office building of RusHydro
Organization of work on verification of reports on the facts of corruption (unlawful actions)	<ul style="list-style-type: none"> Operation of the Helpline on the website (since 2012) Updating the information on about the Helpline (In 2016, the revised Rules of operation of the Helpline and the revised Rules for consideration of appeals and preparation of responses to the appeals from the Helpline of PJSC RusHydro were published) Regular check of the mailboxes of the Helpline located in the halls of the offices for correspondence Awareness raising of the Helpline's employees and possible channels of appeal
Interaction with state regulatory bodies and law enforcement agencies in the field of combating corruption	<ul style="list-style-type: none"> The Department of Economic Security, Regime, Special Activities and Information Protection prepared and forwarded the requested materials as part of execution of 19 inquiries from the Investigative Committee of Russia. The materials were transmitted in full and within the time limits established by law.
Prevention of illegal actions by employees	<ul style="list-style-type: none"> On-line course «Fraud Management» was developed and included into the system of distance learning. It describes actions for fraud management and corruption. Distance learning is included in the 2017 Work Plan of the Corporate Hydropower University of RusHydro (KorUnG) (205-2) As part of the agreements conclusion, 547 counterparties of RusHydro were inspected (there were no facts or signs of conflicts of interest)



1.4. CORPORATE GOVERNANCE

1.4.1. CORPORATE GOVERNANCE PRINCIPLES AND STANDARDS

Corporate governance at RusHydro Group is aimed at creating and maintaining the Company's trust relations with the investors, protecting the rights and interests of the shareholders, and increasing the value of shares. The corporate governance system is created in accordance with the requirements of the legislation and taking into account modern practices of the leading Russian and foreign companies.

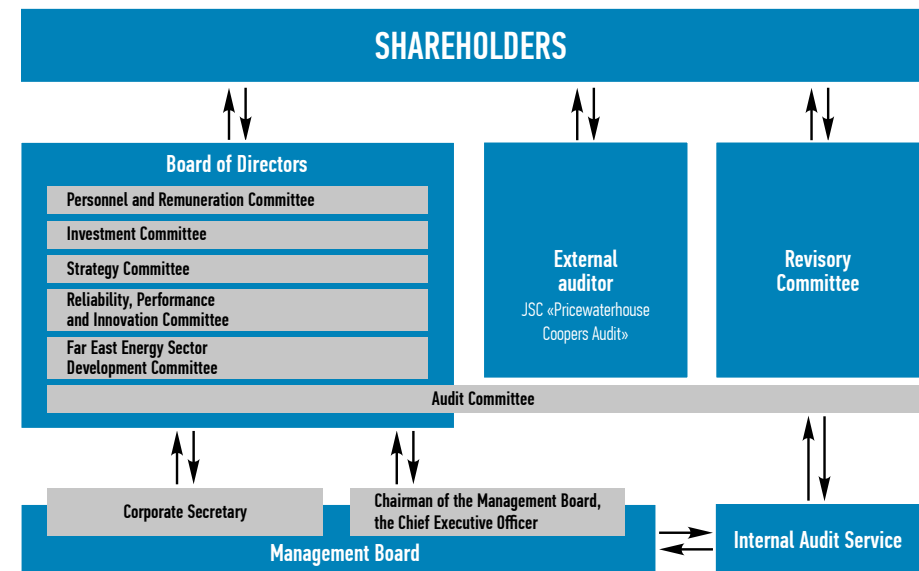
The Groups corporate governance principles and procedures are fixed in the Articles of Association and the Company's internal regulatory documents (see the website). The Corporate Governance Code of PJSC RusHydro, approved by the Board of Directors on June 19, 2015, is the fundamental document in this area. It contains the following corporate

governance system principles: transparency, accountability, honesty and financial discipline. By the decision of the Board of Directors of June 23, 2016, the Code was amended. In 2016, the Company was implementing the Code standards by bringing internal documents in line with it, as well as by applying its norms to everyday practice.

Corporate governance in the Company is carried out in strict accordance with:

- Russian legislation,
- recommendations of the Russian Governance Corporate Code,
- requirements for companies listed on MOEX and London Stock Exchange. (103-2)

RusHydro's Corporate Governance Scheme (102-18)





STRUCTURE OF THE AUTHORIZED CAPITAL

The largest shareholder of the RusHydro Group is the Russian Federation represented by the Federal Agency for State Property Management (66.8312%¹ as of December 31, 2016), the remaining shares are held by the nominee shareholder CJSC National Settlement Depository (30.4579%). Total number of RusHydro's shareholders is more than 360 000. **(102-5)**

The Company's shares are traded on the MOEX, as well as outside the Russian Federation in the form of depository receipts on the Main Market of London Stock Exchange (LSE) and on the US OTC market (OTCQX). The percentage of shares traded outside the Russian Federation in the form of depository receipts, at the end of the reporting period, amounted to 5.4% of the total number of shares.

SUBSIDIARIES MANAGEMENT

PJSC RusHydro participates in the authorized capital of the companies engaged in production and supply of electricity and heat, engineering, construction, repair and service maintenance, technical upgrade and reconstruction of generating facilities.

The Company's interaction with its subsidiaries is aimed at implementing the strategy, ensuring stable economic development and investment appeal, and also at protecting the rights and interests of the shareholders of both the Company and its subsidiaries.

The Company manages its subsidiaries through its representatives at the General Meetings of Shareholders, the Boards of Directors and governing bodies of the subsidiaries, in accordance with the Articles of Association and the Procedure for JSC RusHydro's Interaction with organizations in which the Company participates.

The Management Board is in charge of the decision-making process in subsidiaries in which 100% of the authorized

capital belongs to the Company. The Board of Directors determines the Company's opinion on the subsidiaries' strategic issues (reorganization, liquidation, change in the authorized capital, approval of major transactions, participation in other organizations). The Company's executive bodies are responsible for other significant issues of the subsidiaries.

In 2016, in connection with the implementation of voluntary offer transactions and the forced repurchase of shares in PJSC RAO ES of the East, the share of RusHydro Group in the authorized capital of PJSC RAO ES of the East was increased up to 99.98%.

In addition, since April 2017, the functions of the executive body of PJSC RAO ES of the East are implemented by PJSC RusHydro.

1.4.2. CONTROL BODIES

The General Meeting of Shareholders is the supreme management body of the Company, whose competence is determined by the Federal Law of December 26, 1995 No. 208-FZ «On Joint Stock Companies» and the Articles of Association of PJSC RusHydro. The General Meeting elects the Board of Directors, the Audit Commission and the auditor on an annual basis. In turn, the Board of Directors forms the Committees under the Board of Directors and the Management Board, appoints the Chairman of the Board - General Director, the Corporate Secretary and approves the appointment of the Head of Internal Audit. In 2016, no major changes in the Company's corporate governance system took place.

BOARD OF DIRECTORS

The Board of Directors' activity is regulated by the Regulations for the procedure on convening and holding the Board of Directors meetings of PJSC RusHydro, which is approved by the General Meeting of Shareholders on June 27, 2016. According to the Articles of Association, the Board of Directors consists of 13 members. In 2016, there were two members of the Board of Directors: the composition elected by the annual General Meeting of Shareholders on June 26, 2015, and the composition elected on June 27, 2016. The Chairman of the Board of Directors is not a member of the collegial executive body (the Management Board).

The main task of the Board of Directors of PJSC RusHydro is strategic management. However, the Board of Directors also manages corporate governance, investment and business planning, performance management, innovation development, risk management, audit and control, reliability of facilities operation, and sustainable development, including social policy, charity and environmental aspects.

Remuneration to the Board of Directors members is calculated in accordance with the Regulations for remuneration paid to the members of the Board of Directors of PJSC RusHydro. Remuneration is paid to the members of the Board of Directors who do not have legal restrictions and are non-members of the collegial executive body or the sole executive body. According to the Russian legislation, remuneration is not paid to the members of the Board of Directors with the status of government officials.

Please, see the Annual Report of PJSC RusHydro for 2016, pages 96-104, for more details about the characteristics of the Board of Directors, evaluation of the Board of Directors effectiveness, as well as information on remuneration of members of the Board of Directors and the Management Board.

COMMITTEES UNDER THE BOARD OF DIRECTORS

The Board of Directors of PJSC RusHydro has six committees: Strategy Committee, Audit Committee, Investment Committee, HR and Remuneration Committee (nominations), Committee for Reliability, Energy Efficiency and Innovations Committee, and the Far East Energy Sector Development Committee. Committees consist of persons who have experience and knowledge in the relevant fields, which increases effectiveness and quality of the Board's operation. Committees act on the basis of the Regulations on Committees under the Board of Directors. In accordance with the best practice of corporate governance, only members of the Board of Directors who are independent directors can be elected to the Audit Committee and the HR and Remuneration Committee.

¹ In 2017, the State's share fell to 60.5602% due to the deal with VTB on refinancing the debt of RAO ES of the East.



INDEPENDENT MEMBERS OF THE BOARD OF DIRECTORS

The composition of the Company's Board of Directors includes four independent directors who meet the criteria of the Corporate Governance Code of PJSC RusHydro¹. In 2016, Independent Director S.N.Ivanov was the Deputy Chairman of RusHydro Board of Directors.

MANAGEMENT BOARD

The Management Board acts in compliance with the Management Board Regulation and is guided by the decisions of the General Meeting of Shareholders and the Company's Board of Directors. The Management Board includes managers responsible for financial and economic activities, production activities, capital construction and engineering activities, innovations and strategy formation. Nikolay Shulginov, Chairman of the Management Board – General Director of PJSC RusHydro, elected by the Board of Directors in 2015, is responsible for the Company general management.

Performance of the Management Board members is regularly (quarterly) assessed using key performance indicators (KPIs). This list of KPIs was developed in accordance with recommendations of the Russian Ministry of Energy.

The Board of Directors approved KPI targets for the Management Board which are based on the confirmed business plan. The Regulations on the procedure of remuneration and compensation payment to the Management Board members of PJSC RusHydro provide quarterly and annual bonuses for performance on the basis of individual KPIs.

In 2016, the Management Board held 64 meetings (including 12 meetings in presentia) and considered over 455 issues related to the Company's current operations.

Also in 2016, the following was developed:

- KPI for the first cycle (2017–2019) of Long-Term Motivation Program of PJSC RusHydro (three KPIs related to financial results, investments and innovations);
- list and target values of annual KPIs for the members of PJSC RusHydro Management Board for 2017 (seven KPIs in total, including the share of purchases from small and medium enterprises, the number of accidents at work, and the number of major accidents).



The KPIs introduction will allow to motivate the PJSC RusHydro Management on implementation of strategic goals, and to unite thereby the interests of management and shareholders of the Company.

THE SYSTEM OF INTERNAL CONTROL BODIES: STRUCTURE AND COMPETENCES

The Audit Committee under the Board of Directors

The Committee was elected by the Company's Board of Directors on August 10, 2016.

The Committee consists of three members.

Acts on the basis of Regulations on the Audit Committee under the Board of Directors

The main goal of the Audit Committee is to guarantee the effective performance of the BoD's functions in terms of control over the Company's financial and economic activity.

Regulation on the Audit Committee of the BoD

Revisory Commission

The Commission is elected annually by the General Meeting of Shareholders in the membership of five people. The current Revisory Commission was elected by the decision of the annual General Meeting of Shareholders on June 27, 2016.

Acts in the interests of the Company's shareholders and is accountable to the Company's General Meeting of Shareholders.

Acts independently of management body officials and the Company's business units' managers. The main tasks of the Revisory Commission are:

- supervision of the Company's financial and business performance;
- monitoring of the compliance of the Company's financial and business transactions with the Russian Federation law and the Company's Articles of Association;
- independent evaluation of information on the Company's financial condition.

Regulations on PJSC RusHydro Revisory Commission

The Control and Risk Management Department

The main tasks of the Control and Risk Management Department are:

- organization of an effective corporate internal control system and anti-corruption system operating in the Company;
- development and monitoring of the implementation of plans and programs to upgrade the corporate internal control system of the Company and its subsidiaries;
- interaction with the territorial authorities of the Russian Federation, the Accounts Chamber of the Russian Federation, the Internal Audit Commission of the Company and other supervisory bodies on internal control, as well as in the course of their audits of the Company and its subsidiaries;
- control over the disclosure of information about the risks of the Company and its subsidiaries.

¹ It is provided in the Corporate Governance Code of PJSC RusHydro that in exceptional cases the Board of Directors may recognize a candidate (BoD member) as an independent member, despite he/she has a relation with the Company, a significant shareholder of the Company or a significant counterparty or competitor of the Company, if such relatedness does not affect the ability of the responsible individual to make independent, objective and honest judgments. Following this recommendation of the Corporate Governance Code of PJSC RusHydro, The Board of Directors recognized M.S. Bystrov and S.N.Ivanov, the BoD members, as independent members..



Internal Audit Service

The goal of the Internal Audit Service of PJSC RusHydro is to assist the Board of Directors and executive bodies of the RusHydro Group in raising the RusHydro Group's management efficiency and improving its activities. The Internal Audit Service is a separate structural unit of PJSC RusHydro, which is subordinate to the Board of Directors and is governed by the General Director – the Chairman of the Management Board of PJSC RusHydro.

The tasks and functions of the Internal Audit Service are:

- organization and conduct of internal audits of the Company, its subsidiaries and branches, processes and activities;
- evaluation of the effectiveness of the internal control system, risk management system, corporate governance of the Company and its subsidiaries and branches;
- organization of methodological support and control over the activities of the Company's representatives in the Audit Commissions of its subsidiaries and branches;
- interaction with the Audit Committee of the Board of Directors.

The priority activities of the Internal Audit Service of the Company in accordance with the objectives of the RusHydro Group, taking into consideration available resources, as well as the risk-oriented approach to planning control measures, are determined in the Control Measures Schedule, which is approved annually by the Audit Committee.

The Internal Audit Policy of PJSC RusHydro

1.4.3. CORPORATE GOVERNANCE IMPROVEMENT

In 2016, a remote evaluation of the Board of Directors elected in 2015 was conducted. The evaluation was conducted with the involvement of the Association of Independent Corporate Directors – an organization that is not affiliated with the Company. Based on the results of the assessment, an action plan for improving the Board of Directors activities was implemented and the plan of measures for 2016–2017 corporate year was drawn up.

In 2016, the Board of Directors approved the following:

- changes in the Corporate Governance Code;
- new versions of the Regulations on Committees;
- Regulation on the Corporate Secretary.

It is essential to note that in December 2016, the Board of Directors considered a new organizational structure of the Company. Its amendment is connected with the integration of the executive office of PJSC RAO ES of the East and PJSC RusHydro. The reorganization was aimed at reducing administrative costs in terms of costs for the Executive Office of PJSC RAO ES of the East. As for the subsidiaries of PJSC RAO ES of the East, it was aimed at reducing costs under management contracts. Integration of a part of the personnel of PJSC RAO ES of the East into the profile functional subdivisions of PJSC RusHydro was carried out. Also, the Far East Division was created in the Executive Office of PJSC RusHydro. The new organizational structure of the Company began to operate from April 1, 2017.



Please, see more details about corporate governance, including the activities and operating conditions of the Board of Directors and committees under the Board of Directors, in the Annual Report of PJSC RusHydro for 2016, pages 105–108.



1.5. KEY RISKS AND OPPORTUNITIES

1.5.1. INTERNAL CONTROL AND RISK MANAGEMENT SYSTEM

Risk management activity of RusHydro facilitates the Strategy implementation and ensures business efficiency.

Internal Control and Risk Management Corporate System of PJSC



RusHydro adheres to the definition of risk mentioned in ISO 31000-2010 «Risk management — Principles and guidelines» Standard. According to the Standard, risk is the impact of the uncertainty on the goals, it can have different aspects and can apply at different levels. Risk is often characterized by reference to potential events and consequences, or a combination of these.

RusHydro (hereinafter IC&RMCS) covers all companies of the Group. It provides management of potential impacts in order to decrease possibility and negative consequences of risk occurrence.

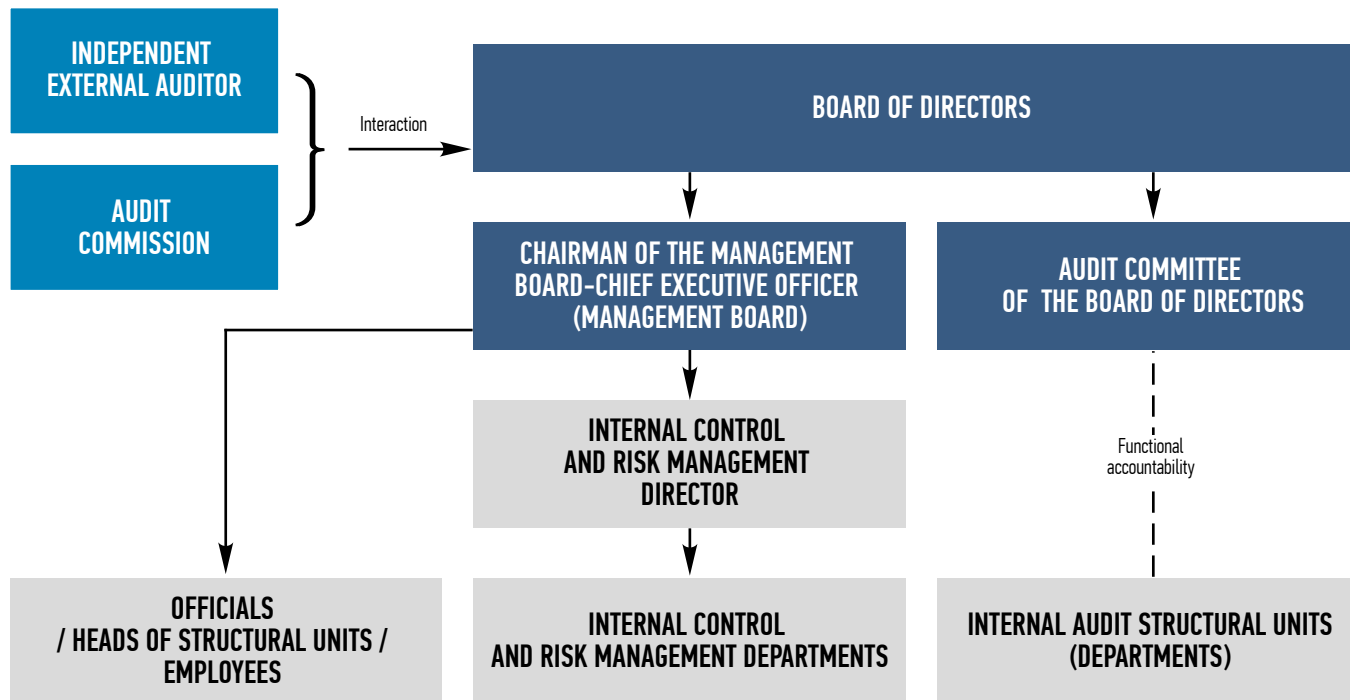
The main body of RusHydro risk management system is the Risk Control and Risk Management Department (hereinafter — RC&RM), a part of the Internal Control and Risk Management Unit. It ensures an efficient operation of the IC&RMCS, an effective operational control and interacts with external control bodies.

The main document, which regulates risk management activities of the Group, is the Internal Control and Risk Management Policy (approved by the Board of Directors of PJSC RusHydro on 16.11.2015). It defines goals, objectives and principles of the IC&RMCS and is based on ISO 31000:2009 «Risk management — Principles and guidelines» Standard and methodological know-how of the best international practices. The methods of risk identification, measurement and response used by RusHydro take into account the principles of COSO ERM and risk management standards ISO 31000 and ISO 31010.

For detailed information on risk management system see PJSC RusHydro Annual Report 2016, pp. 28-32.



Internal Control and Risk Management System



1.5.2. SUSTAINABLE DEVELOPMENT RISKS MANAGEMENT

PJSC RusHydro annually updates the Strategic risk management plan, which includes the list of key risks and response actions, and takes into account all material aspects as for sustainable development. In 2016, RusHydro elaborated and implemented the indicator system of strategic risks realisation, based on scenario approach.

The Governance of PJSC RusHydro annually adopts the Register of strategic risks where the risk owners are defined. The Register discloses information about RusHydro's risks for shareholders, rating agencies, auditors and other stakeholders, and helps to elaborate and control risk management activities in terms of realization of the Company's strategy. The risks and opportunities are prioritized based on their level of impact on key financial, social and ecological aspects, taking into account the strategic goals, development priorities and mission of the Group.

Current procedures of risk/impact management in terms of sustainable development are classified based on three aspects in terms of sustainable development: economic, ecological, social risks. RusHydro Group also defines the stakeholders that are subject to the potential impact in case of a particular risk occurrence. *Risk Radar is presented in PJSC RusHydro Annual Report 2016, p. 33.*



In 2016, the Board of Directors of JSC RusHydro adopted a five-year program to optimize RusHydro's expenses, which includes measures to optimize operation, administrative and management expenses, and investment activities.

A key condition of this program is to ensure safe and reliable operation of production assets.

The implementation of the program allows reducing the debt burden and the risks of a shortage of funds, increasing the financial stability of the RusHydro Group companies and ensuring the growth of the RusHydro's business margins while strictly observing high safety standards at generating equipment operation, which is ultimately aimed at increasing the RusHydro Group capitalization.



Management of sustainable development risks in 2016 (102-15)

Impact on KPIs of RusHydro Group and PJSC RusHydro ¹	Stakeholders	Risk management measures
Economic aspect		
<p>Direct:</p> <ul style="list-style-type: none"> Compliance with the schedule of the capacities commissioning at the core facilities of new construction, % Fulfilling capacity commissioning timetable and the finance and disbursement plan, % Return on equity (ROE), % Limitation on the debt burden (Net Debt/Ebitda) Leverage ratio (coefficient) <p>Indirect:</p> <ul style="list-style-type: none"> Total shareholder return (TSR) 	<ul style="list-style-type: none"> Shareholders and investors Employees Federal authorities Regional authorities and local government authorities Suppliers and contractors 	<p>Systematisation of data on the designed projects:</p> <ul style="list-style-type: none"> Development of the corporate project management system for classification of data on the existing and designed projects <p>Development of the internal expert review for design and detailed documentation:</p> <ul style="list-style-type: none"> Improvement of the efficiency of design institutes operation and procurement activities to strengthen the role of its own design institutes to conduct internal review of design and working documents; Regulation of the activity on conducting internal review of design documentation. <p>Quality, terms and cost of works control:</p> <ul style="list-style-type: none"> Maintenance of the list of disreputable designers, participation in subdesigners selection process; Optimization of insurance and purchasing systems as for construction and mounting activities, Development of regulatory documents for performance of individual types of work, implementation of an authorisation system allowing the employees to perform such types of work, and adapted to suspend individual employees from the works performance in case of any substantial breaches; Development of the supplied equipment quality control system (including equipment manufacture and shipment/delivery); Creation of the schedule and cost monitoring and control system for new construction projects based on the SAP capital construction management information system. The 2017-2021 Investment Program materials to be reviewed contain assessment of the cost-effectiveness of investment capital construction projects with the account of risks.

Reduction of electric power and capacity sales income compared to the business plan

<p>Direct:</p> <ul style="list-style-type: none"> Return on equity (ROE), % Limitation on the debt burden (NetDebt/Ebitda) Current liquidity ratio (coefficient). <p>Indirect:</p> <ul style="list-style-type: none"> Leverage ratio (coefficient) Total shareholder return (TSR) 	<ul style="list-style-type: none"> Shareholders and investors Employees Suppliers and contractors 	<ul style="list-style-type: none"> Preparation of proposals for amendments to the normative legal acts in the field of electric power industry; Regular revision of the sales policy of PJSC RusHydro; Implementation of a commercial dispatch system.
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¹ 16 See the list of KPIs in [PJSC RusHydro Annual Report 2016](#)

Impact on KPIs of RusHydro Group and PJSC RusHydro¹

Stakeholders

Risk management measures

Fund shortage including the shortage of external funds for planned investments

Direct:

- Compliance with the schedule of the capacities commissioning at the core facilities of new construction, %
- Fulfilling capacity commissioning timetable and the finance and disbursement plan, %

Indirect:

- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/Ebitda)
- Leverage ratio (coefficient)
- Total shareholder return (TSR)

- Shareholders and investors
- Federal authorities
- Suppliers and contractors

- Maintenance of the sufficient amount of funds and availability of financial resources through credit lines;
- Implementation of a balanced model of working capital financing by using short-term and long-term sources;
- Monitoring of the compliance with credit agreements in order to avoid breaches of the Company's financial covenants;
- Placement of temporarily available funds in short-term financial instruments (bank deposits);
- Execution of contracting agreements in accordance with standard financial provisions
- Introduction of interest rate and currency exposure management procedures with due regard to the credit policy of RusHydro
- Preparation of the flood zones of power plants under construction using the funds of the federal budget and the budgets of the subjects of the Russian Federation;
- In order to reduce the debt burden of RusHydro Holding, an additional issue of shares was made and an agreement was concluded on the purchase of 55 billion shares of the Company by PJSC VTB Bank.

As part of the Company's approved interest rate and currency exposure management procedures, the Company calculated the risks of currency and interest rate fluctuations for 2017 for the open foreign currency position and the portfolio of liabilities of the Company, respectively, for the purpose of evaluation and formation of the reserve to cover foreign currency and interest rate risks in the Company's budget for 2017.



Terrorism risk

Direct:

- Reliability criterion
- Compliance with the schedule of the capacities commissioning at the core facilities of new construction, %
- Fulfilling capacity commissioning timetable and the finance and disbursement plan, %
- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/Ebitda)

Indirect:

- Leverage ratio (coefficient)
- Reduction of the operating costs
- Total shareholder return (TSR)

- Shareholders and investors
- Employees
- Suppliers and contractors
- Federal authorities
- Regional authorities and local government authorities

- Provision of the facilities' armed security by the private guard of Rosgvardia, FSUE Okhrana of Rosgvardia and FSUE Departmental security of the Ministry of Energy of the Russian Federation;
- Development and maintenance of up-to-date plans for interaction with law enforcement agencies to protect the Company's facilities when committed or threatened to commit a terrorism act;
- Maintenance of security pass regime at the Company's facilities;
- Application of measures to identify, prevent and suppress acts of unlawful interference in the activities of the Company's facilities together with law enforcement agencies;
- Assessments of the most likely threats and development of plans for mitigation, together with the territorial bodies of EMERCOM of Russia in the constituent entities of the Russian Federation at the location of the Company's facilities;
- Equipment of the Company's facilities with engineering and technical means of protection;
- Organization and control over the access to information on the composition and condition of engineering and technical means of protection;
- The Company's fixed assets insurance package includes insurance against Terrorism and Diversion;
- Increase in the number of equipment certified by FSTEC of Russia, and equipment of domestic production;
- Audits of information and technical security.
- Organization and control over the mode of access to software and hardware of control systems and information systems



Impact on KPIs of RusHydro Group and PJSC RusHydro¹

Stakeholders

Risk management measures

Failure to achieve targets by the sales companies

Direct:

- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/EBITDA)
- Reduction of the operating costs

Indirect:

- Leverage ratio (coefficient)
- Total shareholder return (TSR)

- Shareholders and investors
- Employees
- Suppliers and contractors

- Monitoring of the compliance of the sales companies controlled by PJSC RusHydro with the criteria for financial stability in accordance with the rules of retail markets;
- Work with consumers to form mutually beneficial relationships, including the work aimed at preserving the market share of the sales companies of PJSC RusHydro;
- Introduction of the PJSC RusHydro's corporate risk management system into subsidiary sales companies

Delays and errors in management system improvement

Direct:

- Compliance with the schedule of the capacities commissioning at the core facilities of new construction, %
- Fulfilling capacity commissioning timetable and the finance and disbursement plan, %
- Share of purchases from small and medium-sized business entities

Indirect:

- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/EBITDA)
- Total shareholder return (TSR)

- Shareholders and investors
- Employees
- Suppliers and contractors

- Improvement of the activities regulation and business process management system;
- Optimization of procurement timing and coordination;
- Improvement of the communication with the stakeholders
- The internal control department of PJSC RusHydro analyses the key business processes in order to improve the Company's control system and enhance its process efficiency. Civil responsibility of the Company's officers to any third parties is insured.
- PJSC RusHydro introduces corporate management standards in reacquired or established subsidiaries and branches, as well as the systems of corporate project management, staff grading (grading means the establishment of a job hierarchy based on the job evaluation, strategy, and corporate culture of the Company), manager certification and implementation of individual personnel development plans.



The risk of the low efficiency of innovation activity

Direct:

- Integral KPI of innovation activity, %
- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/EBITDA)

Indirect:

- Leverage ratio (coefficient)
- Total shareholder return (TSR)

- Shareholders and investors
- Employees
- Suppliers and contractors

- Alteration/elaboration of work methods and infrastructure in order to ensure the implementation of the innovation programme;
- Update of the innovative development programme;
- Regular benchmarking of currently used technologies.



Impact on KPIs of RusHydro Group and PJSC RusHydro ¹	Stakeholders	Risk management measures
Environmental aspect		
Adverse changes / breaches of legislation		
<p>Direct:</p> <ul style="list-style-type: none"> Return on equity (ROE), %; Limitation on the debt burden (NetDebt/EBITDA) Current liquidity ratio (coefficient) Reduction of the operating costs <p>Indirect:</p> <ul style="list-style-type: none"> Leverage ratio (coefficient) Total shareholder return (TSR) 	<ul style="list-style-type: none"> Shareholders and investors Consumers Employees Trade unions Federal authorities Regional authorities and local government authorities Local communities Environmental organizations Mass media Suppliers and contractors 	<ul style="list-style-type: none"> Monitoring of initiated and pending changes in legislation, which could potentially have an impact on the Company's activities; Monitoring and review of the existing standards and regulations in the field of technical regulation; Participation of the PJSC RusHydro's representatives in the important law changing events held by legislative, executive and judicial bodies, public associations, professional legal organizations and associations; Regular environmental audits and implementation of the recommendations received; Participation in working groups of the Russian Ministry of Energy (on technical regulation) and the Technical Committee No.330 (on national standards).
Anthropogenic accidents		
<p>Direct:</p> <ul style="list-style-type: none"> Reliability criterion <p>Indirect:</p> <ul style="list-style-type: none"> Return on equity (ROE), %; Limitation on the debt burden (NetDebt/EBITDA) Leverage ratio (coefficient) Current liquidity ratio (coefficient) Reduction of the operating costs Total shareholder return (TSR) 	<ul style="list-style-type: none"> Shareholders and investors Consumers Employees Trade unions Federal authorities Regional authorities and local government authorities Local communities Environmental organizations Professional communities and higher education institutes Mass media Suppliers and contractors Non-profit organizations 	<ul style="list-style-type: none"> Performance of the full scope of repairs and implementation of the Retrofitting and Upgrading Program; Development of the quality control system for supplied equipment including its manufacturing and shipment/delivery, construction, installation and commissioning, as well as increasing the scope of contractual liability of suppliers/contractors for the manufacture and supply of equipment and materials Filing claims against disreputable suppliers/contractors; Observance of the recommendations provided during inspections of the facilities owned by PJSC RusHydro; Strengthening of on-site control over contractors / sub-contractors in terms of reducing accident rates, fires, unethical behaviour, thefts; Development of regulatory technical documentation aimed at improving the quality of design and construction management processes; Introduction of up-to-date equipment troubleshooting procedures, advanced control technologies for business assets including appropriate information technologies; Refinement of the structure and amount of replacement parts; Development of equipment lifecycle management systems at operating hydroelectric power plants; Industrial environmental control and monitoring; Control over the officials' compliance with the regulations, instructions, etc. in the course of operations, service, etc.



Impact on KPIs of RusHydro Group and PJSC RusHydro¹

Stakeholders

Risk management measures

Damage in the result of natural disasters and anthropogenic accidents outside the Company's facilities

Direct:

- Reliability criterion
- Compliance with the schedule of the capacities commissioning at the core facilities of new construction, %
- Fulfilling capacity commissioning timetable and the finance and disbursement plan, %
- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/Ebitda)

Indirect:

- Leverage ratio (coefficient)
- Reduction of the operating costs
- Total shareholder return (TSR)

- Shareholders and investors
- Consumers
- Employees
- Federal authorities
- Regional authorities and local government authorities
- Environmental organizations
- Non-profit organizations

- Modernisation in accordance with modern requirements of the centralized emergency control system;
- Research and development of methods for remote monitoring of the condition of facilities and operating modes of HPPs;
- Compliance with the Russian legislation in the field of industrial safety and the use of a production control system functioning on its basis;
- Industrial environmental control and monitoring;
- Property insurance.

Incorrect water-content and output forecasting

Direct:

- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/EBITDA)

Indirect:

- Total shareholder return (TSR)

- Shareholders and investors
- Consumers

- Optimization of the use of water resources within the framework of the Energy Saving Program of PJSC RusHydro;
- Development of the industry system of hydro-meteorological observation and protection of the interests of HPPs in interagency working groups of the Federal Agency for Water Resources;
- Integration of the medium-term water-content forecasting model

Social aspects

Risks of interaction with stakeholders

Direct:

- Total shareholder return (TSR)

Indirect:

- Return on equity (ROE), %
- Limitation on the debt burden (NetDebt/EBITDA)

- Shareholders and investors
- Consumers
- Employees
- Trade unions
- Federal authorities
- Regional authorities and local government authorities
- Local communities
- Environmental organizations
- Professional communities and higher education institutes
- Mass media

- Compliance with the Rules of information activities, the Rules of participation in public events, the Rules of information disclosure;
- Preparation of explanatory press releases and media materials;
- Organization of interaction with stakeholders on the basic areas of the Company's activity, including through organization of joint public events;
- Preparation of regular press releases with the Company's official opinion on the activity issues;
- Holding of press tours and special events for the media

**Impact on KPIs of RusHydro Group and PJSC RusHydro¹****Stakeholders****Risk management measures****Unethical or illegal actions of the employees**

<p>Indirect:</p> <ul style="list-style-type: none">• Return on equity (ROE), %• Limitation on the debt burden (NetDebt/EBITDA)• Total shareholder return (TSR)	<ul style="list-style-type: none">• Shareholders and investors• Consumers• Employees• Trade unions• Mass media• Suppliers and contractors• Non-profit organizations	<ul style="list-style-type: none">• Introduction of the integrated automated control system over distribution of the commercial secret information;• Monitoring of the compliance of the employees with the Regulation on Insider Information;• Restriction of the right of access to the insider information for the Company's employees;• Organization of mandatory notifications from the insiders about transactions they enter into with the Company's securities.
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1.5.3. RISK MANAGEMENT IN SUBSIDIARIES

The Company currently focuses on the IC&RMCS improvement in the following areas of activity:

- implementation of regular assessments of the effectiveness of risk management measures, automation of management procedures as for collection of the information on risks, activities and risk indicators for the Group;
- regulation of risk management processes in the Group's subsidiaries based on the approaches implemented in PJSC RusHydro;
- integration of risk management systems into planning and decision-making processes in the Group's companies;
- development of an end-to-end system for collecting reports on the risk management of the Group's companies and aggregation of the information on risk management at the parent company level using the automated risk management system of PJSC RusHydro;
- type assignment of risk control procedures in all companies of the Group;
- annual reassessment of the levels of development of risk management systems in the Group's companies to update the integrated systems' assessment, as well as development of the to improve the RusHydro Group's risk management system based on the assessment.

In 2016, in order to improve the risk management system, the following key actions were implemented:

- Branches and subsidiaries were assessed and prioritized according to the level of risk and the status of implementation of risk management procedures in order to form a risk-oriented internal audit plan for

PJSC RusHydro for 2017–2018;

- In the key subsidiaries of PJSC RusHydro (design and research institutes, construction organizers and contractors, repair and service companies, sales companies), risk management plans for 2016–2017 were approved;
- As part of the risk management activities of the RAO ES of the East, the measures provided by the Strategic Management Plan for the Holding Company RAO ES of the East for 2015–2016, as developed for the strategic risks of RAO ES of the East, as well as strategic risks Subsidiaries of RAO ES of the East: JSC FEGC, JSC FEDC, PJSC FECC and PJSC Yakutskenergo were undertaken.

1.5.4. INFLUENCE OF R&D AND RESEARCH DEVELOPMENT ON THE KEY RISKS

The RusHydro Group's innovative activities are mainly aimed at reducing the costs of maintenance, repairs, technical support, TP&R and new construction. In addition, the effectiveness of innovation activity directly affects the competitiveness of RusHydro's engineering companies in international markets.

The Company's management specify a separate strategic risk of the low efficiency of innovation activity taking into account the scale of the RusHydro Group's operations and the significance of the possible impact of R&D and research work on RusHydro's financial performance.

Among the risk factors, the Company sees a possible widening of the gap between the applied technologies and international best practices, an underinvestment of planning and surveying works due to occurrence of the risk of shortage of funds, as well as emergence of new requirements of the supervisory bodies for the formation and implementation of Innovation Development Programs.

In 2016, the key event in this risk management was the revision of the RusHydro Group's Innovation Development Program for 2016–2020 with a prospective for up to 2025 (Minutes No. 244 of November 23, 2016). The implementation of this Program will increase efficiency of the main technological cycle of the HPPs (including by reducing costs for own needs), economic and operational efficiency of the activity through the introduction of innovative technical and management solutions aimed at:

- Increase of the service life and productivity of equipment;
- Development of technologies to improve reliability and operating economy of the equipment;

- Improvement of the equipment diagnostics quality and a proactive identification and elimination of operating risks;
- Reduction of dependence on imported equipment and import substitution;
- Environmental impact reduction.

Read more about the Company's innovation activity in part 3.3 of 2016 Report on Corporate Social Responsibility and sustainable development of RusHydro Group.



1.5.5. INTERNAL CONTROL AND AUDIT

There is a system of control over the proper use of funds in PJSC RusHydro. The main mechanism for the implementation of control is the internal control and risk management system aimed at ensuring:

- efficiency and rationality (economy) of operations,
- reliability of financial and management reporting,
- compliance with laws and regulations.

The principles and approaches to the organization of internal control and risk management are defined in the Internal Control and Risk Management Policy. In accordance with the provisions of the Policy, the following internal control procedures are applied by the Company's authorized control bodies and officials:

- coordination of documents;
- approval of documents;
- reconciliation of data;
- monitoring of the key performance indicators (analysis of the actual budget indicators compliance with planned ones);
- monitoring of compliance with disclosure regulations (aimed at identifying deviations in routes and traffic schedules of reporting documents in order to carry out appropriate corrective actions);
- sharing of access rights;
- automation of the procedure for input and transformation of information.

In 2014–2016, the Company carried out a comprehensive work to improve the internal audit, control and risk management system, including the update of this system

in accordance with the current requirements and recommendations of the Ministry of Finance of the Russian Federation, the Bank of Russia, and the Federal Agency for State Property Management.

Internal control is executed at all levels of the Company's management, in all its divisions. IC&RMCS is a multilevel body, which assumes a continuous exchange of information between its subjects (management bodies and structural divisions of the Company).

The Internal Control and Risk Management Departments analyse available risks, test (evaluate effectiveness of) the control procedures aimed at reducing existing risks. Their activity is based on the information provided by the Company's functional divisions. This information contains data about the Company's business processes and the availability and implementation of internal control procedures. Taking into account the results of the data-analysis, the Internal Control and Risk Management Departments formulate recommendations for the improvement of risk management procedures and control procedures.

The interaction of risk management departments, internal control and internal audit departments was organized. As part of this interaction Risk Management Department submits relevant information on the Company's risks to the internal control and internal audit units in order to ensure the risk-based planning of the control activities.

Based on the results of the control activities, the Internal Audit Department informs on the identified risks and residual risks of the IC&RMCS management, as well as about the revealed «defects» in the internal control system of the internal control unit with a view to taking measures to improve the effectiveness of the internal control system.

Internal control is executed at all levels of the Company's management, in all its divisions. This system allows to implement all forms of control: preliminary, current and subsequent ones, as well as promptly interact and respond in a timely manner to emerging risks.

Based on the results of 2016, the internal audit service carried out an internal independent evaluation of the effectiveness of corporate governance, internal control and risk management of PJSC RusHydro in accordance with the valuation Methodology of the Company. The results of the evaluation were reviewed by the Board of Directors of PJSC RusHydro.

The main development directions of the internal audit function are:

- development of a Program of quality guarantees and improvement of the internal audit system;
- update of local regulatory acts that determine the principles for building the group function of the internal audit of RusHydro Group;
- update of programs and methodologies for ongoing control activities, annual independent evaluation of corporate governance, evaluation of the effectiveness of the internal control system and risk management.



1.5.6. CONTROL OVER THE PROPER USE OF FUNDS

RusHydro has implemented an internal system of control for the proper use of funds. It represents a special reporting system before the RusHydro's Management Board (quarterly, in the framework of investment sessions), as well as a number of standards and control regulations that allow to monitor the subsidiaries' work at all stages of project implementation. These measures ensure maximum transparency and enable the state, other shareholders and other interested parties to control the implementation of strategically important infrastructure projects.

Please, see 3.1.2. Procurement for more information on preventing unauthorized and inefficient use of funds in the procurement process. Please, see 3.1.3. Investment activities for the details on the monitoring of the targeting funds for investment projects and repair work and on the monitoring of the proper use of budgetary funds.

RELIABILITY AND SAFETY OF POWER GENERATION FACILITIES



AMONG RUSHYDRO STRATEGIC PRIORITIES, THERE ARE:

- Ensuring a reliable and safe operation of the energy facilities
- Ensuring readiness of hydraulic engineering structures for emergency situations
- Quality control at the engineering and construction stage
- Maintenance of the subsequent technical condition of the equipment

35.5 BILLION RUBLES

The limit of reimbursement
under the contract of voluntary insurance
of civil liability

329

Emergency response activities were held
in RusHydro branches in 2016

-24 %

Reduction in the number of accidents
in 2016

-36 %

Reduction in the number of accidents due
to fault of RusHydro personnel

« After the tragic events at the Sayano-Shushenskaya hydro-electric power station, the public is very much concerned about how reliable our facilities are, whether it is safe to stay and live in the lower reaches of our structures. Therefore, reliability is quite a capacious word for our company. One of the Company's tasks in the field of ensuring reliability is to ensure the safety of the equipment functioning, both for society and for the environment, in relation to which we must minimize the negative impact and reduce risks when building huge facilities on such large rivers as the Volga, Yenisei, Angara. »

B.B.Bogush,

Member of the Management Board,
First Deputy General Director –
Chief Engineer



2.1. MANAGEMENT OF INDUSTRIAL SAFETY, RELIABILITY AND SAFETY OF STRUCTURES AND EQUIPMENT



The RusHydro Group companies are system-forming and have a significant impact on the industrial and energy security of the field, being critical for a reliable and uninterrupted power supply to consumers.



To prevent emergencies, Group uses integrated approach while ensuring the reliability and safety of production facilities. In the process of their operation, RusHydro seeks to comply with the requirements of the Russian legislation and also implements national and corporate regulatory technical standards¹. When establishing an industrial safety system, RusHydro applies advanced international technologies. **(103-1)**

2.1.1. SAFETY AND RELIABILITY MANAGEMENT SYSTEM OF HYDRAULIC STRUCTURES AND EQUIPMENT

Ensuring a reliable and safe operation of the energy facilities is a strategic overriding priority for the Company. By «reliability» RusHydro understands the ability of the equipment and hydraulic structures to function during their service life while maintaining the specified parameters. «Security» means provision of such conditions where there is no unacceptable risk associated with causing harm to

human health, property of individuals and legal entities, state and municipal property and the environment.

Principles of the Safety and Reliability Management System of the hydraulic structures and equipment are:

- compliance with all legislative norms in the field of safety of hydraulic structures;

- hydraulic structures and equipment operation at all stages of the life cycle (the stage of creation initiating, engineering, construction, operation, repair, reconstruction, conservation and liquidation);
- decision-making process to ensure safety and reliability of the hydraulic structures and equipment within the framework of state regulatory restrictions;
- the System management actions are transparent to the management of the Company, shareholders, HPP staff, supervisory bodies and media.
- planning and implementation of measures to ensure safety and reliability of the hydraulic structures and equipment;
- controlling compliance with safety requirements and reliability of the hydraulic structures and equipment;
- management of operational and regulatory expertise in the field of safety and reliability of the hydraulic structures and equipment. **(103-2)**

Documents regulating management of safety and reliability of the hydraulic structures are:

The main processes of the System:

- monitoring of the state of hydraulic structures and equipment with an automated processing of information on the condition of the hydraulic structures and equipment;
- assessment of condition the hydraulic structures condition;
- assessment of the equipment technical condition and physical wear and tear;
- Concept of the Safety and Reliability Management System of the hydraulic structures adopted in 2009, which highlights major risk groups and control mechanisms.
- Regulation on safety and reliability management system of the hydraulic structures and the main equipment of the hydro-power power plants of PJSC RusHydro (Order No. 225 of March 23, 2011).

Distribution of responsibility for management of industrial safety issues, reliability and safety of the hydraulic structures and equipment

Area of responsibility	Responsible person / subdivision of PJSC RusHydro
General management of activities on ensuring reliability and safety of the hydraulic structures and equipment	Member of the Management Board, First Deputy CEO – Chief Engineer
Organization of management of activities on ensuring reliability and safety of the hydraulic structures and equipment at the RusHydro's generation facilities	Operations Department
Development and supervision over implementation of measures and methodological support related to reliability and safety of the hydraulic structures and equipment	Operations Department, Department of Development and Standardization of Production Processes
Monitoring of the condition of the hydraulic structures and equipment, direct implementation of measures on reliability and safety of the hydraulic structures and equipment	Personnel of the Chief Engineer Service of the Company Branches

¹ Federal Law No.35-FZ of 26.03.2003 «On Electric Power Industry», Federal Law No.117-FZ of July 21, 1997 «On the Safety of Hydraulic Structures», Federal Law No.116-FZ of 21.07.1997 «On Industrial Safety of Hazardous Production Facilities». For a complete list of regulatory legal and other acts, see the website



- Regulations on interaction of monitoring services of the PJSC RusHydro's branches, the executive administration of the Company and the structural unit of the analytical centre of PJSC RusHydro in JSC Vedeneyev and JSC NIIES regarding the hydraulic structures and power equipment (last update – Order No. 666 of July 15, 2015)
- RusHydro Technical Policy, which establishes a comprehensive approach to ensuring reliability and safety of the equipment and the power facility as a whole throughout its life-cycle.

Company's Production Program which is the main instrument for implementing the RusHydro Technical Policy. The Technical Policy provides for the development of measures for the Company's Production Program in the mid-term (a six-year outlook) and the long-term (a 15-year time horizon). **(103-2)**

The Production Program includes, inter alia, the Technical rehabilitation and modernization program as part of the Comprehensive Modernisation Program of the RusHydro's generating facilities for the period until 2025 (*for more information see 2.4. Modernization, technical upgrade and reconstruction*). The Technical Policy also provides for the development of corporate regulations and standards, specifying industry standard provisions taking into account specific HPP features.

Each year, the internal commissions of RusHydro Group together with the representatives of the territorial bodies of the Russian Ministry of Emergency Situations conduct a check of HPP operationability during the autumn and winter period by issuing appropriate certificates. In 2016, all HPPs received certificates of readiness for the 2016-2017 autumn-winter period. **(103-3)**

2.1.2. ENSURING OPERATIONAL AVAILABILITY AND RELIABILITY OF POWER SUPPLY IN THE FAR EAST IN THE SHORT- AND LONG-TERM¹

A distinctive feature of the energy sector functioning in the Far East of Russia is the operation in conditions with temperature below 0°C (32°F) from 6 to 9 months per year, so an energy company should use the warmest time of the year to the maximum in order to prepare for the next autumn-winter period. The key step in summarizing the preparations for work in the autumn-winter period is getting the Readiness Passport for the autumn-winter period. The Readiness Passport is issued by a special commission consisting of representatives of federal authorities, the

Ministry of Energy of the Russian Federation and is issued to energy companies upon completion of the audit of the planned activities implementation. **(103-1)**

The main long-term challenge faced by the energy sector of the Far East is to overcome the aging trend and the accumulated depreciation of the equipment. More than half of all thermal power plants in the Far East were built more than 30 years ago and now are 55-85% worn out. Almost 3GW of generating capacity, including thermal capacity of

~2,800 Gcal/h are subject to decommissioning before 2025.

In order to compensate such a shortage, the construction of new thermal power generation facilities in the Amur, Khabarovsk and Primorye energy systems, as well as in isolated energy systems of Sakhalin, Chukotka and the Kamchatka Territory is provided as part of the RusHydro's investment programs (*for more information see 3.2. Contribution to the Sustainable Development of the Regions*). **(103-3)**



¹ More detailed information on the reliability of power supply is disclosed in section 2.4.3 Repair Operation Program



2.2. INDUSTRIAL SAFETY AND IN-PROCESS MONITORING



Production facilities of PJSC RusHydro are subject to planned monitoring and control for compliance with the safety standards of operation. This is necessary to avoid disruptions in the equipment operation and the appearance of emergencies, including the likelihood of flooding residential areas.

Monitoring of the hydraulic structures' condition is carried out using standard monitoring systems installed at the construction stage and modernized during operation.



2.2.1. IN-PROCESS MONITORING

Safety supervision of the hydraulic structures of PJSC RusHydro

An effective safety control and reliability of assets in operation are achieved through double monitoring system: internal – at the account of in-process monitoring for the compliance with industrial and professional safety at hazardous production facilities, and external – by state supervisory bodies.

The Company's internal HS safety monitoring system is supportive towards HS safety state supervision and shall interact with federal executive bodies that perform state monitoring (supervision). Monitoring system includes:

- permanent control of hydraulic structures in construction and in operation to assess and reveal their technical condition;
- compliance control related to standards and rules in terms of hydraulic structure operation, construction and decommissioning;
- timely detection and elimination of damages and emergency situations;
- arrangement of scheduled preventive repair and overhaul;
- timely submission of safety declarations for hydraulic structures to state monitoring (supervisory) bodies.

Mechanisms that ensure operation and safety reliability of the facilities are:

- quality control at the engineering and construction stage,
- external regulatory supervision,
- internal production control,
- standards and operating procedures (sectorial and corporate),
- technical policy and technical management system.

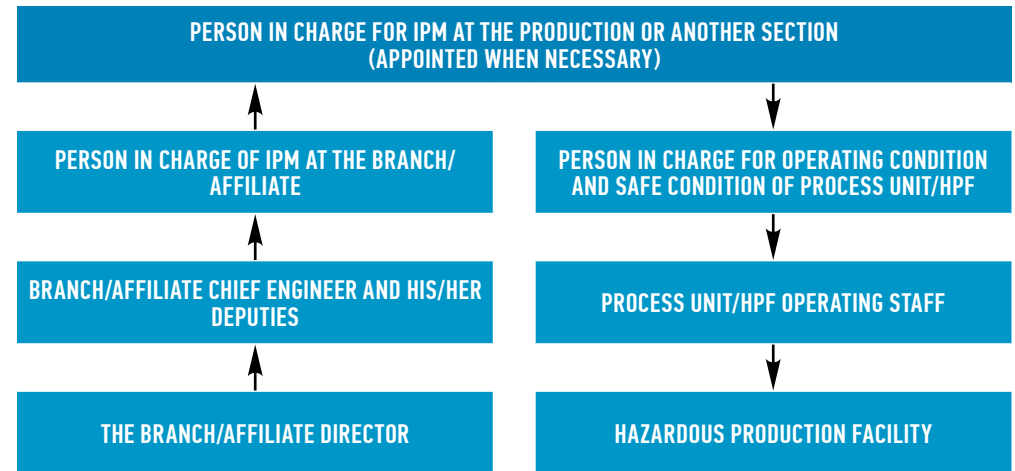
Industrial control of compliance with the rules of industrial safety is necessary for accident-free operation of the power facilities.

A significant impact on the quality of production and technological complexes, especially, the prolongation of the service life and accident-free exploitation of the operating assets, is provided by the organization of timely maintenance, scheduled repair work, modernization of equipment, buildings, facilities and power plants communications.

Since 2014, the Regulations for industrial control over compliance with industrial safety requirements at hazardous production facilities have been developed and are being applied at all branches of PJSC RusHydro.

There are no deviations in relation to industrial safety requirements for the reporting period. In 2016, the Privolzhsk Administration of Rostekhnadzor issued an order with five measures to Cheboksarskaya HPP. All measures are implemented.

Typical structure of an in-process monitoring arrangement at RusHydro



HAZARDOUS PRODUCTION FACILITIES

As of the beginning of 2016, there were 98 RusHydro HPF-sites registered in the State Register of HPF, as of the end of 2016 - 127 HPF-sites. The change was due to the continuing procedure of HPF-sites disaggregation.

In addition to compulsory insurance of civil liability of the HPF owner, RusHydro carries out voluntary insurance of civil liability. The limit of insurance compensation under this agreement is set at 35.5 billion rubles. Payment is made if the insurance indemnity for compulsory insurance of civil liability of the HPF holder is not sufficient to compensate for harm that may be caused to third parties as a result of an accident.

License No. BX-00-015161 dd. 16.12.2014, issued by the Federal Service for Ecological, Technological and Atomic Supervision for the «Operation of explosive/flammable and chemically hazardous production facilities of I, II and III hazard classes». License type - permanent.

In accordance with the Certificate of Registration of hazardous production facilities in the State Register of HPF, PJSC RusHydro has no hazardous production facilities of I and II hazard classes, and pursuant to the Paragraph 2 Article 14 of the Federal Law of 21.07.1997 No. 116-FZ «On Industrial Safety of Hazardous Production Facilities», no industrial safety declaration is required.



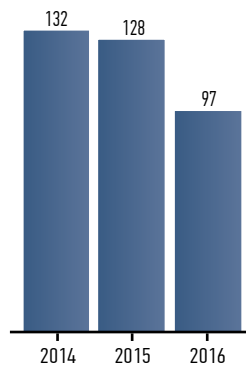
2.2.2. ACCIDENT AND EMERGENCY RESPONSE

ACCIDENTS IN 2016

Due to the on-going equipment reconstruction and modernization, the number of accidents in the Company's branches decreased by 31 units (to 97 accidents) in 2016, with the number of accidents through the plant personnel's fault decreased by 5 units (to 9 accidents).

The greatest results in reducing the number of accidents

The dynamics of accidents in the branches of PJSC RusHydro, pcs.



were achieved in the branches of PJSC RusHydro – Cascade of Kuban HPPs (-10 accidents), Dagestan branch (- 8 accidents), Kabardino-Balkaria branch (-8 accidents).

In PJSC RusHydro the number of accidents on turbine equipment also decreased (by 30 %), on generators (by 30%) and on relay protection and emergency automatics (by 50 %).

The greatest number of accidents is associated with the failure or incorrect operation of the equipment management

systems. The main causes of accidents in 2016 were:

- defects in engineering, construction, manufacture, installation;
- aging factors of equipment.

In 2016, the number of accidents was 5,433 in RAO ES of the East, it is 389 times less than in 2015.

EMERGENCY RESPONSE

Emergency response measures are developed and implemented by the technical specialists of the branches on the basis of the investigation results of the occurred accidents and are controlled by the Company's Executive Office.

Based on the investigation of the causes of accidents in the Company's branches in 2016, 402 emergency response measures were developed, most of which (329) were completed. The deadline for 73 actions was set for 2017-2024.

The main organizational emergency response measures based on the investigation of the accidents causes in 2016 include:

- interaction with project organizations and manufacturing plants for amendments to engineering solutions, elimination of engineering flaws in equipment, quality of supplied equipment, spare parts and materials;
- improvement of the quality of incoming control of equipment, materials and spare parts;
- increase in the scope of routine maintenance of electrical equipment;
- operational documentation amendment;
- strengthening control over the parameters of the equip-

ment technical condition.

The main technical emergency response measures based on the investigation of the causes of accidents in 2016 include:

- restoration of the operational condition of the failed equipment;
- carrying out post-accident checks;
- implementation of activities recommended by engineering organizations, equipment manufacturers.

Among the emergency plans for 2017, along with the work on further modernization of equipment, there are:

- development of an action plan to reduce the flow of failures of electrical equipment, secondary control equipment and communication devices;
- update of programs to reduce accidents;
- strengthening of the control over the operational personnel training;
- improvement of the input inspection system to assess the condition and to enable compliance with the requirements for equipment and materials (participation in the factory acceptance);
- maintenance of the equipment in a good working order outside the factory service life by frequent monitoring of technical condition, technical inspection.

The holding of RAO ES of the East carries out measures to analyse the breakdown of energy equipment, develops recommendations and measures to reduce the accident rate, including those with involvement of specialized organizations and application of advanced and innovative instrumental control methods during technical audits. Special attention is paid to measures of control over the quality and completeness of repair and post-repair testing of the equipment, measures to conduct input control of materials and equipment and measures to increase the

responsibility of repair personnel for the quality of the performed work.

INDUSTRIAL SAFETY AND ACCIDENTS AT HAZARDOUS PRODUCTION FACILITIES

Dangerous production facilities of I and II hazard classes¹ are not in operation in PJSC RusHydro branches, therefore development of action plans for localization and elimination of accidents is not required. In the branches of PJSC RusHydro – Cascade of Kuban HPPs, Votkinskaya HPP, Karachaevo-Cherkessky Branch, North Ossetian Branch such plans have been developed on a voluntary basis.

On 12.07.2016, there was one technological incident at the HPF «The site of the main building of the PSPP of the PJSC RusHydro branch – Zagorskaya PSPP». The beam of the main lift truck was damaged by a hook suspension due to the elevation of the suspension and the failure of the lift limiter of the overhead electric crane.

The economic damage amounted to 672 thousand rubles. Based on the investigation results, the incident causes were: violation of normative and technical documents and regulations in the field of industrial safety, unsatisfactory quality of the mechanism maintenance.

To prevent such incidents, a special instruction was issued with a list of preventive measures. The operational instruction OU-11-2016 (AOP0) has been implemented.

There were no other accidents and incidents at the HPFs.

FIRE SAFETY OF PJSC RUSHYDRO

At PJSC RusHydro, the management of the fire safety system is carried out by the Industrial Safety and Labor Protection Department of the Department of Occupational Safety and Labor Protection. Every year, organizational and administrative documents regulating the employees' activ-



ities in the field of fire safety are developed and approved.

Each branch of PJSC RusHydro has developed measures aimed at improving the level of fire safety, including:

- modernization of automatic fire alarm systems, warning systems and evacuation control system in case of fire, automatic fire extinguishing systems;
- modernization of supply and exhaust ventilation;
- repair and installation of internal and external fire water supply;
- acquisition (reloading) of primary fire extinguishing means (fire extinguishers).

The production and administrative premises, buildings, structures and territory of the branches of PJSC RusHydro meet the requirements of fire safety norms and rules, are provided with primary fire extinguishing means. In 2016, there were no fires in the branches of PJSC RusHydro.

There are schedules of fire-prevention trainings in each branch. The trainings are conducted with operational personnel and facility-based fire departments. Once a year, a joint general fire-prevention training is conducted at all branches together with fire departments of the fire-protection garrison.

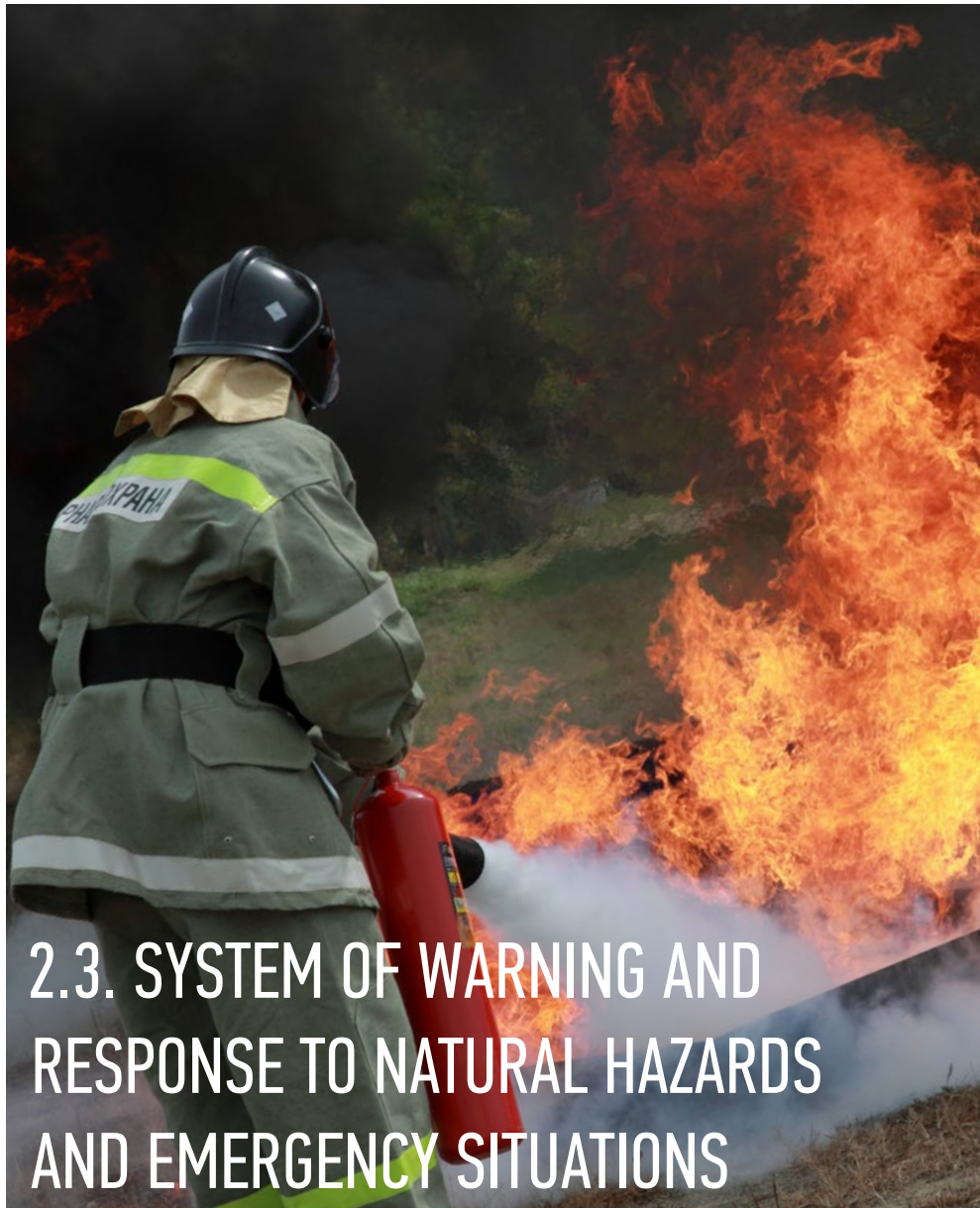
Nine branches concluded contracts for work performance and services provision in the field of fire safety for protecting property of organizations from fires.

2.2.3. MONITORING AND ASSESSMENT OF THE HYDRAULIC STRUCTURES' CONDITION



The monitoring of the hydraulic structures' condition is carried out using regular monitoring systems installed at the construction stage and modernized during operation.

Detailed information on the methods of monitoring of the hydraulic structures' parameters, as well as information and diagnostic systems for the technical condition monitoring is presented in the Corporate Social Responsibility and Sustainability Report of RusHydro Group for 2015.



2.3.1. READINESS OF THE HYDRAULIC STRUCTURES TO DISASTERS AND EMERGENCY SITUATIONS

RusHydro Group is responsible for reliability and an uninterrupted operation of its facilities; therefore, a system of prevention and liquidation of natural disasters and emergency situations (ES) has been introduced at the enterprises of the Group. In particular, preventive measures are taken to avoid technological violations and accidents, and in the event of interruptions, the Company seeks to normalize the facility operation as soon as possible. In addition, the RusHydro's employees receive regular training in the field of civil defence and protection against emergencies. **(103-1)**

The main potential sources of man-made emergencies at the RusHydro's production facilities are:

- abnormal floods, which can lead to forcing of the headrace level, overflow through the hydraulic structures, destruction of the pressure front in the areas of interfaces, hydrodynamic failure with subsequent flooding of the territories adjacent to the rivers coastal zones;
- technological accidents on the equipment that may result in a suspension of electricity supply to consumers, an emergency spill of oil products into the lower tail of the hydroelectric power plant with subsequent disruption of the vital activity of the population and production activity of economic objects.

The bodies responsible for the tasks in the field of population and territories protection from the ES in RusHydro Group are:

- in the Company's Executive Office - Centre for Monitoring the Facilities' Security and Operation Condition and Department of Industrial Safety and Labor Protection (on fire safety). They are subordinated to the Management Board member, First Deputy General Director - Chief Engineer of the Company;
- in the branches – first deputy directors - chief engineers, with the direct participation of civil defence and emergency protection engineers subordinated to them.

The works are performed in full accordance with regulatory requirements of the Russian legislation for hydraulic structures. A backup set of documentation for the RusHydro Group hazardous facilities is established; it is stored at national archives and intended to be used during accident rescue and recovery work.



At all RusHydro Group facilities operating the hydraulic structures, there are:

- action plans for prevention and elimination of natural and man-made emergencies, as well as action plans for prevention and liquidation of oil and oil products spills, agreed with the territorial bodies of the Ministry of Emergency Situations of Russia;
- hydraulic structures security declarations, renewal (processing) of which is carried out at least every five years with mandatory examination of the hydraulic structures by specially created commissions involving engineering and research organizations;
- safety data sheets of facilities;
- special equipment for a quick elimination of possible damage and emergency situations (at the sites equipped with own (contractual) fire units);
- emergency equipment and tools.

In all the Company's branches operating the hydraulic structures with an extremely high and high-level danger risk, the emergency rescue units have been created and maintained in the ready mode, and agreements have been concluded with professional rescue teams. **(103-2)**

FUNCTIONAL SUBSYSTEM OF THE UNIFIED STATE SYSTEM OF PREVENTION AND LIQUIDATION OF EMERGENCY SITUATIONS

In accordance with the Order No. 222 of the Ministry of Energy of the Russian Federation of June 09, 2011, RusHydro Group has created a functional subsystem of the Unified State System for Preventing and Eliminating Emergency Situations integrated with the national state system.

The coordinating body of the subsystem - Commission for Prevention and Elimination of Emergencies and Fire Safety of the Company, responsible for timely assessment

of the situation and decision-making on implementation of measures aimed at preventing emergencies. The annual work plans of the Commission include measures for a safe passage of flood waters in the spring and summer, preparation for the autumn-winter peak of maximum loads, as well as for ensuring sustainable operation in the fire and thunderstorm periods.

Round-the-clock monitoring of the situation at the facilities, notification of detected violations in the equipment operation and conduction of priority measures to prevent the emergencies are provided by the day-to-day management of the functional subsystem of the Company: the operational duty shift of the Centre for Monitoring the Facilities' Security and Operation Condition, as well as on-duty shifts of the operating staff of generating branches.

There are local information systems operating on 23 sites of the Group.

To prevent and eliminate emergencies, RusHydro has created reserves of material resources in the branches operating the hydraulic structures and the target reserve of financial resources in the Company. The target reserve of funds for the emergencies liquidation was established centrally in the interests of all objects of RusHydro in the amount of 1% of the average monthly revenue from the sale of electricity and capacity. **(103-2)**

In 2016, 16 injuries were recorded in RusHydro Group, including one in PJSC RusHydro branch Saratovskaya HPP and 14 - in RAO ES of the East (10 - in JSC FEDC, two - in PJSC Yakutskenergo, one - in PJSC Kamchatskenergo and one more - in PJSC Sakhalinenergo).

In addition, there were recorded seven fatalities among the contractors and the population (One in PJSC RusHydro branch Cheboksarskaya HPP, six - in RAO ES of the East: three - in PJSC Kamchatskenergo, two - in JSC FEDC, and one - in PJSC Sakhalinenergo).

A criminal case was initiated in PJSC Kamchatskenergo, five employees were convicted under part 3 of Article 216 of the Criminal Code of the Russian Federation «Violation of the safety rules for material works, which caused death of two or more persons through imprudence» **(EU25)**

2.3.2. EMERGENCY PREVENTION AND RESPONSE ACTIVITIES

Measures for the prevention of man-caused emergencies were carried out in accordance with the Production Program for Technical Upgrade and Reconstruction for 2016-2021 and the Plans of Major Actions for Civil Defence and Emergency Prevention for 2016:

1. At 18 sites, a preliminary investigation of the hydraulic structures was carried out, conclusions were received on the readiness for localization and liquidation of emergencies in the branches: Cascade of the Kuban HPPs, Nizhny Novgorod HPP, Saratovskaya HPP, North Ossetian Branch, Cheboksarskaya HPP. **(103-3)**
2. The bodies of state supervision of the Ministry of Emergency Measures of Russia carried out inspections of the activities to ensure the with the requirements of the Russian legislation in the field of the population and territories protection from emergency situations of natural and man-made nature. The inspections were conducted in the RusHydro's branches: Zhigulevskaya HPP, Zagorskaya PSPP, Zeyskaya HPP and Cascade of Kuban HPPs. The checks did not reveal any violations. **(103-3)**
3. The action plans for the emergencies prevention and liquidation in the RusHydro branches were amended, coordinated and approved at Bureyskaya HPP and Dagestan Branch. Plans for prevention and liquidation of oil spills were also amended, coordinated and approved at: Volzhskaya HPP, Zeyskaya HPP, Kabardino-Balkarian Branch, Nizhegorodskaya HPP, Sayano-Shushenskaya HPP named after P.S.Neporozhny and North Ossetian branch.
4. 31 employees of the Company were selected, prepared and certified as rescuers, emergency rescue teams



were recertified for the right to conduct search and rescue operations in the Dagestan branch and North Ossetian branch. The total number of rescuers in the 18 emergency rescue teams of the Company reached 166 people.

5. The material and technical reserves for the needs of civil defence and protection against emergencies were filled.
6. Annual maintenance of life support systems was carried out in 22 civil defence objects, large-scale works were carried out to restore protective properties of the shelter located on the territory of the Dagestan branch (Chirkeyskaya HPP).
7. The LWS of the Volzhskaya HPP was modernized, a tender was carried out for the implementation of works on creation of LWS at the Gunibskaya HPP and the Chirkeiskaya HPP, as well as on modernization of LWS of the Chirurtskaya HPP (Dagestan branch).
8. In the interest of creating LWS at the facilities of the branch of PJSC RusHydro - the Cascade of the Kuban HPPs, a preliminary survey of the hydraulic structures was carried out to determine the scope of the LWS establishment and its structure, with the development and approval of a relevant technical task in the territorial bodies of the Russian Ministry of Emergency Situations.
9. The nomenclature and content of material resources reserve for emergencies liquidation have been optimized, and settlement needs (except for rescue units) have been reduced by 60.7% without reducing the quality of the activities implementation defined by the plans. In addition to the created reserves, framework agreements have been concluded for the supply of material resources for emergency situations liquidation. **(103-2)**

EXERCISE FOR ELIMINATION OF EMERGENCY CONSEQUENCES

The employees training in the field of emergencies protection is conducted in accordance with the corporate training program for civil defence and protection against emergencies. The list of persons to be trained is determined in accordance with the normative legal acts of the Russian Federation.

2016 results:

- 134 people have completed the training (advanced training) in educational and methodological centres and civil defence courses.
- 9 complex exercises and object trainings were conducted;
- 18 command post exercises;
- 8 staff training sessions.

Key Learning Activities in 2016:

- complex object training in the RusHydro Executive Office conducted under the supervision of the Deputy General Director for Antiterrorist, Economic and Information Security;
- demonstration complex exercise «Ensuring stability of the branch facilities operation during civil defence activities implementation under the threat of emergency occurrence and in case of emergencies» in the PJSC RusHydro branch - Nizhny Novgorod HPP - under the supervision of the Head of the Monitoring Centre;



- seminar on the basis of the PJSC RusHydro branch - Nizhegorodskaya HPP, where the issues of preparation methodology and exercises and trainings implementation were studied using the example of a comprehensive exercise to ensure sustainability of the branch operation while carrying out civil defence activities under the threat of emergency occurrence and in case of natural or anthropogenic emergencies. **(103-2)**



2.4. MODERNIZATION, TECHNICAL UPGRADE AND RECONSTRUCTION



Maintenance of a proper technical condition of the equipment is one of the essential tasks of the Group's activity. Quality and reliability of production and technological processes depend on timely maintenance, planned repair works and modernization of equipment, buildings, facilities and power plants communications.

To maintain equipment in a proper technical condition, JSC RusHydro and RAO ES of the East implement the special programs:

Condition index¹ for PJSC RusHydro primary equipment groups as of 31.12.2016, %

Type of equipment	Condition index, %
Turbines	70.88 %
Generators	77.38 %
Transformers	81.64 %

COMPREHENSIVE MODERNIZATION PROGRAM OF PJSC RUSHYDRO GENERATING FACILITIES (CMP)

Large-scale program aimed at replacing the obsolete and worn-out equipment

Modernization of generating facilities as integral technological complexes

TECHNICAL UPGRADE AND MODERNIZATION PROGRAM OF PJSC RUSHYDRO

Program duration – 2011-2025
Based on Comprehensive modernization program

TECHNICAL UPGRADE AND MODERNIZATION PROGRAM OF RAO ES EAST HOLDING

Program duration – 2014-2025
Part of the investment program of the Holding

Pinpoint replacement of obsolete equipment for modern

REPAIR OPERATION PROGRAM OF PJSC RUSHYDRO

REPAIR OPERATION PROGRAM OF RAO ES EAST HOLDING

Planned repair of equipment
The program is formed annually

¹ 100% is the perfect condition

2.4.1. COMPREHENSIVE MODERNISATION PROGRAM



A significant part of HPPs was commissioned in 1950–1960-s. By early 2000-s, there was a need for upgrade and replacement of the operating equipment. Due to the economic difficulties of those years, it wasn't possible to replace obsolete and worn out equipment, and PJSC RusHydro could only execute periodic repairs and replacement of some components.

Since the mid 2000-s, PJSC RusHydro has conducted a selective replacement at several HPPs, but the rate of asset renewal did not allow to reverse the trend of HPPs' ageing.

In December 2011, the RusHydro's Board of Directors approved the Comprehensive Modernisation Program of generating facilities of PJSC RusHydro (CMP), for the period until 2025.

CMP is the unique project (in terms of its massive scale) of renewing operational assets in the energy sector. Within CMP, before 2025, RusHydro plans to will have replaced more than half of general equipment of the HPPs:

- 154 turbines (55 % of the total turbine fleet),
- 119 generators (42 % of the total generator fleet),
- 176 transformers (61 % of the total transformer fleet),
- 396 power circuit-breakers,
- around 8 thousand secondary control equipment items,
- more than 4 thousand auxiliary equipment,
- and to reconstruct hydraulic structures.

The CMP key goal is removal of all generating equipment with an expired safe operation life by 2025.

Apart from operational performance, modernization of the equipment improves its environmental performance and helps to reduce anthropogenic impact.

The program is delivered using innovative and energy efficient solutions (fibre optics, optical transformers, deposition of nanostructured materials, control systems based on microprocessors, systems of vibration monitoring, etc.).

MAIN RESULTS OF COMPREHENSIVE MODERNISATION PROGRAM IN 2016

For five years of the CMP implementation, 39 hydraulic turbines, 23 hydro generators, 41 transformers and more than 4,000 units and auxiliary electrical equipment were replaced. In addition, single components were replaced in a large amount of equipment.

In 2011–2016, the total capacity of the RusHydro's HPPs increased by 267 MW.

It can be compared with the commissioning of a new HPP of medium size.

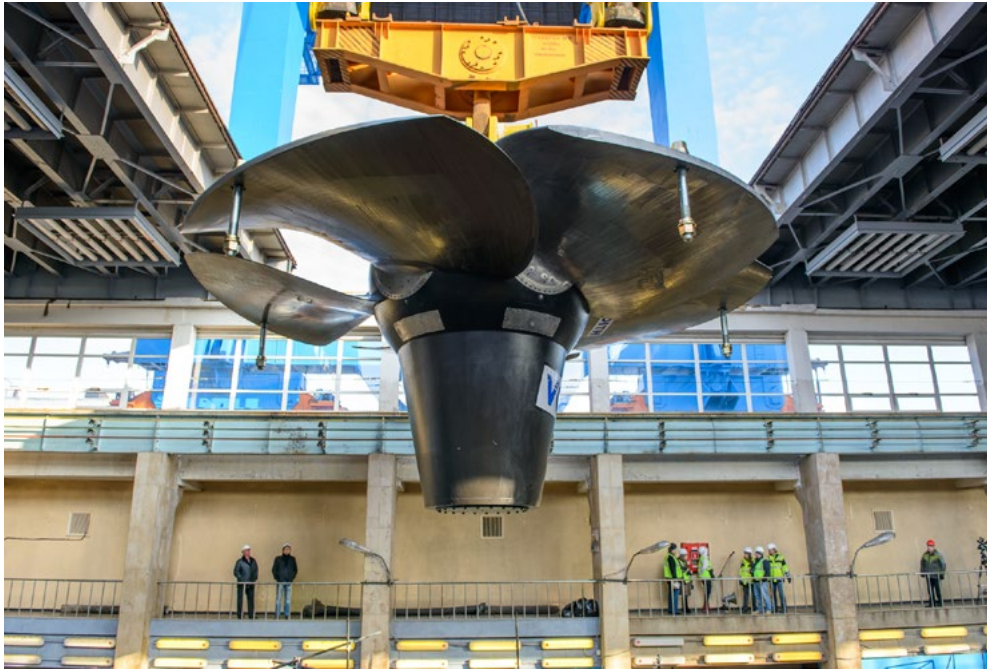
In 2016, the capacity of HPPs increased by 66.5 MW, seven hydraulic turbines, six hydro generators and eight transformers were replaced.

Results of Comprehensive Modernisation Program in 2016

HPP	Works performed	Increase of installed capacity, MW	
		2016, actual	2017, planned
Zhigulevskaya HPP	Completion of reconstruction of three hydrounits with replacement of hydraulic turbines and modernisation of hydro generators	42	21
Volzhskaya HPP	Replacement of a hydraulic turbine and two hydro generators	10,5	10,5
Saratovskaya HPP	Completion of reconstruction of all vertical hydro generators, replacement of turbine on hydrounit No.4, completion of concrete restoration in the zone of variable level.	6	6
Novosibirskaya HPP	Replacement of a hydraulic turbine, equipment remarking	5	5
Kamskaya HPP	Completion of replacement of all hydro turbines and reconstruction of generators (completed in 2015)	3	0
Rybinskaya HPP	Completion of replacement of transformers and reconstruction of outdoor-switchgear-220 kV, beginning of the replacement of the hydraulic unit No.1 (commissioning is scheduled for 2017).		



2.4.2. TECHNICAL UPGRADE AND MODERNISATION PROGRAM



Technical upgrade and modernisation program (TUMP) is based on Comprehensive Modernisation Program. Its goal is to maintain a proper operational condition of the equipment and introduce new production facilities. Unlike CMP, this program involves a selective replacement of the equipment by its analogues with an improved performance. TUMP also involves extension of the statutory period of the main generating equipment, reduction of production costs, increase in the efficiency of HPPs.

Within TUMP (including implementation of CMP at PJSC RusHydro HPPs), in 2017-2020, it's planned to put into service:

- 231.5 MW of capacity,
- 1,166.8 km of power lines,
- 46.73 of heat transmission pipelines.

In 2016, PJSC RusHydro and generating subsidiaries allocated 22.6 billion rubles on Technical upgrade and modernisation program.

TECHNICAL UPGRADE AND MODERNISATION PROGRAM OF RAO ES OF THE EAST

Technical upgrade and modernisation program of RAO ES of the East is a part of the Holding's investment program

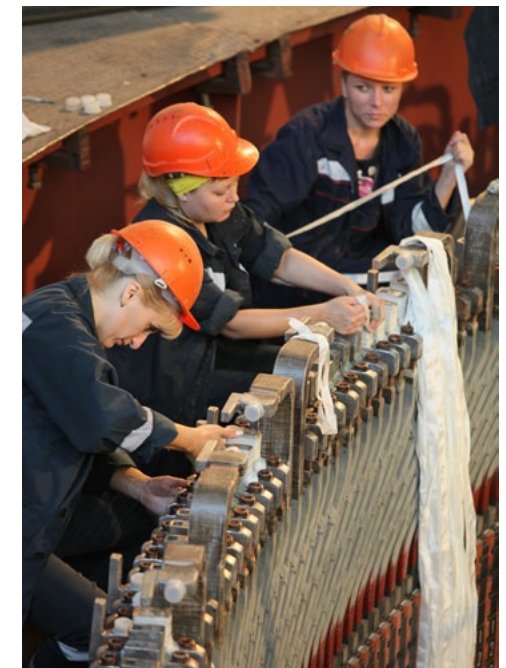
and is related to the necessity to maintain reliability of the technological complex in a long-term perspective at large. Development and implementation of the Program are held within Technical policy of PJSC RAO ES of the East.

Technical upgrade and modernisation program of RAO ES of the East in 2016 amounted to 8,481 million rubles, including VAT. Actual implementation of the Program amounted to 8,602 million rubles, including VAT (101 %).

Program priority areas are:

- Change in the fuel balance by gasification of one unit at Khabarovskaya CHPP-1 (JSC FEGC) plant and gasification of Anadyrskaya CHPP (JSC Chukotenergo).
- Maintenance of operational funds by technical upgrade and modernisation of general equipment of the power plants, heating network and power grid complexes (affiliates of the Far Eastern Federal District).
- Elevation of the ash dumps dam at Artyomovskaya CHPP and Khabarovskaya CHPP-3 (JSC FEGC).
- Removal of network constraints, increase in reserve electrical power supply centres, development of existing infrastructure for connecting consumers (JSC FEGC and other grid companies of the Far Eastern Federal District).
- Installation of the energy accounting meters with inclusion in an automated system (JSC FEDC, PJSC Magadanenergo).
- Reconstruction of substation 220 kV «Orotukan», «Palatka», «Tsentralnaya» (PJSC Magadanenergo).
- Modernisation of gas turbines at power units No.4 and No.5 of Yuzhno-Sakhalinskaya CHPP (JSC Sakhalinenergo).

- Reconstruction of the grid objects to ensure the scheme of power distribution (Sakhalinskaya TPP-2).
- Reconstruction of overhead transmission lines-110 kV «ETPP-lutin» (JSC Chukotenergo).
- Reconstruction of heat pipelines from heat chamber -23 kV 114 to thermal unit UT-1 kv 66 in Yakutsk, to ensure the thermal power output of Yakutskaya TPP-2 (PJSC Yakutskenergo).
- Reconstruction and replacement of generating equipment of diesel power stations (JSC Sakhaenergo, JSC SENK).
- Provision of reliable power supply to consumers.





2.4.3. REPAIR OPERATION PROGRAM

Repair program and schedules are formed in RusHydro Group annually and are based on the requirements of regulatory documents to provide reliability and efficiency, analysis of the equipment's technical condition. The implementation of planned repairs ensures a stable provision of electric and thermal energy to all categories of consumers even during the most intense periods of operation of the power systems.

During the reporting period RAO ES of the East implemented a repair program in the amount of 11,568 million rubles (101 % of planned sum, which amounted to 11,435 million rubles).

Implementation of Repair Operation Program of PJSC RusHydro in 2016 by costs, million rubles

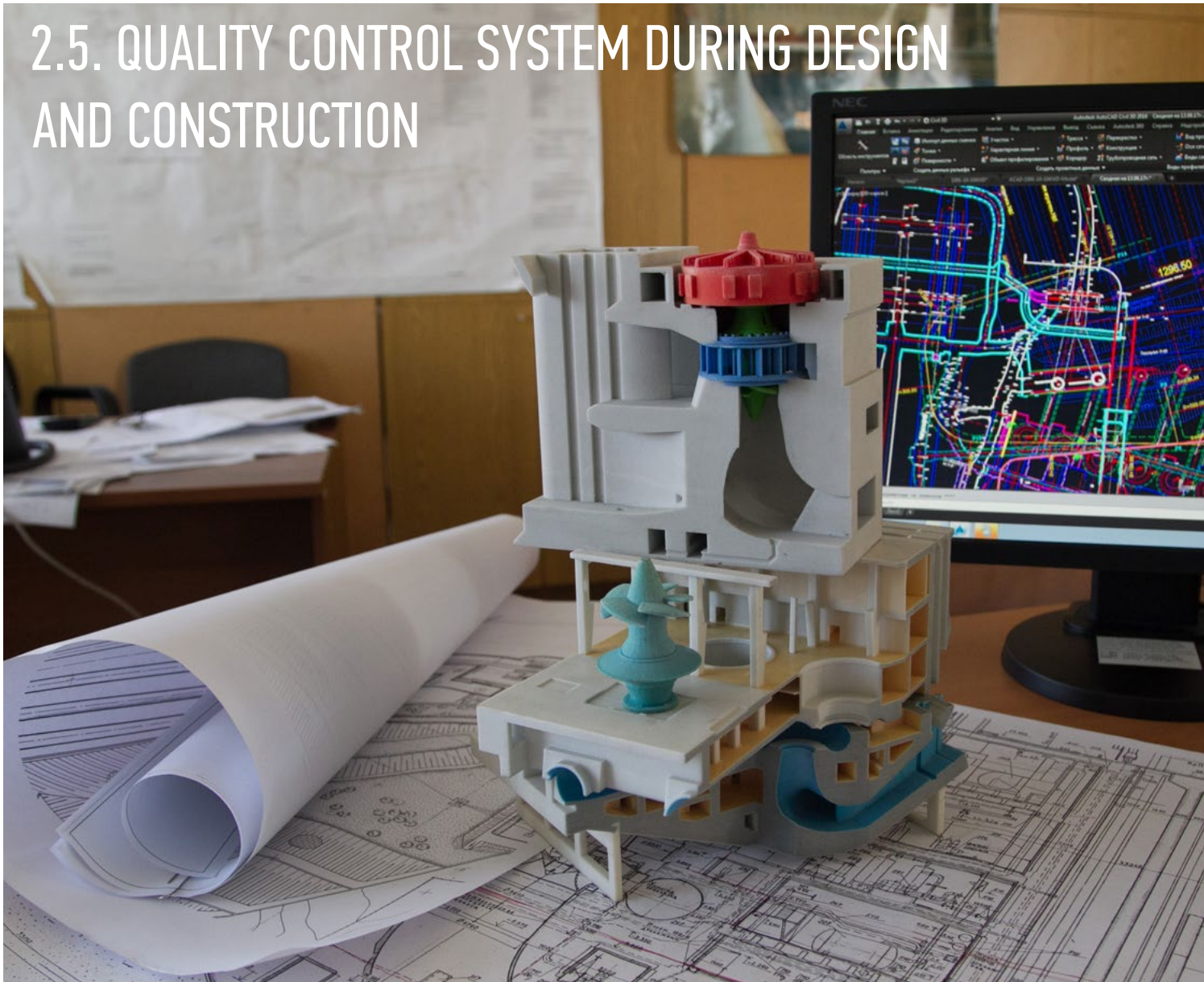
PJSC RusHydro branch/subsidiary	Plan	Actual	Performance, %
PJSC RusHydro's branch Volzhskaya HPP	429.4	372.5	86.78 %
PJSC RusHydro's branch Votkinskaya HPP	179.5	155.3	86.52 %
PJSC RusHydro's branch Zhigulevskaya HPP	302.9	272.7	90.04 %
PJSC RusHydro's branch Kamskaya HPP	143.2	115.4	80.62 %
PJSC RusHydro's branch Cascade of Verkhnevolzhskiy HPPs	66.8	64.9	97.21 %
PJSC RusHydro's branch Nizhegorodskaya HPP	93.1	87.1	93.58 %
PJSC RusHydro's branch Saratovskaya HPP	229.9	196.8	85.60 %
PJSC RusHydro's branch Cheboksarskaya HPP	150.89	115.8	76.78 %
PJSC RusHydro's branch Sayano-Shushenskaya HPP	386.4	333.8	86.39 %
PJSC RusHydro's branch Bureyskaya HPP	80.7	92	114.09 %
PJSC RusHydro's branch Zeyskaya HPP	190.3	146.5	76.98 %
PJSC RusHydro's branch Novosibirskaya HPP	55.2	46	83.36 %
PJSC RusHydro's branch Cascade of Kubanskiye HPP	231.5	188.6	81.49 %
PJSC RusHydro's branch Dagestan branch	159.1	135.8	85.36 %
PJSC RusHydro's branch Karachay-Cherkessia branch	33.8	34.8	103.0 %
PJSC RusHydro's branch Kabardino-Balkarian branch	67.1	54.4	80.99 %
PJSC RusHydro's branch North Ossetian branch	66.7	57.4	86.14 %
PJSC RusHydro's branch Zagorskaya PSPP	302.9	277.4	91.59 %
Total for PJSC RusHydro	3,169.4	2,747.7	86.69 %

Expenses of the RAO ES of the East for the repair of fixed production assets in 2016, million rubles

Company	Expenses
JSC FEFC	4,636.07
JSC FEDC	726.8
PJSC Kamchatskenergo	759.78
PJSC Magadanenergo	1,050.41
PJSC Mobile energy (Peredvizhnayaenergetika)	56.05
PJSC Sakhalinenergo	1,333.6
JSC Sakhaenergo	328.4
JSC Teploenergoservice	129.9
JSC Chukotenergo	313.7
JSC KSEN	372.3
PJSC Yakutskenergo	1,746.3
TOTAL	11,453.3



2.5. QUALITY CONTROL SYSTEM DURING DESIGN AND CONSTRUCTION



Safety of the hydrolic structures and HPP's equipment is set at the stages of project realization, including design and construction. It depends on a number of factors, such as results of design documentation, quality of constructions and materials, compliance with technologies of construction operation, qualification of engineers and workers. (103-1)

2.5.1. QUALITY MANAGEMENT DURING THE DESIGN STAGE

The RusHydro Group facilities are designed by Scientific and Design Complex, which includes design institutes and scientific organisations, that are the Groups' research and innovation centres. They conduct development in the field of technical challenges to improve the equipment operation, develop and implement design and construction schemes, repair and maintenance of HPPs, etc.

All design institutes of RusHydro Group apply quality standards and have introduced quality control system for the works being performed starting from hydro and power facilities design preparation and up to the facilities commissioning. Design workflow and outcome control system is regulated by local regulatory acts developed within the framework of RusHydro Technical Policy, industry and international technical standards.

Moreover, the project quality is assured by using advanced methods and technologies, most advanced materials and structures and by planning activities that help reducing adverse effects and compensatory measures during the construction stage. The environmental impact assessment for capital construction facilities is the mandatory condition



Scientific and Design Complex includes:

Design institutes:

- JSC Hydroproject Institute (Moscow)
- JSC Lengidroproject (Saint-Petersburg)
- JSC MOSOBLHYDROPROJECT (Moscow region)

Scientific organizations:

- JSC Vedeneyev VNIIG (Saint-Petersburg)
- JSC NIIES (Moscow).

Total workforce amounts to about 2,500 employees.

for projects to be approved at the initiation stage (see 4.1.2. *Environmental Impact Management*). Elaboration

of environment protection activities during construction and operation stages is a constituent part of the design stage. **(103-2)**

QUALITY CONTROL SYSTEM FOR DESIGN DOCUMENTATION

In accordance with the Regulations for management and control of investment project implementation, design documentation and reports on engineering survey are considered by consumers (PJSC RusHydro, JSC MC HydroMC, affiliates and branches of PJSC RusHydro) before being taken to the discussion with the PJSC RusHydro Scientific and Design Complex. Design documentation also undergoes a spot check in PJSC RusHydro and JSC MC HydroMC for compliance with design solutions and accuracy of information for construction and installation works.

Design documentation and engineering survey results undergo obligatory state expert examination for compliance with requirements of technical regulations (sanitary requirements of the state protection of objects of cultural heritage, requirements of fire, industrial, nuclear, radiation safety).

Budget documentation is fully reviewed by customers (PJSC RusHydro and JSC MC HydroMC) for correctness of the presented scope of work, prices and actual costs. **(103-3)**

TECHNOLOGICAL AND PRICING AUDIT

Since 2014, the Company conducts technological and price audit of the projects costing 1.5 billion roubles or more. The audit helps to choose best design, engineering and structural solutions, advanced construction materials and equipment.

Pursuant to the Executive Order of the Government of the Russian Federation No. 2988p-P13 of 30.05.2013, RusHydro Group is instructed to arrange public technological and pricing audit of at least three investment construction, renovation, technical rehabilitation projects, with budgeted value of at least 8 billion rubles each and with scheduled implementation start date in 2013-2014 (if necessary, to arrange this at its branches and affiliates).

In 2016, public process and pricing audit was arranged for the following RusHydro Group projects:

1. Comprehensive renovation of transformers (Votkinskaya HPP);
2. Renovation of hydropower units at Maynskaya HPP (Sayano-Shushenskaya HPP named after P.S.Neporozhniy);
3. Construction of GTPP-CHPP in Vladivostok village Zmein-ka (design documentation stage);
4. Construction of GTPP-CHPP in Artyom village Sinyaya Sopka (feasibility study stage).

In accordance with the Standard, the PJSC RusHydro Board of Directors (Minutes of 07.04.2017) has approved the list of investment projects that are subject to the public process and pricing audit in 2017 and 2018, that provide for the start and the end of public process and pricing audit in 2017 in terms of the following RusHydro Group projects:

1. Replacement of the power block transformers (Volzhskaya HPP);
2. Replacement of autotransformer group and transformer group with reconstruction of oil receivers (Zhigulevskaya HPP);
3. Construction of Yakutskaya TPP-2;
4. Construction of two single-circuit overhead transmission lines of 110 kV in Pevek-Bilibino (project documentation stage). **(103-3)**

In order to provide public access to materials related to process and pricing audit for PJSC RusHydro investment projects, they are published at [PJSC RusHydro corporate web-site](#).

2.5.2. QUALITY MANAGEMENT DURING CONSTRUCTION

See information about quality management during construction in 2015 Corporate social responsibility and sustainability report of RusHydro Group, p. 57.





CHAPTER 3
**ECONOMIC
RESULTS**

RECORD-BREAKING FINANCIAL PERFORMANCE

391.3 billion rubles revenue for 2016
39.8 billion rubles net income for 2016
19.9 billion rubles record volume of dividends paid for 2016

POSITIVE IMPACT ON THE ECONOMY

322 workplaces created
65.22 % the share of purchases from small and medium-sized enterprises
72.57 billion rubles taxes paid

EXPANSION OF PRODUCTION

In 2016, we launched:

- Zelenchukskaya HPP-PSPP (+140 MW)
- Zaragizhskaya HPP (+30,6 MW)
- 2 phase of Blagoveshchenskaya CHPP (+124 MBt)

EFFECTIVE PROCUREMENT

In 2016, the Group created a specialized supply company RusHydro Supply (JSC RHS) for more efficient procurement management

INNOVATIVE ACTIVITY

314.3 million rubles RusHydro Group R&D expenses in 2016
There is a special Scientific and Design Complex (SDC) which is in charge of R&D implementation in RusHydro
In 2016, the Concept of Reforming the SPC was approved to improve the effectiveness. In 2016, the innovation management system of the RusHydro Group and RAO ES of the East were merged

« The main driver for the financial capital formation in a long term should be efficient operating activities and a stable long-term profit. Thus, we have formed and we are implementing a number of programs to improve operational and investment efficiency, we are working to reduce the costs of RAO ES of the East. »

A.V. Kazachenkov,
Member of the Board,
First Deputy Director General



3.1. FINANCIAL AND ECONOMIC RESULTS



The development of RusHydro Group depends on how successfully the Company is in creating a base for social and economic relations with all stakeholders. In this regard, RusHydro is striving to make its sustainable development policy transparent and understandable.



RusHydro Group has a complex impact on the economy, in particular, on the sales markets for electricity and heat. The Company supports competition on products and services market by ensuring competitive procurement activities. The Company also participates in solving the employment problems for local population, by shaping the labour market. In addition, RusHydro is a taxpayer of budgets at different levels. **(103-1)**



3.1.1. KEY FINANCIAL RESULTS ACCORDING TO IFRS

In 2016, RusHydro demonstrated high financial results, which were achieved due to an increase in the level of electricity generation by the Group by 9.2% compared to 2015 and a significant optimization of operating expenses. Revenue growth in 2016 amounted to 8.2% compared to 2015: it has risen from 361,826 million rubles to 391,322 million rubles.

Natural resources, labour, capital and intellectual ability are used in the process of cost creation for hydro and heat energy. The new «added value» is divided among the Company's employees, shareholders and creditors in the form of dividends, interest payments to creditors, wages, taxes, as well as charity and social expenses.


Direct economic value created and divided, million rubles (201-1)

Items	RusHydro Group		RAO ES of the East	
	2015	2016	2015	2016
Economic value generated	375,180	413,076	177,065	189,905
Revenues from business operations less impairment loss of receivables	343,501	366,939	159,692	171,577
Government grants	14,314	17,250	14,268	17,184
Financial revenues and a share in the results of the associated companies and joint ventures	12,741	16,625	2,152	973
Revenues/losses from assets sale (revenues from subsidiaries, fixed and other assets sale)	4,6244,624	12,262	953	171
Economic value divided	323,373	333,590	174,354	182,546
Operating costs	206,022	208,550	110,150	117,070
Employee salaries and benefits	72,871	71,768	51,460	52,164
Payments to capital providers (interest on loans and other financial expenses, accrued dividends on shares)	24,755	28,917	10,730	11,028
Payments to government (taxes charged at the accounting period, including profit tax)	18,673	23,491	1,557	1,969
Community investments (charitable contributions, donations to charitable organizations)	1,052	864	454	315
Economic value retained	51,807	79,486	2,711	7,359

Please see 2016 Annual Report of PJSC RusHydro, pages 44-49 for detailed information on the factors that influenced the change in the key economic indicators.

RusHydro Group's key economic indicators, million rubles

Indicators	2014	2015	2016	Change for 2016/2015
Assets	883,770	938,137	983,446	4.83 %
Long-term loans	119,187	135,179	158,046	16.9 %
Short-term loans and short-term part of long-term loans	57,843	62,214	41,757	-32.9 %
Revenue*	341,988	361,826	391,322	8.2 %
Government subsidies	12,428	14,314	17,250	20.5 %
Operating costs**	290,838	315,103	315,705	0.2 %
Net profit	24,131	27,159	39,751	46.36 %
EBITDA	73,249	73,383	100,341	36.74 %

Debt to equity ratio, % (102-7)

	2014	2015	2016
Debt to equity ratio	50 %	53 %	51 %

SECURING CREDITWORTHINESS

The sources to ensure the RusHydro Group's creditworthiness in the medium and long term are its own funds, as well as funds received from external sources: ruble bonds, credit lines, unutilised balances of approved banking limits in leading banks, liquid investments in shares available for sale. Financial sustainability is guaranteed and the control of the total amount of debt is carried out, among others, by the subsidiaries' boards of directors, which approves the plans of borrowing, the marginal cost of borrowing and standard financial and behavioural covenants. Quarterly, the RusHydro

Group companies report on attraction and repayment of loan funds, as well as on a timely and full performance of all obligations under agreements on borrowing. (103-2)

Please see 2016 Annual Report of PJSC RusHydro, p. 50, for more information on the structure of the Group's debt, changes in 2016 and the RusHydro's credit ratings.



3.1.2. PROCUREMENT ACTIVITIES

PROCUREMENT MANAGEMENT SYSTEM

To support its operations, RusHydro Group purchases a large number of products and services from third-party organizations. In RusHydro Group, a number of local regulatory documents (acts) to prevent misuse and mismanagement of funds is adopted.

The Company's activities in the field of procurement are regulated by the requirements of the Russian legislation, in particular the requirements of Federal Law No. 223-FZ of 18.07.2011 «On Procurement of Goods, Works, Services by Individual Types of Legal Entities», and the Regulation on Procurement of Products for the Needs of PJSC RusHydro (approved in a revised version by the

In 2016, the RusHydro Group created a specialized supply company, RusHydro Supply (JSC RHS), which ensures the optimal quality of the purchased products, transparency of procurement processes, increase in the efficiency of procurement and supply processes. Functions of JSC RHS include:

- development of the procurement and supply management functions in the Group;
- ensuring the procurement planning process, supporting the work of the CPC;
- ratification of documents required to prepare the beginning of the procurement procedure;
- market analysis;
- organization and implementation of procurement procedures;
- analysis of pricing documents;
- ratification of contracts, additional agreements;
- examination of economic security;
- other functions to support the procurement management of the Group's enterprises.

decision of the PJSC RusHydro Board of Directors dated 23.06.2016, No. 239, as amended). The use of these regulatory documents facilitates the regulation of purchases, timely and high-quality provision of goods and services, as well as the economical expenditure of the Group's cash.

The procurement activities regulation includes:

- application of mandatory procedures, including a careful planning of the products demand;
- market analysis;
- information transparency of the procurement;
- actions aimed at achieving equality, fairness, non-discrimination and unreasonable restrictions on competition with respect to procurement participants;
- targeted and cost-effective spending of money for the purchase of goods, works, services and other activities.

To increase the procurement's efficiency, transparency and fairness, RusHydro Group is guided by the following principles:

- openness (transparency);
- competitiveness;
- reasonableness;
- efficiency.

A permanent collegial body, the Central Procurement Commission (CPC), ensures control and coordination of procurement activities in PJSC RusHydro. For the direct coordination and implementation of procurement procedures, the CPC appoints permanent procurement commissions.

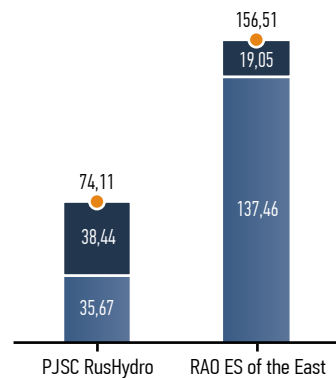
Procurement is carried out by the Procurement, Marketing and Price Formation Department in the Executive Office of PJSC RusHydro and by procurement departments in the branches.

RESULTS OF PROCUREMENT ACTIVITIES (102-9)

A significant share of purchases in the Group is carried out through the electronic trading platform. In 2016, the share of such purchases was 86.27% for PJSC RusHydro and 64.9% for RAO ES of the East.

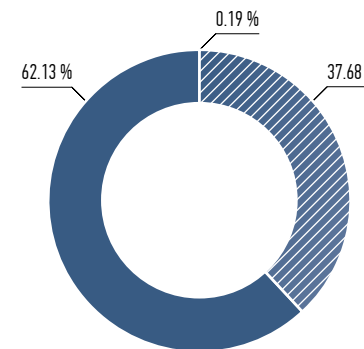
In 2016, within the framework of the Eastern Economic Forum, PJSC RusHydro and the Unified Electronic Trading Facility signed an agreement on cooperation. The agreement is aimed at cooperation in the field of procurement for the needs of PJSC RusHydro through the specialized electronic trading platform «Commercial Procurement» of JSC Unified Electronic Trading Facility.

The volume of purchases in 2016, billion rubles.



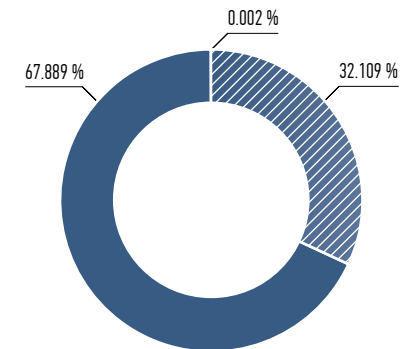
- Total
- Investment activities
- Current production activities

Procurement structure PJSC RusHydro and subsidiaries (except for RAO ES of the East)



- Proportion of purchases from open sources
- Proportion of purchases from a single source
- Proportion of purchases from a limited number of sources

Procurement structure RAO ES of the East





Currently, RusHydro is developing a centralized procurement management system for the Group, including RAO ES of the East, aiming to increase the transparency of procurement activities and create the most comfortable competitive environment.

A share of purchases from a single source is significant due to acquisition of goods and services from the core industry institutions, monopoly companies and state monopolies.

Please, see 2016 Annual Report of PJSC RusHydro, p. 88, for detailed information on the procurement trends from a single supplier.

PROCUREMENT FROM SMALL AND MEDIUM ENTERPRISES (102-9)

RusHydro Group strives to cooperate with small and medium-sized enterprises as part of the procurement activities with the aim to maintain their competition and a stable development.

The website of the Unified information system in procurement (<http://zakupki.gov.ru/epz/gws/quicksearch/search.html>) and the PJSC RusHydro's website include list of goods, works, and services, which are purchased from small- and medium-size business enterprises.

Rate of purchases from small and medium-sized enterprises in 2016, % (102-9)

Indicator		Plan	Fact
Rate of purchases with SMEs' participation against total annual cost of purchases	PJSC RusHydro	18 %	73.8 %
	RusHydro Group		61.6 %
Rate of purchases only from SMEs against total annual cost of purchases	PJSC RusHydro	10 %	56.8 %
	RusHydro Group		29.7 %

RusHydro has its own planned indicators for 2016 purchases from small and medium-sized enterprises. They are established by Decree of the Government of the Russian Federation No. 1352 «On the Specifics of the Participation of Small and Medium-Sized Entrepreneurs in the Procurement of Goods, Works, Services by Individual Types of Legal Entities» of 11.12.2014. At the end of the year, the Group managed to achieve results that far exceeded the plan. The actual result significantly exceeded the plan and the similar indicator of 2015, including, for the following reasons:

- purchases planned for the previous periods (2014-2015) and advance requiring purchases (2017) were included in the counting contour;
- at the end of the reporting period, the number of categories that were excluded earlier were included in the procurement contour related to the procurement from SMEs, in accordance with the legislation.

In 2017, RusHydro Group plans to purchase at least 18% of the total volume of purchases from small and medium-sized enterprises, including at least 10% of purchases conducted with the participation of only small and medium-sized businesses.



3.1.3. INVESTMENT ACTIVITIES

INVESTMENT ACTIVITIES ISSUES MANAGEMENT (103-3)

The RusHydro's management approach is focused on improvement of investment and operating efficiency through concentration of financial resources on the most perspective and important projects. Successful investment activities help RusHydro Group to maintain high level of competitiveness, maximise profit, and ensure the reliability of electric power system operation.

Principles of the PJSC RusHydro investment policy:

- compliance of investment decisions and projects with legal requirements, construction and environment standards;
- analysis of profit and loss from implementation of alternative investment decisions upon completion of every stage of an investment project in case of change of its baselines;
- compliance of investment decisions and projects with the profit and risk requirements, approved by the Company's Board of Directors;
- adherence to the stages' and milestones' cycle during investment project implementation;

- provision of all investment projects with financing sources.

The Company's development milestones, including those in the field of investment activities, are defined by the RusHydro Group's Development Strategy, the RusHydro Group's mid-term consolidated business plan and the Long-Term Development Program of RusHydro Group for the period 2016-2020 (hereinafter referred to as the LTDP). Investment activity in RusHydro is regulated by the Regulation on the Investment Management Process in the Form of Capital Investments. In addition, while making investment decisions, the Company is guided by the Rules for the approval of investment programs for government-linked power industry entities.

In accordance with the directives of the Government of the Russian Federation No. 4955p-P13 of 17.07.2014, an external audit of the implementation of the LTDP is conducted annually.

CONTROL OVER THE PROPER USE OF FUNDS FOR INVESTMENT PROJECTS AND REPAIR WORK (103-3)

Investment projects worth more than 1.5 billion rubles are audited in accordance with the Regulation on the Public

The process of alignment and approval of the investment programs

1.

PRE-APPROVAL

Board of Directors of the RusHydro Group's subsidiaries and affiliates

2.

ALIGNMENT

- Ministry of Energy of the Russian Federation
- Executive agencies

3.

APPROVAL

Board of Directors of RusHydro Group



Technological and Price Audit of Large Investment Projects of PJSC RusHydro.

The Regulation on Investment Activity of PJSC RusHydro includes the control over the implementation of investment projects at all stages of the life cycle. It also includes a price audit, deadlines control and compliance control with the requirements of the current legislation. Special field inspections are regularly conducted at each construction site.

The Company initiates discussion on implementation or completion status of the investment project at the Board of Directors upon completion of each stage of the investment project, as well as when the facility is transferred to a pilot operation. Questions on the implementation of the investment program and individual investment projects may be submitted for consideration by the Board of Directors at the initiative of any member of the Board of Directors.

CONTROL OVER THE PROPER USE OF BUDGET FUNDS (103-3)

In order to control the targeted use of budget funds, namely, while implementing priority investment projects under the Far Eastern Energy Development Program, a special monitoring system has been created. It allows the state to monitor in real-time mode the use of targeted budget funds received by PJSC RusHydro as part of additional emission. The system's participants are the Accounts Chamber of the Russian Federation, the Ministry of Economic Development of the Russian Federation, the Ministry of Energy of the Russian Federation, and PJSC Sberbank.

Permanent monitoring of the priority investment projects implementation within the framework of the Far Eastern Energy Development Program is carried out by the Risk Management Department of PJSC RusHydro, which allows preventing and promptly reacting to possible deviations from the established requirements.

As part of this function, preliminary control of targeted investment funds spending is carried out through analysis of primary financial documents. These documents are received by organizations authorised to make payments for works under projects, monitor compliance of the works actually performed with the requirements established by the project documentation, monitor compliance with the requirements of the Town Planning Code, maintain executive documentation and compliance with deadlines, and eliminate previously identified shortcomings and violations.

INVESTMENT PROGRAM FOR 2016

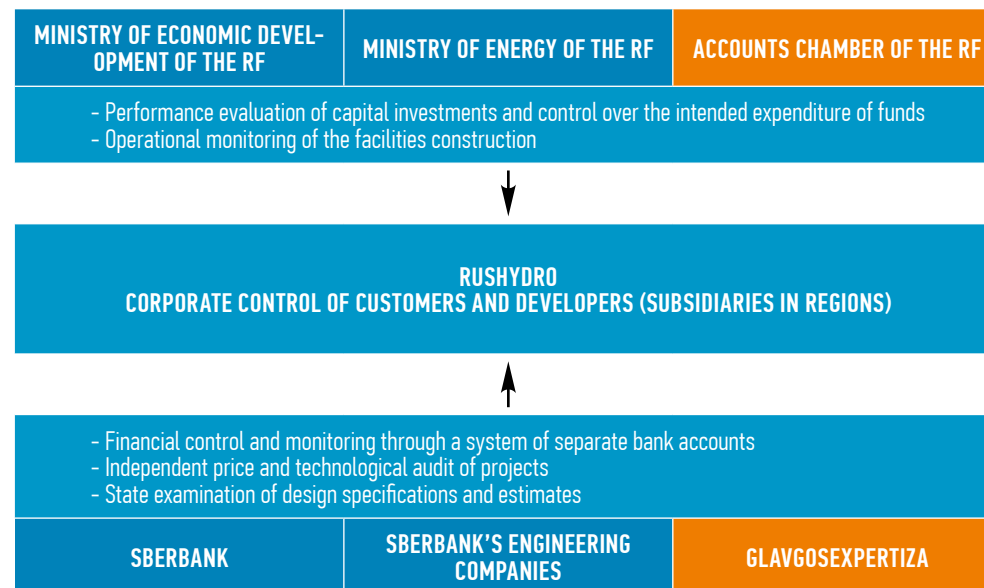
The investment program of PJSC RusHydro for 2016 is approved by Order of the Ministry of Energy of the Russian Federation No. 956 of December 14, 2015 as part of the investment program of PJSC RusHydro for 2016-2018. It is also adjusted by Order of the Ministry of Energy of the Russian Federation No. 1458 of December 30, 2016 «On Approval of the PJSC RusHydro's Investment Program for 2017-2019 and Changes Made to the PJSC RusHydro's Investment Program Approved by Order of the Ministry of Energy of the RF No. 956 of December 14, 2015».

The investment program of PJSC RusHydro for 2017 was approved as part of the PJSC RusHydro's business plan for 2017-2021 (Minutes of the Board of Directors No. 245 of December 26, 2016).

In addition, the Board of Directors of the Company reviewed the draft of the RusHydro Group's Consolidated Investment Program for 2018-2022 and for 2017 (adjustment). The revision took place on April 4, 2017 (Minutes No. 249 of April 07, 2017).

Please see 2016 Annual Report of PJSC RusHydro, pages 54-57, for information on implementation of the investment program in 2016 and major investment projects. (103-3)

Mechanisms to control the intended expenditure of the Federal budget funds allocated to investment projects





3.1.4. FINANCIAL DISCIPLINE AND FAIR BUSINESS PRACTICES

DIVIDEND POLICY

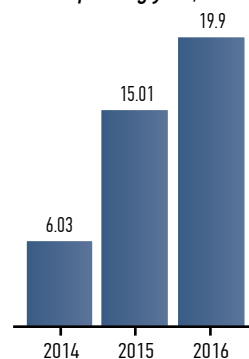
The Company's dividend policy is aimed at ensuring the strategic development of PJSC RusHydro and a shareholder value growth through creation of an optimal balance between dividend payments to shareholders and profits capitalization. In accordance with the RusHydro Group's Development Strategy for 2020 with a perspective for up to 2025, the dividend amount should be at least 50% of net profit. In this regard, the Company will strive to ensure a high level of dividend yield to its shareholders.

In 2015, the Company's dividends amounted to 15.01 billion rubles, or 0.038863 rubles per share.

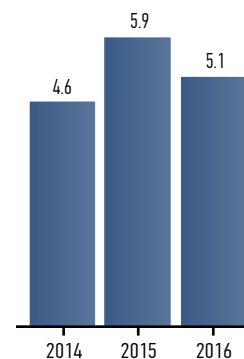
On June 26, 2017, the Annual General Meeting of Shareholders of PJSC RusHydro was held. According to its decision, 19.876 billion rubles were allocated to pay dividends, which corresponds to 50% of the Company's net profit under IFRS for 2016 or 0.0466 rubles per share. As a result, the budget of the Russian Federation will receive more than 12 billion rubles.

Detailed information on the dividend policy, dividend history of the Company is available at <http://www.rushydro.ru/investors/dividends/>

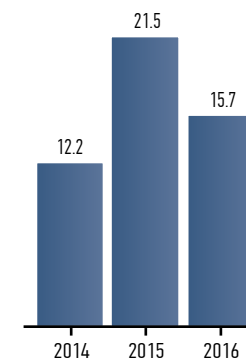
Amount allocated to dividends payment for the corresponding year, billion rubles



Frequency of power cut-offs (EU28)



Average duration of power cut-off, hours (EU29)



RESPONSIBILITY FOR THE RUSHYDRO GROUP'S PRODUCTS

The power supply assets of the Group are consolidated in the subsidiary company - JSC ESC RusHydro. RusHydro's power supply sector includes guaranteeing electricity suppliers in three regions of the Russian Federation: PJSC Krasnoyarskenergosbyt (Krasnoyarskiy Krai), PJSC Ryazan Energy Retail Company (Ryazan Region), Chuvash Energy Retail Company (Chuvash Republic). Apart from this, the power supply activities are implemented by PJSC FEEC (Primorskiy Krai).



The power supply companies exercise their responsibility for the products and quality of customer service: they provide a reliable, complete and timely information to the market about their services. In accordance with the approved standard of customer service, information on services is disclosed on the website www.esc.rushydro.ru, on the websites of regional marketing companies and other public sources, at information stands in client

offices, in promotional materials, contracts and invoices. **(103-1, 103-3)**

The principles of the JSC ESC RusHydro's interaction with consumers are:

- non-disclosure of consumers'/customers' personal information;
- ensuring the right to an ecologically safe environment;
- equality of consumers regardless of gender and cultural factors.

The Group's companies use consumers' personal data only for the purposes of their core business and do not apply this data to the promotion of other services and other products, as well as for any purposes not agreed with the customer **(103-2)**. In 2016, the companies of JSC ESC RusHydro did not receive any claims or appeals for violation of the requirements of the Russian legislation on personal data protection. **(103-2, 418-1)**

The power supply companies operate in the field of electrical energy (power) supply in retail electricity markets and provide services that are continuously associated with the process of power supply to enterprises.

Among the clients of JSC ESC RusHydro there are enterprises in the field of information technology, defence, automotive, chemical and many other industries. Consumers of JSC ESC RusHydro are factories, large fuel and energy complex objects, warehousing and shopping and entertainment complexes, as well as data storage and processing centres, many of which are part of large Russian and international holdings. **(103-1)**



RAO ES OF THE EAST RESPONSIBILITY TO THE CONSUMERS

RAO ES of the East is the main provider of electric and thermal energy in the Far Eastern Federal District.

Information on incidents of non-compliance of the Holding's companies with regulatory requirements and voluntary codes regarding health and safety impact of the products and services, as well as data on the amount of significant fines, are provided in the table.

Other fines of no more than 65 thousand rubles were imposed on JSC FEGC, JSC FEDC, JSC Chukotenergo, JSC Teploenergосervice.

In 2016, the frequency and average duration of the power cut-offs were significantly reduced.

Cases of non-compliance with regulatory requirements, leading to a fine, penalty or a warning¹ (416-2)

Company	Cases of non-compliance	
	Leading to a fine or penalty	Leading to a warning
JSC FEDC	7 Protocols of the State Labor Inspectorate with the total amount of fines of 154 thousand rubles	
PJSC Kamchatskenergo	13 Rostekhnadzor protocols with the total amount of fines of 507 thousand rubles 3 Protocols of Rostrudinspectorate with the total amount of fines of 300 thousand rubles	
PJSC Yakutskenergo	46 Rostekhnadzor protocols with the amount of fines of 318 thousand rubles 3 regulations of Rostrudinspectorate with the amount of 270 thousand rubles	1 protocol of the State Fire Supervisory Authority (a warning issued) 5 decisions of the Rostrudinspectorate (warnings issued)
JSC Teploenergосervice	One Rostekhnadzor Protocol with the total amount of fines of 200 thousand rubles	1 protocol of the State Fire Supervisory Authority (issued a warning)

¹ The table shows fines of more than 100 thousand rubles.



3.2. CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT OF THE REGIONS



For RusHydro Group, it is vital not only to provide stable electricity supply to consumers, but also to contribute to social and economic development of the regions of operation. For this purpose, the Company builds partnerships with local communities.

In a number of cities, the RusHydro's activities are system forming. The Company creates jobs, builds and finances social infrastructure facilities, landscapes cities, supports education, health, culture and sports.

When modernizing and building new hydropower facilities, the Company strives to ensure that projects are not only profitable, but also socially acceptable. **(103-1)**

3.2.1. SOCIAL PARTNERSHIP IN THE REGIONS

The key principle of the RusHydro's social activity in the regions of its presence is to build strong relationships with all stakeholders, including regional authorities.

This principle is implemented through social and economic partnership in the regions. Relationships are built taking into account mutual interests, through sponsorships and charitable initiatives. Such relationships are based on agreements on social and economic cooperation, which are signed every year. The areas of partnership under these agreements are determined by the objectives of social development of the territory and the principles of corporate social responsibility of the Company. **(413-1)**

RusHydro participates in addressing issues related to the employment of local population, fiscal capacity, construction and financing of social infrastructure, improvement of towns, support of education and healthcare, development of culture and sports, care for veterans and disabled people, implementation of technical measures to reduce the impact on the environment, and provision of assistance to victims

of natural disasters or other catastrophes. RusHydro is one of the significant taxpayers in the regions of its presence. **(413-1)**

322 jobs were created by RusHydro branches and subsidiaries in 2016, 256 of them are in the Far Eastern Federal District.





Taxes paid in 2016, million rubles.¹

	Federal budget	Regional budget	Local budget	Total
PJSC RusHydro	23,223.37	20,119.67	457.57	43,800.61
RAO ES of the East	24,903.79	3,472.04	379.61	28,755.43
RusHydro Group	48,127.16	23,591.71	837.18	72,566.04

In February 2016, RusHydro completed the construction of seven paramedic-obstetric stations (POS) in the villages and towns of the Republic of Khakassia, affected by the fires in April 2015.

In each of the areas of 100 m² there are rooms for patient receptions, an examination room, a procedural room and vaccination rooms.

In July 2016, RusHydro began reconstruction of the road bridge going through the structures of the Nizhny Novgorod Hydroelectric Power Plant – a permanent ferry across the Volga with a total cargo traffic of up to 10,000 cars per day in both directions.

At the first stage, the most complicated site in terms of production technology was updated. It is planned that the bridge will have been completely reconstructed by December 2017.

DEVELOPMENT OF THE TERRITORIES NEAR SAYANO-SHUSHENSKAYA HPPC

After the accident at the Sayano-Shushenskaya HPP in 2009, the Company faced a number of important tasks: not only to restore the HPP in the shortest possible time and to improve its safety, but also to help local residents, including the victims' families.

For seven years that have passed since the accident, the plant has been restored and modernized; the level of safety of hydraulic structures has been qualitatively raised. **(103-1)**

One of the RusHydro's key social projects is a complex development of the village of Cheryomushki in the Republic of Khakassia, for which the HPP is the key enterprise. The project is implemented in cooperation with regional authorities. During the years of its implementation, two kindergartens and two schools, a dormitory for students of the Sayano-Shushensky branch of the Siberian Federal University, a club for veterans, a youth centre and a Sunday school were repaired and equipped in the settlement, children's playgrounds were installed in the courtyards of residential buildings. A major overhaul of the sports and sports complex and the building of the polyclinic were completed, the reconstruction of the buildings of the village ambulance station branch and the day hospital were also completed. Moreover, the modern training-industrial and informative-innovative centre was built and equipped in Cheryomushki.

In 2017, it is planned to complete the improvement of the Yenisei River embankment and the construction of the Winter Sports Development Centre.

In total, RusHydro has invested more than 1.3 billion rubles in the development of the infrastructure of the village of Cheryomushki. **(203-1)**

Besides, the programs to help the victims' families and the complex development of Cheryomushki were continued in 2016. Monthly benefits to such families with children under the age of 18 were paid annually in the amount of the indexed salary of the deceased. Payments will continue until all the children of the deceased reach adulthood. Corporate scholarship payments to children receiving their first professional education continue. Altogether, for seven years, about 225 million rubles were invested in the program of social support for the families of the deceased.

¹ Including VAT, PIT, insurance contributions

3.2.2. PRODUCTION FACILITIES CONSTRUCTION

ZELENCHUKSKAYA HPP-PSPP



In December 2016, Zelenchukskaya HPP-PSPP was launched in Karachaevo-Cherkessia. It was built using the building stock left after the construction of the Zelenchukskaya HPP. The new power plant is unique as it has two types of hydraulic units: the first and the second ones operate only in the generator mode, the new third and fourth ones are reversible, so they can operate in the generator and pump modes.

Zelenchukskaya HPP-PSPP will become the centre of operational regulation and balance adjustment of the energy system of the entire North Caucasus. Thanks to its commissioning, Karachaevo-Cherkessia will significantly increase the amount of electricity supplied to the Russian market, and the level of energy supply of the republic will increase to 45%. Tax revenues in the region's budget will increase by 140 million rubles..

ZARAGIZHSKAYA HPP



Zaragizhskaya HPP in Kabardino-Balkaria also launched in 2016 represents the third stage of the Lower-Cherek Cascade. Its feature is the absence of a dam (the pressure on hydro turbines is created due to a natural difference in the terrain with the help of a derivation channel). During the construction of the hydroelectric plant, valuable land was not flooded and no residents had to be resettled. The commissioning of the Zaragizh plant allowed to bring the total annual output of the Cascade plants to 600 million kWh (~50% of the electricity consumed by the republic). **(203-2)**

NIZHNE-BUREYSKAYA HPP



Nizhne-Bureyskaya HPP in the Amur Region is a 320 MW installed power plant that will be put into full operation in 2017. The plant will become a counter-regulator of the Bureyskaya HPP, smoothing the daily river level fluctuations generated by the operation of the hydroelectric power plant. This will remove the restrictions on the operational modes of the Bureyskaya HPP and will eliminate the winter flooding in a number of settlements located in the downstream. The following additional socio-economic effects of the project for the Far East and Russia in general will take place:

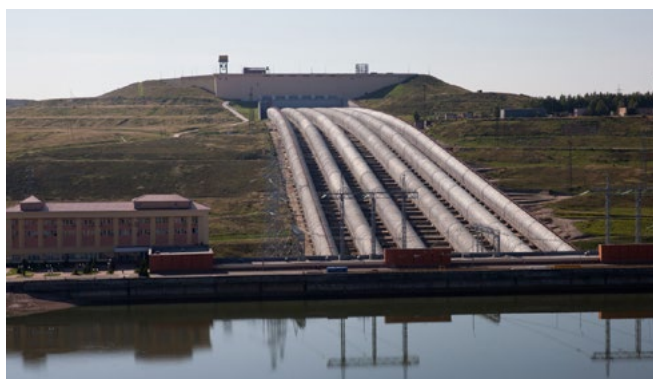
- reduction of current generation costs in the whole integrated power system (hereinafter - IPS) of the East;
- possibility to shift the nearby villages from heating by expensive fuel and coal boilers to electric boiler houses with a reduction in the heat tariff for consumers;
- creation of jobs for the released builders of the Bureyskaya HPP (2,000 people) and reduction in the outflow of population from the Far East;
- loading of domestic producers and contractors;
- increase in tax revenues to budgets of all levels;
- growth in the purchasing power of the population of the Amur Region. **(203-2)**

GOTSATLINSKAYA HPP



The task of the construction of the Gotsatinskaya HPP with an installed capacity of 100 MW is to supply electricity and power to consumers of the scarce IPS of the North Caucasus. This will be beneficial for the regulation of social and political situation and the improvement of social position of the Republic of Dagestan. The project was completed in the end of 2016. **(203-2)**

ZAGORSKAYA PSHPP-2



Zagorskaya PSHPP-2 investment project is intended to partially solve the problem of the manoeuvrable regulatory power deficit in the Central region of Russia, as well as prevent emergencies in Moscow and the Moscow region.

The project was launched in 2006, but at present it is frozen. The final decision on completion will be made in 2017.

The construction of the new PSHP resolves a number of social issues of the Bogorodskoye and Krasnozavodsk municipalities, where the construction is carried out. In 2016, the Company restored municipal engineering communications that are in the construction zone. An all-season approach is provided and a fresh water pipeline is laid in Grigorovo and Sementsevo villages of the Bogorodskoye municipal entity.

With the expansion of the lower basin, the transport infrastructure between Bogorodskoye village and Krasnozavodsk city will be reconstructed. In addition, PJSC RusHydro has committed itself to the construction and improvement of social and civil-purpose facilities – a community centre for 500 seats, a recreational area and a sports complex in Bogorodskoye village, recreation areas and a number of communal facilities in Krasnozavodsk. **(203-1)**

UST-SREDNEKANSKAYA HPP



According to the investment program, Ust-Srednekanskaya HPP on the Kolyma River in Magadan region with the capacity of 142.5 MW will be put into operation in 2018. The HPP's startup complex is the source of generation for the Matrosov mine (Natalka gold deposit) and contributes to the economic growth of the region due to the mining sector development. **(203-2)**

ZARAMAGSKIY HPPS



The construction of Zaramagskaya HPP-1 with the capacity of 342 MW on the Ardon River is the largest investment project in the North Ossetia. The plant is also the largest HPP under construction in the North Caucasus region. After being put into operation, its tax revenues to the budgets of all levels will amount to 0.9 billion rubles annually, which will enable the HPP to become a budget-forming one for the region.

The uniqueness of Zaramagskaya HPP-1 consists, first of all, in a derivation tunnel of 14.5 km long, which has no analogues in Russia. Its width is 4.5 m, height 5 m, water will overcome the tunnel in 80 minutes. The building of the tunnel began in 1982, no more than 30% of its length was made during the Soviet period. In 2016, the construction of a vertical mine was completed and a new stage of construction was launched (concreting the bottom of the daily regulation pool). Also in the reporting year, contracts were signed for the supply of basic equipment. It is planned that the HPP will be put into operation in 2018..



3.2.3. PROGRAM FOR THE CONSTRUCTION OF NEW THERMAL GENERATION FACILITIES IN THE FAR EAST

The development of the Far East is one of the highest state's priorities. That is why the Federal Target Program for the Development of the Region has been developed and the Ministry for the Development of the Far East was created.

RusHydro Group contributes to the development of the region. The Company's most important investment project is the construction of four facilities on the territory of the Far East as part of implementation of the Presidential Decree «On the Further Development of the Open Joint-Stock Company Federal Hydro-Generating Company – RusHydro» No. 1564 of November 22, 2012:

The new facility construction projects are financed from the budget funds designated for the development of the energy industry in the Far East. For these purposes, in accordance with the Presidential Decree No 1564 of November 22, 2012, the government allocated 50 billion rubles to increase the capital of PJSC RusHydro. **(201-4)**

The implementation of these projects is the first stage of the Long-Term Energy Development Program of the Far East, aimed at replacing the out-of-operation power generation capacities and developing the infrastructure of the decentralized energy supply sector.



The Program will help to achieve the following goals for the regions of the East IPS by 2025:

- total increase in the gross regional product (GRP) of the Far Eastern Federal District (FEFD);
- additional revenues from taxes, including income tax on energy companies of FEFD and tax revenues from related industries (mechanical engineering);

Characteristics of the RusHydro's projects in the Far East

Project	Purpose	Works of 2016	Amount of funding since the beginning of construction, mln rubles, VAT included
2nd stage of the Blagoveshchenskaya CCHP	To cover the deficit and to meet the future demand for heat energy, to improve reliability of power supply and to cover the uneven part of the East UES electric load schedules	Construction is completed	6,493.39
1st stage of the Sakhalinskaya SDPP-2	To replace the out-of-operation Sakhalinskaya SDPP, to increase the efficiency of the Sakhalin energy system	The frame of the main building has been constructed, a large-scale turn of the construction is being carried out, communication with the suppliers of the main equipment is in progress	14,724.25
CHPP in Sovetskaya Gavan	To replace the out-of-operation capacities of the Maynskaya HPP and to ensure the growing demand for electricity in the Port Special Economic Zone in Sovetskaya Gavan	The construction of a thermal backbone network has began	11,273.98
1st stage of the Yakutskaya SDPP-2	To replace the out-of-operation capacities of the Yakutskaya SDPP, to ensure the consumption growth and improve energy supply reliability	The delivery and installation of the compressor station were carried out, hydraulic tests of waste heat boilers were also carried out. It is planned to be commissioned in 2017	21,230.53

- development of the construction sector: more houses can be connected to heating;
- increase in population employment through creation of new jobs in industries such as construction, operation of energy facilities, and mechanical engineering. **(203-2)**

3.3. INNOVATIVE DEVELOPMENT



Innovative activity means development and implementation of new mechanisms to use knowledge, tangible and intangible assets, which allow bringing the production process to a higher level and improving the products' quality. The application of innovative practices and technologies ensures an increase in productivity and minimization of negative ecological impacts. (103-1)



The innovative development of RusHydro is focused on increasing the reliability of hydraulic facilities, energy efficiency and the use of new renewable energy sources. For the Group, innovations are the key to the modernization of existing hydropower facilities, as well as to the construction of new ones with improved technical characteristics.

3.3.1. INNOVATIVE DEVELOPMENT MANAGEMENT (103-2)

The RusHydro Group's innovation management system includes the following subsystems/management areas:

- Management and coordination of the RusHydro Group's Innovative Development Program;
- Competencies and infrastructure management;
- Innovative developments (projects) management;
- «Innovative knowledge» management.

The main document that determines the innovative development of PJSC RusHydro and its subsidiaries is the RusHydro Group's Innovative Development Program for 2016-2020 with a prospect for up to 2025 (IDP). It outlines the main KPIs of the RusHydro's innovation activities, contains information on priority innovative development areas and key innovative projects. In order to determine the list of activities for each year, a three-year Medium-Term IDP Implementation Plan is adopted and updated annually. There is also a Roadmap for the implementation of the IDP projects, which is available on the Company's official website.

In turn, on June 29, 2016, the Board of Directors of PJSC RAO ES of the East approved its own Innovative Development Program for 2016-2020 with the prospect for up to 2025. It was agreed and finalized taking into account the comments of the relevant ministries within the framework of the working group meeting chaired by A.L. Texler, the First Deputy Minister of Energy of the Russian Federation.

Innovative development programs of RusHydro and RAO ES of the East are synchronized in terms of implementation of the integrated KPI for innovation (value for 2016 is 85%), which includes the following indicators:

In 2016, the innovative development management systems of RusHydro Group and RAO ES of the East were merged into PJSC RusHydro due to the optimization of the Far Eastern energy management.

RUSHYDRO SCIENTIFIC AND DESIGN COMPLEX (103-2)

Innovation is based on research activities, for which concentration of human, intellectual and financial resources is vital. Especially for this purpose, RusHydro has established the Scientific and Design Complex (hereinafter - SDC), which includes three project institutes and two scientific organizations.

SDC develops and implements innovative technologies in hydraulic engineering, performs complex engineering surveys to justify the projects of various energetic, hydrotechnical and water management facilities and take part in the engineering of hydroelectric power plants in Russia and abroad. RusHydro sees the SDC's mission in the sustainable development of hydropower, the efficient use of hydro resources, the creation of conditions to ensure reliability of the UES and the increased use of renewable energy sources for the benefit of shareholders and society.

SDC's developments are implemented at all stages of the life cycle of hydro projects - exploration, engineering, construction and operation. At present, according to the developed projects and technologies, more than a dozen of large and small hydropower plants are being built.

In October 2016, PJSC RusHydro approved the Concept for Reforming the Scientific and Design Complex of the Company, the implementation of which is entrusted to a specially created working group. The need for reform is explained by the necessity to improve the effectiveness of the SDC, bringing it in line with the existing and planned

Goals and objectives of the Innovative Development Program of RusHydro Group

Ensuring the compliance of the RusHydro's technological level with the level of domestic and world's leading energy companies

- Ensuring the priority use of innovative solutions
- Improvement of the innovative development structure and management system, including the creation of a unified intellectual property management system of RusHydro
- Establishment of permanent complex interaction with subjects of innovation environment on the principles of partnership, cooperation and joint participation in development
- Development of new types of generation

Increasing the effectiveness of the RusHydro's activities

- Innovative project selection on the basis of integral approach to effectiveness assessment
- Conducting of coherent policy aimed at internal energy saving during activities of RusHydro and its subsidiaries
- Reduction of the duration of the development-implementation cycle
- Increase of the involvement of Russian organizations and companies in the Group's innovation activities
- Increase of the level of business processes automation on the basis of advanced information technologies for labor organization

Integral KPI of the innovation activity of RusHydro and RAO ES of the East

Components of the indicator	Weight, %	Value for 2016
Share of R&D expenses in revenue, %	15	0.25
Growth in the number of objects of intellectual property placed on the balance sheet for the reporting period, %	15	4
Coefficient of fuel use, % (only for PJSC RAO ES of the East)	20	51.71
Efficiency of power plant capacity management, people/100MW (PJSC RusHydro)	20	22.43
Quality of development (actualization) of IDP/performance of Group IDP, %	30	100



scope of work in the domestic and foreign markets. The reform's goal is to preserve and develop scientific and project competencies and resources in order to achieve the strategic objectives of RusHydro Group as a key agent of the state. This includes implementation of medium and long-term projects of hydropower and renewable energy development.

Within the framework of the approved concept, it is planned to preserve and develop scientific and design competences, as well as material, technical and laboratory facilities, which are necessary to ensure a reliable and safe operation of hydropower facilities and hydraulic structures. Reformation of the SDC's structure will be held in accordance with the functional and territorial option, which provides optimization of the duplicate competencies in closely located organizations. At the first stage, it is planned to combine the production resources of JSC Hydroproject Institute and JSC NIIES.

SCIENTIFIC AND TECHNICAL COUNCIL (103-2)

In the PJSC RusHydro management system, there is a permanently functioning collegial expert body – Scientific and Technical Council (hereinafter – STC). It provides expert support for the Company's technical policy. The main objective of the STC is a systematic integration into engineering and scientific solutions by the Technical Policy of PJSC RusHydro of the specialized engineering and scientific competencies, presented by both RusHydro Group's employees and external specialists.

In order to ensure environmental safety of new technical solutions, the STC Reservoirs and Environmental Protection section was created. The STC Section functions under the guidance of A.E. Asarin, Honorary Academician of the Russian Engineering Academy, Doctor of Technical Sciences, Honoured Power Engineer of the Russian Federation. The section includes representatives of scientific research and design institutes, the State University of Environmental Engineering, the Institute of Water Problems of the Russian Academy of Sciences, the Department of Hydrology of Land of Moscow State University, the Federal Agency for Water Resources. During the year, the section members, including external experts, consider various issues and projects in the field of environmental safety of hydroelectric power facilities.

3.3.2. SCIENTIFIC AND TECHNICAL INVENTIONS FOR SUSTAINABLE DEVELOPMENT

In its innovative activities, the Group seeks to create an extensive infrastructure focused on creation of a partner network with development institutions, research institutes, universities, representatives of small and medium-size enterprises, foundations and foreign partners..

IMPLEMENTATION OF JOINT PROJECTS WITH DEVELOPMENT INSTITUTIONS (103-2)

In June 2016, RAO ES of the East and the Skolkovo Foundation signed a Roadmap to coordinate joint activities of selection, approbation and implementation of innovative solutions. In order to fulfil the tasks of the Roadmap for 2016-2017, PJSC RAO ES of the East established four expert working groups with the following areas for cooperation:

- technologies to increase the efficiency and environmental friendliness of plants operating on non-renewable energy sources;
- technologies for generating electrical and heat energy

based on renewable energy sources and energy storage technologies;

- technologies of transmission and distribution of electric and thermal energy;
- improvement of technological processes, including repairs and maintenance.

In 2016, the groups' prospective projects were selected for a detailed consideration (about 50 projects in total). Within the framework of one of the working groups, a meeting of RAO ES of the East branches with start-ups was held. In June 2016, a number of projects by the Skolkovo Foundation participants were presented at the RAO ES of the East annual conference and exhibition on renewable energy in Yakutsk.

Moreover, in 2016, PJSC RusHydro resumed its interaction with the Fund «Energy without Borders». A preliminary analysis of previously implemented projects of the Fund was conducted with a view to make their results available

PARTICIPATION OF PJSC RUSHYDRO IN THE ACTIVITY OF SPECIALIZED TECHNOLOGICAL PLATFORMS

Technological platforms (TPs) are the mechanism to adjust and coordinate the efforts of departments, corporations, infrastructure monopolies, and regions for implementation of the national scientific and technological policy – federal target programs, sectoral strategies and programs, corporate development programs. TPs are an important element in the innovative infrastructure of Russia. The list of TPs was approved by the Government Commission on High Technologies and Innovations.

In 2016, PJSC RusHydro was a part of the following technological platforms:

- Perspective renewable energy technologies (*see 4.4. Development of Renewable Energy*);
- Small distributed power;
- New polymer composite materials and technologies;
- Intellectual energy system of Russia.

Also, PJSC RusHydro plans to participate in the technological platform «Technologies of ecological development».



for the use by the Group's companies. The work on the projects selection will be continued in 2017.

COOPERATION WITH UNIVERSITIES IN THE FIELD OF SCIENTIFIC AND TECHNICAL INVENTIONS (103-2)



The volume of R&D funding carried out by universities under the order of RusHydro Group amounted to 9.6 million rubles in 2016.

R&D projects with universities in 2016

University	Project Description
Siberian Federal University	To solve the problem of a reliable operation of hydroelectric equipment, a mathematical model of pressure pulsation in the flow path, vibration of the unit block construction and seismic data is being developed together with the Sayano-Shushenskaya HPP. In 2016, analysis and systematization of the experimental data were carried out. In the future, the project can help to avoid the rapid deterioration of equipment and possible destruction of structural elements.
Russian State University of Oil and Gas named after I.M.Gubkin	Development of a pilot plant for regeneration of oils for recycling (see below)
Moscow Power Engineering Institute	Development of technology and production of a pilot-industrial sample for recovery and maintenance of fuel oil properties for a long shelf life
Far Eastern Federal University	Development and implementation of a technology for monitoring the condition of the soils of the permafrost dam of the water intake facility at nuclear thermal power plant

3.3.3. IMPLEMENTATION OF THE MOST SIGNIFICANT INNOVATIVE PROJECTS FROM THE POINT OF VIEW OF SUSTAINABLE DEVELOPMENT (103-2)

The volume of funds allocated for R&D by RusHydro Group amounted to 314.3 million rubles in 2016, including: 123.6 million rubles - PJSC RusHydro, 190.7 million rubles - RAO ES of the East.

DEVELOPMENT OF SOFTWARE AND HARDWARE COMPLEX FOR MONITORING AND FORECASTING THE RELIABILITY OF HYDRAULIC STRUCTURES IN COMPLEX ENGINEERING AND GEOLOGICAL CONDITIONS

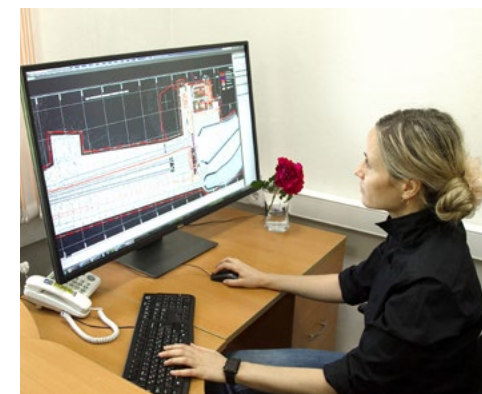
In 2016, Zagorskaya PSHPP established an approved structure of the software and hardware complex for technical monitoring of the HPP safety and reliability. In 2017, it is planned to carry out engineering surveys and develop a project for an additional deployment of control and measuring equipment.

DEVELOPMENT AND TESTING OF MONITORING TECHNOLOGY FOR PIEZOMETRIC PRESSURE IN DESIGN ELEMENTS OF HYDRAULIC STRUCTURES IN THE EVENT OF FAILURE OF EMBEDDED PIEZOMETERS OF A NON-RECTILINEAR SHAPE

The project implementation will increase the sensitivity of existing piezometers of a non-rectilinear form, and to reduce thereby the cost of new piezometers construction.

During 2014-2016, R&D and testing were carried out at the experimental Khorobrovskaya HPP, and experimental operation was carried out at the Novosibirsk HPP in 2016.

At the end of 2016, new methods for restoring control over the responsible zones of hydraulic structures were developed and implemented by increasing the sensitivity of the piezometers of a non-rectilinear shape. The tech-



nology of cleaning the piezometers of a non-rectilinear shape has been developed. The application for obtaining a patent for the invention «Method for cleaning the filter part of a pressure piezometer of a non-rectilinear shape», No. 2016143682 of November 08, 2016, was filed. It is planned to implement this technology at the facilities of PJSC RusHydro in 2017-2020 years.

DEVELOPMENT OF THE TECHNOLOGY AND MOBILE PILOT PLANT FOR REGENERATION OF OILS FOR RECYCLING

The company has developed a highly efficient technology for a mobile pilot plant for regeneration of turbine and transformer oil using vacuum drying, electrophysical and sorption cleaning, oil stabilizing with modern additive compositions, monitoring the quality of regenerated oil and automatically controlling the process. The project addresses the following problems:

- deterioration in quality of the used oil;
- decrease in reliability of power and electrical equipment



operation due to the oil «aging»;

- high costs of oil replacement.

The project was completed in 2016. In the future, it is planned to start the industrial use and scaling of a new technology or production process.

DEVELOPMENT, IMPLEMENTATION AND RESEARCH OF THE EFFECTIVENESS OF THE MULTIFUNCTIONAL COMPLEX PROTOTYPE TO PROVIDE 100% ENERGY SUPPLY TO VERKHNYAYA AMGA VILLAGE (ALDANSKY ULUS) DUE TO RENEWABLE ENERGY SOURCES (RAO ES OF THE EAST)

The main objectives of the project are: to ensure minimum consumption of diesel fuel for the generation of electric power from the Far Eastern Energy System and to ensure the possibility of a round-the-clock power supply regime for

consumers in the spring and summer period only through the use of RES. The economic effect is a decrease in the consumption of diesel fuel by 12 tons per year.

In 2016, a prototype of a multifunctional complex was developed and commissioned. The project cost was 9.2 million rubles. In the future, it is planned to start the industrial use and scaling of a new technology or production process.

BASIC R&D IN THE FIELD OF ECOLOGY

The R&D Program implements both technological projects aimed at improving production performance, improving the reliability and safety of hydraulic structures and equipment, developing promising construction technologies, using new materials and structures, and environmental ones designed to reduce the possible negative impact on the environment and improve the environmental situation in river basins.



Main environmental projects (103-2)

Project	Project Description
Development of constructive and technological solutions for additional watering of Akhtuba River to optimize idle discharges of the Volga HPP and increase the generation of electricity	In the period of high water, higher discharge costs are established through the Lower Volga hydrosystems. They are used to flood the lower reaches of the Volga River in the interests of the environment, agriculture and fisheries. At the same time its adversely affects the amount of electricity produced. PJSC RusHydro conducts mathematical modelling of the flooding of the Volga-Akhtuba flood plain through an additional structure in the left-bank dam of the Volzhskaya HPP.

R&D projects whose implementation is planned for 2017

Project	Description
Development of an information management system for efficient management of loading regimes for the main power equipment and grid facilities - RAO ES of the East	The project is based on the best world practices in the field of automation of technical and economic indicators calculation. It will create a single management tool aimed at reducing the cost of energy production through qualitative planning of the optimal regime and the composition of the plant's operating equipment.
Development of technology and pilot plant for the extraction of silicon dioxide and aluminum oxide from ash and slag wastes - RAO ES of the East	Creation of technology for processing of ash plants of coal-fired power plants with extraction of silicon dioxide and alumina. The processing final products will be amorphous silicon dioxide, alumina and iron dioxide, which differ from those offered on the market today by a lower price and are comparable in quality, which will ensure the import substitution of these products.



CHAPTER 4
**ENVIRONMENTAL
PERFORMANCE**

-1,5 %

Reduction of total amount of wastewater

-2,7 %

Reduction of NO_x, SO_x and other significant air emission

1 807,7 MILLION RUBLES
Environmental expenses

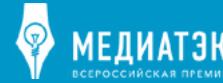
« In 2016, the revised Environmental Policy was approved in PJSC RusHydro. The document reflects the challenges and objectives confronting the Company in implementation of the strategic directions to ensure environmental safety and to meet sustainable development criteria, as well as the Company's key future plans for achieving policy goals. »

B.B. Bogush,

Member of the Board, First Deputy Director General,
Chief Engineer of PJSC RusHydro

KEY EVENTS

- PJSC RusHydro adopted the revised Environmental Policy
- Environmental project «Bureysky Compromise» took the first place in the Competition MediaTEC-2016 in the nomination «Social and Environmental Initiative»



« We understand that the technical component of the construction and operation of any hydro facility is associated with a certain impact on the environment. At the same time, it is necessary to understand the negative effects, minimize them where possible, and improve the situation where there is a potential capability. »

G.I. Rizhinashvili,

Member of the Management Board,
First Deputy Director General of PJSC RusHydro

COOPERATION IN THE FIELD OF RES TECHNOLOGY

- «Renewable Energy Development in the Russian Far East» International Conference was held

CONSERVATION OF BIODIVERSITY

- Cooperation within UNDP Project/GEF/ Ministry of Natural Resources and Ecology
- Open-air cage for the Caucasian bison was build in the Tourmonsky Nature Reserve
- The North Ossetian branch of PJSC RusHydro supported the program for the restoration of the Asiatic leopard in the Caucasus





4.1. ENVIRONMENTAL POLICY



The attitude of respect towards the nature is an essential part of any responsible business policy. International experience demonstrates that modernization of production, development of renewable power generation, innovative development, energy saving and improvement of energy efficiency contribute both to the economic growth of the Company and to the reduction of the negative impact on the environment.

RusHydro Group is the largest power generating company in Russia and a leader in energy production based on renewable sources. The Company operates in most Russian regions; thus, it is one of the main water consumers in the water management system of Russia. Moreover, it is the largest supplier of electricity and heat in the Far East. In this regard, the Company adheres to the responsible approach in terms of the environmental protection. RusHydro Environmental Policy is aimed at preservation of favourable environment by improving the environmental safety of heat and hydro generation facilities. **(103-1)**

4.1.1. ENVIRONMENTAL IMPACT MANAGEMENT

Environmental activities of PJSC RusHydro are carried out in accordance with the Company's approved Environmental Policy, which is based on the provisions of the state policy in the field of environmental development, the Constitution of the Russian Federation, federal laws and other normative legal acts, international treaties of the Russian Federation in the field of environmental protection and a rational use of natural resources. (103-2)

The Company also respects the requirements of international standards in the field of environmental safety and the best foreign experience of the hydropower industry.

While planning and implementing all activities, the Group adheres to the precautionary principle, which was introduced at the 1992 United Nations Conference on Environment and Development.¹ (102-11).

The RusHydro's activities are aimed at minimizing the negative environmental impact and preserving the environment in a favourable condition for present and future generations. This principle is enshrined in the PJSC RusHydro's Environmental Policy, which is the basis for planning and implementing majority of business activities.

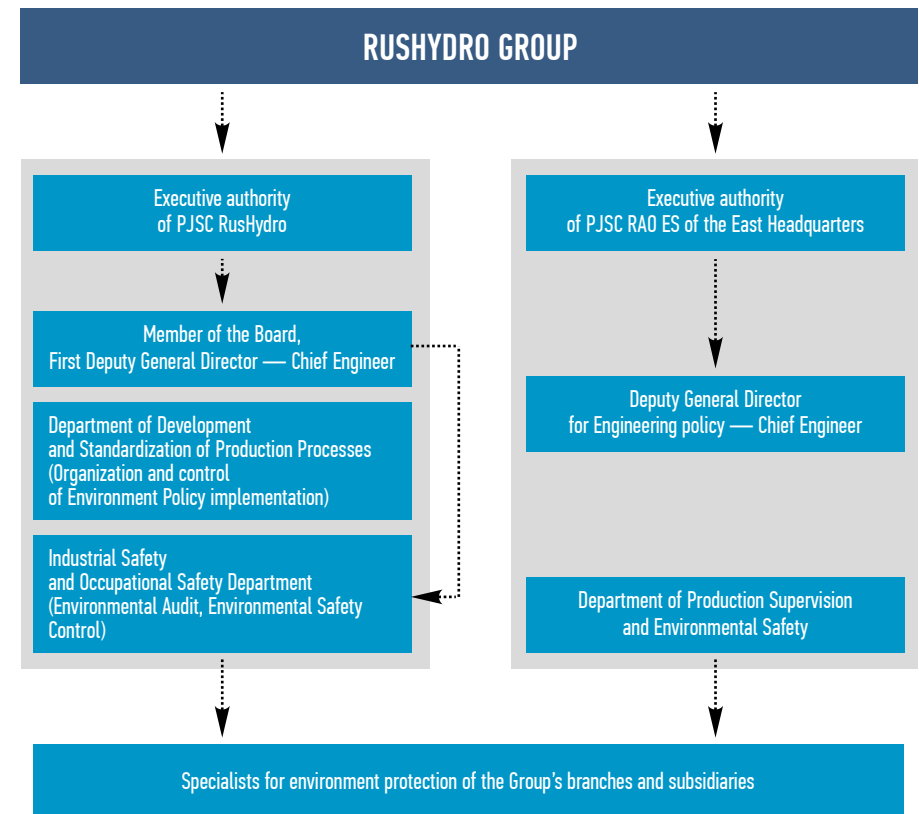
The document was revised and adopted in 2016. Its goal is to identify challenges of ecological safety, together with objectives, tasks and mechanisms to improve the environmental safety level of the existing and projected hydro generation facilities. The Policy applies to all structural divisions of the Company (excluding RAO ES of the East), and its provisions are included in the PJSC RusHydro's business relations with partners.

It is planned to develop the Environmental Policy of RusHydro Group in the context of adoption of the Environmental Safety Strategy of the Russian Federation for the period until 2025², that determined the main directions for improvement of the environmental safety level, and integration of the executive offices of PJSC RusHydro and RAO ES of the East.

[Read more about the Environmental Policy of PJSC RusHydro on the website](#)

Currently, RusHydro is working on creation of a unified environmental management system. A single document 'Regulation on the Environmental Management System' is being developed. The document is to be approved by the end of 2018.

Group's organizational structure for the management of environment protection activities²



¹ «Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation» (Rio Declaration on Environment and Development, 1992).

² The organizational structure ceased to exist on 01.04.2017 in connection with the integration of the executive offices of PJSC RusHydro and RAO ES of the East

³ Order of the President of the Russian Federation No.176 of 19.04.2017.



ENVIRONMENTAL IMPACT MANAGEMENT IN RAO ES OF THE EAST

The Environmental policy of PJSC RAO ES of the East was approved in 2014, its goals are:

- technical re-equipment and replacement of equipment that has low technical, economic and environmental indexes by advanced and economically efficient and environmentally safe equipment;
- involvement of staff into activities aimed at environmental risks reduction, improvement of environmental management system and environment protection performance indicators;
- improvement of the efficiency of use of non-renewable natural resources;
- minimization of adverse man-made impact on the environment. **(103-2)**

[Read more about the PJSC RAO ES of the East Environmental Policy on the website.](#)

MECHANISMS OF THE PJSC RUSHYDRO'S ENVIRONMENTAL POLICY IMPLEMENTATION

Plan of actions to ensure the implementation of the Environmental Policy

The Plan of actions to ensure the implementation of the Environmental Policy was approved in PJSC RusHydro. Activities of the Plan are implemented in the following areas:

Technical re-equipment and reconstruction of HPPs

As part of the Program of technical re-equipment and reconstruction implemented in the Company, the measures are being taken to modernize and replace hydroelectric generating set of HPPs, as well as repair the hydro turbine equipment in order to eliminate the environmental pollution during the operation of hydroturbine equipment. In 2016, new types of hydro turbines with total capacity of 376.5 MW were installed at the Volzhskaya HPP and new hydro turbines with total capacity of 115 MW were installed at the Votkinskaya HPP. Modernization and repair of hydro-turbine equipment took place at the Zhigulevskaya HPP, the Zeyskaya HPP, the Saratovskaya HPP and at the Cascade of Verkhnevolzhskiy HPPs.

In addition, in order to maintain the proper condition of the water protection zones, the Company regularly implements shore protection measures, as well as repairs and reconstruction of the hydraulic structures. In 2016, such works were carried out at the Volzhskaya HPP, the Zhigulevskaya HPP, the Votkinskaya HPP, the Nizhegorodskaya HPP, the Kamskaya HPP, the Saratovskaya HPP, at the Cascade of Verkhnevolzhskiy HPPs and at the Karachay-Cherkessia branch.

RusHydro Group replaces the oil-filled electrical equipment with vacuum or SF₆ gas equipment, which does not contain oils, or with equipment that contains less oil. Works were done at the Volzhskaya HPP, the Zhigulevskaya HPP, the Kamskaya HPP, the Cheboksarskaya HPP, the

Nizhegorodskaya HPP, the Novosibirskaya HPP, at the Cascade of Verkhnevolzhskiy HPPs, in the subsidiary PJSC Kolymaenergo, and at the Karachay-Cherkessia branch.

Also, the reconstruction of existing treatment facilities and installation of new treatment plants are being implemented at hydro generating facilities. In 2016, the works were carried out at the Cheboksarskaya HPP, the Pauzhetskaya GeoPP and at Dagestan, Northern Ossetian, Karachay-Cherkessia branches.

The Company also carries out other activities aimed at reducing the negative impact on the environment:

- Construction of sites for the accumulation of scrap metal;
- Reconstruction of surface-water drain of the HPP buildings;
- Collection of the garbage from the water bodies and its transfer to waste disposal facilities;
- Landscaping and planting.

Such works were implemented at the Volzhskaya HPP, the Votkinskaya HPP, the Zhigulevskaya HPP, the Kamskaya HPP, the Cheboksarskaya HPP, the Zagorskaya PSHP, and at the Karachay-Cherkessia branch. **(103-2)**

TECHNICAL REGULATION IN THE FIELD OF ENVIRONMENTAL SAFETY (103-2)

As part of technical regulation, PJSC RusHydro has applied a number of environmental safety standards.

The Company has approved a corporate standard for the environmental impact assessment: «Hydro power plants. Environmental protection. Assessment of impact on the environment. Procedural Guidelines».

The corporate standard «Hydroelectric Power Plants. Industrial environmental control. Norms and requirements» has been introduced in PJSC RusHydro in order to organize a unified system of production control aimed at ensuring compliance with the requirements and norms established by the current legislation in the field of environmental protection, nature management and environmental protection measures.

For the purposes of administrative use and state supervision, the Company has developed National Standard PNST 15-2014 «Environment protection. Standards for the oil products losses in hydro turbine equipment in operation. Method for calculation of turbine oil losses while operating the hydro turbine equipment». Based on this standard, another standard GOST R (Russian National Standard) with the same name is developed.

[See the texts of the standards of PJSC RusHydro at the website.](#)



Key environmental protection works implemented by branches and subsidiaries of PJSC RusHydro in 2016 (103-2)

Name of branch/subsidiary	Works
Votkinskaya HPP	<ul style="list-style-type: none"> Replacement of sealings in the impellers at two hydroturbines Current repair of collector ditch of earth dams No.3, 4 Current repair of equipment for pumping oil waste Current repair of concrete in the places of filtration Total overhaul of the thrash screen of the hydroelectric generating set No. 2
Zeyskaya HPP	<ul style="list-style-type: none"> Assessment of efficiency of the dust-trapping equipment operation Replacement of sealings in the impeller blades and hydroturbines (during renovation of hydroelectric generating set No. 4)
Saratovskaya HPP	<ul style="list-style-type: none"> Replacement of sealing node in the impellers at hydro turbines PL -20/661-VB-1030: hydroelectric generating set Nos. 5, 7, 20 Current repair works for concrete and ground slopes of the left-bank dam and channel dam Renovation of horizontal and vertical drains
Zhigulevskaya HPP	<ul style="list-style-type: none"> Reconstruction and modernization of hydro turbine equipment using environmental friendly structures
Volzhszkaya HPP	<ul style="list-style-type: none"> Repair of seals for oil-filled impellers of hydro turbines Repair of longstanding plantings of the ground dams No. 40, 41, 42 Maintenance of green areas in the territory of HPP
Sayano-Shushenskaya HPP named after P.S. Neporozhniy	<ul style="list-style-type: none"> Cleaning of the shores of water saving reservoir of SSHPP at running levels of the sanitary zone Water conservation measures in Maynskaya reservoir
Kamskaya HPP	<ul style="list-style-type: none"> Replacement of water waste gates Current repair of WHPP: elimination of leaks Reconstruction of collecting system of bottom-land dams Repair of the attachment of the right bank in the headrace

Name of branch/subsidiary	Works
Zagorskaya PSHPP	<ul style="list-style-type: none"> Instrumental measuring of industrial emissions, measuring of the noise level at sanitary protection zones Transfer of the used luminescent lamps for disposal Organization of the territory regular cleaning with a maximum mechanization of cleaning works
Novosibirskaya HPP	<ul style="list-style-type: none"> Reconstruction of hydroelectric generating set No. 4 (replacement of hydro turbine)
Cheboksarskaya HPP	<ul style="list-style-type: none"> External inspection of oil-filled equipment Monitoring of the condition of transformer oil collection, cleaning of oil vessels when they are full Reconstruction of waste water treatment facilities from the HPP building, reconstruction of rain and snow runoff treatment facilities from the territory of the support base
Byreyskaya HPP	<ul style="list-style-type: none"> Disposal of lamps and devices containing mercury Emergency rescue activities to eliminate spills of oil products
Dagestan Branch	<ul style="list-style-type: none"> Equipment of water intakes and waste water discharges by measuring Reconstruction of water treatment facilities of the Chirkeyszkaya HPP Reconstruction of water treatment facilities of the Miatlinskaya HPP Reconstruction of intake screen with installation of a device for automated cleaning of water intake reservoir of the Gunibskaya HPP
PJSC Kolymaenergo	<ul style="list-style-type: none"> Cleaning of drainage system from oil products (the Kolymskaya HPP) Implementation of the Emission Abatement Plan (Use of Bacti-Bio 9500) (the Kolymskaya HPP) Installation of technical means of water accounting (modernization of hydroelectric generating set) (the Kolymskaya HPP) Equipment for waste storage facilities (JSC Ust-Srednekanskaya HPP)
Pauzhetskaya GeoPP	<ul style="list-style-type: none"> Construction of a concrete site for the temporary accumulation of production and consumption wastes at the Ozernovskiy network site and at the diesel power plant Installation of local treatment facilities at the Ozernovskiy network site and at the diesel power plant (capacity 1.8 m³ per day) with a filtering pit for discharging treated sewage



ENVIRONMENTAL IMPACT ASSESSMENT (103-3)

PJSC RusHydro ensures environmental safety of production activities at all stages of industrial facilities lifecycle. The measures to assess the projects' impact on the environment (EIA) are conducted prior to the implementation of a new project or before the modification of existing facilities (at the initiation and design stages).

In accordance with the Russian law, the conduct of the EIA procedure is a prerequisite at the stage of the decision-making about the project's implementation.

At the stage of initiating RusHydro projects, all EIA procedures are organized and conducted, including public hearings of EIA materials.

In 2016, there was no need to conduct public hearings on the EIA regarding the facilities under design and construction.

Read more about the approaches of PJSC RusHydro to the decision-making allowing reducing environmental risks at the website. For more information on the EIA scheme and EIA characteristics, see 2015 Report on Social Responsibility and Sustainability of PJSC RusHydro.

Provision of activities in accordance with the legal requirements in the field of environmental protection

RusHydro carries out its activities in compliance with the planning documentation. During the construction and operation of the facilities, the draft standards for permissible emissions and discharges of pollutants into the environment, draft regulations on waste production and limits on waste disposal, sections of planning documentation with justification of measures for biodiversity conservation are developed.

The documents are approved by the executive authorities that provide state regulation in the field of environmental protection:

- Ministry of Natural Resources and Environment of the Russian Federation
- Federal Service for Supervision in the Sphere of Nature Management
- Federal Water Resources Agency
- Federal Fishery Agency
- Federal Supervision Agency for Customer Protection and Human Welfare

On the basis of the agreed projects, permits for environmental protection required for the performance of production activities are obtained.

Assessment and control of environmental impact at all stages of project lifecycle

Stage	Measures on the environmental impact management
Planning (pre-design stage)	<ul style="list-style-type: none"> • Arrangement of R&D and engineering works focused on environment protection • Preliminary assessment of environmental impact during planning of new construction and reconstruction
Engineering design	<ul style="list-style-type: none"> • Arrangement of EIA: assessment of the facility's impact on the environment in order to make a decision about ability to construct or reconstruct production facilities • Elaboration of activities to ensure the required level of environmental safety
Construction	<ul style="list-style-type: none"> • Implementation and enforcement of activities provided by the project and focused on the provision of the facility's environmental safety • Compliance with the environmental regulations during construction and installation works
Operation	<ul style="list-style-type: none"> • Performance of industrial environmental monitoring; performance of activities in order to prevent deviations from the specified level of the facility's environmental safety • Voluntary initiatives for the protection of biological diversity and improvement of environmental awareness of communities and employees

Interaction with the expert community

In PJSC RusHydro, there is a permanent expert collegiate body of the Company – the Scientific and Technical Council (STC), which ensures, within its competence, development and implementation of the unified system of technical expertise for research and technology decisions, projects, programs to be complied with the Technical Policy and the applicable technical standard documents.

In order to ensure environmental safety while creating new technical solutions, the Reservoirs and Environmental Protection Section has been created and started functioning as part of STC.

The section includes representatives of research and design institutes, the University of Environmental Engineering, the Institute of Water Problems of the Russian Academy of Sciences, the Department of Land Hydrology of the Moscow State University named after M.V. Lomonosov, the Federal Agency for Water Resources.



MECHANISMS OF THE PJSC RAO ES OF THE EAST ENVIRONMENTAL POLICY IMPLEMENTATION (103-2)

As part of the Environmental Policy of PJSC RAO ES of the East, the Holding companies also implement environmentally oriented initiatives:

- Reconstruction of gas-purifying equipment;
- Transfer of the central heating and power plants (CHPP) to gas fuel
- Construction of water treatment plants for storm water drain

The projects are aimed at improving the technical condition of the equipment, but these measures not only increase the basic production performance indicators, but also mitigate the Company's negative impact on the environment.

In 2016, PJSC RAO ES of the East continued work for the introduction of Integrated Management System (IMS) – environmental management and occupational health and safety management.

The company carried out works to introduce IMS in the energy companies managed by the Group and in the companies, that provide generation, dispatch, distribution, transfer and sale of electric and heat energy at the territory of the Far East and Ural Federal Districts: JSC Chukotenergo, PJSC Magadanenergo, PJSC Kamchatskenergo, JSC KSEN, JSC Sakhaenergo, PJSC Mobile energy (Peredvizhnaya energetika).

RAO ES of the East is implementing various investment projects for the construction and reconstruction of energy facilities aimed at minimizing the negative impact on the environment. Initiatives are aimed at using environmentally efficient gas turbine equipment, as well as low-waste, resource-saving technologies, for example, the use of natural gas as a fuel with innovative technology for preparation and supply.

In 2016, for generation, transmission, and distribution of heat and electrical energy, the primary efforts of PJSC RAO ES of the East were focused in terms of environmental impact management on the following tasks:

- minimization of negative impact on the environment by reducing emissions into the atmosphere, arranging production wastes, using natural resources in the optimum way;
- implementation of the environmental protection plans of the affiliates with due consideration of changes in the environmental regulations;
- improvement of the environmental impact management system. **(103-2)**

In 2016, the Holding adopted the Program of Innovative Development of the RAO ES of the East for 2016–2020 with a perspective for up to 2025.

One of the priorities of the Holding's innovative development for the medium term is the increase in the efficiency and reliability of the traditional generation process, including the improvement of the ecological compatibility of plants operating on non-renewable energy sources. To achieve this goal, the Holding is planning to introduce waste gas cleaning technologies, as well as to reuse coal generation waste.

Also in 2016, the Khabarovskaya CHPP-1 was reconstructed with transferring to the burning of natural gas using high-tech gas equipment for reducing emissions to the atmosphere.

There were neither accidents nor incidents that caused damage to the environment in 2016 in the RAO ES of the East companies.

[Read more about the Innovative Development Program of RAO ES of the East for 2016-2020 with a perspective for up to 2025 at the RAO ES of the East website.](#)

Initiatives for the mitigation of impact on the environment by RAO ES of the East

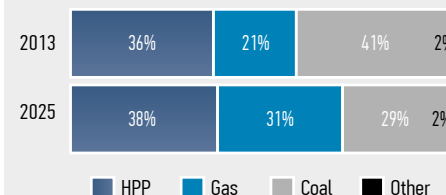
Initiative	Environmental effect
Reconstruction of gas-purifying equipment	<ul style="list-style-type: none"> • Reduction of emission of ash from burning coal, sulphur dioxide.
Transfer of the CHPP to gas fuel	<ul style="list-style-type: none"> • Reduction of emission into the atmosphere • Reaching permissible levels of impact on the environment • Reduction of emission of greenhouse gases • Reduction of water consumption volumes • Reduction of bottom ash from burning coal
Construction of water treatment plants for stormwater drain	<ul style="list-style-type: none"> • Reduction of discharge of waste water

Gradual decommissioning and replacement of outdated generation capacities by new ones and increase in the share of a more environmentally-friendly generation (gas-fuelled power plants) in the structure of energy generation will reduce release of emissions both in relative and in absolute value. By 2025 it is planned to:



- reduce specific fuel equivalent consumption for electric power in term of combined heat and power plant for FEED in average by 12%,
- reduce specific exhaust emission in terms of hazardous substances by 9-36 %.

Projected energy balance at the Far East Federal District





Key environmental protection works implemented by RAO ES of the East in 2016 (103-2)

Name of branch/subsidiary	Works
JSC FEGC	<ul style="list-style-type: none"> Construction of a new ash dump of the Partisanskaya SDPP and increase of the dam of the ash dump at the Artemovskaya CCHP The boiler No. 14 of the Khabarovskaya CHPP-1 was converted to the use of natural gas
JSC FEDC	<ul style="list-style-type: none"> Repair, reconstruction, placement of oil receivers under power transformers Replacement of oil circuit breakers by the vacuum ones
PJSC Magadanenergo	<ul style="list-style-type: none"> Introduction of fixed equipment for monitoring of hazardous emissions at the Magadanskaya CHPP Installation of a set of gas analysis equipment at the Arkagalinskaya TPP Installation and adjustment of wastewater metering devices at the Magadanskaya CHPP Current repair of aeration tanks No. 2,3 at the Arkagalinskaya TPP
JSC Mobile energy (Peredvizhnaya energetika)	<ul style="list-style-type: none"> Repair of the intrasite pipelines for diesel oil service Installation of bearing insulation monitoring system for turbo-generators GTG-1,2,3,4 Overhaul of the turbo-generator T-12-2 Analysis of the wind power potential with the calculation of the preliminary cost for construction of wind power plants in the village of Palana in Koryaksky district of Kamchatka Krai, on the Popov Island of Vladivostok urban district of Primorsky Krai, in the settlement of Tiksi of Bulunsky ulus of the Sakha Republic (Yakutia) and in the settlement of Russon Uam in North Korea Modernization of automated control systems for a wind-diesel complex of a wind power station in the village of Novikovo in Sakhalin Region
PJSC Kamchatskenergo	<ul style="list-style-type: none"> Monitoring of the slurry tank (monitoring of groundwater pollution through the network of observation wells)
PJSC Sakhalinenergo	<ul style="list-style-type: none"> Repair of metal pipes «Venturi», repair of scrubbers of boiler units No. 1-5 Overhaul of boiler units No. 6 Repair of faecal pumping household waste water Repair of effluent treatment plants (oil traps), installation of filters Repair of ash and slag pipelines Repair works on the ash dump (concrete mixture placement of the water box No. 3)

Name of branch/subsidiary	Works
JSC Chukotenergo	<ul style="list-style-type: none"> Testing of dust-collecting plants Repair of oil traps Replacement of cyclone elements in the period of overhaul boiler unit No. 4 PK-50-40 Optimization of the operation mode of the boiler units
JSC KSEN	<ul style="list-style-type: none"> Certification of the integrated system of environmental management, professional safety and health management in accordance with the requirements of international standards ISO 14001:2004 and OHSAS 18001:2007 Purchase of a new modern diesel generator for the diesel power plant-22 in the village of Klyuchi Replacement of high-voltage oil circuit breakers by vacuum circuit breakers of the brand VVU-SESHCH-PZ at diesel power plant-4 in the village of Manila Installation of fish protection devices at the small hydro power plant-4 at the river Bystraya Overhaul of power transmission lines with the replacement of aluminium by a steel core wires with a self-supporting insulated wire (SSIW) at the facilities in the village of Klyuchi, in the village of Esso, in the village of Mayskoye, in the village of Palana, HV line-35 kV Tigil – Sedanka
PJSC Yakutskenergo	<ul style="list-style-type: none"> Repair of burner devices GTE-45-3, GT-770-35-2 Repair of a section of the fan cooling tower Replacement of oil circuit breakers by vacuum ones Replacement of wire with self-supporting insulated wire (SSIW)
JSC Sakhaenergo	<p>JSC Sakhaenergo organizes activities for the use of waste oils to produce thermal energy at the diesel power plant in Tiksi using KVSh boilers. It is planned to use approximately 0.1 tonnes of waste oil for the generation of heat energy annually. Solar power plants were put into operation:</p> <ul style="list-style-type: none"> SPP -30 kW + storages (Batamay village, Kobyaysky ulus); SPP -30 kW (Yusegei village, Oymyakonsky ulus); SPP -20 kW (Kudu-Kuel village, Olekminsky ulus); SPP -15 kW (Dulgalah Verkhoyansk networks); SPP -40 kW (Eyik village, Oleneksky ulus); SPP -15 kW (Jargalah village, Eveno-Bytantaisky ulus); SPP -20 kW(Kubergene village Belogorsky ulus); SPP -80 kW (Delgey village, Olekminsky power distribution zone); SPP -36 kW (Verkhnyaya Amga village, Aldansky ulus); SPP -20 kW (Inyakh village, Aldansky ulus).



ENVIRONMENTAL EXPENSES AND PAYMENT FOR THE NEGATIVE IMPACT

In order to comply with the requirements of the Russian legislation and international standards in the field of environmental protection, RusHydro implements environmental activities. In 2016, the expenses for their implementation amounted to 1.808 billion roubles for RusHydro Group, 392.096 million roubles for PJSC RusHydro, 1.416 billion roubles for RAO ES of the East.



Fines for non-compliance with environmental legislation amounted to 2.34 million roubles. (307-1)

Current expenses for environment protection for PJSC RusHydro, thousand roubles (103-2)

Current expenses for environment protection	392,096
Including:	
Protection of atmospheric air and prevention of climate changes	890.3
Sewage water disposal and treatment	115,847.8
Waste management	3,704.9
Protection and rehabilitation of lands, surface and groundwater	45,522.6
Environmental protection against noise, vibration and other physical effects	218.3
Conservation of biodiversity and protection of natural areas	7,500.0
Research and development activities to reduce negative anthropogenic impact on the environment	2,346.0
Other activities in the field of environmental protection	4,923.0
Payments for environmental protection services	125,932.9
Costs of major repairs of capital assets for environmental protection	85,210.2

Funds (claims) and fines collected in compensation for damage caused by violation of the environmental legislation, thousand roubles

	PJSC RusHydro	RAO ES of the East	RusHydro Group
The amount of payments (claims and fines) paid for violation of environmental legislation	200.0	2,140.0	2,340.0

Current expenses for environment protection for RAO ES of the East, thousand roubles (103-2)

Current expenses for environment protection	1,415,567.5
Including:	
Protection of atmospheric air and prevention of climate changes	331,569.3
Sewage water disposal and treatment	368,895.5
Waste management	686,821.5
Protection and rehabilitation of lands, surface and groundwater	19,648.8
Environmental protection against noise, vibration and other physical effects	252.5
Conservation of biodiversity and protection of natural areas	136.0
Other activities in the field of environmental protection	8,244.0

Environmental payments of RusHydro, thousand roubles

Disclosure	PJSC RusHydro	RAO ES of the East	RusHydro Group
Charges for allowable and excessive emissions (discharges) of pollutants (disposal of production and consumption waste), including:			
Charges for allowable emissions (discharges) of pollutants (disposal of industrial and consumption waste)	6,745.5	134,816.3	141,561.8
Charges for excess emissions (discharges) of pollutants (disposal of production and consumption waste)	4,830.72	75,883.8	80,714.52
Charges for excess emissions (discharges) of pollutants (disposal of production and consumption waste)	1,914.76	58,932.4	60,847.16



4.1.2. ENVIRONMENTAL COOPERATION

RusHydro Group is an active participant in the international cooperation in the field of environmental protection and biodiversity conservation. The Company supports industrial and international initiatives aimed at reducing the anthropogenic load on the environment, and strives to adopt experience for a successful implementation of its environmental projects.

In 2016, PJSC RusHydro continued its membership in international industry associations, such as the Centre for Energy Advancement through Technological Innovation (CEATI), the International Hydropower Association (IHA) and the International Commission on Large Dams (ICOLD). The membership allows the Company to interact with the world community on the issues of safe, innovative and sustainable hydropower development.

The Company promotes implementation of the Methodology for assessing compliance of the hydropower projects with the criteria for



sustainable development (Hydropower Sustainability Assessment Protocol - HSAP) as an official regulatory legal act.

In 2013-2014, PJSC RusHydro tested the Methodology on the designed and constructed hydropower projects. As a result of the Methodology testing, a number of inconsistencies requiring improvements in the internal processes of elaboration and decision-making in PJSC RusHydro was identified. First of all, the changes should be made in the processes of interaction with stakeholders, as well as preservation of cultural heritage sites and biodiversity preservation.

In order to address these objectives, the Operating Unit and the Strategy and Innovation Unit created the Working Group on the Development of Methodological Approaches to Ensuring and Evaluating Compliance of the Hydropower Projects with the Criteria for Sustainable Development. As part of the Working Group's activities, it is planned to

create a local regulatory document to ensure compliance of the hydropower projects with the criteria for sustainable development, as well as to organize actions on assigning to the Methodology of an official normative legal act in the territory of the Russian Federation.

A significant step in the reduction of negative impact on the environment was the signing of the Credit Agreement between PJSC RAO ES of the East and the European Bank for Reconstruction and Development in 2012. Within the framework of this Agreement, the Environmental and Social Action Plan (ESAP) was developed and adopted. The Plan includes a number of organizational and technical measures to improve the environmental efficiency of the power facilities of RAO ES of the East in 2013-2016.

The main objectives of ESAP are:

- Introduction and certification of the integrated management system for professional health and safety and environmental management in the Holding's subsidiaries;

- Conduction of the training for the Holding's management and employees responsible for organization of environmental protection activities in compliance with the EBRD requirements in the field of environmental protection;
- Increase in the effectiveness of measures aimed at monitoring asbestos-containing materials, rational water consumption, installation of highly efficient systems for cleaning polluting atmospheric emissions by analogy of the «CEMS» type;
- Use of natural gas as the main fuel.



UNDP Project (102-44)



PJSC RusHydro is a partner of the Project of the United Nations Development Program (UNDP), the Global Environment Facility (GEF) and the Ministry of Natural Resources and Ecology of the Russian Federation «Mainstreaming Biodiversity Conservation into Russia's Energy Sector Policies and Operations» (hereinafter - UNDP Project). From 2012, the Project is being implemented in Russia with the support of the Ministry of Natural Resources and Ecology of the Russian Federation, energy companies, environmental non-governmental and public organizations and other partners. The goals

of the UNPD Project are:

- Demonstrate and introduce the best world practices in the field of biodiversity conservation in the energy sector of Russia;
- Improve biodiversity in the Russian industrial regions;
- Assist in establishing a system for biodiversity monitoring and testing of environment-saving technologies in oil producing, coal mining and hydropower production;
- Assist in adopting legislative and regulatory documents on biodiversity conservation in the energy sector.

Under the UNDP Project, RusHydro is carrying out works in the following areas:

- Biodiversity preservation;
- Sustainable development of hydropower industry;
- Elaboration of methodical documents for biodiversity preservation in the hydropower sector. (103-3)

Read more about UNDP Project in the Section 4.5. Measures for Biodiversity Conservation



4.2. REDUCTION OF THE IMPACT ON THE ENVIRONMENT IN 2016



RusHydro Group focuses its activities on the rational use of natural resources, prevention of negative impact and environmental conservation in a favorable condition for present and future generations.

RusHydro supports advanced environmental technologies and initiatives that increase environmental safety of production facilities and reduce anthropogenic load on the environment. (103-1)

4.2.1. PROTECTION OF ATMOSPHERIC AIR

There is regular monitoring of emissions of pollutants into the atmosphere at production facilities of RusHydro Group. In 2016, the amount of emissions did not exceed the threshold criteria.

PJSC RusHydro uses renewable energy sources while implementing its activities. In the operation of reservoirs, there are no significant carbon dioxide (CO₂) emissions, thereby the greenhouse effect is not exacerbated.

Emissions to the atmosphere of NO_x, SO_x, CO, solid substances, ton (305-7)

Disclosure	PJSC RusHydro and subsidiaries (excluding RAO ES of the East)			RAO ES of the East			RusHydro Group		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Carbonmonoxide (CO)	21.4	18.0	20.1	42,207.8	42,343.2	40,642.7	42,229.2	42,361.2	40,662.8
Sulfuroxides (SO _x)	2.6	3.4	2.7	73,334.1	73,547.6	68,688.9	73,336.7	73,551.0	68,691.6
Nitrogenoxides (NO _x)	16.9	13.4	15.8	61,150.4	64,670.9	62,154.0	61,167.3	64,684.3	62,169.8
Solid substances	161.3	162	165	93,689.8	97,243	89,053	93,851	97,405	89,218
Total emissions of NO_x, SO_x, CO and solid substances	202.2	196.8	203.6	270,382.1	277,804.7	260,538.6	27,584.3	278,001.5	260,742.2



COOPERATION FOR COMBATING THE CLIMATE CHANGE

In 2016, the PJSC RusHydro established together with JSC EuroSibEnergo and the «Association of Russian Hydropower» a working group to develop methodological approaches to study the processes of global climate change in terms of greenhouse gas emissions from the surface of freshwater reservoirs of HPPs and to assess their absorbing capacity.

At the end of 2015, PJSC RusHydro supported the initiative to combine efforts of the Russian business to reduce environmental impact and prevent climate changes by signing the Statement of Russian business in terms of negotiations and adoption of new climate agreement at the 21st Conference of UN Framework Convention on Climate Change.

This initiative was an additional step focused on adoption of a new climate agreement at the 21st Conference of UN FCCC.

Since 2015, PJSC RusHydro is a member of the «Russian Partnership for Climate Conservation». This partnership is a voluntary association of Russian companies that recognize the need to reduce the anthropogenic impact on the environment and to prevent the climate change.

The main goal of the partnership is to unite the efforts of business in the interests of transition to environmentally friendly technologies and to bring the Russian economy to a new level of responsibility.

Since 2016, PJSC RusHydro has been regularly participating in the events organized by the «Russian Partnership for Climate Conservation».

In 2016, PJSC RusHydro continued to report in terms of greenhouse gas emissions to CDP (Carbon Disclosure Project), in which the Company has been participating from 2015.

The main tasks of the working group are the analysis of domestic and international experience of assessment of the emissions values and absorbing capacity of the HPPs reservoirs and the development of the assessment for the planned, projected, operated HPPs and those under construction. **(103-2)**

PERFORMANCE OF RAO ES OF THE EAST ON GREENHOUSE GAS EMISSIONS

Emissions of greenhouse gases are calculated in accordance with the Decree of the Ministry of Natural Resources of Russia No.300 of 30.06.2015 and using RD 153-34.0-02.318-2001 «Methodical guidelines for calculation of gross emissions of carbon dioxide into the atmosphere from TPP boilers and boiler houses» and inventory data of the Carbon Trust. The amounts of emissions of greenhouse gases are determined on the basis of the data from specific facility, taking into account the facility's fuel balance.

In 2016, the volume of greenhouse gas emissions decreased by 5.8%.

CO₂ intensity equivalents are determined by the relation of emissions of CO₂-equivalents to electric energy generation in million kWh, and heat supply in thousand Gcal.

Direct emissions of greenhouse gases of RAO ES of the East (scope 1) (305-1)

№	Disclosure	2014	2015	2016	Fact 2016 to 2015, %
Total					
1	Emissions CO ₂ , ton	33,434,632.3	36,182,305.5	34,079,488.88	-5.8
2	Emissions N ₂ O in CO ₂ , eq.ton	113,782.9	125,283.1	118,966.5	-5.0
3	Emissions CH ₄ in CO ₂ eq. ton	12,493.5	14,433.5	14,344.6	-0.6
	Total	33,560,908.6	36,322,022.2	34,212,800.0	-5.8
Including:					
	from gas output	10,121,404.8	10,453,851.7	9,936,205.0	-5.0
	from oil fuel output	693,731.2	670,338.1	686,749.94	2.4
	from solid fuel output	22,788,244.7	25,197,832.3	23,589,845.0	-6.4

The intensity of emissions of greenhouse gases of RAO ES of the East, ton¹ (305-4)

Disclosure	2015	2016	2016/2015, %
CO ₂ intensity linked with electricity generation, in tons of CO ₂ -eq.	796.70	782.90	-1.73
CO ₂ intensity linked with heat supply, in tons of CO ₂ -eq	382.80	376.50	-1.65



ACTIVITIES TO REDUCE HAZARDOUS SUBSTANCES EMISSIONS (103-2, 305-5)

Holding takes measures to reduce the level of impact on atmospheric air.

In April 2016, the subsidiary structure of PJSC RusHydro JSC Sakhalinskaya SDPP-2 completed the concreting of the foundation of a 150-meter chimney. The height of the structure will reduce the impact on atmospheric air, as the flue gases will be completely dispersed in the atmosphere, due to electrofiltration and purification by 99.6%.

A significant effect on reducing emissions is provided by the gasification of the power plants of JSC FEGC. From 2007 to 2016, Nikolaevskaya CHPP, the Khabarovskaya CHPP-2, seven boilers of the Khabarovskaya CHPP-1, power-generating unit No.4 of the Khabarovskaya CHPP-3 switched to gas. Thus, the hazardous substances emissions into the atmosphere decreased by a factor of 3, the output of ash and slag wastes decreased by a factor of 4.

For the whole duration of power plants gasification project, emissions from the Khabarovsk CHPP-1 decreased by 14 thousand tons per year, the output of ash and slag was reduced from 263 to 85 thousand tons. Atmospheric emissions of the Khabarovskaya CHPP-2 decreased by a factor of 10. Emissions into the atmosphere from the Nikolaevskaya CHPP have decreased for 10 years by 122.8 thousand tons, and the output of ash and slag wastes decreased by 900 thousand tons.

The Vladivostokskaya CHPP-2 became the main object of reconstruction in Primorsky Krai. Over the past seven years of the project, the station has reduced emissions from 49.3 to four thousand tons per year. The output of slag decreased by a factor of 13: from 629 to 48 thousand tons. Three boiler houses of Vladivostokskaya CHPP-1, the boiler-houses «Severnaya» and «VtorayaRechka» switched to gas.



By the end of 2017, the boiler No.15 of the Khabarovskaya CHPP-1 will be switched to gas. The reconstruction allows reducing the emissions by 15%.

In 2014, the Program of Development of Renewable Sources was established for the period until 2016 with a prospective for up to 2020 in RAO ES of the East. As part of the Program implementation, the replacement of diesel power stations production is carried out in the isolated zones. (103-2)

Starting from 2013, the Company publishes information on hydrologic situation at HPP of the RusHydro Group companies at the special portal: <http://www.rushydro.ru/hydrology/informer/>

4.2.2. WATER MANAGEMENT AND WATER PROTECTION ACTIVITIES

The RusHydro Group is one of the primary water consumers in the system of water management complex of the Russian Federation, most of the Company's activities are carried out at water bodies. (103-1)

RusHydro Group operates water facilities in a strict compliance with the requirements of the legislation. The company receives timely permits for water use and protection of water bodies in the relevant executive authorities. Water intake from the water bodies by PJSC RusHydro does not impact significantly the water sources. (303-2)

In 2016, the total amount of water extracted by RusHydro Group decreased by 0.97% and amounted to 756,261 thousand m³ (in 2015, the amount was 763,646 thousand m³).

In 2016, shore protection works and hydrotechnical repairs took place in RusHydro Group. A number of branches carried out works on:

- Repair of anti-erosion hydraulic structures;
- Repair of regulatory structures;
- Regulation of clearing of dredging of water bodies;
- Clearing of river beds, canals, etc..

Total amount of water intake by source, thousand m³ (303-1)

Water supply sources	PJSC RusHydro			RAO ES of the East			RusHydro Group		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Total amount of water intake from the sources, including from:	58,554.6	64,252	64,530	697,706.3	699,394	709,253	756,260.9	763,646	773,783
Surface water bodies, including wetlands, rivers, lakes, etc.	57,338.2	62,768	62,977	589,568.1	566,880	584,420	646,906.3	629,648	647,397
Underground water bodies, municipal and other water supply systems	1,216.4	1,484	1,550	108,138.2	132,514	124,833	109,354.6	133,998	126,383

Total amount of wastewater disposal with the receiving entity specified, thousand m³ (306-1)

Receiving entity	PJSC RusHydro and subsidiaries (excluding RAO ES of the East)			RAO ES of the East			RusHydro Group		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Water body	63,949.8	74,766	77,957	514,188.4	512,453	525,862	578,138.2	587,219	603,819
Terrain relief	14.1	116	36	4,523.2	4,238	4,037	4,537.3	4,354	4,073
Underground horizons	0	0	0	17.9	22	308	17.9	22	308
Storage reservoir	7.4	8	0	0	0	0	7.4	8	0
Total	63,971.3	74,890	77,993	518,729.5	516,713	530,207	582,700.8	591,595	608,200



IMPACT OF THE RAO ES OF THE EAST ON WATER BODIES

Subsidiaries of PJSC RAO ES of the East also use water bodies for the purpose of withdrawal of water and wastewater disposal. Most of Holding's companies do not impact significantly the water sources as total amount of water taken by the affiliates is less than 5 % of the water body amount.

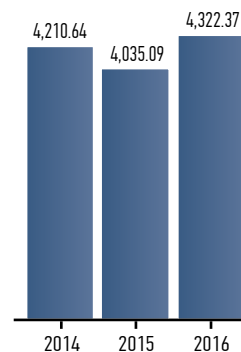
RAO ES of the East does not take water from water bodies classified as natural area of preferential protection. The sources providing water are not valuable from the point of view of biological diversity. An exception is water intake by JC Chukotenergo at water reservoir on Kazachka river in Anadyr – water intake amounts to 1,602.82 thousand m³ or

20.5% of the total amount of water body – 7.8 million m³.

An important project on reduction of the negative impact on water bodies is the construction of a chemical-biological treatment and sanification station for wastewater of the Khabarovskaya CHPP-2.

In 2016, the amount of repeatedly used water by RAO ES of the East increased by 7.1%.

Total amount of repeatedly used water by RAO ES of the East, million m³ (303-3)



4.2.3. WASTE MANAGEMENT

Production and consumer wastes are generated during the operating activities of the RusHydro Group enterprises. Primarily, there are wastes of hazard class IV and V, they are generated during reconstruction, repair works and maintenance of the equipment at facilities. The RusHydro Group companies do not transport wastes by their own efforts. Generated wastes are transferred on a contractual basis to specialized organizations that have licenses to collect and handle the wastes. (103-1, 306-4)

See more about the Waste Management approach of RAO ES of the East in 2015 Report on corporate social responsibility and sustainability of PJSC RAO ES of the East.

Total amount of wastes in 2016 broken down by hazard class, tons (306-2)

	2015	2016	Change
RAO ES of the East			
Wastes Hazard Class I and II	39.9	32.83	-17.7 %
Wastes Hazard Class III, IV and V	27,694,388.90	24,743,428.87	-10.7 %
Total	27,694,428.8	24,743,461.71	-10.7 %
PJSC RusHydro			
Wastes Hazard Class I and II	14.22	20.66	+45,3 %
Wastes Hazard Class III, IV and V	30,964.61	29,179.35	-5,8 %
Total	30,978.83	29,200.01	-5,7 %



4.3. ENERGY EFFICIENCY AND ENERGY SAVING



Energy efficiency and energy saving is a must for a successful and responsible business. In the context of increasing prices for energy, the activities for energy saving help to effectively manage costs.

Furthermore, efficient use of energy helps to decrease greenhouse gas emissions, which is a strategic necessity in times of global warming.

Government, as the major shareholder of RusHydro, gives energy companies the task to increase energy security and decrease energy intensity. The State programme «Energy efficiency and energy development», which was adopted in 2014, prescribes three main aspects of efficiency increasing in the use of all types of resources:

- energy saving and energy efficiency increasing;
- development and modernization of electric power industry;
- development of the use of alternative renewable sources of energy. (103-1)

Energy efficiency is the increase in production volumes while maintaining the initial energy spending. This effect can be achieved by implementing up-to-date technologies. Energy saving is the decrease in the energy spending while maintaining the initial output. It can be reached by updating the equipment and reducing non-productive heat loss.



4.3.1. ENERGY SAVING AND ENERGY EFFICIENCY PROGRAM OF PJSC RUSHYDRO

In 2015, the Programme for Energy Saving and Energy Efficiency Improvement for the period up to 2020 was approved by PJSC RusHydro. It contains the list of primary works to increase efficiency of the use of energy and water resources, and a number of priority energy-saving solutions. In 2017, the Program was updated in accordance with the results of the examination conducted by the Ministry of Energy of the Russian Federation and due to the change in the requirements of regulatory legal acts. The updated Program was designed based on the results of energy audits, conducted in 2010-2016. **(103-2)**

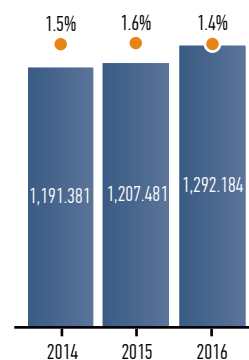
In 2016, the value of own electricity consumption amounted to 1,292,184.31 thousand kWh. The share of own consumption in the annual output, which amounted to 90,279,428 thousand kWh, was 1.4 %. The similar value in 2015 was 1.6 %, in 2014 – 1.5 %

In 2015-2016, the volume of oil and diesel fuel consumed (related to PJSC RusHydro) decreased significantly due to separation of transportation units (they were allocated from subsidiaries to a separated affiliated company).

Volume of consumption for own needs of PJSC RusHydro, by type of energy resource (302-1)

Type of energy resource	Volume of consumption in physical term			Cost of consumption, thousand rub.
	2014	2015	2016	2016
Heat, Gcal	23,619	25,293	18,662	24,341
Electricity, mln kWh	1,191.381	1,207.481	1,301.139	983, 956
Gasoline, l	737,726	1,842	2,490	83
Diesel fuel, l	392,129	17,955	11,391	377
Natural gas, m ³	55,417	58,716	40,241	266

Dynamics and share of energy consumption for own needs from energy production of PJSC RusHydro in 2014-2016, thousand kWh




Specific energy consumption in the PJSC RusHydro's branches, by HPPs

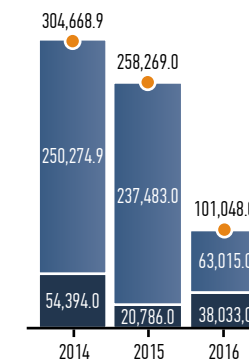

	Energy consumption, mln kWh	Energy production, mln kWh	Specific energy consumption, %
Bureyskaya HPP	146.531	7,052.70	2.1 %
Zeyskaya HPP	246.946	6,407.52	3.8 %
Novosibirskaya HPP	25.587	2,249.74	1.1 %
Sayano-Shushenskaya HPP	238.808	26,958.12	0.8 %
Kamskaya HPP	25.609	1,926.54	1.3 %
Votkinskaya HPP	62.913	2,873.17	2.2 %
Cascade of Verkhnevolzhskiy HPPs	21.535	1,191.36	1.8 %
Nizhegorodskaya HPP	19.256	1,491.62	1.3%
Cheboksarskaya HPP	57.671	1,989.45	2.9%
Zhigulevskaya HPP	90.284	10,670.87	0.8 %
Saratovskaya HPP	88.516	5,512.49	1.6%
Volzhskaya HPP	121.273	11,841.36	1 %
Zagorskaya PSPP	53.99	1,875.35	2.9 %
Cascade of Kubanskiye HPPs	27.430	1,363.43	2 %
Karachay-Cherkessia branch	4.979	89.68	5.6 %
Kabardino-Balkarian Branch	7.221	503.47	1.4 %
Northern Ossetian Branch	5.652	174.87	3.2 %
Dagestan branch	48.243	6,107.71	0.8 %
TOTAL	1,292.184	90,279.43	1.4 %

The total effect of the activities for energy efficiency increase in PJSC RusHydro amounted to 101,048 thousand kWh, equivalent to 34,356 CT.t.

Over 2016, the implementation of the Program for Energy Saving and Energy Efficiency Improvement helped to save 38,033 thousand kWh for own needs. Additional production following the special activities implementation amounted to 63,015 thousand kWh.

Moreover, in 2016, due to selection of the most efficient equipment, optimization of the repairing campaign, operation of the HPPs at the exceed values of pressure heads in relation to long-time average annual values and decrease in sterile spills by redistribution of the reserves of the automatic secondary regulation to the other HPPs of the cascade, an additional electricity generation is ensured in the volume of 1,153 million kWh, which is equivalent to fuel saving in the volume of 397.6 CT.t. of fuel per year. **(103-2)**

See the detailed information on the main activities of the PJSC RusHydro's Program for Energy Saving and Energy Efficiency in 2015 Corporate Social Responsibility and Sustainability Report of RusHydro Group.

Effects in «Energy Saving» and «Energy efficiency» areas, thousand kWh (302-4)


- Total
- Additional production (the effect of «Improving energy efficiency»)
- Effect of «Energy resources saving» (the effect «Energy»)



4.3.2. ENERGY CONSUMPTION AND ENERGY EFFICIENCY OF RAO ES OF THE EAST

ENERGY CONSUMPTION

As primary energy sources, the companies of RAO ES of the East use mostly coal, natural gas and mazout. Apart from this, other types of fuel are used, such as diesel, kerosene and wood. In 2016, total energy consumption of the Holding (primary non-renewable energy sources) amounted to 438,916,239 GJ (121,921.177 GWh).

RAO ES of the East does not consume energy from primary renewable energy sources.

In general, the fuel balance of TPPs, included in RAO ES of

Energy consumption by RAO ES of the East (by primary non-renewable energy source) (302-1)

Energy source	Energy consumption, GJ
Coal	248,316,065
Natural gas	181,306,175
Mazout	4,185,366
Other	5,108,633
TOTAL	438,916,239

the East, did not undergo significant changes. Maintaining the consumption of natural gas helps to reduce GCG emissions and waste slag, and therefore, to enhance environmental situation in the regions of operation.

All in all, in 2016, the need for fuel of TPPs fell insignificantly due to the decrease in energy production as compared to 2015. Meanwhile, a vast part of energy was produced by JSC «FEGC».

The share of JSC «FEGC» in the energy production of the Unified Energy System of East amounted to 63.6 % in 2016, and to 71.9% in 2015. The decrease of the share was caused by the increased load of the HPPs of PJSC RusHydro due to a significant seasonal inflow in 2-3 quarters of 2016.

The increase in load of the HPPs and, as a result, the discharge of TPPs of JSC «FEGC», resulted in the decline of actual energy production in 2016.

See the data on fuel consumption for 2016 by companies included in RAO ES of the East below.

Coal consumption in RAO ES of the East by TPP, thousand tonnes



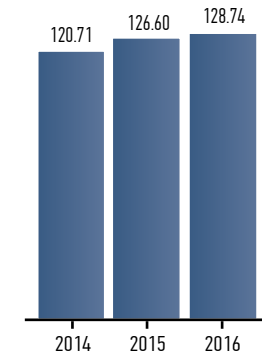
Natural gas consumption in RAO ES of the East by TPP, million m³



Mazout consumption in RAO ES of the East by TPP, thousand tonnes



Other fuels consumption in RAO ES of the East by TPP, thousand tonnes



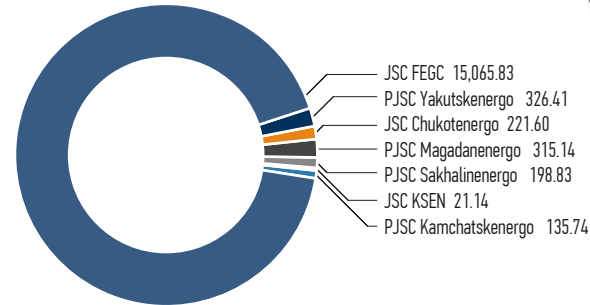


Average efficiency of TPPs energy production, by energy source and control mode (EU11)

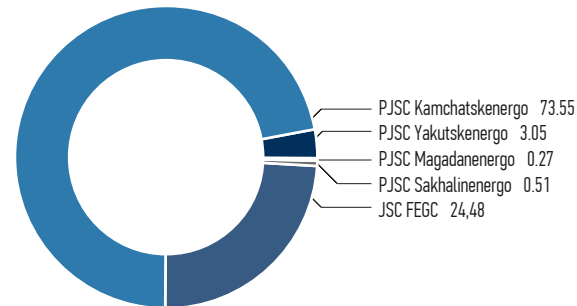
Energy source	Efficiency of energy production
WMEP /regulated tariffs	
Coal	43.3 %
Coal, natural gas	42.28 %
Natural gas, mazout	36 %

RMEP/regulated tariffs	
Coal	14.43 %
Natural gas, mazout	21.3 %
Diesel fuel	1.8 %
Coal, diesel fuel, alternative energy sources	15.6 %
Natural gas	37.7%
Coal, natural gas	48.4%
Water	0.4 %

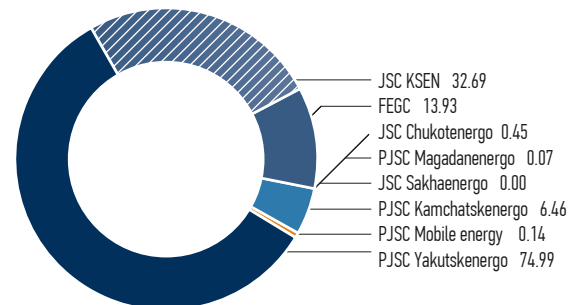
Structure of coal consumption in 2016, thousand tonnes



Structure of natural gas consumption in 2016, mln m³



Structure of mazout consumption in 2016, thousand tonnes



ENERGY EFFICIENCY IMPROVEMENT

One of the main goals in the development of the energy sector of the Far East is energy saving and energy efficiency improvement.

Total output of energy amounted to 34,602.3 kWh, and energy transmission losses - 10.4 % of total volume (3,604.7 kWh). (EU12)

Average efficiency of energy production of TPPs by energy source and control mode (EU11)

	Fuel	2016
WMEP /regulated tariffs		
JSC «FECC»		45.5 %
Nerunginskaya TPP	coal	64.0 %
Chulmanskaya CHPP	coal	17.6 %
Raychikhiskaya TPP	coal	48.2 %
Blagoveshenskaya CHPP	coal	49.7 %
2nd stage of the Blagoveshchenskaya CCHP	coal	35.2 %
Khabarovskaya CHPP-1	coal, natural gas	41.0 %
Khabarovskaya CHPP-3	coal, natural gas	51.0 %
Komsomolskiye CHPPs-1,2	coal, natural gas	47.3 %
Komsomolskaya CHPP-3	natural gas	46.0 %
Amurskaya CHPP-1	coal, natural gas	27.2 %
Maya TPP	coal	31.3 %
Nikolaevskaya CHPP	natural gas, mazout	25.9 %
Primorskaya TPP	coal	38.8 %
Partizanskaya TPP	coal	46.4 %
Vladivostok CHPP -2	coal, natural gas	44.9 %
Artyomovskaya CHPP	coal	58.9 %



In order to enhance quality and efficiency of business activities, the Policy of energy saving and energy efficiency improvement of RAO ES of the East was adopted in 2015 by PJSC RAO ES of the East. In 2016, 12 subsidiary companies of PJSC RAO ES of the East joined this Policy following the relevant decisions by the Boards of Directors. Consolidated Energy Saving and Energy Efficiency Improvement Program of RAO ES of the East for 2017-2021 was developed and adopted (decree No.116 of 30.08.2016).

Energy saving and energy efficiency improvement activities are carried out as part of the adopted programs: investment, repair, reliability improvement and production performance programs, local energy optimization programs, electric and heat energy recovery programs, programs for installation and renovation of metering systems at company facilities and consumers, etc. In order to execute the assigned tasks, Holding implements projects in energy saving automation and introduction of the energy management system.

The Holding's Technical Policy is aimed at improving industrial efficiency and energy resource saving, which can be achieved by installing up-to-date technologies, developing effective modes of equipment loading, and a more complete use of energy sources with a more cost-saving equipment after its reconstruction and modernisation.

The main areas of energy efficiency improvement in the Holding are:

- conversion of the main generating facilities to gas (if possible);
- use of up-to-date gas turbine units and CCGT units;
- modernisation and construction of new capacities with up-to-date technologies.

Moreover, construction and expansion of power generation facilities as part of the investment programs will enable the Holding's companies to save sufficient amount of fuel and energy resources. (103-2)

Average efficiency of energy production of TPPs by energy source and control mode (EU11)

	Fuel	2016
RMEP/regulated tariffs		
<i>PJSC Kamchatskenergo</i>		27.8 %
CHPP-1	natural gas, mazout	11.1 %
CHPP-2	natural gas, mazout	52.7 %
Central Energy Grid DPP	diesel fuel	0.4 %
JSC SENK	coal, diesel fuel, wind	22.8 %
<i>PJSC Magadanenergo</i>		5.8 %
Arkagalinskaya TPP	coal	1.2 %
Magadanskaya CHPP	coal	16.6 %
<i>JSC Chukotenergo</i>		17.1 %
Anadyrskaya CHPP	coal	12.7 %
Anadyrskaya Gas Engine CHPP	natural gas	21.0 %
Chaunskaya CHPP	coal	17.5 %
Egvenkinotskaya TPP	coal	20.5 %
<i>PJSC Sakhalinenergo</i>		45.8 %
Sakhalinskaya TPP	coal	18.1 %

	Fuel	2016
Yuzhno-Sakhalinskaya CHPP-1	coal, natural gas	50.9 %
steam turbine equipment	coal, natural gas	45.9 %
5th power unit of Yuzhno-Sakhalinskaya CCHP-1	natural gas	44.6 %
4th power unit of Yuzhno-Sakhalinskaya CCHP-1	natural gas	63.2 %
JSC Novikovskaya DPP	diesel fuel	4.4%
<i>PJSC Yakutskenergo</i>		37.0%
Yakutskaya TPP	natural gas	49.6%
Yakutskaya CHPP	natural gas	52.1%
Central electric grid DPP	water	0.4%
Western electric grid DPP	diesel fuel	0.5%
JSC Sakhaenergo	coal, diesel fuel, sun	16.3%
<i>PJSC Mobile energy (Peredvizhnaya Energetika)</i>		13.4%
Labytnangi (Mobile PP)	natural gas, wind	7.7%
Kyzym (Mobile PP)	natural gas	11.1%
Urengoy (Mobile PP)	natural gas	22.2%



KEY ACTIVITIES IN THE FIELD OF ENERGY SAVING IN 2016

One of the main challenges confronting the Holding is the equipment's depreciation and obsolescence, which leads to low efficiency. Thus, specific consumption of the equivalent fuel of Maya TPP amounts to 798.8 g/kWh; of the Sakhalinskaya TPP – 570.3 g/kWh, while an up-to-date standard of the specific consumption for effective generation amounts to 298 g/kWh. Therefore, among key activities for improving energy efficiency of RAO ES of the East in 2016, there were:

- reconstruction of generating equipment (turbine units, boiler units, auxiliary equipment)
- reconstruction of boiler plants (including replacement of boilers),
- comprehensive renovation of equipment at heat supply stations;
- renovation of conduits using efficient heat insulation;
- modernisation and repair of equipment resources during planned maintenance;
- substitution of capacities of inefficient generation facilities in operation by means of construction and reconstruction of DPP, construction of stand-alone solar power plants;

The other activities for energy saving include:

- introduction of an Automated Technological Process Control System
- replacement of wires at overloaded power lines with heavy-gauge wires, replacement of OHLs with self-supporting insulated wires;
- replacement of underloaded and overloaded transformers;

- installation of commercial metering devices of thermal and electric energy
- modernisation and deployment of automated information-measuring system of commercial electricity metering. **(103-2)**

In 2016, the costs related to the activities in accordance with approved programs of energy saving and energy efficiency improvement of the PJSC RAO ES of the East enterprises amounted to 1,065.3 million rubles. Economic effect from the activities' implementation in terms of programs of energy saving and energy efficiency improvement amounted to 358 million rubles.

4.3.3. OTHER ACTIVITIES IN THE FIELD OF ENERGY SAVING

The possibility to accurately predict volumes of electricity produced in the medium and long terms is an important condition for control optimization over the entire system. In this regard, the Group is constantly improving its own forecasting system.

See the detailed information on improvements of the forecasting system in 2016 Annual Report of PJSC RusHydro, p. 134.

In accordance with the scheduled energy inspections of the PJSC RusHydro's branches in 2016, energy audits of seven facilities on the following branches were carried out: the Bureyskaya HPP, the Zeyskaya HPP, Cascade of Verkhnevolzhskiy HPPs, the Nizhegorodskaya HPP and the Novosibirskaya HPP. For all branches audited, the Company has developed energy certificates, as well as energy saving and energy efficiency programs and reports with recommendations. **(103-3)**

The RusHydro's areas of responsibility include encouraging customers to modify patterns of electricity use (demand-side management). RusHydro initiates and participates in several thematic events:



1. In September 2016, the Company took part in all-Russian festival of energy saving #VmesteYarche («Brighter Together»). The key event of the festival was the Energy Saving Holiday, held in Moscow on 10th September. The main branches and subsidiaries of RusHydro Group also took part in the festival. Together with local governments, they organized open doors days, lectures and classes on energy saving, contest of thematic essays and drawings, and guided tours to HPPs. The Group also conducted All-Russian energy saving class in more than 80 schools, lyceums, centres of complementary education and



orphanages. More than 3,800 people took part in this class.

2. In 2016, the 8th All-Russian contest for journalists and bloggers «Energy of Water» was held. The goal of the contest was to draw attention of the Russian media to the topics of renewable energy sources, popularisation of hydropower, improvement of energy efficiency. Over 50 bloggers and journalists took part in the contest, and more than 80 works were presented.
3. Branches of PJSC RusHydro give classes on energy saving for schoolchildren.



4.4. DEVELOPMENT OF RENEWABLE ENERGY



RusHydro is a leading Russian producer of energy based on renewable sources. The Company contributes to the development of electricity generation based on tidal, solar, wind and geothermal energy, which are environmentally friendly and highly efficient energy sources.

In the remote areas of the Far East, the Group develops alternative energy and reduces the consumption of diesel fuel during power generation.

According to the Federal State Statistics Service, the capacity of the generating facilities operating on the basis of renewable energy sources in the Russian Federation (excluding hydropower plants with installed capacity over 25 MW) amounted to 906.3 MW¹.



DEVELOPMENT OF RENEWABLE ENERGY

The concept of renewable energy sources (RES) includes such forms of energy as solar, geothermal, wind, energy of sea waves, currents, tides and ocean energy, biomass energy, hydropower and other types of renewable energy.

RES can be divided into two groups:

- traditional: hydraulic energy converted into the type of energy used by large and medium-sized HPPs;
- non-traditional (alternative): solar, wind, energy of sea waves, currents, tides and ocean energy, biomass and geothermal energy, hydraulic energy, converted into the type of energy used by small and micro HPPs.

«At present, we have a fairly balanced energy production in Russia. Only 15% fall on the most «dirty» coal generation; the world average is 30–35%, in China – 72%, in the USA and Germany – 40%. We are not standing still and are striving to increase the amount of energy received from alternative renewable sources. Now it is about 1.5% of all energy produced, but we expect to reach 5% within five years.»

S.B. Ivanov, Special Representative of the President of the Russian Federation on environmental activities

The main reason to develop RES in the world is exhaustion of such energy sources as oil, gas and coal. At the same time, the development of renewable energy is particularly necessary in remote, non-electrified areas, as delivering fuel there is too expensive from an economic point of view. In addition, the use of renewable energy in electricity and heat production is the key to combating the greenhouse effect and the negative impact of production on the environment.

One of the tasks of RusHydro Group's Innovative Development Program for 2016–2020 with the perspective for up

The share of RES, including the large and medium-sized hydropower plants in the energy balance of RusHydro is 75%.

to 2025 is to increase energy efficiency through the use of alternative renewable energy sources. At this moment, RusHydro Group continues to develop wind, solar and geothermal energy. Most of such projects belong to isolated areas that are not part of the unified energy system. As the previous decades show, the use of solar and wind energy technologies can bring economic benefits by reducing consumption of the expensive imported diesel fuel.

Over the past five years, the Group has launched 16 solar stations with the capacity of 1.47 MW and three wind

stations with the capacity of 2.2 MW in Yakutia. The total volume of investments in projects amounted to 845.7 million rubles. Savings on diesel fuel are 1,773 tons per year.

Due to the peculiarities of each settlement, all implemented projects are unique, including the northernmost solar station of 1 MW in the village Batagay. Thanks to the station, annual savings of diesel fuel will be about 300 tons. While working in Yakutia, RusHydro developed its own models for wind-diesel and solar-diesel complexes, tested various options for equipment, including power storage in isolated energy areas.

RusHydro is actively engaged in the development of small hydropower, which is important for remote, hard-to-reach and energy-deficient regions and local water supply for small towns and settlements. Small HPPs are environ-

mentally friendly, as well as have a number of indirect effects, for example, the possibility of accumulation and subsequent use of drinking water. The Company developed a plan – the Forecast for the development of small hydropower industry with the perspective for up to 2025. The obligatory condition for its implementation is adoption of the regulatory framework for an effective support in the Russian Federation.

Read more about the stations operating on the basis of alternative sources of renewable energy on the website.

The RusHydro projects in the field of renewable energy in 2016–2017

Project	Type of RES	Region	Capacity	Status
Development and scientific justification of the use of small rivers and hydraulic structures of non-energy purpose	Water energy	Regions of the Russian Federation	up to 30 MW each	Research, design, start of construction
Barsuchkovskaya SHPP		Stavropol Region	5.13 MW	
Bolshoy Zelenchuk SHPP		Republic of Karachay-Cherkessia	1.26 MW	
Ust-Dzhegutinskaya SHPP		Republic of Karachay-Cherkessia	5.6 MW	
Verhnebalkarskaya SHPP		Kabardino-Balkaria Republic	10 MW	
SPP v. Orto Balagan	Solar energy	Republic of Yakutia (Sakha)	50 kW	Research, design, start of construction
SPP v. Sebyan-Kyuol		Republic of Yakutia (Sakha)	50 kW	
SPP v. Kystatyam		Republic of Yakutia (Sakha)	40 kW	
Experimental-industrial binary block on the Pauzhetskaya Geo PP	Geothermal heat	Kamchatka Region	2.5 MW	Construction
Zaragizhskaya SHPP	Water energy	Kabardino-Balkaria Republic	30.6 MW	Put into operation in 2016
SPP v. Upper Amga	Solar energy	Republic of Yakutia (Sakha)	36 kW	Put into operation in 2016
SPP v. Delgay		Republic of Yakutia (Sakha)	80 kW	Put into operation in 2016
SPP v. Innah		Republic of Yakutia (Sakha)	20 kW	Put into operation in 2016





COOPERATION IN THE FIELD OF RENEWABLE ENERGY

To achieve strategic goals in the field of renewable energy development, PJSC RusHydro participates in a number of innovative technological platforms in Russia, uses mechanisms to coordinate research and development and also attracts government project funding.

In 2016, PJSC RusHydro was a participant in five technological platforms (see 3.3 *Innovative Development*), the initiator and coordinator of one of them (TP «Perspective Technologies of Renewable Energy»). The platform was formed and established by PJSC RusHydro in November 2010 with the support of the Ministry of Energy of the Russian Federation and JSC Agency for Forecasting Balances in the Electric Power Industry. The projects are financed from extra-budgetary sources, as well as within the federal target program «Research and Development in Priority Areas for the Development of Russia's Science and Technology Complex for 2014-2020» (hereinafter referred to as the FTP of the R&D).

Participants of the TP «Perspective Technologies of Renewable Energy» are 139 organizations, including business

structures, universities, research institutes, non-profit partnerships, design organizations, engineering and service companies. In the medium term, the result of its activities is a new industry for Russia in research, design, production of equipment, engineering, construction and operation of generation facilities using RES.

News and documents of the Platform are published on the official Internet portal of the Platform «TFVIE.RF» and «i-Renew.ru» (<http://www.i-renew.ru/>) and on the page of the social network Facebook (<http://www.facebook.com/PTofRES>).

The main results of the activities of the Platform in 2016:

- The participants carried out 26 projects on the scientific and technological issues of the Platform, amounting to 1,487.4 million rubles in accordance with the directions indicated in the Strategic Research Program.
- 13 applications-proposals of the Platform's participants were considered in order to participate in the FTP of the R&D in 2016, 9 of which were supported with letters from the Platform for participation in the contest.

the return on investments, the practice of financing and supporting renewable energy in the Far East. The conference was attended by more than 380 delegates of 130 organizations from 14 countries.

The conference repeatedly initiated several major cooperation projects and the year 2016 was not an exception. As part of the Memorandum of Intentions concluded at the Conference and engaging PJSC RusHydro to construct a Wind Park in Tiksi, in December 2016, in Japan, the joint declaration on this project implementation was signed between the Organization for the Development of New Energy and Industrial Technologies (NEDO), the Republic of Sakha (Yakutia) and PJSC RusHydro.

- The International Congress «Renewable Energy XXI Century: Energy and Economic Efficiency» REENCON-XXI was held at Skolkovo Moscow School of Management.
- Together with the Industrial Development Fund (FGAA «Russian Fund for Technological Development»), a consolidated booklet on Russian technological platforms has been published in Russian and English languages.

Currently, the Plan for the Strategic Research and Development Program of the Platform until 2018 (hereinafter referred to as the «Strategic R&D Program») includes 55 projects on the scientific and technological issues of the Platform, four supporting and 13 initiative actions.

PLANS FOR THE RENEWABLE ENERGY DEVELOPMENT

In 2018, RusHydro Group plans to launch the capacity of the Ust-Dzhegutinskaya HPP and the Barsuchkovskaya SHPP in the amount of 10.61 MW. Also, in 2019, it is planned to commission the capacity of the Verkhnebalkarskaya SHPP in the amount of 10 MW.

In 2017, construction of three solar power plants is scheduled - in Orto-Balagan village of Oymyakonsky ulus, Kystatyam village of Zhigansky district and Sebyan-Kyuol village of Kobyaysky ulus. Moreover, according to the Declaration of Intent signed between PJSC RusHydro, the Government of the Republic of Sakha (Yakutia) and the Japanese Governmental Organization for the Development of New Energy and Industrial Technologies (NEDO) in December 2016, the parties are discussing the possibility of implementing a wind park project with the capacity of up to 1 MW in Tiksi, Bulunsky ulus of the Republic of Sakha (Yakutia).

Within the framework of the Innovative Development Program of RusHydro Group for 2016-2020, with the perspective for up to 2025, the Company plans to explore the opportunities for the energy industry development of the

Kamchatka Region based on the use of local renewable energy resources. The implementation of the Program should result in the development of geothermal energy of the region due to expansion of the Mutnovskaya geothermal station and the construction of the Mutnovskaya GeoPP-2.



IV INTERNATIONAL CONFERENCE «RENEWABLE ENERGY DEVELOPMENT IN THE RUSSIAN FAR EAST»

In June 2016, RAO ES of the East and the Government of the Republic of Sakha (Yakutia) organized the fourth International Conference «Development of Renewable Energy in the Russian Far East» in Yakutsk.

The event proved itself to be the key discussion platform on the topic of renewable energy development in isolated energy systems and in the non-price zone of the Far East.

In 2016, the conference participants discussed issues related to the Russian and international experience in the implementation of renewable energy projects,



4.5. MEASURES FOR BIODIVERSITY CONSERVATION

4.5.1. IMPACTS ON BIODIVERSITY



Industrial facilities of PJSC RusHydro are not located in protected natural areas. There is a large number of protected natural areas with rare species of plants and animals in the territory of RAO ES of the East operations. **(304-1)** The companies of RAO ES of the East are striving not to cause a significant impact on the biodiversity and protected natural areas. **(103-1)**



As a result of the activities of the RAO ES of the East's companies, there is no reduction in number and diversity of species and the habitat transformations. There is no spread of invasive species, pests and pathogens. **(304-2)**

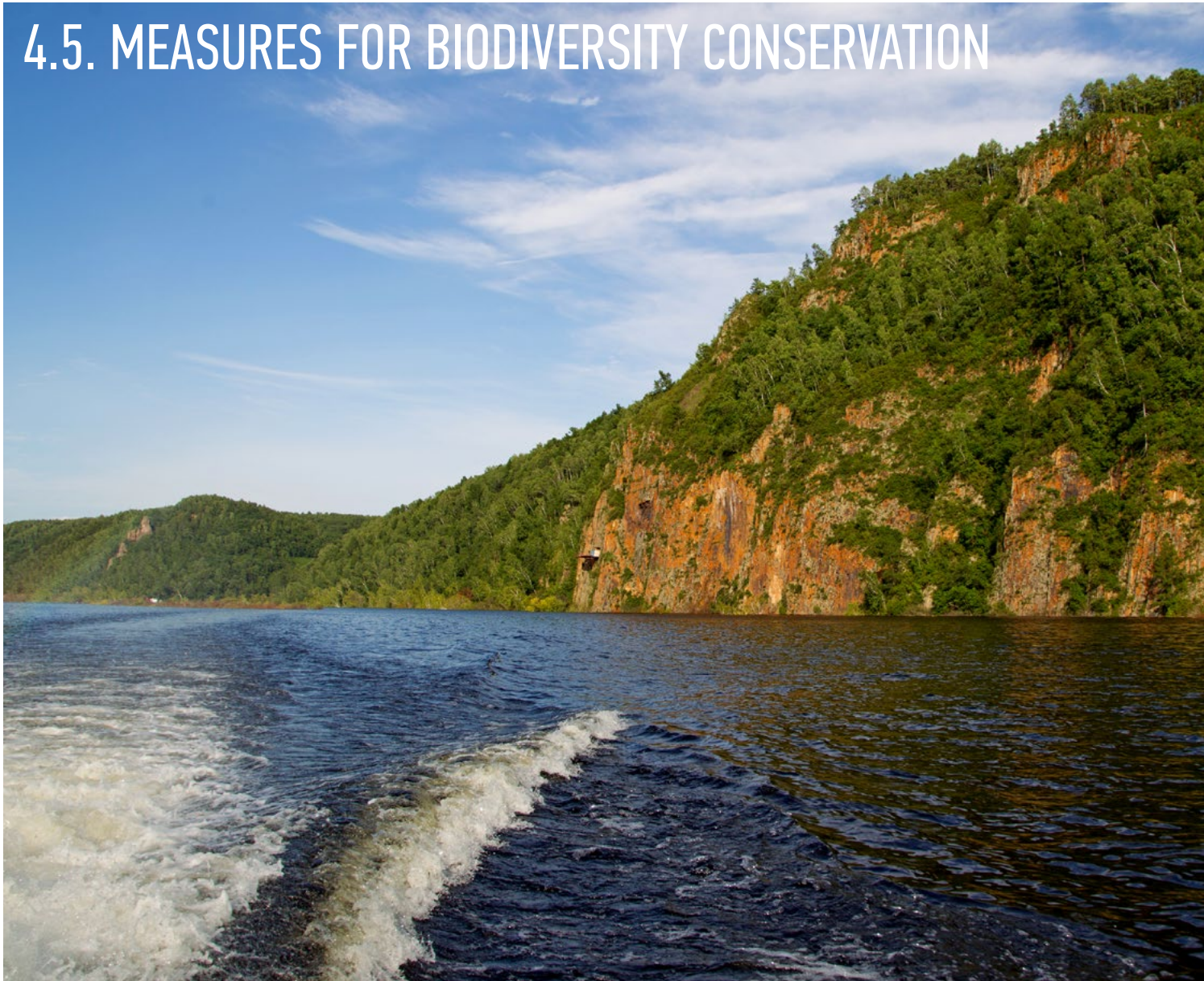




Table. Ownership, volume, and biodiversity value of water bodies, significantly affected by the industrial operations of RAO ES of the East (306-5)

Subsidiaries of RAO ES of the East	Water body**	Volume of water in the water body or the average effluxion of water in the river, million cubic meters	Value in terms of biodiversity *	Subsidiaries of RAO ES of the East	Water body**	Volume of water in the water body or the average effluxion of water in the river, million cubic meters	Value in terms of biodiversity *
PJSC Kamchatskenergo	The Avacha Bay	3,800	Highest Category	JSC FEGC	The Kivdinskoye reservoir	9.6	Category 1
	The Khalaktyrka River	-	Highest Category		The Kontrovod River	-	Highest Category
	Lake Khalaktyrskoye	11	Highest Category		Unnamed creek, which flows into the Knevichanka River	-	Highest Category
	Lake Sypuchka	-	Highest Category		The Promezhutochnaya Bay	-	Highest Category
JSC KSEN	The Bystraya River	43.2	Category 1		The Obiasneniya River	-	Category 1
PJSC Magadanenergo	The Magadanka River	127.5	Highest Category		The Lozovy Kliuch Creek	-	Category 1
	The Kamenushka River	37.9	Category 1		The Partizanskaya River	-	Category 1
	The Miaundja	37.9	Highest Category		The Rudka Creek	-	Category 2
PJSC Sakhalinenergo	The Gulf of Patience in the Okhotsk Sea	211,250	Highest Category		The reservoir on the Olongoro River	43.2	Category 1
PJSC Yakutskenergo	The Lena River	515,610	Highest Category		The Semyonovsky Creek	-	Category 2
	The Viliuy River	21,290	Highest Category		The Bezymianny Creek	-	Category 2
JSC Chukotenergo	The Kazachka River	22	Category 2		The Amnunakta River	-	Category 1
	Okhotnichye Lake	0.25	Category 2		The Amur Channel	-	Highest Category
	The Chaunskaya Bay	-	Category 1		The Amur River	-	Highest Category
JSC Teploenergосervice	The Viliuy River	72,400	Highest Category		Khorpy Lake	-	Highest Category
	The Yana River	29,297	Highest Category		The Galbon Channel (the Stary Amur)	-	Highest Category
	The Aldan River	154,683	Highest Category		The Zapadnaya Bay	-	Highest Category
	The Indigirka River	14,002	Highest Category		The Nante Creek	-	Highest Category
	The Allah-Yun' River	5,550	Highest Category		The Pravaya Berezovaya River	-	Category 2
	The Nera River	3,658	Highest Category		The Chernaya River	-	Category 2
JSC LUR	The Kontrovod river	-	Highest Category	The Polezhayevka Creek	-	Category 2	
				The Gnilaya Pad' Creek	-	Category 2	
				The Malaya Sita River	-	Category 1	

* Categories (Highest Category, Category 1, Category 2)

** None of the water bodies is a protected natural territory.



PROTECTED SPECIES WHOSE HABITATS ARE AFFECTED BY THE RUSHYDRO GROUP OPERATIONS (304-4)

The habitat of the mandarin duck (*Aix galericulata*) in the Amur region fell into the flood zone of the reservoir of the Nizhne-Bureyskaya HPP.

The bird is listed in the Red Book of the Russian Federation as rare species, as well as in the IUCN Red List-96 Red List, Appendix 2 of the Bonn Convention, Annexes of bilateral agreements concluded by Russia and Japan and the Republic of Korea and the DPRK on the protection of migratory birds.

The main area of growth of the fern (*Aleuritopteris kuhni*) was found in the potential zone of flooding. The plant is listed in the Red Book of the Russian Federation as in danger of extinction species.

The construction of the Nizhne-Bureyskaya HPP, as well as the activities of the JSC FEDC company of the RAO ES of the East have an impact on the endangered species – Oriental white storks (*Ciconia boyciana*). It is listed in the Red Book of the Russian Federation and the IUCN Red List – 96, Appendix 1 of CITES, Appendices of the bilateral agreements concluded by Russia with Japan, the Republic of Korea and the DPRK on the protection of migratory birds.

The RAO ES of the East's companies are carrying out reclamation measures for disturbed lands. The area and location of all the restored habitats are indicated in the table below.

The reclamation of ash dumps is an important part of the ecological program of JSC FEDC. The project allows to restore large areas of former landfills for storage of slag and ash. In 2016, there were reclaimed 38 hectares of ash disposal in Vladivostok and 50 hectares at the ash dumps of the Khabarovsk CHPP-3.

Preserved or restored habitats of animals and plants by the subsidiaries of RAO ES of the East (304-3)

Name	Total	JSC FEDC	PJSC Magadanenergo	JSC Chukotenergo	PJSC Sakhalinenergo	JSC LUR
01.01.2016						
Total disturbed land, ha	6,844.74	2,303.55	272.0	176.36	257.64	3,835.19
Including:						
Processed disturbed land, ha	142.41	59	51.0	4.80	3.22	24.39
Stored topsoil, thousand m ³	866.26	287.48	0.00	0.00	0.00	578.78
Data for 2016						
Total disturbed land, ha	127.58	28.50	0.00	1.79	0.10	97.2
Total processed disturbed land, ha	0.10	0.00	0.00	0.00	0.10	0.00
Total re-soiled land, ha	64.10	61.00	0.00	0.00	0.10	0.00
31.12.2016						
Total disturbed land, ha	6,911.23	2,271.05	272.0	178.15	257.64	3,932.39
Total processed land, ha	142.41	59.00	51.0	4.80	3.22	24.39
Stored topsoil, thousand m ³	866.26	287.48	0.00	0.00	0.00	578.78



4.5.2. MEASURES FOR BIODIVERSITY CONSERVATION

RusHydro Group implements measures of five courses to protect biodiversity. **(103-2)**

vPJSC RusHydro develops international cooperation in the field of environmental protection in regard of biodiversity conservation. In 2016, the second edition of «Compendium of innovative biodiversity solutions for the hydropower sector» was prepared with the participation of PJSC RusHydro within the project of the United Nations Development Program/Global Environment Facility and the Ministry of Natural Resources and Environment of the Russian Federation (UNDP Project). The Compendium is a practical guide for designing engineers, environmental specialists, authorities and other stakeholders for the planning of environmentally-oriented activities. The second edition of the Compendium includes the experience of PJSC RusHydro on biodiversity conservation.

Also in 2016, a specialized portal (gisamur.ru) was devel-

oped with the participation of PJSC RusHydro to ensure the solution of geo-ecological tasks for planning the development of hydropower potential in the Amur Region. This is a complex geoinformation system that allows analysing the possibilities of hydropower development taking into account environmental risks and issues of biodiversity conservation. This system can be widely used for creation of strategies and plans for the Amur region development, territorial planning, preparation of environmental passports of the subjects of the Russian Federation. The data collected on the geoportal can be used to solve many issues of state-management orientation, as well as those of industrial, scientific and educational significance.

Four years ago, the UNDP Project initiated the environmental project «Bureysky Compromise» as part of the construction of the Nizhne-Bureyskaya HPP in the Amur Region. It is implemented by the Amur Region state-fi-

nanced institution «Directorate for the Protection and Exploitation of Wildlife and Specially Protected Natural Territories», JSC Nizhne-Bureyskaya HPP, scientific and environmental organizations of the region, mass media. The project is intended to demonstrate the advanced domestic and world principles of conservation of biological diversity in the implementation of large industrial facilities. In addition, the product serves as example of an effective interaction with government bodies, business and society on issues of nature conservation. The «Bureysky Compromise» project is comprehensive and includes many activities for each factor of possible negative impact of the reservoir creation on flora and fauna.

In April last year, «Bureysky» Nature Park was created in the area of the reservoir of the Nizhne-Bureyskaya HPP. Since 2014, JSC Nizhne-Bureyskaya HPP has been implementing the program of socio-ecological monitoring at the territory of the natural park and at adjacent ter-

ritories. With the expert support of the UNDP Project, in 2015-2016, the socio-environmental monitoring program included assessment of the economic activities impact on biodiversity. In 2016, the coverage area of this monitoring was 567 thousand hectares.

In 2016, the Nizhne-Bureyskaya HPP was visited by international experts of the UNDP Project delegation. The main purpose of the visit was to assess quality of the security and compensation activities in the process of construction of the Nizhne-Bureyskaya HPP, to compare them with the best world practices, and to test their effectiveness in terms of compliance with the world standards. Based on the visit's results, the experts will develop methodological recommendations on organization and implementation of the compensation measures in the process of major investment projects implementation. In 2016, the actions to preserve biodiversity were continued as part of the «Bureyskiy Compromise» Project. **(103-3)**



SUPPORT OF PROTECTED NATURAL AREAS



MEASURE ON PRESERVATION OF THE UNGULATE ANIMAL POPULATION



MEASURES ON THE PLANTS PRESERVATION



PRESERVATION OF THE BIRD SPECIES

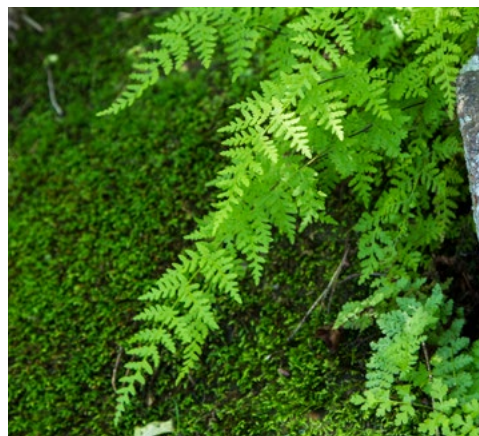


RESTORATION OF THE FISH RESOURCES

MEASURE ON PRESERVATION OF THE UNGULATE ANIMAL POPULATION (103-2)

The network of feeding stations was arranged in the depth of the Natural Park «Bureysky» in order to concentrate the animals in the centre of the Park and remove them from the construction site.

More than 25 feeding stations have been arranged in the entire territory of the Natural Park. The complexes are equipped with surveillance cameras for photo and video recording, which allows receiving information about the attendance of feeding stations by animals.



In 2016, the North Ossetian branch of PJSC RusHydro supported the program for the rehabilitation of the Asiatic leopard in the Caucasus at the suggestion of the UNDP Project. The branch entered into an Agreement with the Institute of Ecology and Evolution named after A.N. Severtsov (RAS) on cooperation in collection of information on the habitat and livelihoods of these animals.

«For us, the return of the leopard to the republic is particularly important. After all, it is depicted on the coat of arms of the North and South Ossetia. We are very pleased that the Ministry of Natural Resources of Russia and the Institute's management are interested in implementing this program in our region. We have already done the first step to preserve the leopard. It is non-financial help now: we provide data from our cameras and install camera traps. But we are ready for further cooperation».

T.V. Balataev, Director of the North Ossetian branch of PJSC RusHydro

MEASURES ON THE PLANTS PRESERVATION (103-2)

Five rare and endemic plant species were found in the flood zone of the reservoir of the Nizhne-Bureyskaya HPP. In order to conserve the rare plant species their transfer to new habitats was arranged. This operation was carried out in two stages: one part of the plants was moved in 2015, an additional transfer was carried out in 2016. As a result, specialists managed to move more than 400 specimens to places suitable for growing.

An additional measure of plant support was the «ex-situ» measure in regard of the fern «Alevritopteris Kuna» listed in the Red Book, its main habitats located in the flood zone of the Nizhne-Bureya Reservoir. A specialized climatic chamber was created in the Botanical Garden of Blagoveshchensk, where from the rare fern spores the plants are grown for subsequent introduction into places suitable for growth. Bedding of plants grown in a climatic chamber will be carried out until 2019.

PRESERVATION OF THE BIRD SPECIES (103-2)

Measures to minimize the impact on the bird fauna are aimed at the two most vulnerable species: the mandarin duck and the oriental white stork.

The habitat of the mandarin duck happened to be directly into the flood zone in the area of the reservoir of the Nizhne-Bureyskaya HPP in the Amur Region.

The key habitats and natural nesting of this species were threatened with extinction. To conserve the population of the mandarin duck, about 100 artificial nest boxes have been built above the level of the reservoir design marks, mainly on tributaries. According to the monitoring results, it was established that the nest boxes began to be populated with mandarin ducks before the reservoir was filled, which confirmed the efficiency of this measure and determined the necessity to install additional artificial nest boxes. In

2016, installation of additional artificial nest boxes and the monitoring of the effectiveness of this solution was continued in order to maintain the Mandarin population in the process of a water body creation.

The south of the Amur Region is the nesting place for most of the world population of the oriental white stork. The distribution of the population of this species is in the downstream of the Nizhne-Bureyskaya HPP. In order to minimize the possible negative impact on the population of the oriental white stork, the artificial nest supports were installed with the support from UNDP Project. The nests can hold up the weight of the stork. In 2017, it is planned to install artificial nest supports for the oriental white storks in the Muravievsky Nature Reserve, as the Amur regional public environmental organization «AmurSoES» and the regional «Directorate for the Protection and Exploitation of Wildlife and Specially Protected Natural Territories» filed a request to the energy sector.



Moreover, according to the information of the Amur regional public ecological organization «AmurSoES», in 2016, there were about 100 inhabited nests of oriental white storks in the southern regions of the Amur Region, and more than 40% of them were located on the supports of overhead transmission lines.

PJSC Yakutskenergo (subsidiary of RAO ES of the East) equips the high-voltage power transmission lines passing



through a specially protected natural territory in Ust-Maysky ulus in Yakutia with special bird protection devices. 24 species of birds are protected there.

Also, PJSC Yakutskenergo provides isolation of the power transmission lines with a special cable SIP in the territory of the Natural Park «Living Diamonds of Yakutia», where



the high-voltage transmission line 6-10 kV passes through. In addition, the company equips transformer substations on transmission lines with fences and covers to prevent animals from entering into the substation and into the mechanisms of the substation.

RESTORATION OF THE FISH RESOURCES (103-2)

Due to the specifics of the Company's activity, the RusHydro pays a special attention at the conservation and restoration of fish resources of rivers. For this purpose, since 2003, the annual voluntary planting of fish actions has been taking place at the rivers and reservoirs of HPPs.

In 2016, the Kabardino-Balkarian branch of PJSC RusHydro together with the West Caspian Territorial Administration of the Federal Agency for Fishery released 43 thousand fries of the Russian sturgeon and 71 thousand fries of the Caspian salmon into the Terek River and its tributaries on the territory of the Republic of Dagestan and the Cherek River and the White River in Kabardino-Balkaria.

The companies of RAO ES of the East also implement measures for the artificial reproduction of aquatic bio-

logical resources. For example, the Bystrinskaya Small HPP produces an annual release of fry in the rivers of the Kamchatka Region.

SUPPORT OF PROTECTED NATURAL AREAS (103-2)

In 2009, an active work to preserve the population of the Caucasian bison listed in the Red Book of the Russian Federation and IUCN began in the North Caucasus.

In 2016, with the support of PJSC RusHydro, a specialized open-air cage with an area of 5 hectares for individuals of the Caucasian bison was built on the territory of the Tourmonsky Nature Reserve in the Republic of North Ossetia-Alania. Open-air cage allows to perform the primary acclimatization of animals grown in captivity for subsequent release into the natural habitat in the territory of the North Ossetian State Nature Reserve.

PJSC RusHydro became sponsor of the international program to restore the population of this endangered species. The cost of financial assistance of PJSC RusHydro in the opening



of the open-air cage was about 300 thousand roubles.



CHAPTER 5
**SOCIAL
RESPONSIBILITY**

68,833 PEOPLE

Headcount of RusHydro in 2016

1,932.0 MILLION RUBLES

Occupational safety expenses in 2016

123.4 MILLION RUBLES

Human resources development expenses

« In May 2016, the volunteer movement of PJSC RAO ES of the East celebrated its second anniversary. Volunteering successfully integrates into the Company's personnel strategy and program of corporate social responsibility. We are very grateful to everyone who responded to the initiative to develop volunteering in the Far East of Russia. Such a project has many positive aspects, including professional orientation of children, an opportunity to acquaint them with the profession of power engineers and create a decent future for them, as well as provide them with opportunities for personal development. »

AN INTEGRATED APPROACH TO HUMAN RESOURCE DEVELOPMENT

- There is a special branch – Corporate University of Hydropower for implementation of RusHydro educational projects
- There is a comprehensive program of pro-active human resources development and a system of corporate elevators (school – university – company)

CHARITY

- The largest program «Clean Energy» is aimed at the creation of a favorable social environment in all regions of RusHydro HPPs operation



363.7 MILLION RUBLES
Charity expenses in 2016

937.2 MILLION RUBLES
Planned charity program of PJSC RusHydro for 2017

COOPERATION WITH HIGH SCHOOLS





5.1. HUMAN RESOURCE DEVELOPMENT



The RusHydro Group's employees ensure successful business and stable operation of Company's industrial enterprises.

RusHydro creates favourable conditions for the work and realization of personal and professional growth of the personnel. Particular attention is paid to social support and to the system of material and non-material incentives, which are aimed at increasing the interest of workers in achieving fruitful results. **(103-1)**



5.1.1 HUMAN RESOURCE POLICY

The employees of RusHydro Group are the main Company's assets. The Group's enterprises in Russia and abroad employ professionals with extensive production experience and vast technical knowledge. RusHydro's HR policy is aimed at developing the employees' potential, which is vital for implementation of the Company's strategic goals.

At the same time, RusHydro seeks to maintain stability in the Company by implementing a socially responsible position in relation to its employees. In particular, the Group protects the social and economic rights of workers, ensures their material stability and social guarantees. **(103-2)**

The Personnel Management and Organizational Development Department deals with issues related to personnel management in PJSC RusHydro. The system of personnel training and development in the Company is regulated by the following local regulatory documents (acts):

- Regulations on the organization of training for employees of PJSC RusHydro¹;
- Regulations on performance appraisal of the personnel of PJSC RusHydro branches²;
- Regulations on the formation of a database of candidates for the positions of PJSC RusHydro branches³;
- Regulations on work with the staff reserve of PJSC RusHydro⁴;
- The concept of pro-active HR development «From the New School to the Workplace».

The provisions, updated in 2016, are aimed at implementing the processes of personnel assessment and development, considering the best practices of manufacturing companies and changes in labor legislation. **(103-2)**

5.1.2. PERSONNEL CHARACTERISTICS



As of December 31, 2016, the headcount of RusHydro Group, including employees of RAO ES of the East (in the Report boundaries), was 68,833 people (including facilities on the territory of the Russian Federation and abroad). The headcount of RAO ES of the East was 50,693 people as of December 31, 2016.

The majority of RusHydro's employees are full-time employed (98.5% for PJSC RusHydro and 99.8% for RAO ES of the East) under terms of a perpetual labor contract (88.5% for PJSC RusHydro and 97.1% for RAO ES of the East).

RusHydro's workforce broken down by gender and employment type (102-8)

	Gender	Full-time employment	Part-time employment	Perpetual labor contract	Fixed-term labor contract
PJSC RusHydro and subsidiaries (except RAO ES of the East)	M	11,685	101	10,401	1,385
	F	6,185	169	5,644	710
	Total	17,870	270	16,045	2,095
RAO ES of the East	M	34,133	38	33,580	591
	F	16,436	86	15,642	880
	Total	50,569	124	49,222	1,471
RusHydro Group	M	45,818	139	43,981	1,976
	F	22,621	255	21,286	1,590
	Total	68,439	394	65,267	3,566

1 Approved by the order of PJSC RusHydro at 07.10.2016 №809

2 Approved by the order of PJSC RusHydro at 07.10.2016 №810

3 Approved by the order of PJSC RusHydro at 07.10.2016 №808

4 Approved by the order of PJSC RusHydro at 07.10.2016 №811


RusHydro Group personnel structure broken down by contract type and region, persons (102-8)

	Federal district/ region	Perpetual labor contract	Fixed-term labor contract	TOTAL
PJSC RusHydro and subsidiaries (except for RAO ES of the East)	Central	2,940	113	3,053
	Southern	599	49	648
	Northwestern	949	28	977
	Far Eastern	2,050	987	3,037
	Volga	3,338	66	3,404
	Siberian	2,960	298	3,258
	North Caucasian	2,891	286	3,177
	Republic of Armenia	301	114	415
	Republic of Tajikistan	17	154	171
	total	16,045	2,095	18,140
RAO ES of the East	Central	220	27	247
	Far Eastern	48,688	1,442	50,130
	Urals	314	2	316
	total	49,222	1,471	50,693

SEASONAL EMPLOYMENT (102-8)

RusHydro Group attracts additional workforce seasonally. In particular, in 2016:

- Five seasonal workers were hires in PJSC Krasnoyarskenergosbyt.

- One employee was temporarily included in the activities of CJSC MEC-Energo in the Republic of Armenia. Seasonal employment was associated with control over water releases from Lake Sevan.
- JSC DRSK (RAO ES of the East) involved temporarily 50 employees in the organization of the children's health camp «Energetik» during the summer school holidays.

Number of RusHydro Group employees by country and region as of December 31, 2016, persons (102-7, 102-8)

	Country, region	Number of employees, persons
Russian Federation	Far Eastern Federal District	53,167
	Volga Federal District	3,404
	Central Federal District	3,300
	Siberian Federal District	3,258
	North Caucasian Federal District	3,177
	Northwestern Federal District	977
	Southern Federal District	648
	Ural Federal District	316
Foreign countries	Republic of Armenia	415
	Republic of Tajikistan	171

The gender composition of RusHydro is heterogeneous, depending on the category of employees. There are 3 times more men than women among managers while there are 1.7 times more women than men among specialists and office workers. As for workers, the number of men exceeds the number of women 4 times due to the specific nature of RusHydro Group's activities.

Only 28% of RusHydro Group employees are under 35 years old. RusHydro has the attraction of young employees as one of the key tasks is HR-management. For this purpose, the Company implements the concept of advanced development of the Company's personnel potential.


Headcount of RusHydro Group by gender and category as of December 31, 2016, people




RusHydro Group personnel structure by age, persons (405-1)

	<25	25-34	35-44	45-54	>55	TOTAL
PJSC RusHydro and subsidiaries (except of RAO ES of the East)	475	5,017	5,186	4,065	3,397	18,140
RAO ES of the East	1,744	12,192	13,659	12,211	10,887	50,693
RusHydro Group	2,219	17,209	18,845	16,276	14,284	68,833

The proportion of employees eligible for retirement during the next 5 and 10 years, broken down by region, in (EU15)

Federal district/ region	Number of employees as of December 31, 2016, persons	In 5 years		In 10 years		Total in 10 years (cumulative)	
		persons	%	persons	%	persons	%
PJSC RusHydro and subsidiaries							
Central	3,053	444	14.5	220	7.2	664	21.7
Southern	648	80	12.3	112	17.3	192	29.6
Northwestern	977	84	8.6	58	5.9	142	14.5
Far Eastern	3,037	293	9.6	341	11.2	634	20.9
Siberian	3,258	462	14.2	383	11.8	845	25.9
Volga	3,404	388	11.4	464	13.6	852	25.0
North Caucasian	3,177	407	12.8	438	13.8	845	26.6
Republic of Armenia	415	69	16.6	77	18.6	146	35.2
Republic of Tajikistan	171	13	7.6	21	12.3	34	19.9
RAO ES of the East							
Central	247	28	11.3	16	6.5	44	17.8
Ural	316	74	23.4	44	13.9	118	37.3
Far Eastern	50,130	6,212	12.4	6,479	12.9	12,691	25.3

RusHydro Group personnel structure by categories and gender, persons (405-1)

	Gender	Management	Specialists and office workers	Workers	TOTAL
PJSC RusHydro and subsidiaries (except for RAO ES of the East)	M	2,667	2,886	6,233	11,786
	F	906	4,028	1,420	6,354
	total	3,573	6,914	7,653	18,140
RAO ES of the East	M	5,882	4,485	23,804	34,171
	F	1,860	8,607	6,055	16,522
	total	7,742	13,092	29,859	50,693
RusHydro Group	M	8,549	7,371	30,037	45,957
	F	2,766	12,635	7,475	22,876
	total	11,315	20,006	37,512	68,833

RusHydro also hires contractors and subcontractors for construction and maintenance services. In 2016 they were involved in the construction of a number of hydroelectric power plants and thermal power plants.

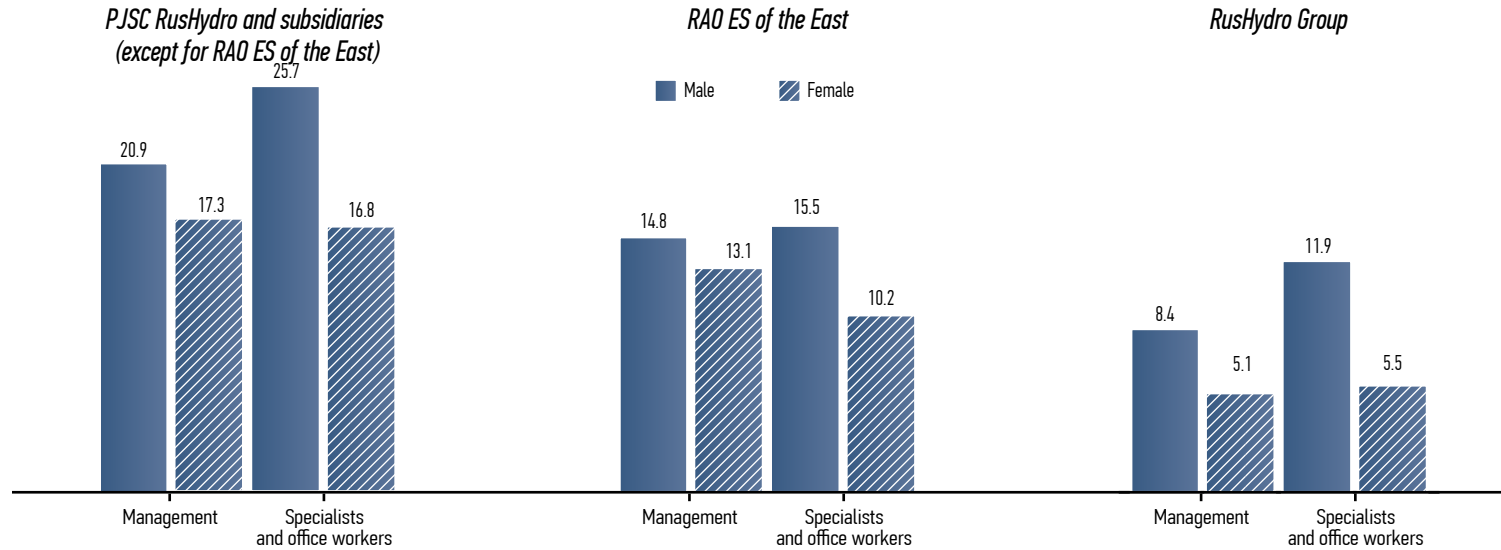
The Company is improving management structures. Activities are carried out with the aim to improve the efficiency of branches management, to strengthen security measures and to increase the reliability of the power facilities operation.

DIALOGUE BETWEEN LABOR AND MANAGEMENT (102-17)

RusHydro created public reception offices and a specialized feedback channel «Line of Trust» with the aim to build the communication between management and workforce, to inform employees and to consult with them, and also to get a feedback from employees. Meetings and discussions between the management of RusHydro and trade unions are held in the process of signing new collective bargaining agreements or by changing the conditions on the demand of the parties.



The share of employees, evaluated for their performance and career development in 2016, by gender and by category, % of total number of workforce (404-3)



PERSONNEL RECRUITMENT

The personnel selection in the RusHydro Group is carried out on a competitive basis (including for any management positions). This approach allows to recruit motivated specialists who meet the qualification requirements and are potentially capable of professional development. The main criterion for selection is the qualification of the candidate for the position. There are no restrictions on gender, age and nationality: all candidates are allowed to compete for vacant positions. (103-2)

PERSONNEL ASSESSMENT

The assessment of the employees' qualification (including for management positions) in the Company is carried out by the Branch of PJSC RusHydro - the Corporate University of Hydropower, using various methods for assessing professional and managerial competencies, including the use of Assessment Centre.

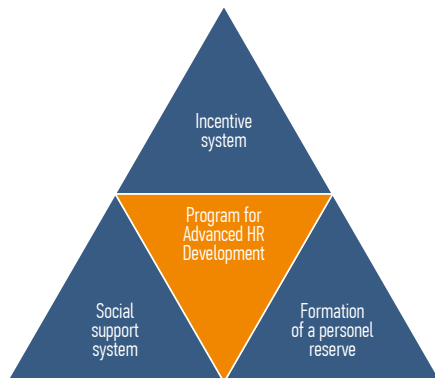
Also, the Company's personnel are certified on compliance with the requirements of their position. Employees' professional, business and personal qualities are assessed, as well as the results of their achievements. The managers, specialists and employees of the Company are assessed regardless of gender, once every three years. (103-2, 404-3)



5.1.3. MEASURES TO ENSURE THE AVAILABILITY OF QUALIFIED PERSONNEL

In order to achieve its strategic goals, RusHydro Group participates in the creation and implementation of professional standards, develops professional and managerial competencies of employees, implements programs for the professional orientation of talented students. For this purpose, the Company implements programs for Advanced Human Resource (HR) Development, creates a personnel reserve, and provides training for employees. The system of material incentives is adjusted to create favourable conditions for work and career growth. (103-1)

Measures to ensure the availability of qualified personnel

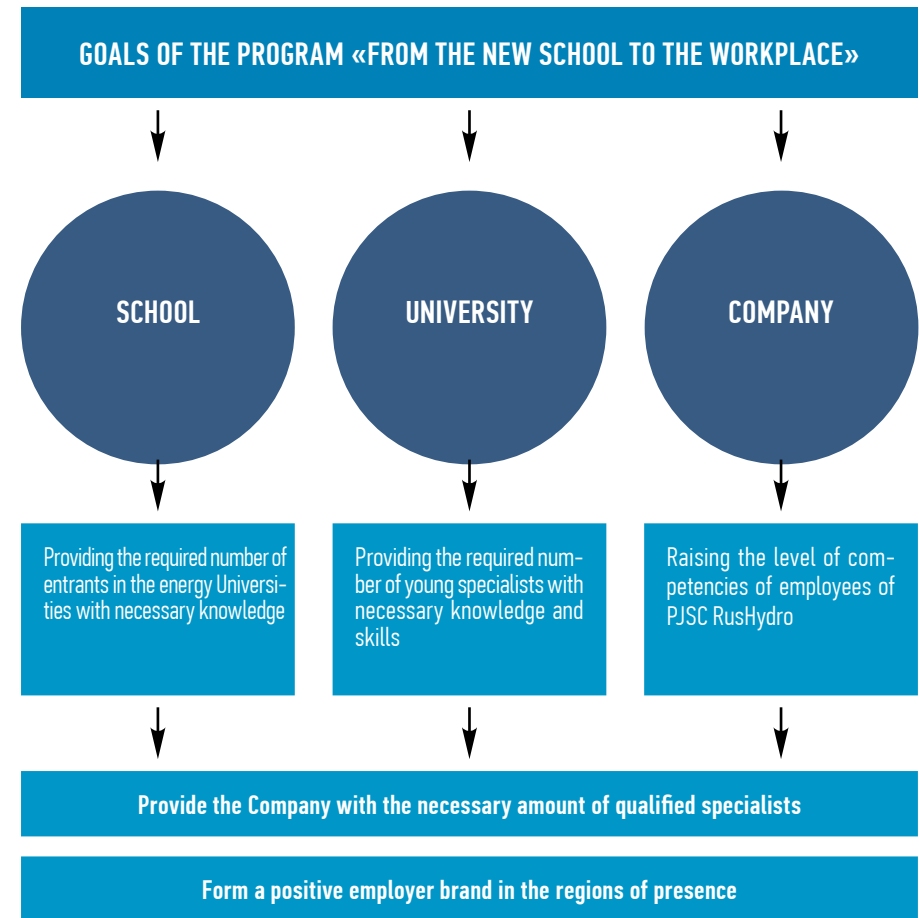


PROGRAM FOR ADVANCED HUMAN RESOURCE DEVELOPMENT (103-2)

The concept of pro-active HR development «From the New School to the Workplace» was adopted in 2010. Its main goal is to provide the Company with quality trained specialists and at the same time, to build a system of natural reproduction of labor the regions of its presence, to generate interest to hydropower industry and to attract young residents of the regions to the professions of energy sector for successful work in RusHydro Group.

As part of the implementation of the concept of pro-active HR development, there was developed a system of «Corporate lifts», which is aimed at attracting and accompanying future specialists from school age as well as increasing the prestige of engineering professions:

- «Corporate lift - New School» - informs schoolchildren about the importance of the hydropower professions, develops engineering abilities, introduces schoolchildren with the activities and specifics of the Company through basic and additional educational programs, provides career guidance, helps with admission to profile universities.
- «Corporate lift - Higher educational institution, technical schools» - creates effective mechanisms for selection and evaluation of entrants in accordance with the Company's targets, supports the future employees training, creates conditions for the continuous development of the scientific and engineering potential of the Company and profile universities.
- «Corporate lift - «Company» – enables adaptation and development of Company's young professionals, organizes mentoring and knowledge transfer system, and forms an effective competence development environment, works with personnel reserve.

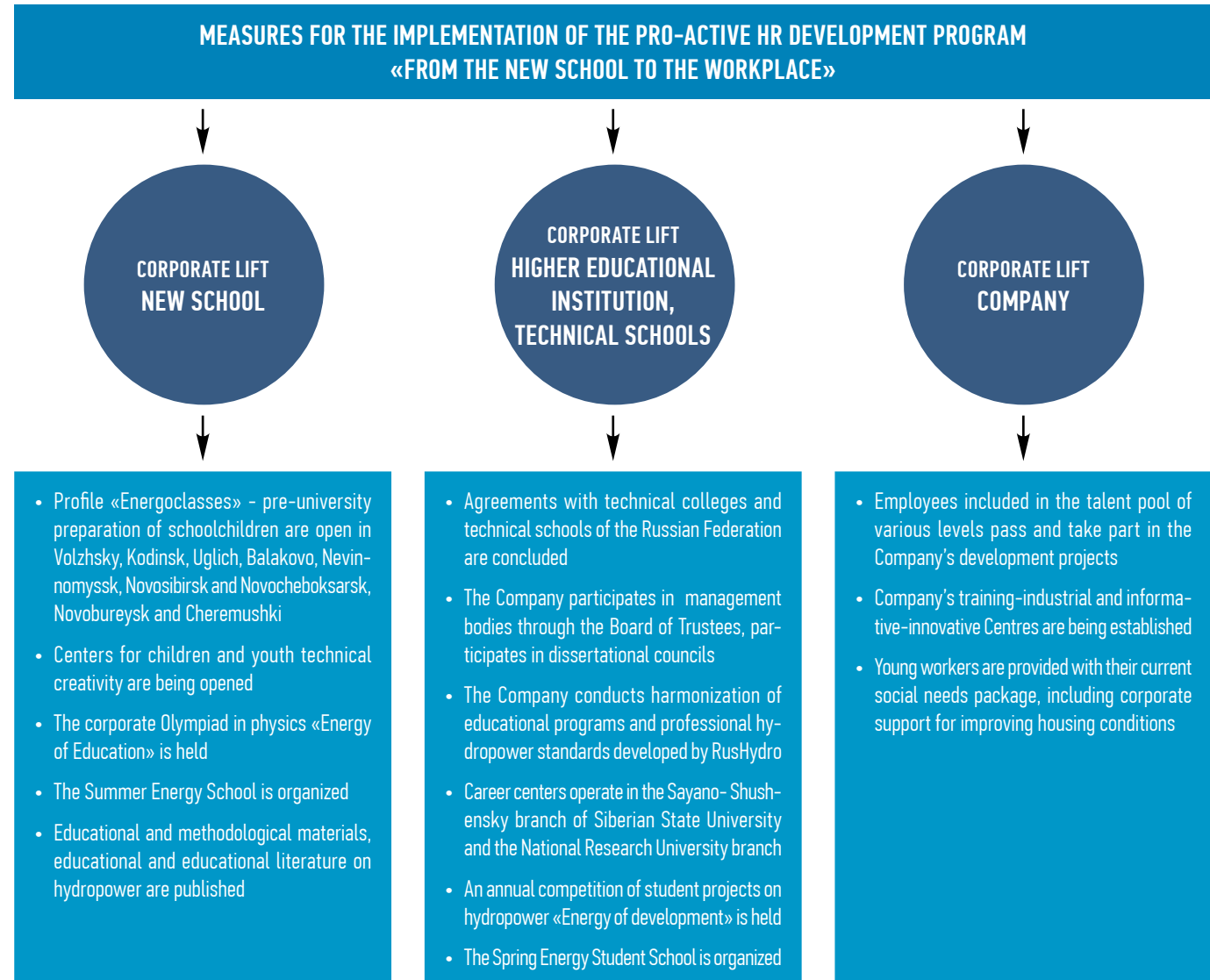




An integrated system also makes it possible to reduce the costs of additional training and newcomers training.

The main results of the corporate lift «New School» in 2016:

- 496 students took part in the «Energoclasses» in 2015/2016 academic year;
- 158 people were trained in the centres for the development of children's and youth technical creativity;
- VI Summer Power School - 2016 was held in Cheremushki on the basis of the RusHydro training-industrial and informative-innovative Centre, it was attended by 39 schoolchildren from 15 regions of Russia;
- the sectoral Olympiad «Energy of Education» was held for pupils of 7-11 grades, 1,108 people took part in the event;
- the first graduates from the Energoclass project, the participants of the Summer Power School, and former students of profile higher education institutions became employees of the stations of PJSC RusHydro throughout Russia - Zeyskaya HPP, Uglichskaya HPP, Cascade of Verkhnevolzhsky HPPs, and others.





INTERACTION WITH UNIVERSITIES

Within the framework of interaction with universities, the implementation of activities aimed at qualitative training of young specialists for the RusHydro Group was continued in 2016:

- Agreements are in force with Moscow Power Energy Institute (MPEI), Siberian Federal University (SFU), Moscow State University of Civil Engineering, Peter the Great St.Petersburg Polytechnic University, Amur State University, and specialized technical schools. In 2016, the Company signed an agreement with Far Eastern Federal University, and donated 30 million rubles to the University Fund.
- In 2016, the Company opened new scientific and training laboratories «Hydraulic Structures» and «Electrical Systems» in the Volga branch of the MPEI.
- Career centres are organized in the Sayano-Shushensky branch of SFU and Volga branch of MPEI (work is conducted during all 4 years of training – corporate courses, assessment of competence development, familiarity with the standards of the company's activities, assistance in career planning, organization of production practices).
- The graduate thesis are useful for the technological process of RusHydro.
- The competition of students' projects on hydropower «Energy of Development» is held every year, the best students take part in the final of the All-Russian Engineering Competition held by the Ministry of Education and Science of the Russian Federation.
- RusHydro is the organizer of the annual All-Russian Scientific and Practical Conference «Hydroelectric Power in the 21st Century», which was held in the Sayano-Shushensky branch of SFU in 2016.



- The Spring Energy Student School is being held in partner universities of the Company.

PERSONNEL TRAINING

Training and development of RusHydro Group personnel is a strategically important task for the Company. It is related to the need to carry out new types of professional activities, as well as to improve the skills and training of personnel. The system of continuous training of personnel allows to develop the competencies of employees in accordance with the requirements for the positions held, as well as for the purpose of moving them in the framework of the training of the personnel reserve. In addition, the Company has the opportunity to undergo professional retraining, including in the compliance with professional standards. **(103-1)**

The Corporate University of Hydropower (the branch of RusHydro) – was established in 2007 to implement educational projects in the Group.

Expenditures for the personnel development of PJSC RusHydro in 2016 amounted to 123.4 million rubles. These costs include the training and development of the Company's personnel, including professional competitions for operational personnel, which are held every two years. The cost reduction in 2016 is related to the cost optimization program adopted by the Company, the transfer of a number of training events to the remote format, as well as to changes in the number of employees who needed normatively mandatory training.

In 2016, the average number of training hours per employee increased for the managers of RAO ES of the East, as well as for the workers of PJSC RusHydro and RAO ES of the East. The average number of training hours for managers of PJSC RusHydro has decreased noticeably (from 77.3 hours/person to 38.6 hours/person), due to a non-linear

Basic Formats of Training (404-2)

Format	Periodicity
Skills upgrading	At least once every three years
Professional education and training	In accordance with the requirements of the supervisory authorities, if it is necessary to obtain a new profession
Professional retraining	Conducted in connection with the production need to perform a new type of professional activity or to obtain additional qualifications for the personnel reserve training
Corporate training	Carried out when it is necessary to solve specific tasks for the Company
Internal technical training	Annually
Short-term training programs (seminars, conferences, forums)	Annually, the content depends on the production need
Distance learning	Annually, the content depends on the production need

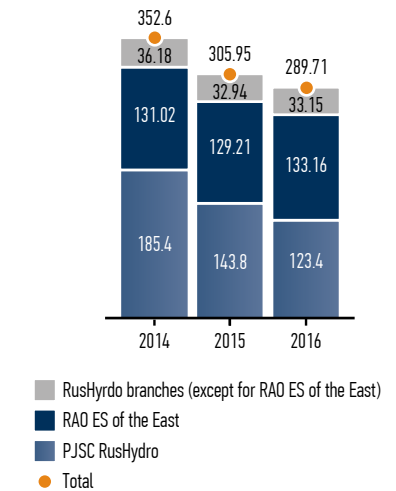
frequency of normative training of management staff.

In 2016, 11,831 people were trained at the Corporate University of Hydropower (including face-to-face – 1,898, remotely – 9,933). Training was provided to employees of PJSC RusHydro and its subsidiaries. The production staff was more than 52% of the total amount of trained personnel at attendance-based programs in 2016.

For the year 2016 Corporate University of Hydropower:

- 69 training events were conducted;
- 1,898 employees of the Company were trained, including 389 people – using webinars, 1,509 people – using face-to-face format.

Expenses for development of HR potential of RusHydro, mln rubles





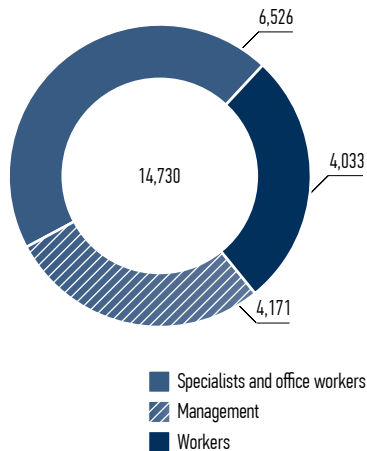
Average number of training hours per employee in 2014-2016, broken down by category, hours/person. (404-1)

	Year	Management	Specialists and office workers	Workers
PJSC RusHydro and subsidiaries (except for RAO ES of the East)	2014	47.1	35.2	35.4
	2015	77.3	50.7	49.3
	2016	38.6	24.1	29.7
RAO ES of the East	2014	45.2	16.9	29.0
	2015	36.5	13.7	28.2
	2016	40.5	13.5	34.3

Average number of training hours per employee in the reporting year, by gender and category (RusHydro Group), hours/person. (404-1)

	Total number of training hours for employees		Number of employees in this category		Average number of training hours per employee		Average number of training hours per employee
	M	F	M	F	M	F	
Management							
PJSC RusHydro and subsidiaries (except for RAO ES of the East)	116,048	21,914	2,667	906	43.5	24.2	38.6
RAO ES of the East	275,314	38,075	5,882	1,860	46.8	20.5	40.5
Specialists and office workers							
PJSC RusHydro and subsidiaries (except for RAO ES of the East)	106,188	60,581	2,886	4,028	36.7	15	24.1
RAO ES of the East	102,987	73,575	4,485	8,607	23.0	8.5	13.5
Workers							
PJSC RusHydro and subsidiaries (except for RAO ES of the East)	215,268	11,905	6,233	1,420	34.5	8.4	29.7
RAO ES of the East	947,919	77,429	23,804	6,055	39.8	12.8	34.3

Professional training of personnel by categories in 2016, people





Starting from 2015, PJSC RusHydro has been actively participating in the implementation of the project to train young workers in accordance with WorldSkills standards.



For the period 2015–2016, 16 teams have been trained in the younger age group, who took part in the regional and all-Russian stages «JuniorSkills» and «WorldSkills Hi-Tech» in the competence «Electrical Installation». To date, PJSC RusHydro is the only company that represents teams in junior direction that consist of orphans.

Volunteers – the Company's employees – conducted preparation for competitive stages and accompanied children at the championships. As a result of participation in the championships, the expert community assigned the tutors the status of «Expert in the program of early vocational guidance and vocational training of schoolchildren Juniorskills», which gives the right to independently initiate regional championships of working professions and develop competitive tasks for competitors.

RAO ES OF THE EAST PERSONNEL TRAINING

With the aim to attract young specialists, RAO ES of the East companies annually finance targeted training programs of higher and secondary vocational education for students, attract students for industrial and pre-graduation practice. Some of the company employees participate in the work of the examination commissions of universities and/or in the educational programs implementation. According to the programs of higher professional education, 344 people were trained at the expense of the Holding Company's funds in 2016, the volume of funding for higher education amounted to 5,508 thousand rubles. (103-2)

NEW LEARNING MECHANISMS (103-2)

In 2015, corporate simulators were put into operation to practice electrical switching and equipment control at the 17 major HPPs. The simulators feature computer modeling of the operation modes of equipment installed at HPPs, including control processes. The simulators were developed in accordance with the wiring diagrams of HPPs with maximum similarity to real control panels, relay protection, and cabinets of technological systems, switchgear and drives. Due to this, it is possible to practice, as close to reality as possible, the skills and sequence of performing actions by operating staff to ensure safe and reliable operation of HPP.

In 2016, the order of PJSC RusHydro was issued¹, according to which the operational personnel of the branches should undergo special simulators training at least once a quarter. Trial training using a simulator was conducted in 15 branches. In addition, a virtual simulator was developed to upgrade operational personnel skills in terms of conducting operational negotiations, fixing commands and orders, maintaining operational documentation, and giving (receiving) teams and permits.

Another RusHydro project in the field of simulator training is the creation of a training ground for personnel of HPP Technological System Management Services on the basis of the Volzhskaya HPP and the Volga Training Centre of the Corporate University of Hydropower.

In 2016, the work was started to create this training ground:

- project documentation has been developed and approved;
- 11 training programs have been developed, which will be implemented at the training ground;
- the equipment has been delivered.

COMPETITIONS OF PROFESSIONAL SKILLS (103-2)

Professional excellence competitions are one of the tools for identifying and training highly qualified specialists, as well as the way to transfer experience from the best representatives of the profession. During the competition the possibility of computer simulators, systems for automated knowledge testing and operators training are demonstrated, modern technical means of training, automated personnel testing and training are introduced and professional experience is shared.

In the year of 2016, the RusHydro Group held the VII All-Russian competitions for operational personnel of the hydroelectric power plant, in which teams were accepted, including branches of PJSC RusHydro, subsid-

aries of the Group and other energy companies. The next All-Russian competitions for HPP operational personnel will be held in 2018.

«Competitions of professional skills are one of the elements of the personnel training system developed at RusHydro. This year, the organizers made every effort to introduce reasonable difficulties at all stages, making them more interesting. The competitions were held at a high level, I believe that our company is among the best in terms of holding such events.»

N.G. Shulginov,
 Chairman of the Management Board -
 General Director of PJSC RusHydro

It is planned that the creation of the training ground will be completed in 2017.

Specialized training programs were developed in the reporting year in the framework of the previously adopted professional standards. In total, it is planned to develop 99 programs and training modules in accordance with professional standards. In 2016, 12 programs and training modules were developed.

WORK WITH THE PERSONNEL RESERVE

The provision of subsidiaries and branches of Group with qualified personnel, especially engineering specialties, is one of the most important tasks of the Company, which the Corporate University of Hydropower successfully solves. The Company has formed a personnel reserve. It includes managers and specialists of RusHydro Group, who have the ability to manage activities that meet the requirements of their position, passed selection and systematic targeted qualification training.

In the reserve, the following groups of candidates are being formed, preparing to be included in the management activities step-by-step:

- the personnel reserve for the leading position of the Branch;
- the personnel reserve for the leading position in the RusHydro subsidiary;
- the personnel reserve of young specialists of RusHydro Group.

The training program for the young specialists of the RusHydro Group includes four training modules, which are conducted with the involvement of advanced energy specialists, in the format of project sessions and internships. Based on the results of reserve-participant preparation, an individual and career development plan is drawn up for each person, also decisions are made on appointing to a vacant superior position, including in project teams.



In 2016, more than 70 employees of the Company completed training under the program of training the operational personnel reserve for the positions of structural subdivisions heads of the branches and began to protect the graduate thesis. The training program included analysis of the best corporate, industry, international practices, creation of proposals for the development of production activities of PJSC RusHydro.

Since 2009, PJSC RusHydro has been conducting a corporate competition «Internal Power Source», aimed at the formation of a highly qualified managerial personnel reserve. In 2016, the third competition was held. Its results were summed up at the International Forum of Young Power Engineers and Industrialists «Forsage-2016», which was the final stage of the competitive selection. As a result of the competition, 28 employees of RusHydro branches and subsidiaries up to 30 years old (of which six employees were from RAO ES of the East) became winners and entered the Group's long-term future reserve.

Reservists of RusHydro Group participate in the modular training and development program, forums, competitions, project activities of RusHydro, as well as in the work of professional communities established during the forum.

Since the beginning of the project, 55% of the past years' «Internal Power Source» graduates have moved up the career ladder, and 9 of them have taken leading positions

5.1.4. MOTIVATION SYSTEM AND SOCIAL GUARANTEES (102-16)

MOTIVATION SYSTEM

The motivation system plays a great role in the Company. It includes material and non-material incentives for personnel and is aimed at increasing the productivity of the Company. Also, bonuses are a significant part of wages.

In order to implement the socially responsible position of PJSC RusHydro, the Company's Social Policy was developed and approved in 2013. The document establishes the main principles, goals and objectives for the social development of PJSC RusHydro and its subsidiaries in the regions of presence.

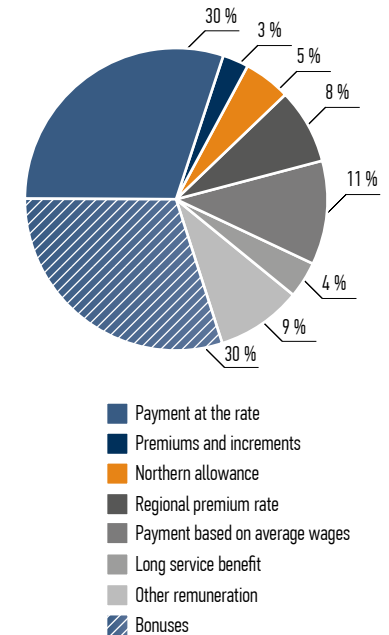
The goals of the Social Policy are:

- to develop RF government projects and implement the Company's social responsibility;
- to develop practices of mutual accountability and social partnership;
- to increase the attractiveness of PJSC RusHydro as an employer in order to apply and retain the best specialists.

The objectives of the Social Policy are:

- to create an institutional environment for attracting and retaining young specialists;
- to build high employee commitment to the goals and principles of PJSC RusHydro;
- to improve labor relations, taking into account the interests of the employer, employees, shareholders, and the state. (103-2)

Personnel wage structure, %





Ratio of standard wages of entry-level employees to the level of minimum wage in the significant regions of activity (202-1)

	Ratio of standard wages of entry-level employees to the level of minimum wage in the significant regions of activity
PJSC RusHydro executive administration (Central Federal District)	5.6
PJSC RAO ES of the East (Central Federal District)	9.2
PJSC RAO ES of the East (Far Eastern Federal District)	10.9
Electricity generation companies (RusHydro Group, except RAO ES of the East)	
Central Federal District	3.5
Volga Federal District	5.92
North Caucasian Federal District	4.64
Far Eastern Federal District	4.29
Southern Federal District	2.85
Siberian Federal District	5
Republic of Armenia	1
Electricity and heating generation companies (RAO ES of the East)	
Far Eastern Federal District	1.7
Central Federal District	1.0
Ural Federal District	1.95
Electricity generation facilities construction companies	
Central Federal District	4.6
Far Eastern Federal District	5.58
North Caucasian Federal District	3.43

	Ratio of standard wages of entry-level employees to the level of minimum wage in the significant regions of activity
Repair and construction companies	
Central Federal District	2.13
Volga Federal District	2.1
North Caucasian Federal District	2.13
Far Eastern Federal District	1.74
Southern Federal District	2
Siberian Federal District	3.3
Institute (research and design) companies	
Central Federal District	1.38
Siberian Federal District	1.1
Northwestern Federal District	1.4
Supply (retail) companies	
Central Federal District	2.7
Volga Federal District	1.4
Siberian Federal District	1.4
Other companies that are essential for CSR	
Far Eastern Federal District	2.8



In its social policy, PJSC RusHydro aims to follow international standards and best practices in terms of human rights, labor relations, environment, anticorruption and stakeholder engagement. The Company follows the provisions of the Guidance on Social Responsibility (International Standard ISO 26000) and the general principles of the UN Global Compact (UNGC Corporate Sustainability) in terms of human rights, labor relations, environment protection, and anti-corruption. **(103-2, 102-12)**

AREAS OF SOCIAL POLICY

Work with youth and educational programs

Families and maternity support

Health care, promotion of a healthy lifestyle

Pension support

Housing program

Socio-professional adaptation of orphans

RusHydro Group provides benefits to employees who work full-time in all significant areas of activity, in particular:

- voluntary medical insurance;
- insurance against accidents and illnesses;
- compensation for disability/invalidity;
- maternity/paternity leave.

The guarantees and privileges, included in the collective agreement, are applicable to all employees who have concluded an employment contract with the Company, regardless of the conditions of employment (full-time employment, temporary or part-time employment). **(401-2)**

In accordance with Article 74 of the Labor Code of the Russian Federation (on changes organizational or technological working conditions) and Article 75 of the Labor Code of the Russian Federation (on changes of the organization's property owner, changes in the subordination of the organization, reorganization), the employee is notified in a simple written form not later than two months after the material change of employment contract takes place. **(402-1)**

VOLUNTARY MEDICAL INSURANCE AND INSURANCE AGAINST ACCIDENTS AND ILLNESSES

Voluntary medical insurance is part of the social package of PJSC RusHydro employees. Under the contract of voluntary medical insurance and insurance against accidents and illnesses, the Company's employees are provided with out-patient services, emergency and planned in-patient treatment, emergency medical care, and travel insurance. Also, workers are vaccinated against a number of diseases and can undergo medical and preventive examinations. This program covers 100% of the Company's employees, except for part-time employees and those on probation. The company facilitates the purchase of voluntary health insurance policies for members of employees' families at corporate prices.

NON-GOVERNMENTAL RETIREMENT PLANS

The non-state retirement plan (hereinafter – NSRP) program has been implementing in PJSC RusHydro since 2007. The stable Company's partner is JSC Non-State Pension Fund of the Electro Energy Industry.

In 2016, NSRP PJSC RusHydro included several pension plans designed to finance the pension savings of different target groups of employees.

The most numerous in terms of the number of participants

In 2016, RusHydro signed a memorandum of cooperation with the non-state pension fund VTB Pension Fund in the framework of the St. Petersburg International Economic Forum. In December 2016, RusHydro and NPF VTB signed an agreement on non-state pension funding for the corporate pension program.

is the Parity Plan, which is financed on the basis of parity participation by the employee and the Company. Also, the programs of NSRPs fully funded by the Company are created for employees with significant experience in the industry and awarded with state and industry awards (Supporting Program) and for the well-deserved former employees of the industry (Veteranskaia program).

More than 50% of employees took part in non-state pension plans of PJSC RusHydro in 2016. In the RAO ES of the East, the number of participants in the parity plan was about 15% of total number of the Holding employees at the end of the reporting year. **(201-3)**

IMPROVEMENT OF EMPLOYEES' LIVING CONDITIONS

PJSC RusHydro continues to implement the program to improve living conditions of the Company's employees. Young specialists under the age of 30 who do not have their own houses, professionals who were invited to work

at the branch and in this connection moved from another area, and highly qualified specialists have the priority right to participate in the program.

The main form of corporate support to improve the living conditions is compensation of expenses related to the payment of interest on the mortgage to the bank, and housing rental costs. In exceptional cases, operating staff of the branches, which are of particular value to the Company, can receive target interest-free loans for up to 10 years to improve their housing conditions.

In 2016, 66 RusHydro branches' employees received target interest-free loans.

RAO ES of the East also pays special attention to retaining qualified specialists at enterprises. In this regard, in 2016, the Holding concluded an agreement with the Government of the Khabarovsk Region and Agency for Human Capital Development in the Far East on the development of housing construction and housing hiring for power engineers.

The Government of Khabarovsk Region has committed itself to the development of housing construction and the selection of land for the affordable housing construction. PJSC RAO ES of the East plans to develop corporate housing programs to attract employees to new facilities and ones that are under construction. The Holding together with the Agency intend also to develop a set of proposals to the



executive authorities with the aim to stimulate construction and reduce housing cost.

COLLECTIVE AGREEMENT

The collective agreement regulates social and labor relations at the enterprise and takes into account the mutual interests of employees and the employer.

In 2016, collective agreements concluded in 2014 continue to operate in all branches of the Company. Among the Group's employees, 65,918 people (95.8%) were covered by collective agreements in 2016. **(102-41)**

PJSC RusHydro and a number of its subsidiaries are members of the All-Russian Industry Association of Electric Energy Employers, which adopted the Industry Tariff Agreement (ITA), which forms a single industry standard for regulating social and labor relations in the industry and sets a minimum level of guarantees for employees. The existence of such a standard facilitates the conduct of a dialogue between the parties of social partnership at the level of the companies of the industry and the holding company, helps to compare and evaluate the level of guarantees provided to employees.

RusHydro regularly carries out a dialogue with representatives of trade union organizations during the conclusion and modification of collective agreements of branches and subsidiaries. Disagreements may arise when discussing the working conditions of employees, but the parties in the overwhelming majority of cases find opportunities for constructive dialogue and removal of the arising disagreements. This helps to provide the necessary level of social stability, to avoid social tension and the emergence of collective disputes. **(103-1, 103-2)**

In October 2016, the Company had disagreements with the trade union on labor remuneration issues for employees

of the Luchegorsky coal mine; several dozen workers announced a strike. The protest action was discontinued after the management of JSC LUR assumed the obligation not to conduct any staff reductions, as well as to accept the regulation on employees bonuses and accept the collective agreement on social benefits and guarantees. **(103-3)**

To support young families, the Company provides them with one-off payments in connection with the registration of marriage, the birth of a child; childcare allowance for up to three years; compensation of expenses for the maintenance of children in pre-school educational institutions.

The Company creates conditions for the formation of professional dynasties and tries to increase the prestige of engineering professions. To attract young qualified specialists to the industry, the Company pays stipulated payments to workers' children who are trained for power professions with «good» and «excellent» grades, as well as encourages employees for mentoring.

HUMAN RIGHTS

The basic approach taken by RusHydro Group in the field of human rights is to fulfil all legal requirements of the Russian Federation. The Group does not conduct its activities and does not enter into investment agreements in areas with a high risk of human rights violations. RusHydro Group guarantees its employees respect for their rights to work, to rest, to financial support in old age and in case of disability. These rights are exercised in accordance with the requirements of the Labor Code of the Russian Federation. **(412-3)**

Employees of RusHydro Holding's member companies are able to fully exercise their right to freedom of association. There are trade unions, which have been organized and operate freely in most companies of RusHydro Holding. **(407-1)**

Benefits are also provided for employees wishing to adopt a child, become foster parents or guardians - this is compensation for the costs of medical services, visits to sports clubs, development groups, etc. Employees-adoptive parents also receives monthly incentive payments.

The Company compensate the payment of season tickets to sports clubs and sections in the amount of 50%. The compensation exists for employees and their children in the framework of maintaining health and promoting healthy lifestyles.

In 2016, the Board of Directors of PJSC RusHydro approved a new version of the standard Collective Agreement of RusHydro branches for 2017-2019. The new version of the agreement has been finalized taking into account changes in labor legislation and labor protection legislation of the Russian Federation.

Granting maternity and paternity leave (RusHydro Group) **(401-3)**

	2014		2015		2016	
	M	F	M	F	M	F
Total number of employees that were entitled to parental leave in the reporting period, persons	3,417	2,002	3,798	2,194	3,850	2,383
Total number of employees that took parental in the reporting period, persons	48	1,277	53	1,399	46	1,489
Total number of employees that returned to work in the reporting period after parental leave ended in the reporting period, persons	25	571	20	529	18	568
Total number of employees that had to return to work after parental leave ended in the reporting period, persons	54	1,206	44	820	62	940
Return to work rate in the reporting period, %	46.3	47.3	45.5	64.5	29.0	60.4



5.2. OCCUPATIONAL SAFETY AND HEALTH PROTECTION



The Company undertakes to ensure the priority of preserving the life and health of employees during the implementation of all kinds of activities.

An organized system of labour and health protection allows employees of the Company to feel protected, this increases their interest in work and the productive efficiency of enterprises. **(103-1)**

5.2.1. OCCUPATIONAL SAFETY MANAGEMENT SYSTEM

The fundamental document laying down the principles of occupational safety at the workplaces in PJSC RusHydro is the Occupational Safety Policy. In accordance with the document, the Company's activities are aimed at creating of safe work places, as well as development of safe behaviour in industries and the skills to prevent dangerous situations. The company strives to reduce operational risks and the constantly improve the working conditions. **(103-2)**

The main objectives of RusHydro Group in the field of occupational safety are as follows:

- to preserve life and health of employees in the course of their employment;
- to prevent occupational injuries and diseases;
- to teach employees the fundamentals of safe behaviour at the workplace and develop their hazard prevention skills; to constantly improve working conditions.

The Company's Occupational Safety Policy is approved by the order of PJSC RusHydro No. 372 of 20.04.2015. The document defines the priorities and obligations of PJSC RusHydro:

- compliance with legislative and other normative legal acts of the Russian Federation in the field of occupational safety;

- mandatory insurance of employees against industrial accidents and occupational diseases;
- teaching employees the occupational safety rules and checking their knowledge of occupational safety requirements;
- timely assessing of workplaces in terms of working conditions;
- controlling the state of working conditions in the workplace;
- providing employees with necessary personal protection equipment, serviceable tools and devices;
- controlling the state of working conditions in the workplace;
- implementing an incentive system that encourages employees to unconditionally observe occupational safety requirements;
- identifying, assessing and mitigating risks in the field of occupational safety;
- implementing and using advanced technologies that ensure safe working conditions in the workplace;
- providing financial and logistical resources for the implementation of Group's Occupational safety policy;



- ensuring effective functioning and continuous improvement of occupational safety management system.

The responsibility of the Company's management in the field of occupational safety and health is defined by the order of PJSC RusHydro No 1090 of 30.12.2016. **(103-2)**

Distribution of responsibility for addressing issues related to work organization, occupational health and industrial safety

Member of the Board, First Deputy General Director
— Chief Engineer

- Management of activities to ensure occupational safety at RusHydro hydropower facilities
- Organization and control of occupational safety measures implementation in the Company, including preventive activities to minimize production risks and preserve the health of employees

Industrial Safety and Occupational Safety Department

- Development, execution and control of measures to ensure occupational safety, health and industrial safety on the Company's level

Services for occupational safety and production control of the branches and subsidiaries

- Development, execution and control of measures to ensure occupational safety and health, and industrial safety directly in the Group's branches and subsidiaries

OCCUPATIONAL SAFETY MANAGEMENT SYSTEM OF RAO ES OF THE EAST

The operations of RAO ES of the East are connected with potentially hazardous industrial facilities; therefore, the Holding seeks to create a safe working environment for its employees and minimize the risk of accidents. In 2014, the Holding approved the Occupational Safety Policy by the minutes of the Management of PJSC RAO ES of the East meeting.

The main objectives of RAO ES of the East in the field of occupational safety are as follows:

- achievement of unconditional fulfilment of the rules for the safe behaviour during all works and occupational safety at the Holding facilities;
- raising the level professional development and training of employees;
- technical re-equipment and replacement of old equipment with modern, cost-effective and safe one;
- involvement of the Holding personnel in activities aimed at reducing occupational risks, improving the management system of occupational health and safety, labour

protection and reducing industrial injuries.

[Read more about the Occupational Safety Policy of RAO ES of the East at the website](#)

From 2014, there functions an integrated management system (IMS) within the implementation of the Policy in the field of occupational health and safety in PJSC RAO ES of the East. In particular, it includes a professional health and safety management system in accordance with the requirements of the international standard OHSAS 18001: 2007 «Occupational health and safety management systems». The introduction of the standard is aimed at reducing the level of injuries during the operation activities and increasing the overall level of the production culture.

In order to prevent occupational injuries, the Holding implemented the Working Conditions Improvement and Enhancement Program. Weeks of increased attention to the issues safety during the work in electrical installations are held on a quarterly basis. All subsidiaries have issued administrative and regulatory documents establishing personal responsibility of structural units' heads at all levels to observe safety requirements by subordinate employees. **(103-2)**

COVERAGE OF OCCUPATIONAL SAFETY AND HEALTH TOPICS IN FORMAL AGREEMENTS WITH TRADE UNIONS

In all subsidiaries and branches of RusHydro Group, where the interests of employees are represented by trade union organizations, employers and trade unions have concluded collective agreements, which contain a mandatory section on occupational safety and health, and assurance of industrial safety of employees.

The collective agreement guarantees the provision of a one-time benefit to employees:

- In case of the death of an employee in industry, payment is for each of his dependents in the amount of the annual earnings of the deceased
- In case of the death of an employee from a common disease or a home accident, the family of the deceased (submitted a death certificate) gets a payment in the

amount of 15,000 rubles

c) In case of employee disability categorization as a result of injury through the fault of the employer or occupational disease, the employee gets the benefits in size:

- persons with the disability category I (the third extent of limitation of work capability) – 75 percent of annual earnings
- persons with the disability category II (the second extent of limitation of work capability) – 50 percent of annual earnings
- persons with the disability category III (the first extent of limitation of work capability) – 30 percent of annual earnings. **(403-4)**



WORKING CONDITIONS ASSESSMENT (103-3)

The organization of a special assessment of working conditions is the responsibility of any employer. Assessment of working conditions and industrial control at the enterprise are the basis for realizing the right of every employee to safe work.

In 2016, RusHydro Group's workplaces have undergone a special assessment of working conditions, taking into account the transitional provisions of Federal Law No. 426-FZ «On Special Assessment of Working Conditions» of 28.12.2013.

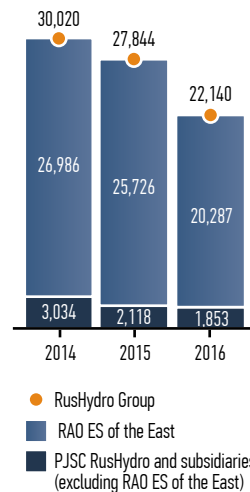
Based on the results of a special assessment of working conditions / workplace labour conditions compliance certification, the number of employees at workplaces with the working conditions Class 3 amounted to 1,853 in the branches and subsidiaries¹ of PJSC RusHydro. (17.6 % lower than a year earlier).

Based on the results of a special assessment of working conditions in RAO ES Holding², the number of employees working at workplaces that do not comply with occupational safety and health requirements, decreased by 22.3% and amounted to 20,287 people in the reporting period. (403-3)

There are no Class 4 hazardous workplaces (employees engaged in professional activity related to a high risk of injury or occupational diseases) at RusHydro Group.

Based on the results of the labour assessment conducted at enterprises, action plans were developed to improve working conditions in the workplace and reduce occupational risks. The plans are developed taking into account the requirements of the Order of the Ministry of Health and Social Development of Russia No. 181n «On approval of the standard list of measures implemented annually by the employer to improve labour conditions and safety and reduce occupational risks» of 01.03.2012. (103-3)

The number of employees working at workplaces that do not comply with occupational safety and health requirements, people



5.2.2. OCCUPATIONAL INJURIES AND OCCUPATIONAL DISEASES (403-2)

OCCUPATIONAL INJURIES (403-2)

In 2016, RusHydro Group experienced 22 accidents, three of them were fatal. In the reported year, there were two accidents in the branches and subsidiaries of PJSC RusHydro, excluding RAO ES of the East. In total, 460³ work days were lost due to work-related injuries in PJSC RusHydro and its branches and subsidiaries (excluding RAO ES of the East). The frequency rate of general injuries was 0.311.

RAO ES of the East experienced 20 accidents, three of them were fatal. In total, 1,50³ work days were lost due to work-related injuries. The frequency rate of general injuries was 0.458. In 2016, the total number of accidents in industries of RAO ES of the East increased by one relative to the year of 2015.

Workplace accidents

Year	Disclosure	PJSC RusHydro and subsidiaries (except for RAO ES of East)	RAO ES of East
2014	Number of injured, people.	8	22
	<i>Including fatal:</i>	0	3
	The frequency rate of general injuries	0.376	0.431
2015	Number of injured, people.	5	19
	<i>Including fatal:</i>	0	1
	The frequency rate of general injuries	0.214	0.390
2016	Number of injured, people.	2	20
	<i>Including fatal:</i>	0	3
	The frequency rate of general injuries	0.311	0.458

¹ Hereinafter, the disclosures are related to occupational are disclosed in the following branches of PJSC RusHydro: PJSC Boguchanskaya HPP, JSC Geoterm, PJSC KamGEK, PJSC Kolymaenergo, JSC Pauzhetskaya GeoPP.

² Hereinafter, the disclosures are related to occupational are disclosed in the following subsidiaries of RAO ES of the East: JSC FECC, JSC FEDC, PJSC Magadanenergo, PJSC Kamchatskenergo, PJSC Sakhalinenergo, JSC Sakhaenergo, CHP-plants, JSC Chukotenergo, JSC KSEN, PJSC Yakutskenergo, PJSC Mobile energy (Peredvizhnayaenergetika).

³ Lost work days mean days of disability of the victims of accidents when they were unable to work, including the days of the accidents for the previous year.



OCCUPATIONAL DISEASES (403-2)

In 2016, there was revealed one case of occupational disease in PJSC RysHydro (in 2015 there were no cases of occupational diseases). The employee of the branch of PJSC «RusHydro» – «Sayano-Shushenskaya HPP» had an occupational disease connected with the liquidation of the accident that occurred at the power plant on August 17 of the year 2009.

There was revealed four cases of occupational diseases in RAO ES of the East.

Preventive measures are conducted to prevent cases of occupational diseases in RusHydro Group, they include providing personnel with effective personal protective equipment of hearing and breathing; compensation of expenses for additional medical examination, sanatorium treatment and sports activities; purchase of first-aid kits and medicines for the renovation of the drug set; conduction of training on the prevention of infectious diseases; protective vaccination of personnel; ensuring the drinking disciplines of workers; personnel vitaminization; provision of workers with detoxifying agents; provision of workers with harmful labour conditions with milk or equivalent products.

5.2.3. OCCUPATIONAL SAFETY ACTIVITIES

In 2016, within the framework of occupational safety in RusHydro Group, the following activities were carried out. (103-2)

MEASURES TO REDUCE INJURIES AND PREVENT ACCIDENTS

- Strengthening of technical and technological supervision, industrial control in the field of labour protection for working brigades, including contracting organizations;
- Health and safety briefing;
- Inspections of workplaces;
- Training and testing of knowledge on safety protection of workers;
- Holding of the monthly Occupational Safety and Fire Safety Days;
- Pre-trip and post-trip medical examinations of drivers.

MEASURES FOR THE PREVENTION OF DISEASES IN INDUSTRIES

- Medical examinations of workers engaged in work with occupational hazards;
- Control over the observance of sanitary rules and the implementation of sanitary and anti-epidemic measures;
- Organization of employees visits of sports complexes and swimming pools;
- Organization of health resort treatment of workers with compensation of expenses.

MEASURES TO IMPROVE WORKING CONDITIONS

- Repair and equipping of industrial, office and welfare premises;
- Usage of modern effective protection equipment of hearing organs;
- Installation of vibro-noise isolated cabins in the main generator halls of HPPs for the operational personnel;
- Reconstruction of water supply, heating, ventilation and lighting systems.

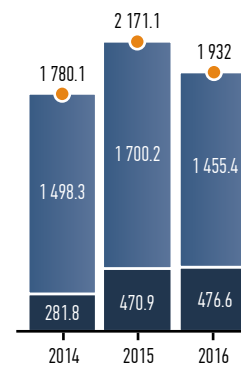
PROVISION OF EMPLOYEES WITH INDIVIDUAL PROTECTIVE EQUIPMENT

- Provision of employees with protective overgarment, safety footwear, individual protective equipment and organization of their storage, care, repair and replacement.

OCCUPATIONAL SAFETY EXPENSES

Occupational safety is the most important condition for preserving the life and health of workers in the process of their labour activity. In 2016, occupational safety expenses of RusHydro Group amounted to 1.932 billion rubles.

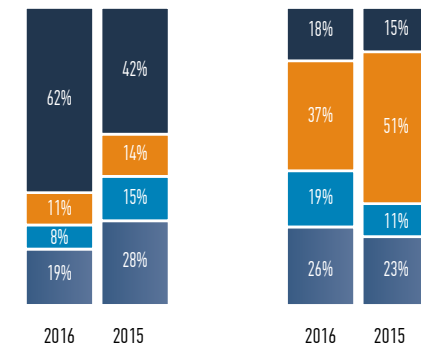
Occupational safety expenses of RusHydro Group, million rubles



- RusHydro Group
- RAO ES of the East
- PJSC RusHydro (branches and subsidiaries, excluding RAO ES of the East)

The structure of the occupational safety expenses, %

PJSC RusHydro and subsidiaries RAO ES of the East



- Provision of employees with individual protective equipment
- Measures to improve working conditions
- Measures for the prevention of diseases in industries
- Measures to reduce injuries and prevent accidents



2016 – «THE YEAR OF OCCUPATIONAL SAFETY» IN RUSHYDRO (103-2)

In RusHydro, the year of 2016 was announced as the «The Year of Occupational Safety», which was an additional incentive for improving the work to ensure a high level of occupational safety for the personnel of RusHydro's production facilities.

The main objectives of the activities are:

- Increasing the level of process safety
- Prevention of cases of the occupational injuries
- Prevention of cases of occupational diseases

- Development and improvement of the management system of the organization of occupational safety
- Maximum use of experience in the field of reduction and prevention of injuries;
- Prevention of injuries of contractors' employees operating at the facilities of RusHydro Group;
- Prevention of injuries among the population in the area of responsibility of RusHydro Group.

Within the framework of «The Year of Occupational Safety», RusHydro's branches took part in the All-Russian contest of the Ministry of Labor and Social Protection of the Russian

Federation «Success and Security». In total, more than a thousand organizations of the industrial sphere of the country took part in the competition. The best of RusHydro's companies are: the cascade of Verkhnevolzhskiy HPPs (23rd place), the Cheboksarskaya HPP (25th place), the Votkinskaya HPP (32nd place).

Since 2016, RusHydro Group has put into a regular practice the holding of the «Occupational Safety and Fire Safety Day» at its enterprises. Leaders and specialists of the occupational safety of contractors are invited to participate in the event. The «Occupational Safety and Fire Safety Day» held once a quarter.

WORK WITH PERSONNEL IN THE FIELD OF OCCUPATIONAL SAFETY

The requirements for work with personnel in the organizations of the electric energy industry are established in the Rules approved by Order No.49 of the Ministry of Fuel and Energy of the Russian Federation of 19.02.2000. The work with personnel in RusHydro Group is carried out in accordance with the above-mentioned rules. The work with personnel in PJSC RusHydro is also conducted in accordance with the Procedure for Work with Personnel in PJSC RusHydro.

According to Russian law, the responsibility for training in the field of occupational safety rests with the employer. PJSC RusHydro do not keep any records in terms of the number of contractor and subcontractor employees that have undergone relevant health and safety training.

In 2016, the following activities were carried out in terms of the work with personnel in RusHydro Group:

- First aid training of employees;
- Introductory training for employees in new positions, with internship and training in the workplace;
- Testing the employees' knowledge in terms of labour protection rules, rules of technical operation, fire safety rules, industrial safety rules;
- Emergency response exercise and fire training
- Briefings on occupational safety for own personnel and personnel of contract organizations;
- Special training of operation, maintenance and repair personnel;
- Professional development of employees;
- Inspections of personnel's workplaces in order to identify violations and deviations from the requirements of existing rules, norms, instructions, standards;
- Running the competitions on professional skill among the personnel;
- Holding the Occupational Safety Days. (103-2)

In 2017, RusHydro Group plans to develop a draft policy in the field of occupational safety, taking into account the risk-oriented approach, as well as the documents of the occupational health and safety management system. Moreover, there will be carried out the centralization of procurement of personal protective equipment and automation of occupational safety specialists' workplaces. (103-3)



5.3. CHARITY



Charity is an important part of RusHydro Group social policy. It is to provide grant assistance to indigent people and stimulates the development of social and economic areas of regions of Company's operation.



By means of charitable activities and corporate volunteering, RusHydro Group forms favourable social conditions in the regions of operation. The company provides assistance to low-income categories of citizens, disabled people, pensioners and children in difficult situation.

Projects financed by RusHydro are chosen taking into account Sustainable Development Goals and are mostly focused on the development of social infrastructure, environment protection, support of education and science, development of sports and healthcare system.



5.3.1.CHARITY AND SPONSORSHIP ACTIVITIES OF PJSC RUSHYDRO

In 2016, Board of Directors of the Group approved the Policy of charity and sponsorship activities of PJSC RusHydro. It contains information about the goals and priority areas of charity and sponsorship activities of the Group, decision-making process concerning financing different projects, etc.

Every year PJSC RusHydro develops the annual Charity and Sponsorship Program and submits it to the Board of Directors for review and approval. It contains information about activities supported, the amount of money allocated on each project and the total funds allocated on charitable and sponsorship activities.

The goals of RusHydro's charitable activities are the following:

- Systematic realization of social programmes, support, low-income citizens, culture, sport and education system.
- Forming the Company's image as a socially responsible company, centre not only economic, but also social life.



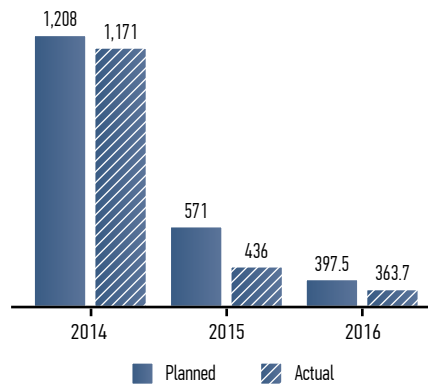
In its charity and sponsorship activity, RusHydro strives to shift from one-off donations to comprehensive social responsibility and follows the principles of transparency, targeted nature and effectiveness of funds allocated. PJSC RusHydro does not support commercial organizations, organizations and representatives of legislative, judicial and executive authorities, political parties and movements.

«Clean energy» programme (103-2)

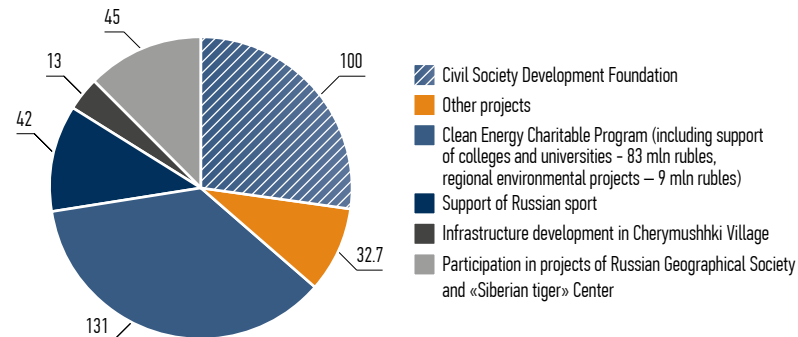
Assistance to orphanages and children's educational institutions	Charitable environmental activities	Educational programmes	Other
<p>Description PJSC RusHydro seeks to provide social adaptation of children in orphanages, demonstrate their importance for the society</p> <p>Results of 2016 and plans for 2017 In 2016 «Clean energy» covered about 30 orphanages, 6 rehabilitation centres, dozens of general and music schools and children's artistic groups. 19 branches of PJSC RusHydro helped foundations and centres for rehabilitation of disabled children.</p>	<p>Description RusHydro pays special attention to environmental education projects. The Company holds ecological-touristic shifts, supports All-Russian ecological marathon «Samarskaya Luka» and environmental educational campaigns in Zhiguli Nature Reserve, with the help of volunteers cleans banks of water bodies. Personnel of the Company hold thematic lessons for schoolchildren. Another project is organising ecological hiking trails and improving recreation areas in collaboration with nature reserves.</p> <p>Results of 2016 and plans for 2017 There are ecological hiking trails in 13 regions of RusHydro's operation. Three of them were opened in 2016. («To the Buchilo waterfall», «Zveroboy» in Novosibirskaya oblast, «In harmony with nature» in Natural park «Volga-Akhtuba floodplain»)</p>	<p>Description RusHydro holds the contest of student projects in the field of hydropower and alternative energy «Energy of development». The aim of the contest is long-term professional personnel training in hydropower industry via identifying talented young people interested in scientific and practical activities in this field.</p> <p>Results of 2016 and plans for 2017 In 2016-2017 the eights contest «Energy of development» was held. Winners joined the RusHydro team at the Youth Innovation Forum «Forsazh-2017» and will participate in World Festival of Youth and Students which will be held in Sochi in October 2017. RusHydro financially supported the following universities:</p> <ul style="list-style-type: none"> • Moscow State University of Civil Engineering; • Peter the Great St. Petersburg Polytechnical University; • Moscow Power Engineering Institute and its branch in Volzhsky; • Sayano-Shushensky branch of the Siberian Federal University; • Far Eastern Federal University 	<p>Description Support of publication of children's books by Detgiz State Children Publishing House</p> <p>Results of 2016 and plans for 2017 In 2016 RusHydro supported publication of the following children's books: «From the Mast to the Keel» about the history of the Russian fleet, and «Around the world under Russian flag» about first Russian circumnavigation. Large-scale work is also continuing on the creation of the second volume of the scientific and artistic almanac for young people «I want to know everything», which is scheduled for presentation at the end of 2017. The first book «I want to know everything. Old and new science news of 1957-2014» was released in 2014. The main part of editions was transferred to children's and school libraries, development centres in all regions of the company's presence.</p>



Charity expenses, mln rubles



Structure of expenditure for charity in 2016, million rubles



«OBeregay»

Since 2005 PJSC RusHydro holds ecological campaign «OBeregay» aimed at cleaning riversides and storage ponds. Among participants are: Company's employees, representatives of municipalities, activists of ecological NGOs, children from orphanages, schoolchildren and students, media representatives. They are provided with aprons, bandanas, flags and other souvenirs with the logo of the campaign. Most active volunteers are awarded. Among participants of the campaign, photo contest is held.

Over 11 years more than 36,000 people took part in the campaign, 1,870 tonnes of garbage were removed.

In 2016, 30 events were held in 17 regions, 2,427 people took part in them. 3,740 garbage bags were removed.

Priority areas of charity and sponsorship activity of PJSC RusHydro are the following:

- assistance to labour veterans and honoured workers of energy sector;
- assistance to low-income categories of citizens, the disabled, and pensioners;
- assistance to children's organizations and institutions;
- assistance to medical institutions and health care organizations;
- promotion of socio-economic development of the Far East and Baikal regions;
- promotion of restoration of Russian historical and architectural monuments;
- development of institutions of education and science
- support of sports organisations. (103-2)

In 2016, the total amount of funds spent on the implementation of the Charity Program amounted to 363.7 million rubles, including 315.9 million rubles through the executive bodies.

In 2015–2016 the total amount of funds spent on charity significantly decreased, due to one-time support of Hockey Club «Dinamo» (500 million rubles) in 2014. In that way, RusHydro participated in the state program of hockey development, including support of youth sports and training of coaches.

Main charitable programmes of the Company are integrated in Federal Long-term programme «Clean Energy», aimed at forming favourable social conditions in all regions of HPPs operation, and to build up conditions for social adaptation, development and education of youth.

Among other fields of charitable activity:

1. Development of Russian sports. RusHydro supports the RF Whitewater Federation, the Russian Union of Martial Arts, and other organizations. PJSC RusHydro also renders assistance to sports clubs and teams, equips sports halls, improves sports grounds. In 2016 the Company spent on these purposes over 40 mln rubles.

The Charity program of PJSC RusHydro for 2017*

Aspect	Sum, mln rubles
Long-term projects	85.00
«Clean energy» program	128.9
Other programs and campaigns	723.3
TOTAL	937.2

2. Infrastructure development in Cheryomushki Village (Khakassiya republic, where Sayano-Shushenskaya HPP is situated). The programme is aimed at comprehensive renovation and modernisation of social facilities of the village. In 2017 the Company plans to finish the development of the Yenisei embankment and the construction of Centre of winter sports.

See detailed information about the development of Cheryomushki and support of the families of the deceased in 2009 Sayano–Shushenskaya power station accident in 3.2. Contribution to the Sustainable Development of the Regions.

3. Support of Russian Geographical Society (RGS), «Siberian Tiger» Centre. RusHydro participates in forming RGS grant fund, funding publication activity and organising ecological-geographical expeditions, and takes part in projects aimed at saving Siberian tiger population. Total sum of financing in 2016 amounted to 45 million rubles.

4. Support of other NGOs: in 2016, the Company supported the «Vera» hospice relief fund, the Public Organization of the Disabled Centre for Humanitarian Programs, the National society of children's haematologists and oncologists.

* In the following year, the program might be adjusted.



The Company has been supporting the hospice relief Fund «Vera» for several years. In 2016, RusHydro sent 800 thousand rubles for the implementation of the fund's projects related to improving the quality of care for seriously ill people, including in regions where RusHydro operates. Part of the donation is aimed at improving the skills of hospice medical staff across the country, the other part is aimed at the acquisition of care products for patients of the Centre for Palliative Care in Moscow and helping the family of an incurably diseased girl in buying medical equipment. The Company also provided assistance to Primorsky Krai, which was affected by the «Linerok» typhoon. **(103-2)**



CHARITY OF RAO ES OF THE EAST (103-2)

Being a socially responsible company, RAO ES of the East is actively involved in the economic and social life of the regions of the Far Eastern Federal District. In charitable activities the Holding follows Regulations on charitable and sponsorship activities, adopted on 04.09.2012 by the Board of Directors of PJSC RAO ES of the East¹.

In the Far Eastern Federal District, charitable and sponsorship activities are conducted by JSC FEEC, JSC FEDC, PJSC Yakutskenergo, PJSC Kamchatskenergo, PJSC Magadanenergo, JSC Sakhaenergo, JSC Sakhalinenergo, JSC Energotranssnab, JSC Teploenergosservis, JSC YaERC, JSC Khabarovsk Repair- Assembly Company and JSC KSEN.

In 2016, money put in charitable activities, totalled 315.2 mln rubles. Main part of it was allocated for the support of sports programmes, youth sports, assistance to indigent groups of people.

5.3.2. VOLUNTEERING

PJSC RusHydro also develops volunteering movement and supports employees who take part in different social projects. Personal engagement of the employees helps to develop the Company's staff potential, because they introduce children to the job of energy specialists, conduct trainings and excursions to the power plants.

Since 2013, the Program of social and professional adaptation for orphans, aimed at support of the children in orphanages. Employees of the PJSC RusHydro branches organise tours to the power plants, festivals and other events for the wards. Company regularly organises events to raise funds for the wards of the charity organisations and support of those in need.

More than 3.8 million rubles raised employees of RusHydro during corporate charitable and volunteering campaigns since 2014.

One of the biggest charitable events in 2016 was the annual New Year fair «Day of Goodness», which took place in the PJSC RusHydro office in Moscow. RusHydro employees bought presents for friends and family, and the proceeds (over 334 thousand rubles) were delivered to 15 charitable organisations and foundations.

Employees of PJSC RusHydro also hold lessons for school children about energy safety on a voluntary basis.

Volunteering movement is also developed in the affiliates of RAO ES of the East Holding. Employees of PJSC FEEC, JSC FEGC, JSC FEDC take care of children in nine orphanages in Khabarovsk kray, Primorye, Amur oblast and Jewish Autonomous Oblast. The program is aimed at introducing children in orphanages to professions of the energy sector, helping them to socialise. Among events, organised in 2016, are Festival of professions, Days of professions and thematic workshops.



APPENDICES



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303-2. Water sources significantly affected by withdrawal of water	110	
303-3. Water recycled and reused	111	The information on PJSC RusHydro and its subsidiaries, excluding RAO ES of the East, was not provided. In the next reporting period. The Company will consider the feasibility of implementing this practice in the next reporting cycle.
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<i>GRI 103. Management Approach 2016</i>		
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103-2. The management approach and its components		Information unavailable. Currently, RusHydro does not assess the environmental impact of suppliers. The Company will consider the feasibility of implementing this practice in the next reporting cycle.
103-3. Evaluation of the management approach		
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308-2. Negative environmental impacts in the supply chain and actions taken		
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<i>GRI 103. Management Approach 2016</i>		
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APPENDIX 2. MINUTES OF PUBLIC HEARINGS ON CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY REPORT OF RUSHYDRO GROUP FOR THE YEAR 2016

Public hearings on the Corporate Social Responsibility and Sustainability Report of the PJSC RusHydro Group for the year 2016 were held on July 26, 2017 from 01:30 pm till 05:00 pm in the Hall of the Management Board of PJSC RusHydro «Yenisei» at the address: 7, Malaya Dmitrovka St., 127006 Moscow

Before the meeting participants of the Public hearings received the following information materials:

- program of the event;
- draft of Corporate Social Responsibility and Sustainability Report of the PJSC RusHydro Group for the year 2016 (draft for public discussion),

List of participants:

Delegates of PJSC RusHydro:

- A.V. Kazachenkov, Member of the Management Board, First Deputy Director General of PJSC RusHydro;
- B.B. Bogush, Member of the Management Board, First Deputy Director General — Chief Engineer;
- T.V. Nemoytina, Head of the Public Relations Department of PJSC RusHydro;
- M.M. Kochetkov, Advisor to Director General for Investor Relations of PJSC RAO Energy Systems of the East;
- V.E. Pak, Deputy Director of Personnel Management Department of PJSC RusHydro;
- D.M. Dolgov, Deputy of Public Relations Department of PJSC RusHydro;
- R.Y. Sorokin, Head of the Equity Capital and Corporate Transaction Support Unit of the Corporate Governance and Property Management Department of PJSC RusHydro;

- T.G. Agashkina, Chief Expert of the Public Relations Department of PJSC RusHydro;
- Y.G. Durov, Expert in the share capital management and corporate transaction support of the Corporate Governance and Property Management Department of PJSC RusHydro;
- A.Y. Novgorodtsev, Head of the Corporate Governance and Property Management Department of PJSC RusHydro;
- A. V. Denisova, Chief Specialist of the Public Relations Department of PJSC RusHydro.

Delegates of stakeholders:

from Federal Authorities:

- A.N. Mitreykin, Deputy Director of the State Energy Policy Department of the Ministry of Energy of the Russian Federation;
- A.S. Ivanov, Deputy Director of the Financial and Banking Activities and Investment Development Department of the Ministry of Economic Development of the Russian Federation;
- A.A. Mazurets, Employee of the Financial and Banking Activities and Investment Development Department of the Ministry of Economic Development of the Russian Federation;
- I.A. Tarasov, Independent Director, member of the Association of Independent Directors, member of the Expert Council of the Federal Agency for State Property Management;

from regional and municipal Authorities:

- E.N. Marchenko, Deputy of Permanent Representative of the Republic of Khakassia;
- Y.V. Zabolev, acting Permanent Representative of the Republic of Sakha (Yakutia) under the President of the Russian Federation;

from regulators and infrastructure organizations:

- E.A. Artyushova, Head of the Group of Issuers Control Division of Control Unit of the Moscow Stock Exchange Listing Department;

from environmental organizations:

- M.V. Babenko, the head of the Green Economy programs of WWF Russia;

from the investment community:

- S.S. Gerasymov, Senior Banker of the European Bank for Reconstruction and Development, Electricity Sector Russia-Caucasus, Central Asia;
- A.N. Nekrasov, Executive Director of the Customer Relations Department of Sberbank of Russia;

from business associations:

- I.S. Bakhtina, Chairman of the CSR Committee of the Business Association of Russia «Association of Managers», Vice President for Sustainable Development «UNILEVER»;

from professional and scientific and technical community:

- T.A. Shestopalova, Deputy Head of the Chair «Hydropower and RES» of Moscow Power Engineering Institute;
- O.G. Lushnikov, Executive Director of the Association «Hydropower of Russia»;
- V.F. Grakovych, Chairman of the Board of the National Fund for Sustainable Development of the Regions, member of the Higher Ecological Council of the State Duma Committee on Natural Resources, Nature Management and Ecology;

from the work and staff community:

- A.V. Zamoskovny, General Director of the RaEl Association;

from large consumers:

- N.P. Kasperovich, Head of the Pricing Division of the Electric Power Department of RUSAL Global Management BV;

from charities:

- A.Y. Nasonova, President of the Children's Book House Foundation;
- E.O. Kadetova, Development Director of the Charity Fund for Hospices «Vera»;

from the expert community (independent observers):

- O.K. Karavaeva, consultant, risk analysis and risk management services at PricewaterhouseCoopers in Russia;
- I.I. Akhmed, leading expert of the Russian Institute of Directors;
- A.G. Gabrielyan, Manager-Analyst of Agency of Corporate Development «Da-Strategy»;
- E.S. Mamina, Manager-Analyst of Agency of Corporate Development «Da-Strategy»;
- A.M. Semenova, Consultant-Analyst of Agency of Corporate Development «Da-Strategy»;

moderator:

- Z.K. Zagidullin, CEO, Agency of Corporate Development «Da-Strategy», Member of the RSPP Council on Non-Financial Reporting



I. OPENING OF THE PUBLIC HEARINGS

A.V. Kazachenkov, Member of the Management Board, First Deputy Director General of PJSC RusHydro greeted the participants of the hearings. He thanked the participants for their interest in the Company and willingness to participate in public hearings on the draft of the Corporate Social Responsibility and Sustainability Report of the PJSC RusHydro Group for the year 2016 (hereinafter – the Report). In his speech A.V. Kazachenkov emphasized that this is the ninth report of the Company and it has a number of features, in particular, an updated version of the Global Reporting Initiative (GRI Standards) manual was used in its preparation.

For further conduct of public hearings, the word was given to Z.K. Zagidullin, Director General of BDA «Da-Strategy», who introduced the rules of proceedings and structure of the program, explaining the main points on organization of communication. Moderator drew attention to the fact that all those present will have the opportunity to express their views on the completeness and materiality of information provided in the Report and recommendations to the perspective plans of the Company.

II. CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY REPORT OF THE PJSC RUSHYDRO GROUP FOR THE YEAR 2016: GOALS, STANDARDS AND KEY THEMES (speaker: A.V. Kazachenkov, Member of the Management Board, First Deputy Director General of PJSC RusHydro)

In the report, A.V. Kazachenkov spoke about the key events of the RusHydro Group for 2016 and presented the results of RusHydro's activities in 2016 – operational, financial and economic, results in the field of corporate social responsibility. The speaker pointed out on the Company's work, which led to an increase in S&P's long-term credit rating and the inclusion of RusHydro in the new FTSE4Good sustainable development index.

Further, the speaker explained the context and the process of preparing the Report (including the process of determining the materiality of the disclosed topics), the structure and the main content of the Report, and also described various ways to confirm (verify) reporting information and the Company's main achievements in the field of sustainable development in 2016.

At the end of the report A.V. Kazachenkov announced RusHydro's plans for sustainable development activities for 2017.

III. LABOUR AND INDUSTRIAL SAFETY PROTECTION AT RUSHYDRO GROUP: MANAGEMENT, ACHIEVEMENTS OF 2016, PLANS. (speaker: B.B. Bogush, Member of the Management Board, First Deputy Director General — Chief Engineer)

At the beginning of the speech, B.B. Bogush told the audience about the policy of PJSC RusHydro in the field of labour protection, drawing attention to the objectives of the document and the Company's obligations to employees. The speaker also mentioned that by the end of 2017 the majority of regulatory documents related to the Company's production would be updated and submitted for approval by the Board of Directors in connection with the completion of RAO ES of the East integration. Then the speaker introduced the industrial safety and labour protection management system, indicating the distribution of functions.

Further, B.B. Bogush presented the main results in the field of occupational and industrial safety management in 2016, among which he presented the data on a special assessment of working conditions, occupational injuries and labour costs. Special measures were taken to protect labour and industrial safety, including within the framework of Labour Protection Year announced in 2016 in the RusHydro Group.

The next part of the report was devoted to safety at hazardous production facilities of RusHydro. In particular, data were presented on the number of hazardous production facilities, the production control system in the RusHydro Group and accidents at work. It was noted that, in 2016, the number of accidents in hydro generation branches and subsidiaries of PJSC RusHydro (except for RAO ES of the East) decreased by 26%, and in the Holding of RAO ES of the East – by 6.6%.

At the end of the report, B.B. Bogush described the Company's tasks in the field of labour protection and industrial safety for 2017.

IV. THE CHARITY POLICY OF RUSHYDRO GROUP AND THE SOCIAL RESPONSIBILITY OF THE COMPANY IN 2016–2017. (speaker: T.V. Nemoytina, Head of the Public Relations Department of PJSC RusHydro)

T.V. Nemoytina presented an approach to managing charitable activities in the RusHydro Group. The speaker especially noted the adoption of a new regulatory document «Charity and sponsorship policy of PJSC RusHydro» in 2016.

T.V. Nemoytina pointed out the goals, principles and main directions of the charity and sponsorship activities of the RusHydro Group and provided information on the key results for 2016 – the volume of charity expenditures and the structure of the charitable program broken down by directions. It was noted that the total amount of RusHydro's expenses for charitable activities amounted to 363.7 million rubles in 2016.

Then the speaker presented a description of the main charitable projects of RusHydro Group (among them – the long-term comprehensive program «Clean Energy», support of sports organizations, corporate volunteering).

V. SUGGESTIONS AND RECOMMENDATIONS OF STAKEHOLDERS

Moderator Z.K. Zagidullin invited the representatives of stakeholders to speak with their reports, in particular, to evaluate the text of the draft Report for 2016 from the point of view of completeness and materiality of information, as well as to express their suggestions and recommendations for PJSC RusHydro on improving the quality of public reporting, as well as proposals to plans and Company's obligations in the field of sustainable development.

All the representatives of the interested parties positively assessed the presented report of PJSC RusHydro for 2016, noted its informational fullness, detailed provision of information, as well as detailed correlation of the Report content with the UN Sustainable Development Goals. Stakeholders thanked RusHydro Group for the opportunity to discuss the Report and express their opinion. They recognized that the practice of public hearings is an example of transparency for Russian companies. Public hearings on the Report are an important element in developing relations with stakeholders and developing the corporate governance of the Company, increasing transparency and accountability of the Company.

The speakers have made a number of specific recommendations to the text of the Report, as well as to the plans and commitments of PJSC RusHydro on sustainable development:

V.F. GRAKOVYCH

- The report is prepared at a high level and represents the best practice for other companies. In this connection, the Report will be nominated for the RF Government prize in 2017 within the framework of the Year of Ecology¹.
- To consider using domestic technical solutions and technologies for the improvement of embankments.



A.V. ZAMOSKOVNY

- To disclose more detail information on the interaction of RusHydro with trade union organizations.
- To supplement the Report with information on RusHydro's participation in the sectoral electricity tariff agreement, including the information about the social dialogue with the Company's employees on the agreement implementation, and the impact of this dialogue on the Group Social Policy.
- To disclose information on RusHydro's participation in national qualifications system reformation and professional standards development in the power industry.
- To disclose information on the PJSC RusHydro support to the WorldSkills Championship, taking into account the upcoming WorldSkills World Cup in Kazan in 2019.
- To participate in the development of a new sectoral tariff agreement, which will be signed in 2018, expanding the participation of RusHydro's branches and subsidiaries in the sectoral tariff agreement.
- To consider launching of activities in the field of independent employees evaluation, including in accordance with the Federal Law on Independent Evaluation.
- To consider conducting a public (stakeholder) certification of the Report (in addition to professional audit and assurance in the RSPP) in the next reporting cycle.

E.O. KADETOVA

- To disclose more detailed information about the charitable activities and projects of RusHydro, in particular, about the support of the BF «Vera», as well as RusHydro's plans for charity for 2017.
- To expand RusHydro's interaction with the Foundation for the organization of volunteer activities of RusHydro.

GERASIMOV S.S.

- To describe in more detail the Company's activities aimed at reducing greenhouse gas emissions within the framework of the overall strategy, including in the Far East, and indicate which measures are used to reduce emissions (for example, installing solar panels, switching from coal to gas, etc.).
- To link the Company's investment plans, projects and results in the field of reduction of greenhouse gas emissions.
- To provide a brief overview of RusHydro's plans to implement the overall greenhouse gas reduction strategy.

A.N. NEKRASOV

- To add information about RusHydro's key investment projects, particularly those being implemented in the Far Eastern region.
- To disclose information on investment plans and the expected impact of RusHydro's key investment projects on regions of presence (taxes, new jobs, etc.).

A.Y. NASONOVA

- To disclose more information in the Report about the Company's charitable activities.

N.P. KASPEROVICH

- To disclose more information on the environmental impact and investment activities of the Company.

A.S. IVANOV

- To describe the reasons for reducing the Company's expenses for social activities (personnel development,

labour protection, charity) in 2016.

- To identify the reasons for the reduction in the number of employees in the Company, to clarify whether there are programs for conversion (retraining, employment) for the released employees who were affected by the optimization program.
- To provide information on RusHydro's long-term plans in the field of developing alternative renewable energy and increasing the share of RES in the overall electricity production structure of the Group.

I.A. TARASOV

- To consider the issue of preparing a video for the report presentation, which provides basic information on the Sustainable Development Report.
- To disclose more detailed information about the results and events on the anti-corruption activity of RusHydro.
- To indicate the relationship between corporate KPIs and KPIs of the General Director and RusHydro top management.
- To add the opinion of the external auditor about the report.
- To disclose information on plans for the development of the corporate governance system and increase the assessment within the corporate governance rating (RID).
- To disclose information on the Company's planned activities to develop internal audit and risk management systems.
- To describe in the Report how cost reduction affects key risks and performance of the Company.
- To describe the impact of R&D development and R&D on the Company's key risks.
- To specify the goals of RusHydro's activities in the field

of labour protection and industrial safety, charitable activities.

MITREYKIN A.N.

- To describe separately the management approaches of the Company in the field of environmental protection and reduction of greenhouse gas emissions.
- To indicate the payback period of energy efficiency projects.
- To describe the effects in terms of sustainable development that the implementation of the Company's innovative projects (for example, projects on the use of ash-and-slag disposal) brings.

BABENKO M.V.

- To indicate the international conventions, standards, international environmental regulatory requirements that govern the Company in its activities. To explain how the recommendations of the EBRD on hydropower, issued in 2016, were taken into account while developing the Environmental Policy of PJSC RusHydro.
- To explain the Company's impact on the environment through the indication of the impact not only of reservoirs, but also dams. To pay attention to the problems of the water regime transformation, temperature pollution, generation of greenhouse gas emissions (including methane). To provide information on the assessment of this impact and measures to reduce it.
- To describe the results of the work of the RusHydro Working Group on Global Climate Change.

T.A. SHESTOPALOVA

- To use the resources of the Laboratory of Modelling of

Distributed Energy Systems on the Basis of Renewable Energy Sources, provided by the Company to the Hydropower and RES Department of the Moscow Power Engineering Institute in 2015, not only for educational purposes but also for scientific purposes (for modelling and management of distributed energy systems on the basis of RES and etc.).

Y.V. ZABOLEV

- To display in the Report plans for the further development of energy in the Republic of Sakha (Yakutia).
- To provide details of the Company's activities in the fight against terrorism.
- To consider raising the charity budget of RusHydro.
- To consider the possibility of the Company to support the nationwide movement of good deeds «My Yakutia in the 21st Century.»

I.S. BAKHTINA

- To specify data on the ecological footprint of the HPP, as well as on the modification of the ecological footprint based on the results of HPP productivity improvement.
- To provide in the Report comments on topics raised in critical publications in the media (in particular, regarding the Cheboksary HPP and the Volga HPP).
- To present additional quantitative and qualitative indicators of the Company's performance in a number of areas that are included in the detailed table on environmental costs: sewage treatment, land rehabilitation, surface and groundwater, noise and vibration effects.
- To provide information on the ratio of RusHydro's negative impact on biodiversity and measures for replenishing biodiversity, and on the ratio of resources invested and

the effectiveness of biodiversity conservation projects.

- To structure the directions of charity, focusing on social projects directly related to the Company's activities.
- To formulate long-term goals clearly for each area of charitable activity, to calculate the effectiveness of charitable activities of RusHydro.

E.A. ARTJUSHOVA

- To add to the 2017 Report the main points of the Board of Directors improvement plan, developed as a result of the self-assessment procedure, to describe measures taken in accordance with the plan.
- To indicate whether minority shareholders or minority shareholders representatives are involved in sustainable development and CSR activities, and whether the Company receives feedback from them in this part.
- To take into account the recommendations on corporate governance (including information disclosure) from the study of the Professional Investors Association «Evaluation of corporate governance in public joint-stock companies with the participation of the Russian Federation, whose shares circulate on the organized securities market», issued in 2017. The recommendations are aimed at improving the disclosure of information on material facts, on management remuneration, dividend policy, etc.

O.G. LUSHNIKOV

- To provide more complete information:
 - on the impact of supporting educational institutions charitable projects on the development of the Group's human resources (for example, the share of partner universities' and departments' graduates employed in RusHydro);

- on the active participation of the Company in the projects of the Association «Hydropower of Russia», including projects in the field of ecology and environmental protection.
- The report of RusHydro Group can be considered as the best practice, in this regard, the Association «Hydropower of Russia», guided by its statutory goals, is ready to promote the Company's experience in the field of corporate social responsibility and sustainable development among other hydropower companies.

E.N. MARCHENKO

- To promote the Report more actively with the aim to familiarize a wide range of stakeholders with the Report.

VI. SUMMARIZING

At the end, A.V. Kazachenkov thanked the participants of the Public Hearings for their participation, for the proposals to the draft Report and to the plans and obligations of the Company, and also confirmed the intention of the Company to work harder to take into account the recommendations and proposals made and to continue active interaction with a wide range of stakeholders.

*Member of the Board,
First Deputy Director General
of PJSC «RusHydro»*

A. V. Kazachenkov

*Mediator,
CEO of Agency of Corporate Development
«Da-Strategy»*

Z.K. Zagidullin



APPENDIX 3. ACCOUNTING FOR THE RECOMMENDATIONS OF STAKEHOLDERS EXPRESSED AT THE PUBLIC HEARINGS

During the preparation of the 2016 Report, the Group endeavoured to take into account the stakeholders recommendations expressed at the Public hearings on the 2015 Report.

The information added at the stakeholders' recommendation is marked with the «Dialogue» icon:



№	Recommendations/suggestions made by stakeholders	Consideration of stakeholders' recommendations, and obligations taken by the Company
1	To provide more information on the correlation between the Strategy of the Company and the Draft Energy Strategy of Russia for the period until 2035, and to clarify the Company's role in the process of drafting the Energy Strategy of Russia.	Fulfilled (<i>see 1.2. RusHydro Strategy</i>)
2	To increase the number of analytic comments on the sustainable development indicators and their dynamics (to pay special attention to the indicators provided in the section on personnel).	Fulfilled (<i>see 5.1. Human Resource Development</i>)
3	To provide more information about social risk management (it would be useful to use the ISO 31000 standard to find out about the structure of description).	Fulfilled (<i>see 1.5. Key risks and opportunities</i>)
4	To take into account current global and national agenda in determining the material aspects of the Report (to make an initial list of topics).	Fulfilled (<i>see Report information</i>)
5	To structure information and figures in the Report by region and branch/power plant of the Company	Fulfilled partly. Data on the consumption of various types of fuel is broken down by plants for PJSC RAO ES of the East (<i>see 4.3.2 Energy consumption and energy efficiency of RAO ES of the East</i>). To fully implement this recommendation, it is necessary to configure the system for collecting data. The Company is planning to fulfil this recommendation in the next Reports.
6	To reflect the specific features of the environmental impact of the Company as a hydrogenerating organization in the Report more fully.	Fulfilled partly. (<i>see 4.1.1. Environmental Impact Management, 3.3.3. Realization of the most significant innovative projects from the point of view of sustainable development</i>). It should be noted that in accordance with Article 8 part 1 of the Water Code of the Russian Federation, reservoirs are federal property, and the environmental impact of reservoirs is the responsibility of federal executive authorities.
7	To disclose energy efficiency indicators, which are more significant and representative of the Company, broken down by the plant (e.g. «the ratio of power generation to flow pass in a given year, taking into account the height of the dam»).	Fulfilled partly: data is presented for RAO ES of the East (<i>see 4.3.2 Energy consumption and energy efficiency of RAO ES of the East</i>). The Company will consider the issue of the further information detalization in the next reporting period.
8	To resume interaction with environmental NGOs, suspended in 2015. In particular, to continue the project for the development of renewable energy and small hydropower plants, biodiversity conservation (written proposals regarding the development of cooperation and the creation of an information system to support the formation of an effective market of autonomous RES in Russia and the CIS were submitted to A.V. Kazachenkov at the hearings).	In process. (<i>see 4.5. Measures for Biodiversity Conservation</i>)



№	Recommendations/suggestions made by stakeholders	Consideration of stakeholders' recommendations, and obligations taken by the Company
9	To add comments to the section of the Report dedicated to key events: specify why these events are significant.	Fulfilled (<i>see Key events</i>)
10	Include a brief summary of the entire document at the beginning of the Report, as well as a brief summary of each chapter at the beginning of each chapter.	Fulfilled partly. (The beginning of each chapter contains a summary and key facts). A summary of the Report will be in the form of a presentation
11	The Ministry would like to read the first versions of the 2016 Report if they are ready at the end of this year.	-
12	To add information on the sale of energy by RusHydro Group and its impact on sustainable development in the following reporting cycles, and to present a forecast calculation of possible consequences of the sale of the Group's power selling companies (in case such a decision is made).	Fulfilled partly. Information is provided on the impact of energy sales activities of RusHydro on sustainable development (<i>see 4.3.3 Other activities in the field of energy saving, 3.1.4 Financial discipline and fair business practices</i>).
13	To structure reporting information to a greater degree, to improve the consistency and coherence of the presentation of information within the sections of the Report.	Fulfilled.
14	To describe the difference between the old corporate governance system and the improved one in more detail in the Report.	The significant changes in RusHydro corporate governance system did not take place in 2016.
15	To present the main key performance indicators of RusHydro subsidiaries in the Report.	Detailed information on KPI is presented in 2016 Annual Report PJSC RusHydro, pp. 26-27.
16	To present an assessment of the work of the Company's Board of Directors in the Report, or to specify a link to the Annual Report on it.	Detailed information is presented in 2016 Annual Report PJSC RusHydro, pp. 101-104.
17	The activities, aimed at biodiversity conservation, implemented by the UNDP/GEF Project — the RF Ministry of Natural Resources together with PJSC RusHydro and described in the Report, are of great importance and are recognized as good practice. It is proposed to single out in this Report (and all future reports) a separate section titled «Biodiversity Conservation» to generalize information about the activities carried out by the Holding, in particular, to describe the activities carried out in conjunction with the UNDP/GEF Project — the RF Ministry of Natural Resources. The inclusion of such a section in the Report corresponds to the world reporting practices of foreign hydropower companies.	Fulfilled.
18	Due to the fact that activities aimed at biodiversity conservation in 2015–2016 were carried out mainly at the expense of the UNDP/GEF Project — the RF Ministry of Natural Resources, it is suggested that while developing the Program of activities that ensure the implementation of the provisions of PJSC RusHydro Environmental Policy for 2016–2017, special attention be given to measures aimed at the conservation of biodiversity, based on the experience gained and best approaches, which have been developed in cooperation with the UNDP/GEF Project — the RF Ministry of Natural Resources.	Accepted for the consideration of the possibility of including in the Company's business operations plan.



№	Recommendations/suggestions made by stakeholders	Consideration of stakeholders' recommendations, and obligations taken by the Company
19	<p>Since the Company implements a large number of environmentally-focused activities at its facilities (e.g. in its branches in the North Caucasus, and other branches, mentioned in the Report made by B.B. Bogush), it is suggested that a sub-section «Biodiversity Conservation» be created on the Company's website, which would accumulate information about the Company's environmental activities, environmental monitoring results, the experience of supporting especially protected natural areas and species, about the Collection of Innovative Solutions to Conserve Biodiversity in the Hydropower Sector, etc. This complies with the common world practice used by environmentally responsible companies, and facilitates the search for environmental information.</p>	<p>Fulfilled. (see 4.5. Measures for Biodiversity conservation)</p>
20	<p>In the last four Reports on CSR and sustainable development of RusHydro Group, there is information that the Company supports the Methods of Hydropower Projects Evaluation for Meeting Agreed Sustainability Standards. It appears that the Company has gained sufficient experience to begin to use the Methods for internal needs and intra-corporate assessments of its facilities, which would allow the Company to plan activities to improve the production processes, as well as activities related to the social and environmental policy more accurately and with a reference to international practices.</p>	<p>In process (see 4.1.2. Environmental cooperation)</p>
21	<p>It is proposed to consider continuing work at the Methods of Hydropower Projects Evaluation for Meeting Agreed Sustainability Standards in the organization of internal assessment of the Company's facilities.</p>	<p>In process. (see 4.1.2. Environmental cooperation)</p>
22	<p>It is desirable that the names of relevant subsidiaries and affiliates referred to in the column «others» be specified at the graph of power generation.</p>	<p>Fulfilled (see Key indicators)</p>
23	<p>The Report presents different ways of understanding RES — as small-scale power generation (up to 25 MW) and major HPPs of the Company. It is necessary to define the concept of RES used, and to bring the text of the Report in accordance with it (it is recommended to consider RES as small-scale power generation).</p>	<p>Fulfilled. The Report introduces two categories of RES — major HPPs of the Company and small-scale power generation (up to 25 MW).</p>
24	<p>To describe in detail the impact of large dams on the environment, in particular, to provide information and indicators both for the head race and the tail race.</p>	<p>In the next reporting cycle, the Company will consider the expediency of disclosing this information.</p>
25	<p>To make a comment in the Report (including, with respect to environmental impacts of the Company) on the dynamics of heat production, since power generation at HPP is decreasing, and heat production is increasing.</p>	<p>Fulfilled (see 4.1.1. Environmental Impact Management)</p>
26	<p>To include in the Report data on traditional environmental indicators (such as SO_x, NO_x emissions).</p>	<p>Fulfilled (see 4.2.1. Protection of Atmospheric Air)</p>
27	<p>To provide specific environmental indicators further in the Report (in particular, regarding pollutant emissions) per unit of power production so that readers will get a clear idea of trends in the Company's development.</p>	<p>Fulfilled (see 4.2.1. Protection of Atmospheric Air)</p>
28	<p>To present more detailed information on the certification according to ISO 14000 standard, as well as the Company's further plans pertaining to the development of an environmental management system within the Group.</p>	<p>This will be taken into account in the preparation of the report for 2017</p>



№	Recommendations/suggestions made by stakeholders	Consideration of stakeholders' recommendations, and obligations taken by the Company
29	It is advisable to provide examples of feedback on sustainable development from stakeholders in the reporting period (e.g. quotes) in the Report.	It will be fulfilled on the basis of Public hearings
30	To present more detailed information on the dynamics and targets for technical and performance indicators of RAO ES of the East (production of electricity, loss of heat and energy, the use of different types of fuel, reduction of pollutant emissions).	<i>Detailed information is presented in 2016 Annual Report PJSC RusHydro</i>
31	It is recommended to describe the Company's relationships with universities more specifically in the Report. It is necessary to specify more clearly (possibly in a special supplement) which of the Company's projects involved universities that have concluded agreements with PJSC RusHydro. Otherwise, it seems that the Company's charitable activity in respect of universities is much higher in monetary terms than the value of the scientific and technological projects these universities are involved in.	Fulfilled (<i>see 3.3.2. Scientific and technical inventions for sustainable development</i>)
32	It might be useful to note that the use of the Company's charitable funds by universities made it possible for their representatives to participate in national and international scientific events.	Fulfilled (<i>see 5.1.3 Measures to ensure the availability of qualified personnel</i>)
33	It is desirable to develop a general strategy and objectives of the Company's interaction with universities and to reflect this information in the Report.	The proposal has been submitted to relevant structural units.
34	To structure information and to include analytical comments in the sections of the Report.	Fulfilled.
35	To pay more attention to the interests of the Company's major stakeholders — shareholders and investors — in the Report.	Detailed information for shareholders and investors is presented in 2016 Annual Report PJSC RusHydro
36	To pay special attention in the Report to the issue of social risk management, in particular to the management of social risks related to the negative attitude of the community to the consequences of launching new projects for the construction of hydropower plants in specific areas for the population (e.g. those listed on the website plotinam.net site).	<i>This will be taken into account in the preparation of the report for 2017</i>
37	To provide more detailed information about the plans and results of RAO ES of the East regarding the reduction of greenhouse gas emissions.	Fulfilled (<i>see 4.2.1. Protection of Atmospheric Air</i>)
38	To send the Report prepared by the Company to the Supreme Environmental Council of the Committee for Natural Resources, Environment and Ecology at the RF State Duma.	The Report will be sent to the Supreme Environmental Council of the Committee on Natural Resources, Environment and Ecology at the State Duma

APPENDIX 4. CERTIFICATE OF PUBLIC CERTIFICATION OF THE REPORT BY THE RUIE COUNCIL ON NON-FINANCIAL REPORTING



THE CONCLUSION OF RSPP NON-FINANCIAL REPORTING COUNCIL ON THE RESULTS OF CONSIDERATION OF CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABILITY REPORT BY RUSHYDRO GROUP FOR THE YEAR 2016 WITH A VIEW TO PUBLIC CERTIFICATION

Non-financial Reporting Council of the Russian Union of Industrialists and Entrepreneurs (RUIE) (hereinafter – the Council), established in accordance with the resolution of the Administrative Office (Resolution dated 28.06.2007), considered upon an initiative of PJSC «RusHydro» Corporate Social Responsibility and Sustainability Report (hereinafter – the Report) by the RusHydro Group for the year of 2016. (hereinafter - the Company, Group, RusHydro).

The Company appealed to the RUIE with a request to organize the Council's public endorsement, which forms an opinion on the relevance and completeness of the disclosure statement in the non-financial information about the Company's achievements from the perspective of the Social Charter of the Russian business, containing the principles of responsible business practices.

During the period from 20 July to 4 August 2017 the Council members studied the Report's content presented by RusHydro and made the present Judgment, in accordance with the Regulations of public certification of corporate non-financial reports, approved by the Council.

The Council members have the necessary competence in the field of corporate responsibility, sustainable development and non-financial reporting, they work in compliance with the ethical requirements of independence and objectivity of the evaluations, express their personal expert's opinion and not the opinion of organizations they represent.

The Report was assessed based on the following criteria for completeness and relevance of the information contained therein:

Information is considered relevant as it reflects the activity of RusHydro Group as for the principles of responsible business practices implementation disclosed in the Social Charter of Russian Business (www.rspp.ru).

Completeness implies that the company specifies its operations in the Report- values and strategic guidelines, underlying systems and management structure, key achievements and results of operations, principles of interaction with stakeholders.

The Company's use of international reporting system is taken into consideration in the framework of public certification proceedings. However, confirmation of compliance with the reports of international reporting systems is beyond the scope of this Conclusion.

RusHydro shall be liable for the information and statements contained in the Report. The reliability of the evidence contained in the report is not a matter of public endorsement.

This Conclusion is made for PJSC RusHydro, the Company may use this Opinion as for its internal purposes and for the purpose of communications with stakeholders by publishing it without any changes.

CONCLUSIONS

In terms of the analysis of the Report, as well as public information on the official corporate website of the Company, and collective discussion of the results of an independent Report assessment, drawn by the RUIE members of Non-Financial Reporting Council, the Council confirms the following:

RusHydro Group's Report on Corporate Social Responsibility and Sustainability for the year of 2016 contains essential information, covers key areas of responsible business practices in accordance with the principles of the Social Charter of the Russian business, and completely enough discloses information about the Company's activities in these areas.

The RUIE Council's recommendations on the basis of public certification of the Report of the Company for 2015 are reflected in the Report for 2016. In particular, the Report includes information on the compliance of the RusHydro Strategy with Energy Strategy of the Russian Federation, on the results of activities within the technological platform «Perspective Technologies of Renewable Energy». The Company's Report covers the requirements for suppliers and contractors in the field of environmental protection, the number of environmental disclosures is expanded and the information on approaches in the field of charitable activities is more fully presented.

The Company's report for 2015 contains important information regarding the following aspects of responsible business practices:

As for economic freedom and responsibility. (103-3)

The report characterizes the main activities of the RusHydro Group, its structure, market position, reveals financial and production results in the dynamics. The report presents the Strategy approved in the reporting year, as well as the Long-term Development Program of the Group as a mechanism for its implementation. There is shown the connection of these documents with the Energy Strategy of the Russian Federation for the period until 2035, RusHydro's contribution to solving its tasks through the implementation of key projects and target programs of the Company (Investment, Production, Innovation Development Programs etc.). Considerable attention is paid to the reliability and safety of generation facilities. In this context, RusHydro presents the comprehensive modernization of equipment, as well as a quality control system at the design and construction stages of processing facilities. The Report highlights the Company's position on corporate social responsibility in the context of implementation of the sustainable development principles and the Company's impact on its key aspects. The Company indicates the UN's Sustainable Development Goals for the period to 2030, which RusHydro strives to achieve. The system of corporate governance, measures for its improvement, as well as the role of the Board of Directors in managing the sustainable development issues of the RusHydro Group are presented. The system of internal

control and risk management is covered. Report contains the information on anti-corruption issues and ethical conduct of business, including in the supply chain. There is the list of corporate documents regulating the responsible business practices of the Company.

As for business partnership. (103-3) The report highlights the issues of interaction with various stakeholder groups. There is the map of stakeholders and the mechanisms of interaction. It is reported on the development of relations with the investment community and with the institutions of independent evaluation of the Company, including on the factors of sustainable development. The report contains the information on working with shareholders, including minority shareholders, in connection with the acquisition of shares in PJSC RAO ES of the East, and the information on the dividend policy. There is the information on personnel, human resources development, motivation system and social guarantee programs. The issues of working environment and occupational safety are covered. The report reveals data on interaction with universities through programs of vocational guidance and training, the formation of a personal reserve, including the system of «corporate elevators». There is the information on the system of interaction with suppliers, on the development of business relations with small and medium-sized businesses, the requirements for occupational and environmental safety in the supply chain. It is reported that a centralized procurement management system has been established to increase transparency in this area. Special attention is paid to interaction with partners and development institutions in the field of innovation. There is discussed the interaction of the energy sales companies of the Group with consumers, including the activities of the Unifies Call Centre and development of relations with energy-intensive industrial consumers. There is presented the information on interaction with state and municipal authorities on the development of the industry and the economy of the country as a whole, and on the cooperation in the framework of agreements with the regions. Information is provided on the Company's cooperation with a number of Russian and international organizations, including on issues of sustainable development. It is indicated that Public hearings on the draft Report were part of its preparation.

As for human rights. (103-3) The report reflects the human rights observance agenda, especially in the aspect of labor rights. The Company indicates its orientation towards the principles of the UN Global Compact in the field of human rights, labour relations, environmental protection and combating corruption, as well as the Guidance on social responsibility (ISO 26000). It is noted that there are bargaining agreements regulating social and labour relations at all RusHydro's branches.

As for environmental conservation. (103-3) The report contains the information on the policy, management system and results of the RusHydro Group in the field of environmental safety and environmental protection. The report informs about the creation of a united environmental impact management system for assets of PJSC RusHydro and RAO ES of the East. The report lists activities to implement the Environmental Policy, initiatives to reduce the environmental impact of production, to conserve biodiversity, and the Company's main environmental impacts. There is a list of environmental measures and the environmental impact indicators. There is covered the system of industrial control in the field of safety of hydraulic structures of the Company, the emergency response and fire prevention measures, measures for the prevention and liquidation of natural disasters and emergency situations. It reports on the Company's activities in the development of renewable energy, the leading role of RusHydro in Russia in the production of energy from renewable sources. The implementation of the program in the field of energy saving and energy efficiency is highlighted. There is the information on interaction with Russian and international experts and organizations on environmental issues, including cooperation in combating climate change in the Report.

As for the Company's participation in local community development. The report highlights the Company's diverse contribution to the development of the regions where it operates, including the creation of jobs, tax payments, construction and financing of economic and social infrastructure facilities, and the implementation of social and cultural projects and programs. The report informs about the partnership areas in the framework of agreements on social

and economic cooperation with the regions. It is reported on the progress of construction of new generation facilities in various regions of the country, including the Far East of Russia. There is highlighted the further implementation of the development program for the territory affected by the accident at the Sayano-Shushenskaya HPP. Information is provided on the adoption of the Charity and Sponsorship Policy in the reporting year, on the priority areas of activity in this field, as well as on the management approaches and on the amount of funding. There is included the information on the volunteer activities of the Company's employees. There are examples of specific social programs.

FINAL PROVISIONS

In general, the 2016 Report of the RusHydro Group reflects the scale and strategy of the Company's operations, its contribution to the development of the country's electric power and economy, management system, including sustainable development, priorities in the field of corporate social responsibility. There is implemented an integrated approach to the disclosure of information on economic, environmental and social aspects of activities. The practice of interaction with stakeholders is presented, including one during the preparation of the Report.

The report is prepared using the standards of Russian and international practice of reporting in the field of sustainable development (GRI Standards), as well as the energy industry protocol GRI, which ensures continuity of data and comparability with other companies in the country and abroad. The disclosed material topics are identified using the procedures described in the report.

The RusHydro Group Report on Corporate Social Responsibility and Sustainable Development Report for 2016 is the ninth corporate non-financial report that reflects the sequence in the development process of public accountability and adherence to the principles of openness and transparency. There are used various forms of independent evaluation of the Report (professional audit and public certification), which demonstrates RusHydro's responsible attitude to the quality of the disclosed information.

RECOMMENDATIONS

Noting the advantages of RusHydro Group Report on Corporate Social Responsibility and Sustainable Development Report for 2016, the Council draw the Company's attention to a number of significant stakeholder issues and the importance of full disclosure of information and recommend considering them in the next reporting cycle. The Council notes that the recommendations made on the analysis of previous reports RusHydro may be used in the further practice of the Company's financial statements.

The report includes a comparison of the Company's activities with the UN Sustainable Development Goals until 2030. It is recommended to further develop this topic and more fully describe the relationship of the Group results to progress towards global goals. It is necessary to deepen the analysis of correspondence by conducting it not only on the goals, but also on the tasks that are defined for each goal, to include measurable indicators, to evaluate the progress achieved at each stage, and to inform about it in the reports.

The approach to disclose the main results of activity in dynamics over three years is positively assessed, however it is recommended to pay attention to the need to accompany this data with a clear comment. This is especially important in case of significant changes in certain disclosures (for example, environmental expenses), as well as in case of their discrepancy in interrelated disclosures (for example, in the dynamics of electricity generation and revenue). It is also recommended to compare the actual results with the planned parameters and comment the discrepancies if they arise.

The Report tells about the Company's participation in a large number of initiatives and organizations, including international ones, related to issues of sustainable development. It would be useful to report the content and results of this interaction. This is relevant because one of the global goals (No 17), involves an assessment of the company's participation and contribution to global initiatives in the field of sustainable development.

The Report notes the use of the KPI system in the company to assess the achievements. It seems reasonable, not

only put references to information in the Annual Report, but also to include a brief description of these KPIs in the sustainability reports, especially those ones related to sustainable development, as well as information on results of their fulfilment. Such information is significant and allows better understanding of the quality of management in the company and the effectiveness of the activities

The report contains a brief analysis of current challenges related to the development of the energy industry, which is an important contextual information that enhances the analytical value of the Report. It is recommended to further steady progress in this direction, to emphasize the connection of the tasks and results solving by the company, with the actual modern development agenda in the country and in the world. In particular, this refers to information on alternative energy sources, which will become clearer and fuller if there will be included a comparative analysis with trends and achievements in this area in other countries. The topic of RusHydro's interaction with small and medium-sized businesses will also become fuller, if there will be discussed its relevance for the development of the country, individual territories, and the solution of import substitution tasks.

Taking into account the unification of management systems of PJSC RusHydro and PJSC RAO ES of the East, the topical human rights issue is the consideration of the interests of indigenous peoples of the North and the Far East during the design and construction of new facilities, as well as the decommissioning of ones that have exhausted their resources. The issues of interaction with these peoples and the impact on various aspects of their life became more popular in the world agenda and deserves a special attention in the reports.

It is recommended to disclose in detail the procedure for selecting material topics in the next reports. It should be explained, what tools are used to ensure the balance and representativeness of the opinions of different stakeholder group. It is also necessary to more clearly reflect the ratio of topics selected for disclosure with the recommended topics and disclosures of the reporting system used.

It is recommended to follow more strictly the declared boundaries of information disclosure in the future. In cases

where, the boundaries of disclosure do not coincide with those declared for the report as a whole, it is necessary to clearly define them in the report and provide a justification for the adopted approach, taking into account the principle of materiality.

It is necessary to pay attention how important topics related to the company are discussed in the society and the media. It is recommended to reflect the Company's response to such topics, in order to ensure the information balance, as well as to avoid doubts about the completeness of the analysis and consideration of the opinions of the external community in determining the material topics and content of the report.

Given the relevance of the combating corruption, it seems important to strengthen the content of information on this topic. It is necessary to disclose the importance of the anti-corruption targets, which the Company annually determines, as indicated in the Report, and to report on the achievements and the methods for their assessment.

The report provides a list of key environmental actions for 2016. It would be useful to disclose the criteria for including activities in this list. This will contribute to a better understanding of their significance in terms of obtaining the greatest effect in improving environmental performance, and will also help clarify the content of the list.

The RUIE Non-Financial Reporting Council's assesses the report positively, supporting the Company's commitment to the principles of responsible business practices and noting the sequence in the development of the reporting process, and hereby confirms that the RusHydro Group's Corporate Social Responsibility and Sustainability Report for 2016 has successfully completed public certification.

Chairman of the
RUIE Non-Financial Reporting Council
F.T. Prokopov

Deputy Chairman of the
RUIE Non-Financial Reporting Council
E.N. Feoktistova

APPENDIX 5. CONCLUSION ON THE PROFESSIONAL AUDIT OF THE REPORT



Independent Limited Assurance Report to the Directors of Public Joint Stock Company Federal Hydro-Generating Company – RusHydro (PJSC RusHydro)

Introduction

We have been engaged by management of PJSC RusHydro to provide limited assurance on the selected information described below and included in the Report on Sustainable Development and Corporate Social Responsibility (“Report”) of PJSC RusHydro and its selected subsidiaries (“RusHydro Group”¹) for the year ended 31 December 2016.

The selected subsidiaries are listed in the reporting scope of the Report.

Selected Information

We assessed the qualitative and quantitative information that is disclosed in the Report and included in the Appendix 1 «GRI Standards Index» to the Report for standard disclosures in environmental, workforce, safety and socio-economic areas in the reporting scope (the “Selected Information”). The scope of our limited assurance procedures was limited to Selected Information for the year ended 31 December 2016.

Reporting Criteria

We assessed the Selected Information using Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI) and GRI Electric Utilities Sector Supplement (collectively, GRI Standards). We believe that these criteria are appropriate given the purpose of our limited assurance engagement.

PJSC RusHydro responsibilities

Management of PJSC RusHydro is responsible for:

- designing, implementing and maintaining internal systems, processes and controls over information relevant to the preparation of the Selected Information that is free from material misstatement, whether due to fraud or error;
- establishing objective reporting criteria for preparing the Selected Information;
- measuring and reporting the Selected Information based on the reporting criteria; and
- the accuracy, completeness and presentation of the Selected Information.

¹ The term “RusHydro Group” in this Report relates only to PJSC RusHydro and its selected subsidiaries included in the Report on Sustainable Development and Corporate Social Responsibility and is not equivalent to the similar term used in the Consolidated IFRS financial statements.

AO PricewaterhouseCoopers Audit
White Square Office Center 10 Butyrsky Val Moscow, Russia, 125047
T: +7 (495) 967-6000, F: +7 (495) 967-6001, www.pwc.ru

TRANSLATOR'S EXPLANATORY NOTE: This version of our report/the accompanying documents is a translation from the original, which was prepared in Russian. All possible care has been taken to ensure that the translation is an accurate representation of the original. However, in all matters of interpretation of information, views or opinions, the original language version of our report takes precedence over this translation.



Our responsibilities

We are responsible for:

- planning and performing the engagement to obtain limited assurance about whether the Selected Information is free from material misstatement, whether due to fraud or error;
- forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- reporting our conclusion to the management of PJSC RusHydro.

This report, including our conclusions, has been prepared solely for management of PJSC RusHydro in accordance with the agreement between us, to assist management in reporting on RusHydro Group sustainability performance and activities. We permit this report to be disclosed in the Report on Sustainable Development and Corporate Social Responsibility of RusHydro Group for the year ended 31 December 2016, to assist management in responding to their government responsibilities by obtaining an independent limited assurance report in connection with the Selected Information. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than management of PJSC RusHydro for our work or this report except where terms are expressly agreed in writing and our prior consent in writing is obtained.

Professional standards applied and level of assurance

We performed a limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) 'Assurance Engagements other than Audits and Reviews of Historical Financial Information', issued by the International Auditing and Assurance Standards Board. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour, together with the ethical requirements of the Auditor's Professional Ethics Code and Auditor's Independence Rules that are relevant to our assurance procedures in the Russian Federation.

Our firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Work done

We are required to plan and perform our work in order to consider the risk of material misstatement of the Selected Information. In doing so, we:

- made enquiries of RusHydro Group management;
- conducted interviews of personnel responsible for sustainability reporting and data collection (interviews were held in Moscow);

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- performed analysis of the relevant policies and basic reporting principles and gaining an understanding of the design of the key structures, systems, processes and controls for managing, recording and reporting the Selected Information;
- performed limited substantive testing of the selected information on a selective basis of the Selected Information to check that data had been appropriately measured, recorded, collated and reported; and
- reviewed the Selected Information for compliance of the disclosures with the requirements of GRI Standards.

Reporting and measurement methodologies

There are no globally recognised and established practices for evaluating and measuring the Selected Information. The range of different, but acceptable, techniques can result in materially different reporting outcomes that may affect comparability with other organisations. The reporting criteria used as a basis of RusHydro Group sustainability reporting should therefore be read in conjunction with the Selected Information and associated statements reported on PJSC RusHydro's websiteⁱⁱ.

Limited assurance conclusion

Based on the procedures we have performed and the evidence we have obtained:

- nothing has come to our attention that causes us to believe that the Selected Information for the year ended 31 December 2016 has not been prepared, in all material respects, in accordance with the requirements of GRI Standards; and
- nothing has come to our attention that causes us to believe that the Selected Information does not meet the Core requirements in accordance with the Guidelines of GRI Standards.

28 August 2017

Moscow, Russian Federation

A. S. Ivanov, certified auditor (licence no. 01-000531),

AO PricewaterhouseCoopers Audit

Audited entity: PJSC RusHydro

Certificate of inclusion in the Unified State Register of Legal Entities issued on 26 December 2004 under registration № 1042401810494

Krasnoyarsk, Krasnoyarsk Region, Russian Federation, 660017

Independent auditor: AO PricewaterhouseCoopers Audit

State registration certificate № 008.890, issued by the Moscow Registration Chamber on 28 February 1992

Certificate of inclusion in the Unified State Register of Legal Entities issued on 22 August 2002 under registration № 1027700148431

Member of Self-regulated organization of auditors «Russian Union of auditors» (Association)

ORNZ 11603050547 in the register of auditors and audit organizations

ⁱⁱ The maintenance and integrity of the PJSC RusHydro website is the responsibility of the directors; the work carried out by us does not involve consideration of these matters and, accordingly, we accept no responsibility for any differences between the selected information on which the assurance report was issued or the assurance report that was issued and the information presented on the PJSC RusHydro website.

TRANSLATOR'S EXPLANATORY NOTE: This version of our report/the accompanying documents is a translation from the original, which was prepared in Russian. All possible care has been taken to ensure that the translation is an accurate representation of the original. However, in all matters of interpretation of information, views or opinions, the original language version of our report takes precedence over this translation.



GLOSSARY AND ABBREVIATIONS

Anticorruption Charter of Russian business	Moral and ethical document intended for voluntary self-limitation of Russian market participants in terms of their use of corrupt practices.
Renewable energy sources	Sources based on continuous or recurring processes in nature. They include solar energy, wind energy, energy of water, tidal power, wave energy of water bodies, geothermal energy, using natural underground heat media, low-grade thermal energy of the earth, air, water, using special heat media, biomass, which includes growing special plants for energy production.
Hydro power plant	A power plant as an engineering and production facility comprising hydraulic structures and equipment that convert mechanical energy of water into electrical energy. For the purposes of this Report, small HPPs and PSPPs fall within this category, except as otherwise specified.
Hydropower facilities	All existing and proposed facilities and facilities under construction that fall within the category of renewable energy sources facilities, i.e. HPPs, PSPPs, and tidal power plants.
Unified Energy System of Russia	It consists of 69 regional energy systems, which, in turn, are grouped into seven interconnected power systems (IPSs): IPS East, IPS Siberia, IPS Urals, IPS Middle Volga, IPS South, IPS Centre, and IPS Northwest. All power systems are synchronized, i.e. operate simultaneously.
Stakeholder	A person or organization that has rights, share, claims or interests with respect to the system or its properties that satisfy their needs and expectations
Ash-and-slag wastes (ZSHO)	Wastes resulting from the combustion of coal, peat and their mixtures for energy purposes
PJSC RusHydro Investment Program	The set of investment projects presented as a list of capital investment projects into fixed assets, their main characteristics and the amount of financing amounts, which is made for one year or for some other time period and is based on the local regulatory documents of PJSC RusHydro.
Condition index	The equipment condition index is an integral characteristic of the equipment technical condition, which allows to cumulatively compare the relative level of physical ageing and obsolescence, need for repair and reliability of various groups of similar equipment. The index is expressed in percent.
Corporate social responsibility (CSR)	The company's responsibility for the impact of its decisions and activities on society and the environment through transparent and ethical behavior that promotes sustainable development, takes into account the expectations of stakeholders, is consistent with applicable legislation and is consistent with international standards of conduct; A set of obligations that correspond to the company's specifics and level of development; they are regularly reviewed, voluntarily and consistently developed with the participation of key stakeholders, including the implementation of internal and external social and environmental programs.
Coefficient of financial leverage	The ratio of the company's borrowed funds to its own funds (capital).
Small HPPs	Hydropower generating assets with installed capacity of less than 30 MW.
Downstream	Part of the reservoir, river or canal adjacent to the waterworks, and located below the water-pressure structure downstream



Interconnected power system	A set of several power system of the same operation mode and with common dispatching control.
RES facilities	The facilities using renewable energy sources, including hydropower facilities with unit installed capacity of less than 25 MW, and facilities using wind, tidal, geothermal and solar energy.
Operational personnel reserve	Candidates who can be nominated for a higher position at the present time.
Orthogonal hydroelectric unit	Hydraulic unit with orthogonal turbines is one in which the flow of water flows across the axis
Prospective staffing reserve	Candidates foreseen for the next 1-3 years
Reclamation	A set of measures aimed at restoring the productivity of disturbed lands in the process of nature management, as well as improving the environmental conditions
The Russian Union of Industrialists and Entrepreneurs (RSPP)	All-Russian public organization representing business interests
Safe operation period	The lifetime of equipment within which the requirements of industrial safety will be fulfilled
Technological platform	The mechanism for coordinating the efforts of departments, corporations, infrastructure monopolies, regions to implement the national scientific and technological policy - federal target programs, sectoral strategies and programs, corporate development programs; an important element of Russia's innovation infrastructure.
Specific fuel consumption	The ratio between the fuel consumption (per unit of distance of time) and the power or thrust output. This factor is used to describe the fuel efficiency, among other things.
Installed capacity	Total rated actual power of generators in the Company's power plants.
Sustainable development	This development, in which the needs of present generations are met without compromising the ability of future generations to meet their own needs
Waste gas	Combustion products (full or incomplete), diluted with air due to its suction in the furnace, gas flues of the boiler and the gas path of the boiler room.
Financial covenant	The contractual obligation of the borrower to the creditor, which contains a list of certain actions, and which the borrower undertakes to fulfill or refrain from performing them during the validity of the loan agreement
Sustainable Development goals	A set of 17 goals for future international cooperation, which is planned to be reached from 2015 to 2030

LIST OF ABBREVIATIONS

PJSC RusHydro, Company	PJSC Federal Hydro-Generating Company RusHydro, including its executive bodies and branches.
RusHydro Group, Group	PJSC RusHydro and its subsidiaries, included in the Report boundaries (including RAO ES of the East). The list is given in the Section «Report Boundaries»
PJSC RAO ES of the East	PJSC RAO Energy Systems of the East



RAO ES of the East Holding	PJSC RAO ES of the East, including its controlled companies
BRICS	A group of key developing countries: Brazil, Russia, India, China, South Africa
RES	Renewable energy sources
OHL	Overhead power line
PSPP	Pumped storage power plant
GPP	Geothermal power plant
HS	Hydraulic structures
HPP	Hydro power plant
RCandRM	Risk Control and Risk Management Department
Sub	Subsidiaries in relation to PJSC RusHydro
LTDP	Long-Term Development Program of RusHydro Group
FEFD	Far Eastern Federal District
DPP	Diesel power plant
UES	Unified Energy System of Russia (UES of Russia)
IMS	Integrated Management System
KPI	Key performance indicators
IC&RMCS	Internal Control and Risk Corporate Management System of PJSC RusHydro
LAS	Local alarm system
PL	Power lines
SHPP	Small HPPs
SME	Small and medium enterprises
IFRS	The International Financial Reporting Standards
MChS	Ministry of the Russian Federation for Affairs for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters
MTS	Material and technical support
VAT	Value added tax
D&SW	Design and survey works
R&D	Research and development
NGO	Non-profit organization



NCP	Non-commercial partnership
SDC	Scientific and Design Complex of PJSC RusHydro
STC	Scientific and Technical Council of PJSC RusHydro
EIA	Environmental Impact Assessment
HPF	Hazardous production facilities
OS	Open switchgear
WMEP	Wholesale market for electricity and power
UES	Unified energy system
PID	The program of innovative development of RusHydro Group for 2016-2020 with a perspective up to 2025
CMP	Comprehensive Modernisation Program
RAS	Russian Academy of Sciences
REM	Retail electricity market
RMEP	Retail market for electricity and power
RSES	Unified state system of prevention and liquidation of emergency situations
BoD	Board of Directors of PJSC RusHydro
SSIW	Self-supporting insulated wires
Mass media	Mass media
CIS	Commonwealth of Independent States
SPM	A special program for the modernization of power facilities of RAO ES of the East for 2014-2025.
SSHPP	Sayano-Shushenskaya HPP named after P.S. Neporozhniy
TUMP	Technical upgrade and modernisation program
FEC	Fuel and energy complex
TPP	Thermal power plant
SFC	Specific fuel consumption
PMS	paramedical and midwifery stations
ES	Emergency Situation
CPC	Central procurement commission of PJSC RusHydro



EBITDA	Earnings before interest, taxes, depreciation and amortization — an analytical indicator equal to the volume of profit before deduction of expenses on interest payments, taxes and accrued depreciation.
GRI	Global Reporting Initiative
IR	Investor Relations
ROE	Return on equity

UNITS OF MEASUREMENT

GW	Gigawatt is the unit of measurement of electrical power (1 GW equals 1000 MW)
GJ	Gigajoule is a unit of measurement of work, energy and quantity of heat
Gcal	Gigacalorie is the unit of measurement for thermal energy
Gcal-hr	Gigacalorie/hour is the unit of measurement for heating capacity
kW-h	Kilowatt hour is the unit of measurement for generated electrical power
MW	Megawatt is the unit of measurement for electrical power
MPa	Megapascal is a unit of measurement of pressure (mechanical stress).



CONTACTS (102-53)

Full company name in English	Public Joint-Stock Company Federal Hydro-Generating Company – RusHydro
Abbreviated company name in English	PJSC RusHydro
OGRN (Primary State Registration Number)	1042401810494
TIN (Taxpayer Identification Number)	2460066195
Industrial Enterprise Classification Code	246601001
OKPO (Russian Business and Organization Classification Code)	75782411
OKVED (Russian Classification of Economic Activities)	40.10.12
Office location in Moscow	7 Malaya Dmitrovka Str., Moscow, 127006 51 Arkhitektor Vlasov Str., Moscow, 117393
Mailing address:	7 Malaya Dmitrovka Str., Moscow, 127006
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Email	office@rushydro.ru
Website:	www.eng.rushydro.ru www.rushydro.ru