



**RusHydro**

# Report on social responsibility and corporate stability

JOINT STOCK COMPANY  
FEDERAL HYDRO GENERATING COMPANY  
(JSC RUSHYDRO)

2010

Location: 660099 Krasnoyarsk Territory, Krasnoyarsk, Respubliki Str., 51  
RNNBO 1042401810494, date of registration 26.12.2004 by Authority of Ministry for Taxes and Charges of the  
Russian Federation of Zheleznodorozhny District of Krasnoyarsk, the Krasnoyarsk Territory

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### **1. Strategic context and general characteristics of the report**

#### **1.1 A Word from the Chairman of the Management Board**

Dear shareholders, partners, colleagues!

The activity results of JSC RusHydro over the past years give grounds to say that today the company is not only one of the largest but also one of the most dynamically developing companies in Russia. Its international recognition proves this fact. In 2010 RusHydro entered the list of 250 largest energy companies in the world. Moreover, according to Platts, the authoritative international agency, RusHydro is the second company in the list of 50 fastest developing companies in the world and is included to the composite rating of energy companies.

Such recognition has been earned because RusHydro widely uses innovative approaches in electricity energy technology and is aimed at sustainable, effective and environmentally safe development.

The company's active social policy also significantly contributed to these positive changes.

RusHydro started the implementation of its Strategic Plan for the period till 2015 and towards 2020, which provides for commissioning of new capacities and modernization of the existing HPPs. It is evident that solution of these tasks shall be preceded with unbiased assessment of environmental impact of the planned work. Definitely one can be sure that the company is open for thorough discussion of each project with public representatives. Such an approach allows us to take into account the opinions of all interested parties and avoid the conflict of interests between the company and the people for whom we work. One of the main means of achieving the consensus of opinion with the community are Social partnership agreements which RusHydro has already concluded with 16 Russian Federation constituencies.

RusHydro is a company which follows the principle of social responsibility and pays special attention to socially unprotected population groups, is engaged in active charitable and sponsorship activity, which addresses children, power engineering pensioners, low-income citizens, disabled people, talented and creative young people, scientific and sports organizations, parishes.

We consider the people working for the company to be its main value. Set measures for potential staff development at JSC RusHydro, its branches, subsidiaries and affiliates. We are involved in both the programs for professional development of the employees and activities to attract talented young people to hydro power industry.

We are sure that the priorities, selected by the company and measures taken in all departments of RusHydro allow the company to update the industry, enhance leading positions in the Russian market and contribute to the social and economic development of the Russian Federation.

Yours sincerely,

Evgeny Dod,

Chairman of the Management Board, JSC RusHydro

## **1.2. Company Profile**

JSC RusHydro is one of the largest Russian companies generating energy using renewable energy sources. In terms of installed capacity RusHydro occupies the second place in the world among hydropower generating companies.

Renewable, natural and ecologically clean, the energy generation sources allow the company to combine high generation efficiency and its safety for environment and society. This combination and also the rational use of potential of water flows, tidal, wind and geo-thermal energy are the key components of RusHydro's dynamic development.

Authorized capital distribution	as of 31.12.2010	Credit rating	as of 31.12.2010
Russian Federation	57.97 %	Standard & Poor's	BB+
Minority shareholders	42.03 %	Fitch Ratings	BB+
incl. ADR holders	10.05 %	Moody's	Ba1

Key Figures	as of 31.12.2010
Installed capacity, GW	25.5
Electricity generation in the year 2010, mln kW*h	72 045
Number of generating facilities	61

Group <sup>1</sup> revenue in 2010, mln rubles	418 003
EBITDA* Group revenue in 2010, mln rubles	61 575
Capitalization, mln dollars	15 503

\* the index is calculated as net income before depreciation



With Sayano-Shushenskaya HPP which is the largest HPP in Russia, the company has 61 renewable energy generating facilities including nine plants of Volzsky-Kamsky cascade with a total installed capacity of more than 10,000 MW, Zeyskaya HPP (1330 MW) in the Far East, Bureyskaya HPP (2010 MW), Novosibirsk HPP (455 MW) and dozens of HPPs in the North Caucasus, including Kaskhatau HPP (65.1 MW), which was commissioned in the Kabardino-Balkarian Republic at the end of 2010. JSC RusHydro also owns geo-thermal power plants in Kamchatka and the highly-maneuverable Zagorskaya Pumped Storage Hydro-power Plant (PSPP) in the Moscow Region, which levels daily variations in energy demand in the central IPS (Incorporated power system of the Center) division. In addition to the holding company, RusHydro incorporates scientific and research, planning and surveying and engineering enterprises, as well as retail power companies.

Along with operating active HPPs and RES sites, RusHydro continues implementing capital investment projects for HPP construction in various Russian regions. The largest of these projects include: Boguchanskaya HPP construction (3,000 MW), which RusHydro is building together with UC RUSAL on the Angara River in the Krasnoyarsk Territory; the second extension of Zaramagskiye HPP (352 MW) on the Ardon River in the Republic of North Ossetia – Alania; Zagorskaya HPSPP-2 (840 MW) in the Sergiev Posad District of the Moscow Region;

<sup>1</sup> Main subsidiaries and associates of JSC RusHydro, included in IFRS <http://www.rushydro.ru/investors/disclosure/reports/finreports1/2010>

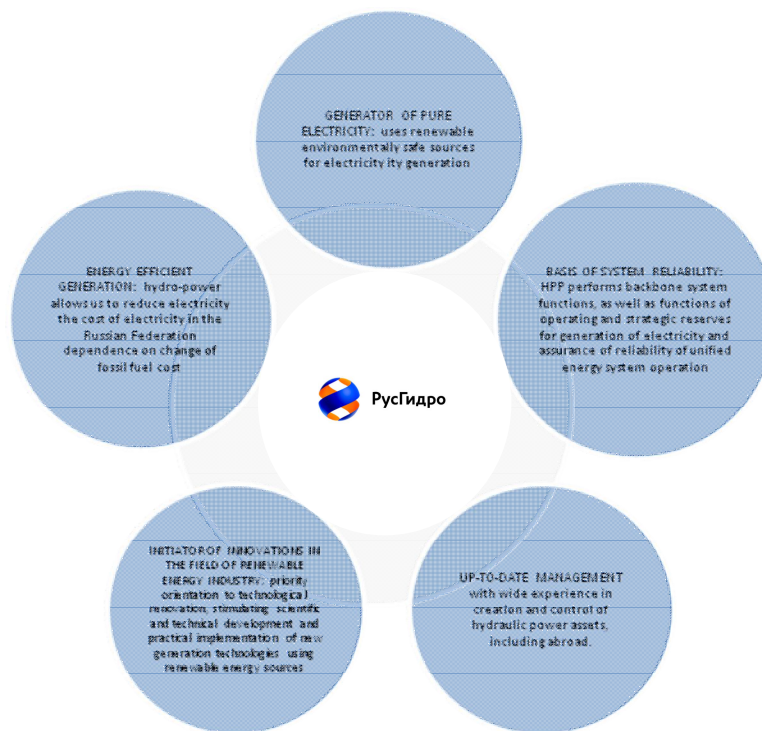
Ust-Srednekanskaya HPP (570 MW) in the Magadan Region; Nizhne-Bureiskaya HPP (320 MW, re-regulating reservoir of the Bureiskaya HPP) in the Amur Region and others.

### 1.3. Company's development strategy

Until 2020 RusHydro is a global transnational vertically integrated holding company, one of the world leaders in the field of developing renewable energy sources. The company will be distinguished by:

- Presence of multi-profile engineering complex, which has the ability to ensure competitive high-efficient development of renewable energy industry in Russia and abroad;
- Presence of developed retail energy supply business providing quality service and uninterrupted supply of consumers;
- Presence of equipment and material manufacturers, as well as large energy-intensive consumers in Company's structure;
- Balanced business portfolio providing its maximum value;
- High rates of innovations implementation, in the field of technical and process decisions, as well as in the field of control systems.

### Strategic profile of the company: unique benefits



Key peculiarities and authorities of RusHydro allow using main tendencies of world power generation development for strengthening of positions and growth of company's role in the country and abroad.

### Strategic priorities of the company:

- assurance of reliable and safe operation of company's facilities;
- increase of energy efficiency through stable development of electricity production on the basis of renewable energy sources;
- growth of company's value.

## 2. Main priorities and programs in the sphere of sustainable development

The company defines corporate social responsibility as its responsibility to society and stakeholders for the company's sustainable development, including: contributing to the social and economic development of Russia and its regions and the careful and efficient use of natural resources

The company is focused on energy efficiency, including developing clean power potential, depending on renewable sources, and this is critical in the current context of pressing environmental challenges and climate change. The company is making a valuable contribution to developing the regulatory system to encourage RES use.

RusHydro's priorities include: developing human resource potential and fostering accelerated innovative development.

The company's strategy reflects its commitment to social responsibility and sustainable development principles.

<b>RusHydro Strategic Priorities</b>	<b>Agenda of Social Responsibility and Sustainable Development</b>
Assurance of reliable and safe operation of company's facilities	The company is aware of its social responsibility as a power producer that is vitally needed by society. The company's key strategic objectives is to operate its equipment and hydro-power facilities in a reliable and safe manner for society and the environment, while also taking into account the economic feasibility of funds applied to minimize risks and reduce any possible damage
Increasing energy efficiency by stable growth in the production of electricity based on renewable energy sources	The company focuses all of its efforts on increasing the RES share in the power balance, ultimately looking to occupy Russia's leading position for RES usage. The company pursues this goal by introducing new generating facilities and by increasing the consumption of clean energy produced at the company's facilities, while simultaneously upgrading energy efficiency
Growth of Company's value	The company seeks to maximize its value for the state, its shareholders, society and its employees

In the medium-term, the company plans to set priority goals for its economic, environmental and social roles.

<b>Economy</b>	<ul style="list-style-type: none"> <li>• Ensure the reliability and modernization of operating assets; rebuild Sayano-Shushenskaya HPP and construct a second extension of the costly spillway.</li> <li>• Switch to long-term contracts for services and equipment supply.</li> <li>• Accelerate innovation.</li> <li>• Optimize the HPPs operating modes and increase revenues from power and capacity sales at operating assets.</li> <li>• Expand hydro-generating assets.</li> <li>• Reduce both the construction costs and completion time for the company's projects.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Upgrade the efficiency of repair and maintenance services for the company's assets.</li> <li>• Expand the company's presence and sales in the retail power market.</li> <li>• Develop integrated power supply services, energy-saving measures, public utilities and other services.</li> <li>• Expand operations in the water supply sector.</li> <li>• Establish an efficient system to manage innovation, develop challenging innovative trends.</li> <li>• Implementation of integrated infrastructure investment projects abroad.</li> </ul>
<b>Ecology</b>	<p>Prioritize environmental safety as an integral part of national security.</p> <ul style="list-style-type: none"> <li>▪ Save energy and use energy resources efficiently.</li> <li>▪ Reduce possible negative environmental impact at all stages of the HPP life cycle.</li> <li>▪ Use preventive measures as a priority to eliminate negative environmental effects.</li> <li>▪ Make management and investment decisions based on multiple-choice development scenarios with a view to environmental priorities.</li> <li>▪ Pursue an environmental audit practice.</li> <li>▪ Introduce and certify the environmental management system.</li> <li>▪ Renovate and upgrade hydro-turbine equipment using environmentally friendly structures to eliminate pollutant discharge into water bodies.</li> <li>▪ Renovate and repair hydro-power structures to maintain the proper condition of water protection areas and perform bank pitching.</li> <li>▪ Replace oil-filled electrical equipment with alternative, environmentally friendly ones.</li> <li>▪ Equip pollutant discharge into water bodies with wastewater treatment plants.</li> </ul>
<b>Society</b>	<ul style="list-style-type: none"> <li>▪ Company's contribution to planning and implementing national and industrial development programs.</li> <li>▪ Develop human resource potential in all fields of RusHydro's business.</li> <li>▪ Restoration of technical human resources for the hydro-power industry.</li> <li>▪ Expansion of ties with field-specific higher education and research institutes and establishment of the School for the Young Hydro-</li> </ul>

## **2010 Sustainable Development Report: Overview and Goals**

This report is an overview of RusHydro's activities to maintain its sustainable development in 2010. The report reflects the most important results of the company in the economic, environmental and social sectors.

Information provided in the report is related to JSC RusHydro's operations and its branches and subsidiaries. It is planned to expand the scope of information in future reporting cycles.

For the purposes of this report, the names JSC RusHydro, the company and RusHydro all refer to JSC RusHydro and its branches.

The reporting period runs from January 1<sup>st</sup>, 2010 to December 31<sup>st</sup>, 2010.

This report is prepared using methodology for preparation of nonfinancial reports set forth in the Global Reporting Initiative GRI (G3)<sup>2</sup>, as well as a set of standard structural solutions and reporting elements recommended by the Guidelines. The company was guided by Level C of the Guidelines in preparing this Report.

### **2.1 Alternative power engineering**

Acceleration of innovations is set as one of the priorities of the Strategic Plan of JSC RusHydro for the period till 2015 and towards 2020. To implement this task it is necessary to develop the efficient innovation management system. Due to this in 2010 in accordance with the Strategic Plan of JSC RusHydro the company developed the innovative development program for 2011–2015.

According to the main areas of scientific and technical developments, set in the program, the list of critical innovative projects was developed including the work classified as R&D, PD&TAs (Scientific and technical workings out, developmental and technological works) and innovative projects:

#### **Module unit development for tidal power plants**

As a result the following technologies shall be developed: technologies of floating units construction and the construction of industrial unit with three-tier orthographic turbine capacity of 12 MW for construction of the North tidal plant in the Barents Sea and implementation of other tidal plant projects. The next project, the Malaya Mezenskaya TPP is also based on using these units.

#### **Development of the power equipment and wave power plants of a new type**

As a result new effective equipment for wave power plants shall be developed which allow as significant increase in the potential of wave power engineering and reduce the unit costs on construction of wave power engineering facilities.

#### **Development of technology for complex power generation based on the use of oceanic energy**

As a result the domestic technology for complex power generation will be developed, it will be based on the use of tidal flows and wave energy and experimental unit with capacity shall be constructed.

<sup>2</sup> Principles for Defining Report Content: materiality, interested parties inclusiveness, sustainability context, completeness.  
Principles for Defining Report Quality: balance, comparability, accuracy, timeliness, clarity and reliability.



**The start of the specified projects is scheduled in 2011–2012, on the second stage of program implementation.**

In 2010 JSC RusHydro implemented innovative projects aimed at the development of technologies for use of renewable energy sources: Activities on construction of pilot binary power plant at the site of Puzhetskaya GeoPP and increase of Mutnovskaya GoePP installed capacity due to the use of waste heat were held.

In 2010 jointly with JAC APBE JSC RusHydro initiated the development of the Technical platform Perspective technologies for renewable power engineering (TP).

Within the framework of TP the technologies of renewable and hydro power engineering shall be developed:

- Hydro power engineering (incl. small);
- Wind power engineering;
- Tidal, wave and currents power engineering;
- Solar energy;
- Geothermal power engineering;
- Energy storage units;
- Systems of power supply on the basis of RES complex use.

Platform coordinator is JSC RusHydro. A number of scientific and research institutes of the industry, HEIs, companies confirmed their participation in TP work.

### **Plans for 2011**

The technical platform Perspective technologies of renewable power engineering implies the expansion of the cooperation with institutes for development, scientific organizations, public companies, government authorities for the following purposes:

- Monitor and analyze the market, evaluate the technological level and problems of RES use in Russia and abroad;
- Develop comprehensive strategic research program to coordinate and guide the scientific work in favor of industry and consumers;
- Define the perspective commercial projects in the sphere of development and construction of the main equipment, their common implementation;
- Stimulate the state and private investments for R&D implementation in the framework of strategic development program;
- Assist the development of regulations, rules and standards for the design, construction and operation of the power generating facilities based on the new technologies with RES use;
- Assist the development of education and professional development in RES use.

## **2.2 Risk management**

Risk management is one of the key components of company strategic governance and execution of risk management indicators on the strategic level is implemented in the company's management motivation system.

The register of strategic risks for JSC RusHydro is maintained and approved to disclose information about the company risks for the company's Board of Directors, rating agencies, company's auditor, and also to develop and implement activities for risk optimization in the framework of the company's implementation of strategy. Following the approval of the register the company risk management plan is developed and implemented.

The support and assessment of the company strategic risks register is annually performed on the basis of the company strategic risks register from the previous period, analysis of the internal documentation of the company and external public information and also taking into account the strategic priorities of JSC RusHydro development for the specified period.

Taking into account the external and internal company environment, the results of comparison of the risk situation in 2009 and 2010 are quite interesting. So in 2010 the category of critical risks for the company (risks which are paid special attention in the management process) comprised the risk of mergers and acquisitions executed inefficiency, initially included in the Register of strategic risks due to the report of the analysts of the leading consulting companies for the international economic forum in Davos Global Risks 2010. This risk is significant due to the company's considerable activity at M&A market.

Main factors of this risk are the following:

- Revaluation of shares of company being merged;
- Underestimation of amount of additional investments, acquisition of insolvent enterprise;
- Fall in the rate of shares of companies participating in merger/acquisition, worsening of market position and financial situation at the time before completion of merger/acquisition process.

In this connection the company takes measures to improve methods and procedures for merger and acquisition transactions, including correction of transaction conditions provided that the specified negative effects occur in relation to asset acquired in the course of transaction.

The risk of delays and errors at managerial decisions taking is also considered significant by the management. Control activities on revealing the cases of inaccurate or incomplete execution of approved managerial decisions and specified procedures are held regularly and measures on their elimination are taken. This risk correlates with many strategic risks of the company, as its realization especially in the area of external risk forming factors, may promote the realization of other risks and consequently lead to a cascading effect which may cause significant losses in both reducing the financial indicators of the company's activity and the company's financial value.

As compared with 2009 risk of growth of the company's loan portfolio for the supply of electricity and capacity is transferred to the category of insignificant risks, as on the assessment basis this risk in the absolute amount cannot exceed the level of the requirements of the company, though indebtedness growth is quite possible due to the liberalization of electricity and capacity market starting from 2011. Also risk of public policy inconsistency is also transferred to the category of insignificant risks due to the control level increase in this area in 2010. Following the analysis and setting priorities the risk of shortage of untied funds which was critical in 2009 was excluded from the register of strategic risks of the company in 2010 due to its insignificance in the specified period.

Also as compared with 2009 the attention to the risks of terrorism and expenses to minimize these risks increased in the company. Due to steady overcoming the global financial crisis by the Russian Federation some crisis developments in the economy of the country are reduced and consequently financial solvency of the contracting parties has improved and credit risks have decreased.

Risk management is an important component of corporate governance and one of the key factors in implementing sustainable development principles. JSC RusHydro's business is associated with a set of risks, which in certain circumstances may negatively affect the company's production and financial performance, as well as its social and natural environment. To reduce these potential negative effects, the company has established a risk management system. This system is focused on implementing JSC RusHydro's strategy, maintaining the efficient use of its resources and potential, properly adapting of the company to external and internal changes, ensuring consistent performance, stability and developing of the company. JSC RusHydro's risk management system supports the identification, assessment and control of potential threats and the appropriate response to them.

In 2010 in accordance with international standards of risk management ISO31000 and ISO31010 the company amended and approved the new internal control and risk management policy. Risk management is integrated both in the strategic planning process and the personnel

motivation system. The company implements projects to introduce risk management procedures in operational business processes. The company plans to introduce qualitative risk assessment methods. Qualitative and quantitative risk assessment tools include: modern assessment methods for possible losses based on statistics, engineering analysis and financial mathematics.

JSC RusHydro maintains databases on different types of risks both manually and through information systems and also has a reporting system for crisis situations.

The company was developing a risk management system focused on streamlining the use of the company resources, maintaining the reliability of plants, improvement of the ecological and energy efficient generation, industrial safety and labor protection of the employees, upgrading safety and improving the quality of management information on the company's risk profile and the efforts taken to minimize them, shaping the risk-oriented management culture in which management decisions are made and current operations are managed with a view to possible effects and risks.

The company implements the project for the Automated Management System of Risks Related to Production and the Reliability of Business Assets.

In 2010 JSC RusHydro and EnergoRynok magazine held VI annual conference entitled, Risk Management in Energy: New Development Prospects. The conference has become a popular industry event and offers a forum for professional discussions and sharing best practice.

Risk management managers regularly communicate with the company's employees, both in the headquarters and in the branches. For example in 2010 the policy in the field of supply activities developed jointly with sales departments and risk management of the company was approved. The company organizes working groups on managing operational risks with the participation of employees across all levels, from top management to power plant staff. The company supports consistent advanced staff training in risk management, including hosting training seminars and conferences.

In 2010 nineteen company existing standards were developed and significantly amended aiming at regulatory activity for the requirements of large HPPs operation, and also new company standards were developed and approved taking into account the recommendations specified in the act on the investigation the causes of the Sayano-Shushenskaya HPP accident on the improving the legislative and regulatory base.

All technical solutions applied in renovating the company's Sayano-Shushenskaya HPP comply with the requirements of supervisory bodies with regard to the safe operation of hydro-power structures and equipment, including fitting hydro-power units with fixed vibration control systems, setting up the hydro-power unit control system with an instant equipment stoppage in case of deviations from nominal operating parameters, fitting the HPP building with status monitoring systems, etc.

The company performs the independent risk assessment. In 2010 a number of branches will be surveyed by the independent survey company Suregrove Limited. In 2011 all branches of the company will be surveyed.

### **2.3 Labor Protection, Industrial and Fire Safety**

Labor protection management at sites is distributed between the site manager and other employees in accordance with administrative and functional subordinacy and normative local documents of the site (resolution, provision, rules).

Also powers and responsibility of the representatives of public organizations, which are set in the resolutions for personnel, collective agreement, provision of labor protection management on site.

At JSC RusHydro it is part of the responsibility of all employees working at the company's sites to follow strictly labor protection standards. Administration for occupational health and safety precautions monitor the compliance with labor protection regulations. Work managers and heads monitor the compliance with labor protection regulations during the performance of certain types of work.

The sites are fully provided with regulatory technical and legal documentation, some local normative documents (labor safety instructions) were developed for all professions and types of work.

Monthly instructions on 3–4 issues of labor protection in general and on particular professions and types of work are kept for workers.

Annual assessment of knowledge concerning labor protection regulations for the workers is carried out.

Annual instructions and assessment of managers at all levels involved in the power generation is carried out.

Workplaces are certified for labor conditions at all workplaces and sites.

Independent accredited laboratories and expert organizations are engaged in certifying workplaces and industrial control.

Specialized medical organizations are engaged in regular, mandatory, medical examinations.

Independent expert organizations are engaged in evaluating construction and facility safety.

Notification system which records all unwanted events (accidents) successfully functions in the company.

All accidents are investigated.

Operation of hazardous industrial sites of JSC RusHydro is performed in compliance with the legislation requirements in the field of industrial safety: a system for industrial supervision complying with industrial safety requirements functions at sites. All necessary permits for operating HIS, civil liability during the operation of HIS is insured, company's sites personnel is certified in the field of industrial safety.

Fire safety regulations have been developed. Fire risk does not exceed the allowable values specified by the legislation in the field of fire safety. Fire safety system at the company's industrial sites has been developed and functions.

At all sites industrial safety and HES safety regulations have been developed and maintained.

## 2.4 Energy efficiency

In accordance with the Program for Energy Conservation and Improving Energy Efficiency for JSC RusHydro for 2010–2015, approved by JSC RusHydro governance (minutes dated 12.04.2010 No. 461 pr/1) in 2010 branches of JSC RusHydro has developed an Action plan for energy conservation and improving energy efficiency for 2010–2015.

Information on activity aimed at improving energy efficiency and reducing technical and operating expenses (non-regulatory measures) for branches of JSC RusHydro, carried out during 2010 is given in the table:

No.	Description of measures	Performance time
JSC RusHydro affiliate – Bureyskaya HPP		
1	Plant use power consumption reduction	2011
2	Protective area consumption reduction	2011
3	Form the water resources saving	2011
4	Expenses in this area are 0.984 mln rub in 2010	
JSC RusHydro affiliate – Volzhskaya HPP		
1	Carrying out the thermo graphic survey of HPP buildings. Organizational measures on switching off electric convection heaters and electric heating coils when the outside air temperature rises;	2 qtr 2010- 4 qtr 2013
2	Lighting system operation optimization	1 qtr 2010- 4 qtr 2012
3	Arrangement of outside consumers power supply	1 qtr 2010- 4 qtr 2013
	Expenses in this area are 2.8 mln rub.	
JSC RusHydro affiliate – Votkinskaya HPP		

1	Inlet and exhaust ventilation operation mode optimization	May – December 2010
2	OPI pump operation modes optimization	January – December 2010
3	Heating system optimization (replacement of pump system, boiler and water heating with electric convection heaters)	January – December 2010
4	Different lighting systems operation optimization (working, emergency, egress)	January – December 2010
5	Replacement of BB-500 air-break switches with gas-insulated ones (decommissioning of the compressor ones)	January – December 2010
6	Reconstruction of hydraulic units cooling system automatics	January – April 2010
7	Reconstruction of 1KY compressor station with the replacement of water cooling system with air cooling system (removal of water cooling system)	January – May 2010
8	HES hydro-mechanical equipment, replacement of rubber sealing along the gates perimeter, replacement of gate featheredge seal	January – December 2010
9	Replacement of threaded rubber sealing along the lower and upper ring on hydraulic unit	January – December 2010
10	Inlet and exhaust ventilation operation mode optimization	January – December 2011
11	OPI pump operation modes optimization	January – December 2011
12	Heating system optimization (replacement of pump system, boiler and water heating with electric convection heaters)	January – December 2011
13	Replacement of BB-500 air-break switches with gas-insulated ones (decommissioning of the compressor ones)	January – December 2011
14	HES hydro-mechanical equipment, replacement of rubber sealing along the gate perimeter, replacement of gate featheredge seal	January – December 2011
15	Replacement of threaded rubber sealing along the lower and upper ring on hydraulic unit	January – December 2011
	Expenses in this area are 1.618 mln rub.	
JSC RusHydro branch – Zhigulevskaya HPP		
1	Replacement of the hydro-turbine unit of st. No. 6 hydraulic unit with GTP (gas turbine plant) of type PL-30/877-V-930	2010
2	Reconstruction of aerial crossing of 500 kV turbine-generator 7 with replacement of wire and end fitting	2010
3	Overhaul of lighting system marked 42, 46 with replacement of lamps with energy saving ones	2010
4	Reconstruction of pump facilities for pumping the water gallery of HHP building with replacement of pumpout pumps	2010
5	Automatic control of HPP industrial marks lighting	2010
6	Measures taken as agreed and approved in the efficiency enhancement program for Zhigulevskaya HPP, developed on the basis of an energy audit	2010
	Expenses in this area are 169.071 mln rub.	
JSC RusHydro affiliate – Zagorskaya PSHP		
1	Heating system optimization, quarterly revision and operation control of stop valve	01.01.2010 – 31.12.2010
2	Rational selection of hydraulic units composition considering their particular characteristics according to consumable active	01.01.2010 – 31.12.2010

	power during operation in SC (synchronous condensing) mode	
3	Disconnecting the power transformers from the circuit when putting the hydraulic unit operating in the facility to repair	01.01.2010 – 31.12.2010
4	Ventilation system operation optimization (arrangement of rational operating mode, equipment technical condition control)	01.01.2010 – 31.12.2010
5	Lighting system operation optimization	01.01.2010 – 31.12.2010
6	Reduction of losses through DSL of HES, and also internal consumption reduction for technological needs	01.01.2010 – 31.12.2010
	Expenses in this area are 4.6 mln rub.	
JSC RusHydro branch – Zeiskaya HPP		
1	Replacement of internal lighting in the turbine building of HPP buildings	2010
2	Replacement of internal lighting of the dam rooms	2013
3	HPP buildings reconstruction (replacement of heating and hot water supply systems)	2012
4	Reconstruction of heating and hot water supply systems (replacement of water heating and hot water supply systems, check of technical facilities)	2011
5	Reconstruction of heating and hot water supply systems (reconstruction of electro-boiler room)	2011
6	Development of hydrological observations on Zeyskoye water reservoir	2011
7	Acquisition of new metering instruments	2010
	Expenses in this area are 32.149 mln rub.	
JSC RusHydro affiliate – Irganaiskaya HPP		
1	Replacement of incandescent bulbs with energy saving ones Automatic control of outside lighting	2010
2	Replacement electric pumps for pumping water from the turbine cover to the ejector	2010
3	Replacement of ring valve No. 2 sealing	2010
	Expenses in this area are 0.624 mln rub.	
JSC RusHydro affiliate – Kabardino-Balkarian affiliate		
1	Replacement of Hydraulic unit No. 1, No. 2 of Mukholskaya HPP with new ones	4 qtr 2008 – 2 qtr 2010
2	Replacement of Electrical and technical equipment of Mukholskaya HPP with new one	4 qtr 2008 – 2 qtr 2010
3	Reconstruction of diversion canal of Mukholskaya HPP	1 qtr. 2009-4 qtr. 2010
4	Reconstruction of head end of Mukholskaya HPP	1 qtr. 2009-4 qtr. 2010
	Expenses in this area are 32.054 mln rub.	
JSC RusHydro affiliate – Kamskaya HPP		
1	Replacement of 2 phases 4T transformer	2 and 3 quarters 2009
2	Special energy audit (quick inspection)	28.09.2009 – 02.10.2009
3	Measures taking set in the agreed and approved Efficiency enhancement program for Kamskaya HPP, developed on the basis of energy audit	01.01.2010-31.12.2010
	Expenses in this area are 13.236 mln rub.	

JSC RusHydro branch – Karachaevo-Cherkessky branch		
1	Reconstruction of water catchment system on the Aksaut river with connection project development: <ul style="list-style-type: none"> <li>● Design works are completed.</li> <li>● Earth works are completed Lower head, fish way path</li> </ul>	2010 – March 2011
	Expenses in this area are 3.142 mln rub.	
JSC RusHydro affiliate – Cascade of Verkhnevolzhskie HPP		
1	Modernization of RK blades seals with Hydraulic unit No. 3 RHHP construction changes	2010-2011
2	Replacement of hydraulic unit st. No. 2 UHPP excitation system with selfexciting thyristor system	2009-2010
3	Reconstruction of PU UHPP	2009-2011
4	Supply of autotransformers AT 63 000 kVA	2010
5	Replacement of Uglichskaya HPP hydraulic unit No. 2	2009-2011
JSC RusHydro affiliate – Kubanskie Cascade HPP		
1	Sengileevskaya HPP Replacement of power transformers TDG-10000/110 T-1, T-2	Completed 24.02.2010
2	Egorlykская HPP. Replacement of transformers for own needs T-101, T-102	Completed 25.12.2010
3	HHP-4. replacement of 330 kV transformers with transformers of 0.2 S current class	Completed 5.12.2010
4	Svistukhinskaya HPP Replacement of power transformers T-1-T-2	IV qtr. of 2011
	Expenses in this area are 82.1 mln rub.	
JSC RusHydro affiliate – Nizhegorodskaya HPP		
1	Replacement of the transformers of facilities, station number 50T of TM-560 6/0.4 type and 51T of TM-630 6/0.4 type with TMG-400 6/0.4	30.08.2010
2	Performance of energy audit of JSC RusHydro affiliate – Nizhegorodskaya HPP	15.12.2010
3	Replacement of transformers for own needs of TM 3200 13.8/6.3 type (2 pcs) with TMG-4000 13.8/6.3	30.11.2011
	Expenses in this area are 14.693 mln rub in 2010	
JSC RusHydro branch – Novosibirskaya HPP		
1	Modernization of bulkhead gate of bottom outlets (BGBO) G1, G2, G4 with reconstruction of booms of bottom outlets (BBO) and slots repair	2008-2011
2	Leakage elimination in the slots of service gate before the turbine GA4 (SGBT)	2010
3	Repair of service gates before turbine (SGBT)	2010-2014
4	Repair of service gates of the spillway dam	2010-2014
5	Repair of service gates APZ topside facilities and PR of the spillway dam	2010-2014
6	Replacement of blowout coils (BC) in the generator neutral No. 3,7	2010
7	Reduction of losses in the power unit transformers T1, T3 through their replacement	2009-2010
8	Reconstruction of GA1 – efficiency increase	2009-2012
9	Implementation of control system for runner blades G4, G5	2010

10	Reduction of losses in the transformers for own needs through replacement during the reconstruction of GIS 6	2009-2011
11	Transformers for own needs operation compliance with the operation of main TON1, TON2 with less losses than standby TON0	on a regular basis
12	Participation in the work of inter-department flood committee to provide rational use of water resources	on a regular basis
	Expenses in this area are 227.1 mln rub. It should be taken into account that the energy efficiency of expensive investment programs is not an aim in itself but one of the effects together with reliability increase (reduction of risk of technological failures), repair and maintenance cost reduction, improvement investments objects technical characteristics	
JSC RusHydro affiliate – Saratovskaya HPP		
1.	Dry gallery lighting optimization	on a regular basis
2.	Optimization of lighting in the maintenance corridor marked 27.70	on a regular basis
3.	Lighting of HVAC RU optimization	on a regular basis
4.	Optimization of lighting in pumping and gate PWS RU, LU premises	on a regular basis
5.	Optimization of lighting in the machine department marked 27.70	on a regular basis
6.	Replacement of incandescent bulbs with energy saving ones in the cable galleries	2009-2010
7.	Floating waste removal before the trash screens	on a regular basis
	Expenses in this area are 0.27 mln rub in 2010.	
JSC RusHydro affiliate – North-Ossetian affiliate		
1	Maintaining of effective NWS of Dzauzhikauskaya HPP	01.01.2010-31.12.2013
2	Maintaining of effective NWS of Ezminskaya HPP	01.01.2010-31.12.2013
3	Maintaining of effective NWS of Main Zamaragskaya HPP	01.01.2011-31.12.2013
	Expenses are 0 mln rub	
JSC RusHydro branch – Sayano-Shushenskaya Neporozhniy HPP		
1	Reconstruction of ventilation system of SSHPP production areas for the system with automatic work cycles adjustment	3 qtr 2010
2	The program on use of ventilation systems of machine rooms and technological premises in summer and winter is developed	On a regular basis
3	The procedure of lighting systems of machine rooms and technological premises use taking into account electrical energy saving and workplaces lighting requirements is developed	On a regular basis
4	Operation modes for electro-boiler room is optimized depending on outside air temperature	On a regular basis
5	No operation of hydraulic units in synchronous condensing mode	On a regular basis
6	Control of SSHPP and MHPP decorative lighting in the specified time period	On a regular basis
7	Switching on the operation lighting in the technological premises only where the work is performed	On a regular basis
8	Automatics adjustments of stationary electro-boiler rooms control are performed after the replacement of heating elements	2 qtr 2010



	and insulating glass units in the machine premises of SSHPP	
9	The procedure of use of equipment and technological premises heating systems is developed	On a regular basis
10	On the marks of SSHPP machine rooms the energy saving lamps with better light efficiency than the previous ones were installed	2 qtr 2010
	Expenses for energy saving program implementation are the following: – It. 1. estimated cost, including the cost, installation and delivery of equipment is 10,421,000 rub. – It. 4. estimated cost, including the cost, installation and delivery of equipment is 2,581,970 rub. – It. 10. estimated cost, including the cost, installation and delivery of equipment is 3,537,630 rub.	
JSC RusHydro affiliate – Cheboksarskaya HPP		
1	Change over to blade propeller operation mode of hydraulic turbine No. 16	October 2011
2	Reconstruction of operation wheel on the hydraulic unit st. No. 8G	August 2011
3	Overhaul repair of emergency bulkhead gates	June – October 2010
4	Floating waste removal before the trash screens	June – August 2010
5	Seasonal adjustments of water flow for cooling the hydraulic generators and unit transformers	April, November 2010
6	Defining the normal value of turbine inlet guide opening providing the maximum efficiency with minimal water flow	2010
7	Energy inspection	September 2010
	Expenses in this area are 66.033 mln rub.	

## 2.5 Environmental Protection

The aim of JSC RusHydro environmental policy is to increase the level of ecological safety, increase capital because of reliable, eco-friendly, energy generation, and an integrated approach to the natural energy resources use.

Environmental safety and protection is performed in accordance with the program for implementing environmental policy by RusHydro for the years 2010–2012, in which the measures to reduce negative environmental impact are specified.

### **In its activity the company follows the following principles of ecological policy:**

- Prioritize environmental safety as an integral part of national security.
- Save energy and use natural resources and energy resources efficiently at all stages of hydroelectric power plants' life cycle;
- Reduce possible negative environmental impact at all stages of the hydroelectric power plants' life cycle;
- Use preventive measures as a priority to eliminate negative environmental effects;
- Make management and investment decisions based on multiple-choice development scenarios with a view to environmental priorities;
- Company reputation making as infrastructure forming, socially responsible company.

**The company reduces negative environmental impact by solving the following tasks:**

- Rationally using marine bodies;
- Reducing the submergence maximum possible within the competency of the company;
- Reducing pollutant dumping in marine bodies;
- Cutting the generation of production waste;
- Decreasing specific discharge and pollutant emissions per unit of output product (kg/kWh);
- Ensuring full and proper compensation for damage to biological water resources in the process of constructing new HPPs;
- Pursing priority of maintaining and protecting biodiversity of specially protected natural territories in the process of design and location of HPPs.

**The company creates conditions and mechanisms to minimize negative environmental impact in the following way:**

- Upgrading legislation, developing and promoting the approval of technical regulations and standards;
- Introducing environmental management systems in accordance with ISO 14000 requirements to improve constantly in the field of environmental protection;
- Establishing conditions and mechanisms to ensure the registration of environmental aspects and to reduce environmental risks at all production stages;
- Preventing pollution and reducing negative environmental impact using the best existing technologies;
- Ensuring that the company's employees and contractors performing the work at the company's sites comply with environmental safety and labor protection standards and norms.

**Company risks connected with climate change:**

**Earth-quake prone territory**

Most company facilities are located in seismically stable regions. However, such facilities as the Puzhetskaya GeoPP and the Verkhne-Mutnovskaya GeoPP are located in an earthquake-prone zone with possible earthquake intensity of up to magnitude 9 on the Richter scale. In case of an earthquake there is a contingency plan developed and seismic situation is permanently monitored. Transport connections are worked out well in advance taking into account the above risk, routes for people and cargo deliveries are optimized.

**Seasonal floods**

Rise of water level in water-storage reservoirs of HPPs at upper and lower elevations may lead to a flood of the near-shore areas with industrial facilities, houses and natural complexes. Protective dams and structures are used to prevent under flooding, owners of these facilities shall be responsible for maintenance of these in proper condition and timely reinforcing of damaged sections of the dams. In its turn basing on weather forecasts the Company timely informs water users about probable water level to let them make decisions on protective measure well in advance.

To comply with the environmental legislation requirements at the company's sites ecological monitoring was organized, which is usually held by Federal State Institutions (FSI Centre for Laboratory Analysis and Technical Metrology, FSI Administration of Federal Service for Hydrometeorology and Environmental Monitoring etc.) and by HPP internal services and laboratories. Furthermore, at a number of company construction sites scientific, social and ecological monitoring of the hydraulic unit impact area is performed. Main areas for monitoring are: Hydrochemical monitoring, ichthyologic monitoring, monitoring of soil and vegetation cover, vegetation monitoring, forest range monitoring, zoological monitoring and social monitoring.

A number of governmental agencies supervise compliance with the environmental legislation requirements at the company's sites. According to the company activity results in the field of environmental safety and protection penalties of the company are not significant in 2010.

## **2.6 Participation in international ecological programs**

In November 2010 JSC RusHydro jointly with UNDF GEF initiated project No. 4241 Tasks for Biodiversity Protection in policy and programs for Russian energy sector development. The specified project is aimed at making the main energy sectors development environmentally friendly and the participation of JSC RusHydro in its implementation gives the company the competitive advantage in the industry in the field of development of indicators and standards of ecological efficiency, in the implementation and distribution of safe technologies. The work in this area allows the company to develop its own ecological policy and exchange successful experience with Russian and foreign colleagues.

The project strategy implies that apart from educational program on assessment of biodiversity protection tasks for designers, auditors, company's personnel, recommendations and regulations shall be developed on location, design and construction of hydro-power engineering facilities taking into account specified tasks and biodiversity damage compensation. The implementation of these pilot projects will promote the attraction of new breakthrough technologies on the rational use of water resources, the technologies for risk management and company's reputation for developing technologies, and improving its investment potential on the international market.

## **2.7 Program of Sayano-Shushenskaya HPP Restoration**

In December 2010 the first stage of renovation work at the Sayano-Shushenskaya HPP was completed.

Hydraulic unit (HU) No. 3 with a capacity of 640 MW was connected to the grid for operational tests. The connection to the grid of the fourth restored unit (earlier HU No. 4, 5, 6 had been started) was ordered by the chairman of the Russian Federation Government Vladimir Putin during the video conversation with Sayano-Shushenskaya HPP.

To restore hydraulic unit No. 3 the hydraulic turbine was repaired and the generator was replaced. The fourth out of ten hydraulic units was restarted after all the necessary agreements and permits were acquired including those from Rostekhnadzor, Power Machines – Reostat Plant LLC and Grid Operator. The operation of Sayano-Shushenskaya HPP for 40 % of its installed capacity facilitates the execution of a task to supply of IPS Siberia consumers with electricity, provide additional reserves in the energy system for covering peak consumption and increase electricity supply reliability. Apart from starting the four units, the station will not carry out sterile spills in autumn – winter period as it was required during the previous winter. It allows us to minimize the risk of repeating last year's accident caused by the formation of snow-ice growth on the plant hydro technical facilities elements. Water supply of the territories located downstream the Yenisei in winter 2010–2011 provides for normal release into the downstream reach through the water way paths of four operation power units.

This start was the sign of completion of the first stage of Sayano-Shushenskaya HPP recovery. In 2011 RusHydro starts the second stage of the plant recovery. In 2011–2013, the company will install six absolutely new hydraulic units at the Sayano-Shushenskaya HPP, Power Machines – Reostat Plant LLC currently manufactures them. Four hydraulic units that were restored in the current year will be replaced with entirely new ones during the completion stage in 2013–2014. The service life of the new hydro units will increase by 40 years. Maximum efficiency of the new turbines will be 96.6 % and energy and cavitation sensitivity will also be upgraded. The turbines will be equipped with a more efficient system of technological protections. The started

hydraulic unit No. 3 will operate until October 2014 when its replacement with the new equipment will begin.

The Sayano-Shushenskaya HPP restoration program financing for 2010 according to plan was 12,478,430,000 rub.

Actual financing of the program for 2010 was 12,289,136,200 rub. (98.5 % from plan 2010).

#### **Main work on SSHPP restoration performed in 2010:**

- Restoration and start of hydraulic units HU 5, HU 6, HU 3, HU 4 according to time schedule;
- Development of working documentation as part of commissioning activities for HU 5, HU 6, HU 3, HU 4;
- Equipment supply for restoration of hydraulic units HU 5, HU 6, HU 3, HU 4;
- The development of complex project of SSHPP restoration;
- Restoration of general plant systems (electric lighting, fire extinguishing);
- Supply and installation of upgrade-stream and tail-bay gates;
- Development, agreement, approval of time regulations of use of water resources because of starting restored hydraulic units;
- Supply of blocks and spare parts for new hydraulic units ;
- Restoration of construction structures for HU 7, HU 8, HU 9;
- Inspection of hydraulic jump basin of operation spillway.

#### **2.8 Personnel development**

The education and development of JSC RusHydro's personnel is continuous and is planned and performed in periodic sequences. It is based on the following forms:

- Advanced training – at least once every three years;
- Professional education and training – subject to supervisory requirements, if there is a need to obtain a new profession;
- Occupational re-training – subject to business needs to carry out new professional functions or to receive additional qualifications and to train the personnel reserve;
- Corporate training – if there is a need to achieve company-specific tasks involving RusHydro employees or external trainers;
- Internal business training – annually;
- Short-term programs at educational institutions (seminars, conferences and forums) – annually, depending on business needs;
- Correspondence courses – annually, depending on business needs.

An essential component of JSC RusHydro's personnel development is personnel reserve management for the following purposes:

- Meeting company development challenges;
- Consistently reinforcing the company's executive staff with highly qualified personnel;
- Upgrading the recruitment and deployment level for executive staff, introducing the practice of forecasting staff movement (career planning);
- Reducing risks associated with appointing employees to executive positions;
- Motivating employees' career growth and further stimulating employees to upgrade their education levels and professional qualifications.

The principal challenges of JSC RusHydro in terms of personnel reserve development include the following:

- Necessary and potential personnel reserve formation and development;
- Defining specific avenues for growing the personnel reserve with regard to candidates' individual differences and company needs;
- Developing necessary professional and management expertise for employees assigned to the personnel reserve and maintaining the relevant condition of the personnel reserve until vacant positions are filled;

- Supporting the rotation system for the company’s executive personnel by developing and approving the scheme for appointing prepared reserve members to fill vacant positions in the company and its subsidiaries and dependent companies.

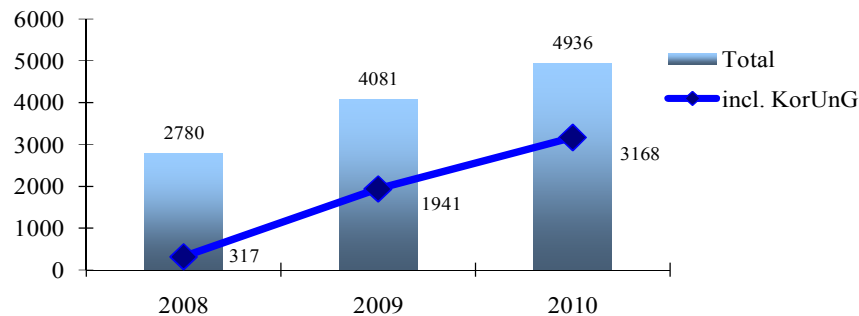
The efficient development of JSC RusHydro’s personnel reserve is based on the following principles:

- Focusing on strategy – consistent goals and principles for personnel reserve development and generating strategic organizational competencies;
- reliability – using technologies with a high degree of forecasting and reliability to assess and train personnel;
- growth – creating opportunities for the company’s employees to achieve professional accomplishments.

In 2010 4936 people got training, enhanced qualification and received occupational re-training at JSC RusHydro; including 623 workers, 2776 specialists and 1537 managers.

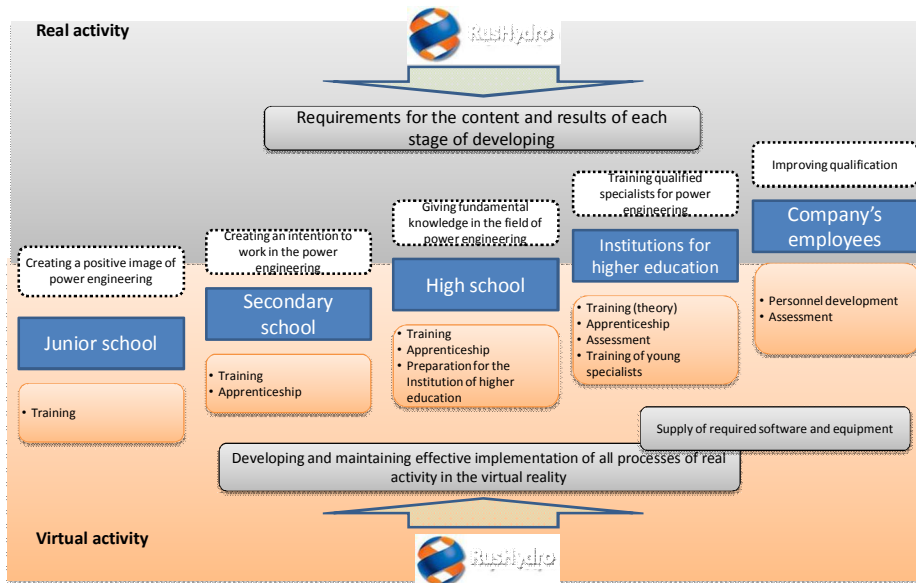


Comparative analysis of the personnel having got training, enhancement of personnel qualification and occupational re-training (pers)



Because of the necessity of ensuring a personnel reserve to start of 22.2 GW new capacities for 2020 and to perform key tasks of the company’s industrial programs, such as maintaining reliable and accident-free operation of the sites and increase of operational efficiency, reducing the human risk factors. Because of improving the professional training and responsibility of the employees at all levels, in September 2010 the chairman of the Management Board, JSC RusHydro E. V. Dod approved the framework for the company’s personnel potential priority development training From New School to Workplace, and the program for its implementation. The main aim of the program is to develop engineering education and promote technical professions, create conditions for compliance with the requirements of the JSC RusHydro in qualified specialists who are expected to operate existing and newly introduced technology at the company facilities, to maintain their reliable and accident-free operation.

## System of personnel potential priority development training



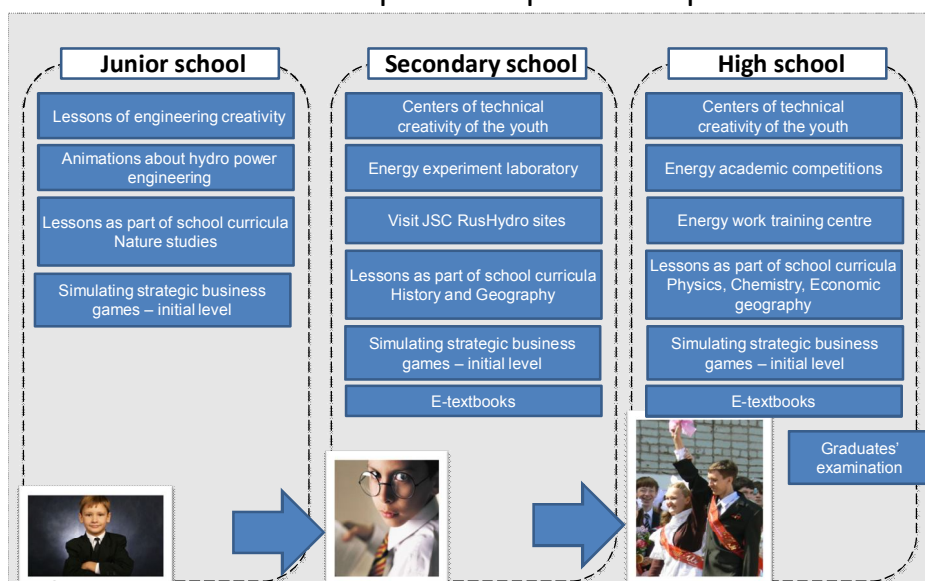
As part of the program the following is performed: Projects for special competencies development for future specialists – hydroengineers starting from junior school, activities for early professionalization of junior and secondary school pupils, students training in power engineering professions taking into account the requirements of JSC RusHydro, necessary conditions for efficient activity by young workers.

To implement the program for the company's personnel potential priority development training the continuous system of Corporate Ladders was implemented which shall provide young specialists for short-term, middle-term and long-term company demand for young specialists motivated for work for the company and trained in compliance with corporate requirements.

At the first step Corporate Ladder – new school there will be conditions for informing pupils about hydroengineering, professional prestige, an effective development of engineering abilities of future hydroengineers, their training on main and additional educational programs with embedded training into activities and specifics of RusHydro, career – guidance, profile institution entrance.

### Corporate Ladder – new school

Means for development of personnel potential.



In 2010 in seven regions of the company JSC RusHydro Corporate university of power engineering conducted seminars for 300 high school teachers to present teaching materials lessons for pupils, intended for career guidance of the pupils in the field of power engineering. The career guidance lessons comprise 38 lessons for schoolchildren from years 1 to 11 in seven subjects. Learning the world, Biology, Physics, Chemistry, Literature, History and Economic Geography. Each lesson is provided with schedule and methodological recommendations for teachers that allows the effective use of material in the academic environment. All training material is provided with visual support that will help teachers make their lessons more vivid and interesting.

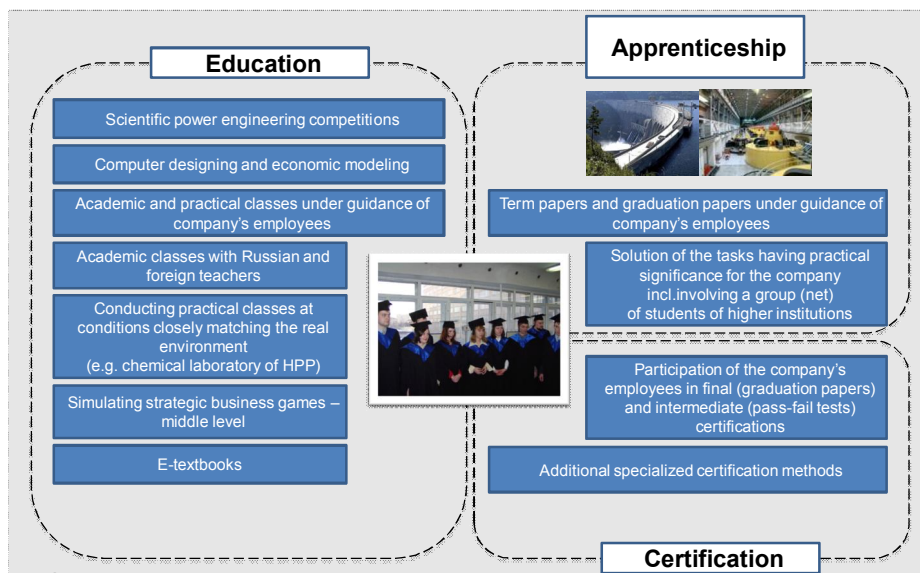
As part of development of engineering skills of future hydro-engineers in Cheremushki village the clubs and sections were established where children have the opportunity to discover and develop qualities required for future engineers. At the present moment there are the following clubs: Interactive club Trans Force, computer design workshop, section of designing and modeling, tourism, environment and chess clubs, musical ensemble and educational program Hydro-power engineering is developed. More than 200 children attend the clubs, more than 100 hours of extracurricular lessons per week. Children take part in the environmental expeditions, sports activities, win special competitions in model sport, creativity contests in web-design. Such centers of technical creativity will also be established in other regions.

To attract talented youth to specialized training institutions JSC RusHydro jointly with Moscow Institute of Energy (MIE) organized the first round of extramural internet – academic competition energy of education following the results of which 23 winners and awardees will take part in the Hope of Power Engineering Russian academic competition. The competition is held by the leading Russian higher education institutions with the assistance of JSC RusHydro. Active participation of JSC RusHydro in organizing and conducting the academic competitions results from the wish of attracting students to hydro power engineering at specialized institutions and then to the company. Based on results of the academic competition winners, pupils of year 11 get the right for non-competitive admission to specialized institutions with majors in power engineering.

Training and selection for future specialists to work at JSC RusHydro facilities shall be carried out at the second step of the corporate ladder – institutions of higher education. When implementing this step, JSC RusHydro and professional and higher education institutions collaborate mutually, to create effective mechanisms for selecting graduates and testing in with the special-purpose request of the company, accompanied with targeted training of RusHydro’s future workers and continuous development of science and technical and engineering-technical staff potential of the company and profile institutions.

### Corporate Ladder – EI\HEI

Means of personnel potential development.



RusHydro establishes and develops the institutional environment to attract its employees' children to specialized institutions. The standard collective agreement of the branches of the company gives benefits to the employees' children, who get specialized education such as corporate scholarships, travel expenses to the place of study and apprenticeships.

In 2010 JSC RusHydro and Siberian Federal University concluded an agreement for a strategic partnership. As part of this agreement the company representatives take part in meetings of the Board of Studies and education boards of the university and in developing the academic programs and educational standards, in supervisory boards, boards of trustees and other management bodies, in state examination and certification committees and in quality assessment of specialist training. As part of scientific and research activity joint projects are implemented on topical for the company R&D and R&AD, scientific and research papers competitions are held for students, grants for practical and academic research are planned for university teachers and postgraduate students. Also the work for organizing the apprenticeship and probations at RusHydro and foreign sites shall be developed.

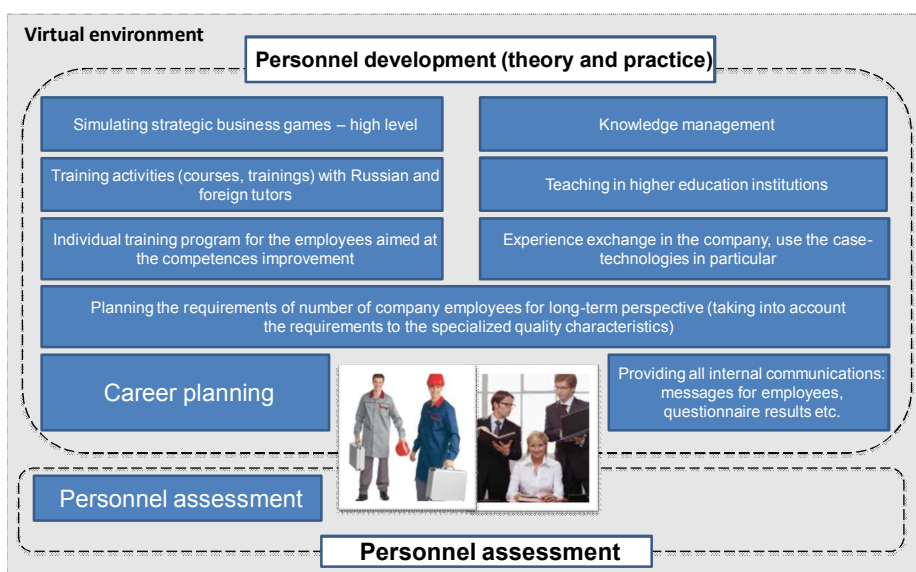
The main task of cooperation between JSC RusHydro and Siberian Federal University is aimed at the development of Sayano-Shushensky branch of the university. In Sayano-Shushensky branch of Siberian Federal University 126 specialists have been trained with Hydro power plants as their major. The branch comprises the following departments: Academic training, hydro technical facilities, hydro power engineering, hydro power plants, power system grid and electric grids. Since 2009 a new department has been established – a Bachelor's program in power engineering and starting from the academic year 2010 a new major is introduced hydro technical construction. In 2010 the amount of financial assistance from JSC RusHydro to Sayano-Shushensky branch of Siberian Federal University is more than 19 mln rubles. The graduates of Sayano-Shushensky branch of Siberian Federal University work at different sites of the company in different regions.

Sayano-Shushensky branch of Siberian Federal University To implement the agreement on strategic partnership concluded between JSC RusHydro and Siberian Federal University the Managing committee SFU-RusHydro, joint portal was established, a number of activities are approved aimed at improving the system of engineering training and R&D and R&AD performance.

Adaptation and development of young specialists hired by RusHydro, organization of mentoring and knowledge transfer, forming effective competencies, development media is performed at the third step Corporate Ladder – company.

### Corporate Ladder – company employees

Means for personnel potential development.





As part of the third stage of the Corporate Ladder – company for young employees – adaptation plans and individual development plans are developed. A monitoring system for young employees potential use is being implemented. At present the company formed perspective personnel reserve of young employees under 30 years. The development program is implemented. Together with students and post graduate students of institutions, young specialists of the company shall participate in R&D and R&AD performance and monitor and analyze the information for scientific research and developments.

## **2.9 Support of social and economic development of the regions**

JSC RusHydro promotes the company's sustainable development in regions in which corporate branches are located. The company's management team is aware of the impact of financial and social risks on local communities in remote Russian regions and, as a consequence, on JSC RusHydro's branches. Happy social environment increases the employees' efficiency and it increases the efficiency of the company.

Today, JSC RusHydro's main power consumers are individuals and enterprises in regions in which the company is present, and as a result, the company has added a social partnership policy to its regional business. It has concluded cooperation and interaction agreements with Russian constituents in regions in which the company is present.

As of December 2010, there were 17 valid agreements between JSC RusHydro and the following Russian regions:

- The Republic of Dagestan;
- The Kabardino-Balkar Republic;
- The Karachayevo-Cherkesskia Republic;
- The Republic of Sakha (Yakutia)
- The Republic of North Ossetia-Alania;
- Republic of Khakassia;
- The Republic of Altai;
- The Krasnoyarsk Territory
- The Amur Region (2 agreements);
- The Astrakhan Region;
- The Volgograd Region;
- The Moscow Region;
- The Novosibirsk Region;
- The Saratov Region;
- Republic of Bashkortostan;
- Saint-Petersburg.

In addition to serving economic and technological purposes, these agreements aim to create favorable conditions to address social challenges of Russia's regions.

The company's obligations and intentions include the following:

- Contributing to the construction of social infrastructure projects;
- Attracting small- and medium-sized business entities, experts and regional employees to implement joint investment projects and HPP construction in the regions in which the company is present;

- Locating production and cost-efficient HPPs in the regions, which allows the company to create new workplaces, upgrading the labor market situation in regions in which the company is present and facilitating tax payments in the consolidated budget to Russian regions;
- Contributing to charitable and sponsorship activities (supporting disadvantaged citizens, persons with challenges, pensioners, and medical, educational and children's organizations and institutions), subject to decisions by the Company's Board of Directors;
- Developing scientific potential and a system of personnel training and advanced vocational training for hydro-power industry employees;
- Assisting programs that develop hydro-power resources and regional potential;
- Implementing other approved social programs in the health, culture and sports spheres.

### **Agreement with the Administration of the Republic of Khakassia**

The Company has concluded a separate agreement with the Khakassia administration to establish a Coordination Council for rendering assistance to the families of deceased workers and those injured in the accident at the Sayano-Shushenskaya HPP named after P. S. Neporozhny in order to organize targeted assistance funded by charitable funds and other charitable sources.

JSC RusHydro is pursuing an integrated development Program for Cheremushki village social infrastructure. The Program considered renovating several social projects Because of their poor condition and the changed needs of citizens.

The 2011–2014 Plan calls for renovating the Shelkunchik (Nutcracker) child care center and School 1, repairs of two blocks of the village hospital and the purchase of medical equipment; repairs of electrical networks and ventilation in the maternity hospital in the Maina Village. In addition, the company plans to overhaul the Cheremushki Children's Art School and the heating system in the Evrika gymnasium, repair of the façade, auditorium and utilities of the Energetik Cultural Center, improvement of the pond territory within village borders and upgrading the park territory.

JSC RusHydro preformed the following first priority activities with total amount of 212 mln. Rubles including:

- Repair and equipment for School 2;
- Partial renovation of sports complex building and purchase of exercise equipment;
- renovating road surfaces of the central square in front of the Energetik Cultural Center;
- Renovating the municipal buildings for hostels for the students of Sayano-Shushensky branch of Siberian Federal University;
- Partial renovation of School 1;
- Renovation of the building of public association Veterans club Mudrost (Wisdom);
- repairing central and internal motor roads for Cheremushki Village.

In the course of building of Zaramagsky HYDROELECTRIC POWER STATIONS archaeological opening are carried out.

The head of the Ardonsky clove at Zaramag village was the site of archeological digs. Four archeological expeditions were sent here to dig five unique sites, which are historical and cultural landmarks with global scientific importance. Studying remains from the dig allowed scientists to amend their positions on the 7<sup>th</sup>-10<sup>th</sup> centuries and processes that took place in the Caucasus Region and in the southern Russian plains.

The digs showed that there was an important trade road running through the Nizhny Zaramag and Tsmi Regions that connected the Trans-Caucasian Region and Southwest Asia to the Southern Russian steppes and northern forest-steppe zone ruled by Khazarsky Kaganat.

The digs proved that Nizhny Zaramag was an important point on the ancient route. Burial sites contained temple rings, necklaces and beads, but most common were bronze, and sometimes silver, rings with glass insets. According to archeologists, results of this discovery are a critically important source for studying entire historical epochs and ancient civilizations.

Construction of the Zaramagskaya Cascade HPPs began in 1976, and the Cascade is unique in its technical parameters: the elevation change of the power system is 630 meters.

The environmental effect from commissioning the Zaramagskaya HPPs will replace approximately 270,000 tons of equivalent fuel in the North Caucasus fuel balance. This will significantly reduce atmospheric pollutant emissions, including: 3,500 tons of nitrogen oxide, 8,200 tons of sulfur oxide, 3,000 tons of ash and 420,000 tons of carbon dioxide.

Construction and additional commissioning of the Zaramagskaya Cascade provided tremendous momentum to the social and economic development of North Ossetia by establishing new workplaces and tax payments for the Republic's budget.

In 2007, while preparing the Zaramagskaya HPP reservoir bed, JSC RusHydro funded the development of the section Ensuring the preservation of historical and cultural landmarks located within the flood limits of the Zaramagskaya HPP reservoir bed of the construction project under Federal Law No. 73-FZ dated June 25<sup>th</sup>, 2002 for cultural heritage sites (historical and cultural landmarks) of Russian Federation populations.

During construction, it was discovered that the flood area of the Zaramagskaya HPP (with a maximum water level of 1,690.6 meters) covers five archeological sites with historical and cultural landmarks:

- Adaydon, a burial site (5,300 square meters),
- Zaramagsky Utes, a multi-level settlement (8,000 square meters),
- Tsmi, a medieval site of the ancient town (1,300 square meters),
- Tchidgom, a medieval settlement (3,000 square meters),
- Mamisondon, a burial site (1,600 square meters).

Because of the lack of federal funding and the need to commission the hydro-power facility within approved deadlines, JSC RusHydro has funded the conservation and rescue (archeological) work in the area flooded by the Zaramagsky HPP reservoir from its own investment program to the amount of 81,400,000 rubles.

Therefore, the company looks to contribute to the development of local communities in the regions in which it is present. For this purpose, it implements the following social projects: efforts to aid socially vulnerable groups; support for the preservation and development of cultural and historical landmarks; charitable events and the sponsorship of cultural, educational and sporting events and organizations.

## **2.10 Corporate charity**

JSC RusHydro takes an active part in economic and social life in regions where the company is present. Because of this task the corporate strategy of the company includes the charity program aimed at bringing up a new generation and developing the favorable social environment in all regions of HPP operation.

Guided by the Framework for Charity and Sponsorship the company devotes funds for the following:

- Aid to disadvantaged citizens, individuals with challenges and pensioners, primarily through charitable funds, organizations and institutions;
- Aid to veterans and honored power industry workers;
- Aid to children's organizations and institutions;

- Aid to medical institutions and health organizations;
- Assistance to restore Russia's historic and architectural monuments and to development culture, education, science and sport.

In 2010 JSC RusHydro funded charity and sponsorship activity in the amount of 434 mln rubles, including 34 mln rubles for implementation of the charitable Sail of Hope program.

### **Charitable projects within the program Sail of Hope**

Since 2008 JSC RusHydro has implemented a long-term complex charitable program, the Sail of Hope. The name of the program reflects one of the main aims of the project – to give hope and the opportunity for improvement to those who because of different reasons got caught in difficult conditions. Primarily it is the least protected part of the population – children from bad families or living in orphanages. Sail of Hope integrates the social adaptation, education of a child including in the fields connected with power engineering and, further, getting a profession. In future children interested in hydro power engineering will become new personnel potential of the industry.

### **Support of orphanages and educational institutions**

Helping children in orphanages the company does not limit itself to material assistance (buildings renovation, purchase of equipment, office equipment, studying materials etc.) The tasks of the charitable project comprise organization of development programs, contests, allowing the discovery of talented youth; organization of charitable new-year celebrations, equipping children play-grounds. Support of children's sports clubs and many others. Sail of Hope intends to show to children in complicated life situations that their talent, skills and knowledge are needed by Russian society.

Children from 16 orphanages and boarding schools, six children's social rehabilitation centers and challenged children centers, more than 10 sport schools and clubs got assistance from JSC RusHydro in regions with the company's presence in 2010. The assistance was also granted to secondary and musical schools, creative teams.

Within the Sail of Hope program RusHydro implements different training programs to attract the youth to hydro power engineering. They include contests of children pictures among young children, issue of new textbooks for higher institutions and providing grants to students.

### **Educational project – contest of students projects Energy of Development**

The main tasks of this annual contest are development of conditions for discovering and developing of youths' abilities; assistance in getting professional education and providing the possibility for implementation of the boldest professional and career ambitions.

In 2010 contest Energy of development was held for the second time on the topic of energy efficiency and energy conservation. More than 200 students and post graduate students from 57 Russian higher educational institutions took part in this contest.

### **Charitable ecological events**

As the company which uses green power engineering, RusHydro pays significant attention to the projects on environmental education of children as part of its charitable program.

Charitable ecological events comprise such projects as Oberegay!, the environmental charitable action, ecological program Moi Zhuravlik (My crane) with cooperation of Hingansky reserve, ecological and tourist camp with cooperation of Zeisky reserve.

Oberegay! action is intended for cleaning of rivers and water bodies, care of coastal territories, knowledge of HPP role in regulating water consumption, forming a responsible attitude towards nature, interest and love for environment and public spirit.

In 2010 before Children's Day JSC RusHydro affiliate – Bureyskaya HPP and Hingansky state reserve initiated joint educational, ecological program Moi Zhuravlik.

The program is intended for several months of summer and autumn period of 2010 and is for work with orphaned children and other socially unprotected children to involve them in nature, labor, giving them knowledge about the environment. Forty children for boarding school 5 of Novobureisky village and orphan asylum 16 from Novoraichikhinsk village got an opportunity to get acquainted with nature of their region and cranes.

JSC RusHydro branch – Zeiskaya HPP and Zeisky reserve held three ecological and tourist shifts for school children on the territory of Bekeldeul reserved forest this summer.

### **Project for different kinds of sports development**

For RusHydro it is a very important task to develop the projects connected with promoting different kinds of sport, as it gives an opportunity during the sporting event to show young people HPPs of the company, many of which are located on the largest rivers of the country. As part of charitable projects RusHydro equips sport and fitness facilities with required equipment, repair and development of sports grounds. Besides, the company supports sports, taking part in local competitions, sports tournaments, assisting in organization of international and interregional sports competitions.

Special attention is paid to water sports promotion. Since 2007 JSC RusHydro has co-operated with Russian whitewater federation. The company was a title sponsor of the first Russian whitewater competitions in Vladikavkaz. The competitions were held on the diversion canal of Dzauzhikauskaya HPP which is a part of JSC RusHydro affiliate – North-Ossetian affiliate.

### **Projects in the field of cultural landmarks**

Since 2007 JSC RusHydro has taken an active part in the construction and interior furnishing of Dormitory church in Bogorskoye village in Sergiev Posad District on the territory of Zagorskaya PSP.

For three years the company is a title sponsor of Moscow Easter Festival which in 2010 was noted not only for its geographical expansion – that is more than 30 cities of Russia but the duration as it lasted five weeks of live music.

Also JSC RusHydro continued financing Krasnoyarsk State Opera and Ballet Theater for the technical renovation of the theater.

### **65<sup>th</sup> anniversary of the Great Victory**

Together with the country JSC RusHydro celebrated the anniversary of the Great Victory of 1945. On this day more than 700 veterans of the company received special attention and congratulations. Warm welcomes and concerts, presents and financial assistance were some of the gifts given to the heroes of the occasion. Special anniversary events were held in all branches of the company. Furthermore, together with congratulations, each veteran and worker on the home front received a Sberbank card from the company with an open account for 10,000 rubles.

## Organization of children, youth and veterans leisure activities in Cheremushki village

The following leisure clubs continue to work in the Energetik Cultural Center, the Evrika gymnasium and Children's Art School for different groups of the population: Kangaroo school for young children from 1.5 to 3 years old, Azhur club on work with metal for teenagers, Yalichnost youth group for students and young specialists, Vernisazh art children studio, Konsonans choir group for women, club of pop music, bands for young people of the village, Vokshebnaya glina club, Yuny spasatel club, air-ship-auto-modeling clubs, allows there are classes on guitar playing for children and adults.

Invited by JSC RusHydro in Cheremushki village lead singers of the Bolshoi Theatre, Traveling art academy and participants of VI International ecological and ethnic festival Puppet show CHir Chaiaan gave their charitable concerts and performances.

In May 2010 JSC RusHydro Corporate Hydropower University organized the visit of the pupils from Cheremushki village to Moscow and Uglich. The children visited such famous historic places as Red Square, the Kremlin, the Sparrow Hills, Uglichskaya HPP and Central museum of Russian hydro power engineering.

Twenty children and teenagers whose parents were killed or injured in the Sayano-Shushenskaya HPP accident received a holiday and psychological rehabilitation at the Orlenok Children's Center on the Black Sea in June 2010. The vouchers were given free of charge based within Russian charitable action Under the colors of kindness, and traveling expenses were compensated at the expense of charitable funds, transferred to the account of trade union organizations of the Sayano-Shushenskaya HPP.

With assistance of JSC RusHydro pupils of the Cheremushki Children's Art School took part in the international musical festivals– contests Open Europe and Hopes, talents, masters, which were held in Bulgaria in August and September 2010. With the assistance of JSC RusHydro taking part in the events of the international level gives young contestants great opportunity for their professional development and for talented children such events can give them a head start for successful national or international career.

Following a request from the citizens of Cheremushki village to the community liaison office, JSC RusHydro executed an overhaul the Mudrost club, which comprises more than 200 older citizens of Cheremushki village for 14 years. In the new building honored citizens of Cheremushki village and Saynogorsk town, veterans and pensioners of the village have an opportunity to hold their musical, art and friendly gatherings in comfortable conditions.

### Charitable and Sponsorship Funds Allocated by JSC RusHydro

Branch	2009, rubles	2010, rubles
RusHydro, headquarters	106,930,248	340,454,902.98
Saratovskaya HPP	1,700,000	1,530,000.00
Zagorskaya PSHPP	570,310	600,000.00
Dagestan branch	8,000,000	7,200,000.00
Cascade of Verkhnevolzhskiy HPPs	1,000,000	900,000.00
Kamskaya HPP	1,360,000	1,224,000.00
Volga HPP	2,000,000	1,800,000.00
Zhigulevskaya HPP	3,992,020	3,999,958.17
Cheboksarskaya HPP	1,500,000	1,350,000.00
Northern Ossetia Branch	1,800,000	1,620,000.00
Votkinskaya HPP	1,920,000	1,728,000.00
Zeyskaya HPP	2,984,500	2,800,000.00

Nizhegorodskaya HPP	1,450,000	1,395,000.00
Cascade of Kubanskiye HPPs	500,000	450,000.00
Novosibirskaya HPP	110,000	200,000.00
Bureyskaya HPP	1,000,000	900,000.00
Irganayskaya HPP	1,500,000	1,350,000.00
Sayano-Shushenskaya HPP n.a. P. S. Neporozhny	146,425,000	64,137,808.00
Kabardino-Balkarsky branch	470,000	500,000.00
Karachaevo– Cherkessian branch	250,000	200,000.00
<b>Total charitable and sponsorship costs</b>	<b>285,462,078</b>	<b>434,339,669.15</b>

### 3. Management in the sphere of sustainable development and communication with interested parties

#### 3.1 Management on the sphere of sustainable development:

Corporate governance in JSC RusHydro is geared to shaping the conditions for sustainable development of the business activity for long-term perspective, increasing the company value, supporting stable growth of financial indicators, exercising control and mitigating risks, and providing for successful cooperation with interested parties (stakeholders) of the company.

Efficient task solution by JSC RusHydro in the field of sustainable development is provided with the modern management system of the company, experienced and responsible governance with great experience in establishing and management of hydro power engineering assets including abroad.

#### Corporate governance in JSC RusHydro is based on the following main principles:

**Accountability.** The Code envisages accountability of the Board of Directors of the company to all shareholders in accordance with legislation and serves as an instruction manual for the Board of Directors in developing strategy and exercising management of and control over the activities of the company's executive bodies. The Management Board and the Chairman of the Management Board are accountable to the Board of Directors of the company and to the General Meeting of Shareholders.

**Fairness and an equitable attitude towards all shareholders.** The company undertakes to defend the rights of shareholders and to ensure an equitable attitude towards all shareholders. The Board of Directors provides all shareholders with an opportunity to receive effective protection in the event of a violation of their rights.

**Transparency.** The company provides for timely disclosure of accurate information about all material facts relating to its activities, including its financial status, social and environmental indicators, the results of its activities, ownership structure and management of the company, as well as free access to such information for all interested parties.

**Conscientiousness.** Conscientious exercise by all shareholders, the company, its bodies, officials and other interested parties of their rights and preclusion of rights abuse.

### 3.1.2 Corporate management.

JSC RusHydro's corporate governance system is focused on complying with Russian laws and international norms. The corporate governance structure and its mechanisms are continuously improved with a view to JSC RusHydro's strategic goals and best Russian and global practice.

JSC RusHydro is a member of a number of non-commercial international organizations such as:

- E8;
- World Economic Forum, WEF;
- World Energy Council, WEC;
- Non-commercial partnership Russian and Chinese business council;
- International Hydropower Association, IHA;
- International Commission on Large Dams, ICOLD;
- International Association for Hydro-Environment Engineering and Research, IAHR.

JSC RusHydro representatives are members of the committees and working groups of IHA, ICOLD, IAHR, WEF, e8.

JSC RusHydro is a public company. Its securities are traded on both of the leading Russian exchanges (RTS and MICEX), as well as on the LSE.

The company's basic corporate governance principles are set forth in JSC RusHydro's Code of Corporate Governance, which has been developed in accordance with the Code of Corporate Conduct recommended by the Russian Federal Securities Commission, corporate governance principles of the Organization for Economic Cooperation and Development (OECD) and the Company's Charter.

#### The structure of JSC RusHydro's management bodies includes:

**The General Meeting of Shareholders** – the supreme management body of the company through which shareholders exercise their right to participate in management of the company;

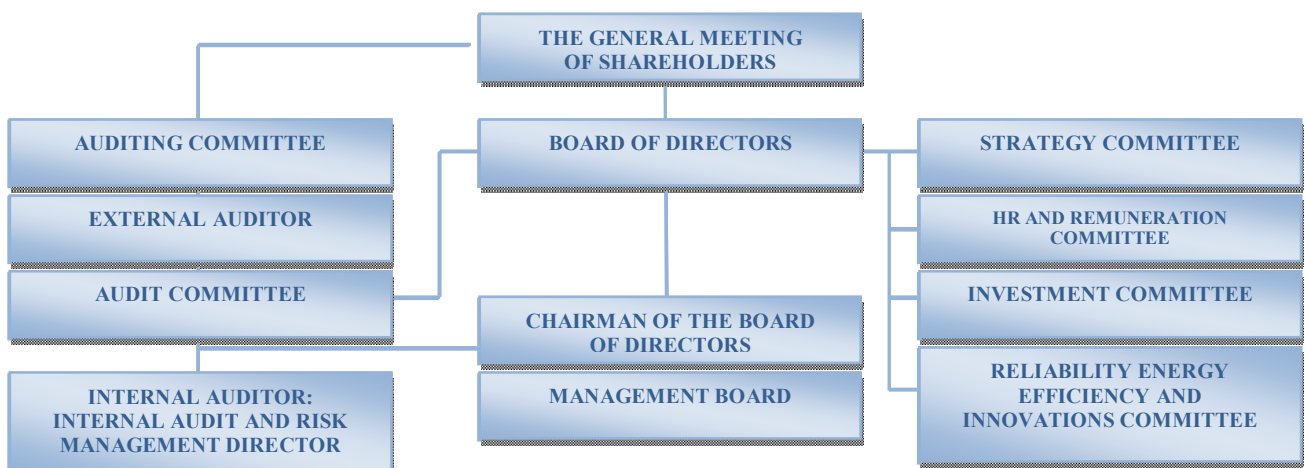
**The Board of Directors** – the management body responsible for developing the company's strategy, for overall management of its activities and control over those of its executive bodies. The Board of Directors of the company may also set up committees under the Board of Directors.

**Committees under the Board of Directors** – consulting and advisory bodies of the Board of Directors of the company created for the purpose of preliminary consideration of the most important matters falling within the terms of reference of the Board of Directors.

**The Management Board and the Chairman of the Management Board** – the management bodies in charge of the daily activities of the company and implementing the strategy determined by the Board of Directors and the shareholders of the company;

**Audit Commission** – the body exercising control over the financial and business activities of the company, accountable directly to the General Meeting of the company Shareholders.

#### The structure of JSC RusHydro's management bodies





JSC RusHydro continuously develops and improves its management system. In 2008, the company expanded the range of committees of the Board of Directors by establishing the HR and Remuneration Committee and the Investment<sup>3</sup> Committee.

In 2010 Provision on the Audit Committees under the Board of Directors of JSC RusHydro was approved as amended.

In a new edition of the provision on the Audit Committee the requirements to the committee activities were taken into account as set in the following local normative resolutions of the company:

- Provision on the internal risk control and management policy of the company.
- Provision on the insider information of the company.
- Code of Corporate Governance of the company.

Also during the development of new edition of the Provision the recommendations of the organization of the Audit Committee set in the following documents were taken into account:

- the Code of Corporate Conduct of the Russian Federal Securities Commission (FSFM);
- Code of Corporate Governance of Great Britain;
- Recommendations on Audit committees activities prepared by the Council of financial statements of Great Britain.

The amended provision on the Audit Committee is aimed at increasing effective oversight, performed by the Board of the Directors on the financial and economic activities of the company, at the level of corporate management of the company and compliance with its best practices.

Matters of the sustainable development are constantly the focus of attention of company management. These matters are paid significant attention in the annual report of the company, which is presented to the General Meeting of the company shareholders. General management of the company activities in the field of the sustainable development is performed by the Board of the Directors and the Chairman of the Management Board. The organized committees of the Board of Directors regularly consider the key matters of the company activity.

### **3.1.3 Systems of social and ecological management, monitoring of program effectiveness in the sphere of sustainable development.**

#### **Implementation of Environmental management system**

In 2010 RusHydro continued to implement Environmental management system in accordance with international standard ISO-14001-2004:

- RusHydro managers, branch and SAC managers and staff passed training on the following: Environmental management system and environmental audits;
- JSC RusHydro – Volzhskaya HPP branch environmental management system has successfully passed re-certification to comply with international standard ISO 14001-2004, certificates of conformance were received;
- JSC RusHydro Cheboksarskaya HPP and Kamskaya HPP branches received certificates of conformance of the existing environmental management system to the requirements of standard ISO 14001:2004.

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<sup>3</sup> For more information on JSC RusHydro's corporate governance system please see the Company's Annual Reports (2009 and 2010 Annual Reports, Corporate Governance Section).  
A set of JSC RusHydro's documents regulating corporate governance and Minutes from the Board of Directors is also posted on the corporate website.

## **Participation in international environmental initiatives**

In 2008 JSC RusHydro started participating in cooperation with International Hydroenergy Association (IHA) and other partners in order to issue the Protocol of HPP sustainable development assessment (Protocol of IHA). This document is a tool for assessment in accordance with criteria of sustainable development applied to the activity of hydroenergy facility during all the phases of its life cycle.

Implementation and application of IHA Protocol over the Russian Federation territory ensures assessment in impersonal and comprehensive manner of HPP impact to economic, environmental and social components in accordance with adopted international standards and criteria.

In 2009–2010 JSC RusHydro continued performing cooperation with International Hydroenergy Association (IHA) to improve Protocol of HPP sustainable development assessment (Protocol of IHA). Within the framework of this work the experts of JSC RusHydro prepared a set of suggestions to the final revision of Protocol of IHA, major part of these was taken in account.

In October of 2010 the International Hydroenergy Association approved the final revision of Protocol of IHA and recommended it for adoption. In December of 2010 JSC RusHydro prepared the draft of Russian edition of final revision of Protocol of IHA.

The company intends to continue and even expand cooperation with International Hydroenergy Association within the framework of sustainable development and implement international experience within the Russian Federation. Cooperation with WWF-Russia is expected, it will relate to improvement of Russian translation of the final revision of the Protocol and making available of official text at the project internet site: [www.hydrosustainability.org](http://www.hydrosustainability.org), as well as testing of one of the Company facility with the Protocol. Based on testing results it is planned to organize concluding conference for development of recommendations for application of the Protocol over the territory of the Russian Federation.

### **3.1.4 Position in relation to government policy and participation in the development of the state policy and lobbying**

JSC RusHydro is completely integrated to state social politics for creating conditions ensuring decent life and free development of the human. Basic company efforts within the framework of social tasks solution are carried out by using a comprehensive approach, combining interests of the domain and state as well as taking in account the existing international experience and social standards.

The Government is a majority stake-holder of JSC RusHydro that implies certain liabilities and significantly influences company strategy.

JSC Basic Company efforts within the framework of social tasks solution are carried out using a comprehensive approach, combining interests of the domain and state as well as taking in account the existing international experience and social standards. Company interests are not limited exclusively by the business interests. The frameworks of this interaction are determined with equal account of the company interests and the population interests of JSC RusHydro regions of presence.

JSC RusHydro with proactive Rostekhnadzor interaction performs operations for restoration of Sayano-Shushenskaya HPP named after Neporozhny P. S.

In 2010 the operation for realization of program of comprehensive diagnostics and expert review of JSC RusHydro HPP equipment condition based on the contract with FSUE VO Safety – company subordinated to Rostekhnadzor continued.

Within the framework of Plan 2010 of the company strategy execution the interaction with Moscow Region Government, Moscow Government, Ministry of Agriculture of the Russian Federation, Federal Forestry Agency was performed, it related to the execution of mission of the Prime Minister Deputy Sechin I. I. dated 02.03.2010 No. IS-P9-1206 On the transfer of land plots of forestry fund to the land plots of industry for the purpose of Zagorskaya PSP-2 construction. On 23 September 2010 the Russian Federation Executive Order No. 1577-r was

signed, it relates to the transfer of land plots with overall surface 211.0496 Ha from the category of forestry fund to the category of industry, energy technology, transport, communication, radio broadcasting, television, informatics for ensuring space activity, defensive lands, safety and other special purpose for construction of Zagorskaya PSP-2.

Managers and specialists of JSC RusHydro as experts participate in operation and form part of several state commissions.

In order to improve regulatory background the specialists of JSC RusHydro participated in 2010 in the following:

- development and approval of the draft of the Federal law On the safety of the facilities of energy economy, changes to the Water Code of the Russian Federation and the Land Code of the Russian Federation providing creation of the protective zones of HPP's at adjacent land plots and water sites (developer – Department of Energy of the Russian Federation in cooperation with Federal Security Service of Russia, Ministry of Internal Affairs of Russia, Administration of the President of the Russian Federation, the basis for development – the order of the President of the Russian Federation);

- at a work group of the Ministry of Energy of Russia for preparation of suggestions for changes and amendments to Federal law On the electric energy aimed to the improvement of industry functioning;

- preparation of amendments to the Federal law On electric energy providing the participation of JSC RusHydro representative in the Supervisory Board of NCP Market Council;

- preparation and approval of Rules of the wholesale market of electricity and power (the resolution of the Government of the Russian Federation dated 27.12.2010 No. 1172);

- preparation and approval of the resolution of the Government of the Russian Federation dated 31.12.2010 No. 1242 On changes implementation into certain acts of the Government of the Russian Federation relating the issues of functioning of retail electricity markets.

During 2010 the company representatives participated in Parliament hearings and round tables organized by the Federation Council and the State Duma of the Federal Assembly of the Russian Federation as well as in events organized by the Chamber of Commerce and Industry of the Russian Federation, the Russian Union of Industrialists and Entrepreneurs, industrial unions of employers and Association of managers for the creation of a legal framework for social and labour relations, environment, including:

- in a meeting of the Commission of the Federation Council for interaction with the Chamber of Accounts of the Russian Federation that took place 25 of January 2010, it concerned the problem of Checking efficiency of State capital investments use provided in 2007–2008 by the federal targeted program for funding individual social important facilities located on the territory of Chelyabinsk and Magadan regions;

- in meeting of round table of Committee of the State Duma for science and high technology that took place on the 9<sup>th</sup> of February 2010, relating to: energy technology and strategy of Russia's national safety. scientific and methodological aspect;

- in parliamentary hearings at the State Duma of the Federal Assembly of the Russian Federation on the 11<sup>th</sup> of February 2010 on the following issue: On improvement of legal framework for ensuring safety of industrial facilities;

- in a meeting of a round table in the Federation Council of the Federal Assembly of the Russian Federation that took place on the 25<sup>th</sup> of February 2010, on the following issue: On the use of alternative energy sources;

- in a meeting of a round table in the State Duma of the Federal Assembly of the Russian Federation that took place on the 23<sup>th</sup> of March 2010, on the following issue: Creation of basis of normative and legal regulation for alternative energetic as factor of the Russian Federation energy safety improvement;

- in parliamentary hearings at the State Duma of the Federal Assembly of the Russian Federation on the 14<sup>th</sup> of September 2010 on the following issue: Improvement of legislation in the sphere of supplying the population with pure water;

- in a meeting of round table in the State Duma of the Federal Assembly of the Russian Federation that took place on the 10<sup>th</sup> of November 2010, on the following issue: On development of regulatory framework for implementation of the clauses of the Federal Law

No. 261-FZ On energy saving and increase of energy efficiency and changes input to individual legislative acts.

The representatives of JSC RusHydro presented in reports and speeches the position of the company, precise remarks and suggestions to the drafts of the laws and other regulatory acts.

Along with authorities of the regions with JSC RusHydro's presence, the company supports good relations aimed at resolving social and economic tasks of the regions. One of the forms of strengthening and development of mutually beneficial social and economic cooperation at long term and stable basis is awarding cooperation and collaboration contracts with the subjects of the Russian Federation that are the regions of the company presence. A working meeting of JSC RusHydro management with administration of the Russian Federation subjects are held on regular basis; these concern actual issues and discussions of the collaboration development prospects. With the aim of efficient implementation of investment and other social and economic projects on the territory of the regions joint work groups are created with participation of the company and regional authority representatives.

With company collaboration many socially significant for the region of presence projects associated with development and modernization of social infrastructure facilities – education, medicine, culture, sports, etc. are implemented. The dialogue with local community takes places even during the regular activity of the company, particularly, within the framework of conditions creation for participating in activities for implementation of investment projects of the companies on the territory of the Russian Federation subjects, that are registered on the territory of the corresponding region while strictly following corporative procedures and the legislation of the Russian Federation. Within the framework of charity JSC RusHydro ensures targeted support for socially unprotected populations as well as participates in activities for preservation of cultural and historical heritage. Therefore the company is an active participant of the process of regional and local social and economic policy for elaboration of efficient mechanisms of population social protection in the regions.

### **3.2 Interested parties list, main trends, forms and results of communication, dialogue development**

RusHydro formulates and implements its strategy taking into account the interests of society on the whole, national development priorities, and global, social and ecological challenges. In its activity the company ensures balance of the interests of particular parties – shareholders, personnel, consumers, partners and other groups one way or another related to the company's activity.

RusHydro strives to build relationships with stakeholders based on openness, solidarity, respect, fair practice and qualifications, attaching strategic importance to this task: the company's ability to respond flexibly to macroeconomic changes and market performance, manage social and environmental risks, minimize accident risks in many ways depends on the quality of communication with interested parties.

The principles and priorities of communication with interested parties are reflected in the corporate management code, code of conduct, as well as in documents regulating the company's activities in different areas, such as communication policy, environmental policy, charity policy, etc.

Social and economic roles as well as the company's range of activities define its wide circle of interested parties which includes its shareholders and investors, business partners, personnel, public authorities, local public, community and mass media.

#### **JSC RusHydro's interested parties**

##### **Shareholders and investors**

A controlling stake belongs to the Russian Federation represented by the Federal Assets Administration Agency (Rosimushchestvo). Among JSC RusHydro's shareholders there are more than 300,000 Russian and foreign investors.

## Government

The government is the company's shareholder (see above). Besides that RusHydro works with the government on a federal and local level.

## Personnel

There are more than 5,000 employees in RusHydro and its affiliates, they are workers, engineers and specialists.

## Business partners

The company's products are mainly used by large Russian industrial consumers.

## Local public

RusHydro's affiliates operate in the major federal districts in Russia – in Central, South, North-West, Siberia, Far East, Volga and North-Caucasian regions.

## Community

The company interacts with industrial, professional associations, including foreign ones, environmental organizations, non-profit institutions representing a wide range of social interests. Significant efforts were focused on the company's strategy development with the use of international organizations formats: international initiatives Copenhagen Initiative (WEF) and 3S (Vattenfall) regarding issues of climate changes and CO<sub>2</sub> emissions reduction, WEF initiative on water resources efficient use and management, e8 initiative on sustainable development and energy security.

## Main principles for communication with interested parties:

<b>Shareholders and investors</b>	<ul style="list-style-type: none"><li>• Fullfilment of obligations.</li><li>• Increasing level of information transparency and availability required to make investment decisions. Regular activities to enhance the company's value and investment potential, and improve corporate and risk management.</li><li>• Sound business practice and observance of business ethics, promotion of the company's brand and corporate image.</li></ul>
<b>Government</b>	<ul style="list-style-type: none"><li>• Enhancing efficiency of the company's contribution to improve national and regional competitiveness, better use of labor and natural resources, introduction of innovations, tax payment to federal and local budgets.</li><li>• Partnership with the government to implement programs of social and economic development.</li><li>• Contribution to handling sustainable development of the industry, Russia's energy strategy, social and environmental policies, participation in regional problem solving.</li></ul>
<b>Personnel</b>	<ul style="list-style-type: none"><li>• Respect for the individual and employees' rights. The company does not permit gender, politics, religion and nationality discrimination to employees during employment, remuneration, advancement.</li><li>• Staff policy transparency.</li><li>• Subsequent operation focused on ensuring health and safety.</li><li>• Arranging necessary conditions for career advancement, and improving social prosperity.</li><li>• The company does not use child labor or forced labor.</li></ul>

	<ul style="list-style-type: none"> <li>• Fair and competitive remuneration.</li> <li>• Social assistance to employees and pensioners. Equal opportunities to participate in corporate social programs.</li> <li>• Constructive dialogue with trade unions.</li> </ul>
<b>Business partners. Suppliers and consumers</b>	<ul style="list-style-type: none"> <li>• Solidarity, stability and reliability.</li> <li>• High quality services.</li> <li>• Competitive mechanisms for choosing partners.</li> <li>• Economic feasibility of pricing policy. Focus on long-term mutually beneficial relations.</li> </ul>
<b>Local public</b>	<ul style="list-style-type: none"> <li>• Meet the demands for electricity supply in the regions.</li> <li>• Contribute to the development activities in the region. Assist socially unprotected population groups and youth.</li> <li>• Environmental friendliness.</li> <li>• Preserve and develop items of cultural and historical value.</li> <li>• Dialogue with local community is a mandatory component of the company's social activities. Support of local public initiatives focused on improving people's quality of life in the regions where the company is operating.</li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>• Availability and transparency of the information on the company's activities in accordance with the corporate communications policy.</li> <li>• Dialogue development.</li> </ul>

The company develops various mechanisms to communicate with interested parties:

- regular questionnaires for employees and consumers;
- negotiations and meetings;
- public consultations;
- joint working parties;
- hot-lines for employees and consumers;
- meetings with the company's management;
- presentations for investors.

The company is attentive to stakeholders' views. Regular questionnaires are commonly used; their purpose is to determine areas of cooperation with different groups of stakeholders.

A constant dialogue with interested parties, and a smoothly running feedback system make it possible to reduce on time both risks and new opportunities to expand and to enhance efficiency of the company's activities.

Within the framework of cooperation with stakeholders, an important project is to prepare a corporate report on sustainable development. An integrated, classified representation of information on the company's activities, important for the society and specially interested parties, is intended for the company's growth of credibility,, it helps to outline essential issues and the most crucial tasks of this cooperation. The content of this report in many significant aspects reflects results of the dialogue with the interested parties. The company has been preparing reports on sustainable development since 2007.

### **3.3 Corporate communications**

An advanced system for corporate communications is used at RusHydro, it includes the following:

- an official corporate site in Russian and English;
- information Internet-products (infographic trailers, a weekly video log at Sayano-Shushenskaya HPP, etc.);
- the company's annual reports for investment professionals;
- a corporate publication RusHydro's Newsletter;
- the company's intranet-portal where news, announcements and reference documents are placed, and which provides access to the company's hot-line;
- corporate press-releases;
- corporate system of documentation management.

Corporate communications activities are regulated with the communication policy of JSC RusHydro, which, in turn, is based on the following principles:

- regularity and efficiency;
- information availability;
- completeness and truthfulness of disclosed information.

Balance between the society's openness and protecting its commercial interests.

Corporate communications system in the company is constantly growing, adapting to information requests from investors and other target groups.

## **4. Main results in the sphere of economical and social activity, environmental protection**

### **4.1 Economic efficiency**

JSC RusHydro's economic activity is an important factor contributing to a social and economic development of the company's activities regions and the country itself on the whole. The company contributes to development of the national and regional economics as power resources supplier, big employer and taxpayer. The company revises its production and develops its scientific and technological potential, it conducts an active innovation policy.

#### **JSC RusHydro's place and role in power engineering in Russia**

JSC RusHydro is one of the three largest power generating companies in Russia. JSC RusHydro is a leader in power production using renewable energy sources, developing power generation using water flows, tidal, wind, and geo-thermal energy.

JSC RusHydro was established in December 2004 as part of the government program on power engineering reform and formation of a competitive branch in accordance with Decree of the Government of the Russian Federation No. 1254-r dated 01.09.2003.

Consolidation of hydro-generating assets of JSC RAO UES of Russia on the basis of JSC RusHydro was carried out from 2005 till 2008 in several steps; they included an additional issue of shares paid with batches of shares of hydroelectric power plants and property complex used by hydroelectric power plants for electricity generation, as well as consolidation and reorganization in the form of subsidiaries and affiliates accession to the company.

In 2007, following an additional issue of shares, the Russian Federation (represented by the Federal Assets Administration Agency, Rosimushchestvo) went into the stock capital of the company.

In January 2008 the first stage of JSC RusHydro's consolidation was completed by affiliating twenty joint-stock companies. The same year, in July, there took place a final

affiliating step – JSC State Holding HydroIGC, as well as JSC Minority Holding HydroIGC, JSC Irganayskaya HPP and JSC Cascade of NCh HPP, separated from JSC RAO UES of Russia, were reorganized in the form of accession to JSC RusHydro, shares of these societies were converted to shares of JSC RusHydro.

Following the consolidation results, the company combined more than 50 hydroelectric power plants in 18 regions of the Russian Federation with total installed capacity exceeding 25 GW.

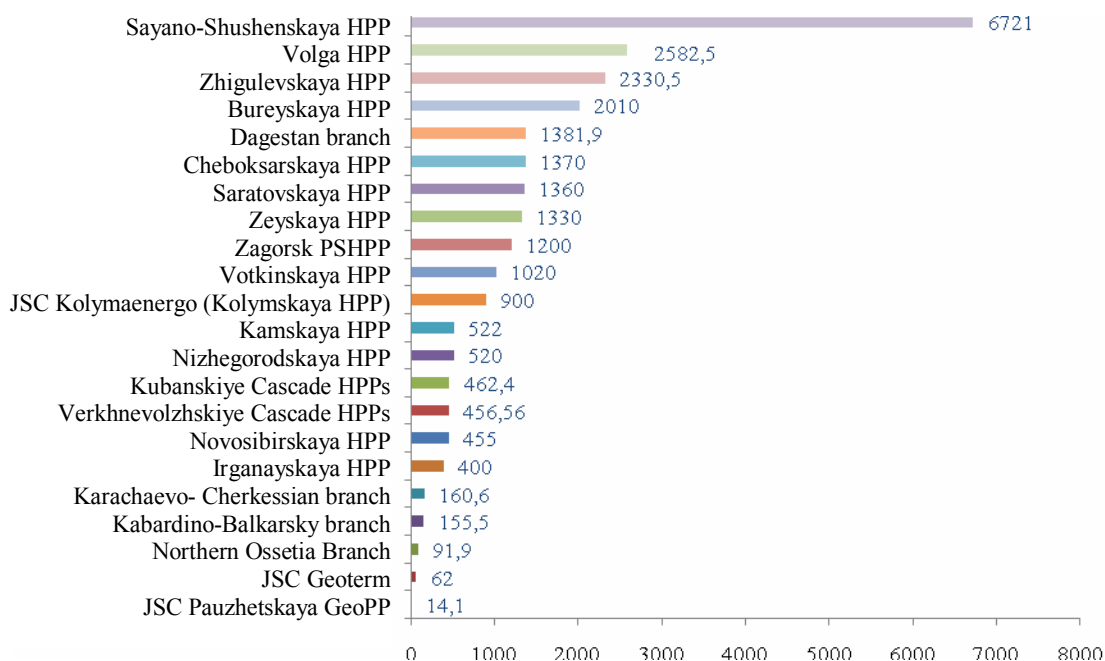
In 2010 the company continued development of its production potential: construction of Kashkhatau HPP and Egorlykskaya HPP-2 was completed, there started a consolidation of hydropower assets in Siberia (the company acquired a block equity holding of Krasnoyarskaya HPP).

Besides this the company developed rapidly in priority directions: power supply (by acquisition of a number of core businesses), innovative and research and development sectors (acquisition of 100% of JSC Institute Hydroproject shares) Once again the program to reach foreign markets was started; it had been stopped during the economic crisis of 2008. The company pays special attention to developing an alternative energy industry in Russia, as well as energy efficiency and greater efficiency enhancement programs declared by the country's government as one of the development priorities for the industry.

At present, JSC RusHydro serves as a strategic company in the energy sector and at the same time it is a structure supporting operation and security of the key systems required for the state.

Total installed capacity of the company by the end of the year 2010 amounted to 25,505.96 MW (taking into account JSC Kolymaenergo, JSC Geoterm, Pauzhetskaya Geothermal Power Plant, JSC Zamaragskiye HPPs and Eshkakonskaya Malaya HPP), which is 108 MW more than the installed capacity at the end of 2009.

### *The company's installed capacity*

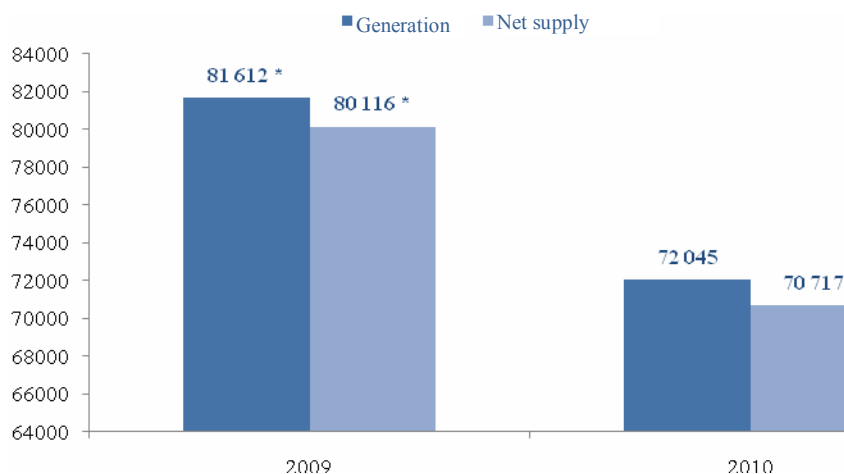


During the accounting period the company produced 72,045 mln kWh of electrical power, which is 9,609 mln kWh less than during 2009. The decrease in power generation in 2010 compared to



the previous year was caused by an accident in August 2009 at Sayano-Shushenskaya HPP and by the fire at Irganayskaya HPP in September 2010.

### Power generation and net supply dynamics



\* Generation and net supply for 2009 are indicated without Pauzhetskaya GeoPP taken into account, it was acquired by the company in 2010.

Actual power generation amounted to 98.2 % of the planned one, which was caused by low water in the basin of Volzhsky-Kamsky Cascade HPPs. Despite an unfavorable hydrological situation (annual inflow was 16 % lower than the long-time average annual value), due to an optimal management of water resources during the year, the power generation at this cascade in 2010 is practically equal to the long-time average annual design value. Optimum use of water resources to generate power at hydropower plants of the company's branches made it possible to supply up to 930 mln kWh additionally.

In 2010 the company revised the approach to implementing HPP modernization programs, namely – contract signing with strategic partners for the integrated modernization and reconstruction of hydro-technical structures and HPP equipment.

#### When implementing this approach in 2010:

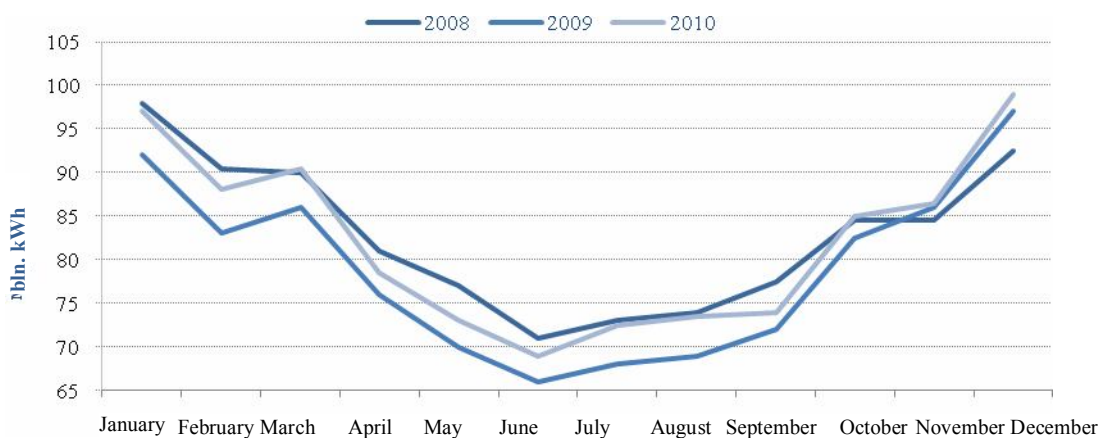
- the company signed an agreement with a consortium of Alstom Hydro France, Alstom LLC, JSC OEK on general terms of the contract for reconstruction and modernization of the Kubanskiy Cascade HPPs;
- the company signed a contract with OJSC Power Machines for modernization of 14 hydraulic units at Zhigulevskaya HPP;
- the company signed a contract with OJSC Power Machines for modernization of 4 hydraulic units at Volga HPP within the framework of cooperation with EBRD;
- the company signed a contract with OJSC Power Machines for modernization of a hydraulic unit No. 2 at Rybinskaya HPP within the framework of cooperation with EBRD;
- the company signed a contract for supply and replacement of 4 hydro-turbines at Kamskaya HPP manufactured by OJSC Turboatom.

The most important operating principles for hydro-power facilities at RusHydro are technical safety and system reliability. To upgrade equipment reliable performance and hydro-power structure safety, RusHydro has implemented a technical upgrade and reconstruction (TU&R) program at all power plants under operation. The program was developed with regard to the actual and estimated status of equipment, buildings and structures, as well as requirements for industrial and corporate standards.

The company continues to successfully develop one of the most important business lines – retail sale of electricity. Under the strategy for the developing the company’s energy supply, taking into account the potential of retail markets for power, synergy effect due to power and accompanying services generation and net supply, as well as providing an access for the company to the end user, during the last year the company acquired share blocks in several energy providers.

Actual power consumption in 2010 from UES of Russia, amounted to 988.9 bln kWh which is 4.5 % higher than the results of the year 2009, and 0.2 % higher than in 2008. During the first nine months of 2010 an average decrease of power consumption from UES of Russia in comparison to the same pre-crisis period in 2008 amounted to 1.9 % (during the same period compared to the year 2009, the consumption increase amounted to 5.4 %). Power consumption increase from UES of Russia in the fourth quarter of the year 2010 in relation to the same period in 2009 amounted to only 2.2 %.

#### Power consumption dynamics



It may be said that an actual power consumption from UES of Russia in 2010 reached a pre-crisis level of power consumption for 2008.

There appears a possibility to establish long-term relations between generators and consumers by concluding long-term bilateral purchase/sale contracts for electricity and power generated by JSC RusHydro’s newly commissioned generating facilities and supplied to new intensive power consumers. Risks of a price rise in power are hedged for the consumer.

JSC RusHydro has successful experience in contracting existing and perspective generating facilities, including within the framework of joint investment projects integrated implementation. Power supply for economic growth in the regions with main consumers development trends taken into account are considered to be potential directions of electricity and power supply in order to provide new projects in a particular region with all necessary energy infrastructure, including the following:

- electricity and power supply to integrated energy systems (IES) of UES of Russia;
- electricity and power utilization mainly by one or several large industrial consumers, as well as export to near-border countries.

#### **Industrial complexes based on HPP – A tool for regional development of Russia**

It is necessary to ensure an advanced development of power engineering in comparison with the other sectors in the economy, it shall provide a reliable power supply to consumers, at that power engineering growth shall be adapted to the new power consumption forecast which has changed due to the crisis, and shall take into account demand related to the region and industrial sector.

The main feature of an up-to-date power consumption structure is industrial production. More than half of all demands (55 %) for the power come from three types of economic activities – mining operations, processing production and power, gas and water generation.

The Russian economy lacks mineral resources. Potential deposits are located in the eastern part of the country (primary resources are especially important for the sectors which Russia can use to compete on international markets – energy sector, transport and communication, aviation and shipbuilding industries, space activities, innovative technologies).

Taking into account the need to develop large mineral reserves, it is reasonable to implement projects on the base of HPPs within the framework of regional, integrated development – infrastructure development and intensive power consumers in mining and processing industries. Such a cluster approach stimulates investors to implement intensive power intensive industrial projects. At that the government with the use of mechanisms (Federal targeted programs, Investment Fund of the Russian Federation, credits granted by Vnesheconombank) finances the infrastructure of the projects (HPPs' dams and reservoir beds, power transmission lines, railway and motorway, bridges, as well as design and estimate documentation for the infrastructure projects).

Power generation complexes implemented or scheduled for implementation in Siberia and in the Far East, related to big consumers in adjacent regions, are the following:

#### **Complexes under development**

- **Angara complex (BEMO project)** based on Boguchanskaya HPP and non-ferrous metallurgy enterprises (2006–2015). Boguchanskaya HPP will supply power to aluminum smelter, gold fields, pulp-and-paper plants.
- **South Yakutia complex** on the base of Kankunskaya HPP (the 1<sup>st</sup> extension of YuYaHGC) and ironworks and petroleum and chemical complex (2008–2020)
- **North-Eastern complex** on the base of Ust-Srednekanskaya HPP and gold-mining enterprises (2008–2017). Ust-Srednekanskaya HPP will supply power to Natalkinsky mining and processing complex.
- **Amur complex** on the base of Nizhne-Bureyskaya HPP and enterprises of ore mining and metallurgy industries and construction materials manufacturing (2008–2015). Nizhne-Bureyskaya HPP will make it possible to start development of mineral resources (iron and non-ferrous industries), to supply power to woodusing complex, new space launch complex in the town of Svobodny, Garinsky iron ore deposit and construction of mining and processing complex.
- **Kamchatka complex** on the base of new commissioned power units at Mutnovskaya GeoPP and gold-mining enterprises (2010–2013)
- **South complex** on the base of Northern Caucasian HPP and PSHP under construction

#### **Complexes scheduled for implementation**

- **Nizhneyeniseysky complex** on the base of Nizhne-Kureyaskaya HPP
- **Zabaikalsky complex** on the base of Mokskaya HPP and Ivanovskaya HPP (the 1<sup>st</sup> extension of Vitimsky HGC) and enterprises of ore mining and metallurgy industries. Mokskaya HPP will supply power to Baikal-Amur Railway area which currently lacks for power, it will make it possible to start development of a number of perspective fields.

#### **Economic effect from implementation of integrated power generation complexes**

An integrated approach to implementing power generating complexes makes it possible not only to encourage investment because of favorable conditions for investors but to solve a row of practical tasks. They include lifting system limitations on electric power transfer and supply, encouraging economical development of the region by creating an industrial infrastructure. Besides that, an integrated approach makes it possible to slow down increase of internal rates for power.

## **Production modernization and technical upgrading**

In 2010 JSC RusHydro forwarded 18.58 bln rubles to finance a program for technical upgrade and reconstruction (TU&R).

### **Integrated modernization program for generating facilities**

Presently, an average degree of main generating equipment depreciation in the industry on the whole is about 65–70 %, about 50 % of the whole stock has exceeded its working life.

Equipment aging rates outrun its replacement frequency, which is related to insufficient financing of technical upgrade and reconstruction programs during 1990–2000.

To ensure a sufficient level of technical reliability, as well as to implement JSC RusHydro's strategic plan, approved by the company's Board of Directors on June 16, 2010, a program for the complete modernization for the company's generating facilities (PCM) was developed.

One of the key tasks of PCM is to decommission important generating equipment with expired service life.

Main directions of PCM:

- modernization of main equipment and introduction of innovative energy efficient technologies;
- optimization of water resources;
- reduction of internal power consumption;
- implementation of innovative solutions.

The program foresees:

- integrated pre-project inspection of equipment, buildings and facilities;
- development of an integrated modernization project;
- upgrade of main and auxiliary equipment;
- integrated modernization of plant systems (auxiliary systems, technical water supply systems, venting, conditioning systems, etc.);
- activities for full automation of main production processes.

When implementing PCM it is planned to replace the following:

- 140 turbines, or 50% of the total number of turbines;
- 114 generators, or 40% of the total number of generators;
- 173 transformers, or 60% of the total number of transformers;
- 349 high-voltage switches;
- 7,000 units of sub commutation equipment;
- 3,000 units of auxiliary equipment.

## **4.2 Environmental efficiency**

### **RusHydro's facilities environmental impact**

Minimizing negative environmental impact and ensuring stable ecosystems are one of the main priorities of the company. RusHydro is a leader in generating environmentally friendly power based on renewable sources. Hydraulic power generation makes it possible to prevent combustion of organic fuel and emission of greenhouse gases and pollutants into the atmosphere.

**Information about water resources utilization and their state at JSC RusHydro in 2009:**

HPP name	Reservoir level				Total usable capacity, km <sup>3</sup>	Level as of 31.12.2009		
	Normal water surface		Top of dead storage			Head pond mark		Usable capacity, km <sup>3</sup>
	m	km <sup>3</sup>	m	km <sup>3</sup>		m	km <sup>3</sup>	
Bureyskaya HPP	256.00	20.95	236.00	10.25	10.70	250.57	17.28	7.03
Volga HPP	15.00	31.46	12.00	23.13	8.34	14.47	29.86	6.73
Votkinskaya HPP	89.00	9.36	85.00	5.66	3.70	87.93	8.22	2.59
Zhigulevskaya HPP	53.00	57.32	45.50	23.39	33.94	50.7	44.30	20.91
Zeyskaya HPP	315.00	68.42	299.00	36.34	32.06	315.04	68.50	32.16
Irganayskaya HPP	547.00	0.64	520.00	0.26	0.38	542.44	0.56	0.30
Kamskaya HPP	108.50	12.20	100.00	2.37	9.83	106.15	8.26	5.89
Nizhegorodskaya HPP	84.00	8.81	81.00	4.92	3.90	83.73	8.40	3.48
Novosibirskaya HPP	113.50	8.80	108.50	4.40	4.39	113.06	8.32	3.92
Rybinskaya HPP	101.81	25.47	97.10	8.75	16.72	101.02	22.02	13.26
Saratovskaya HPP	28.00	12.87	27.00	11.12	1.74	27.64	12.22	1.10
Sayano-Shushenskaya HPP	539.00	30.71	500.00	16.00	14.72	525.99	24.08	8.08
Uglichskaya HPP	113.00	1.25	109.00	0.70	0.67	112.87	1.20	0.64
Cheboksarskaya HPP	63.30	4.90	62.50	4.10	0.80	63.15	4.75	0.65
Chirkeiskaya HPP	355.00	2.78	315.00	1.46	1.32	348.99	2.53	1.07

**Information about water resource use and their state at JSC RusHydro in 2010:**

HPP name	Reservoir level				Total usable capacity, cub.km	Level as of 31.12.2010		
	Normal water surface		Top of dead storage			Head pond mark		Usable capacity, cub.km
	m	km <sup>3</sup>	m	km <sup>3</sup>		m	km <sup>3</sup>	
Bureyskaya HPP	256.00	20.95	236.00	10.25	10.70	250.46	17.21	6.97
Volga HPP	15.00	31.46	12.00	23.13	8.33	14.04	28.53	5.40
Votkinskaya HPP	89.00	9.36	85.00	5.66	3.70	87.1	7.53	1.87
Zhigulevskaya HPP	53.00	57.32	45.50	23.39	33.93	48.97	36.02	12.63
Zeyskaya HPP	315.00	68.42	299.00	36.34	32.08	312.83	63.35	27.01
Irganayskaya HPP	547.00	0.64	520.00	0.26	0.38	533.39	0.42	0.16
Kamskaya	108.50	12.20	100.00	2.37	9.83	105.99	8.04	5.67

HPP								
Nizhegorodskaya HPP	84.00	8.81	81.00	4.92	3.89	83.8	8.52	3.60
Novosibirskaya HPP	113.50	8.80	108.50	4.40	4.40	112.69	7.94	3.54
Rybinskaya HPP	101.81	25.47	97.10	8.75	16.72	100.04	17.45	8.38
Saratovskaya HPP	28.00	12.87	27.00	11.12	1.75	27.72	12.37	1.25
Sayano-Shushenskaya HPP	539.00	30.71	500.00	16.00	14.71	529.7	25.67	9.67
Uglichskaya HPP	113.00	1.25	109.00	0.70	0.55	112.9	1.17	0.47
Cheboksarskaya HPP	63.00	4.60	62.50	4.10	0.80	62.96	4.57	0.47
Chirkeiskaya HPP	355.00	2.78	315.00	1.46	1.32	348.08	2.49	1.03

NWS (normal water surface) is the highest design water surface of the head pond which it is possible to maintain under normal operating conditions of hydropower structures.

TDS (top of dead storage) is the minimum level allowed under normal operating conditions.

The company is developing a new area of environmentally friendly power engineering related to construction of hydroelectric pumped storage power plants and wind farms. Developing clean power engineering, RusHydro at the same time seeks to reduce loads onto ground and water ecosystems during the company's enterprises functioning.

The company's environmental impacts nowadays are mainly related to construction and operation of hydropower facilities. Human intervention of HPP construction processes affects water bodies (rainfall discharge, pollutant discharge into water, impact on biological diversity) and air (pollutant emissions into the atmosphere). Environmental impact occurs because of the accumulation of industrial waste at a site.

### **Water bodies**

Based on a longstanding experience operating HPP, one may state that they have a minimal negative impact on marine ecosystems during the plants' operation. This impact is related to oil products and other pollutants being discharged into water bodies as a result of utility, drain and waste surface and rainfall waters discharge to water bodies from HPP areas, minor leakages of oil products from the hydraulic unit systems.

### **Pollution from JSC RusHydro's HPPs**

Main operating process of hydroelectric power plants is performed without greenhouse gases or any other emission of pollutants into the atmosphere. RusHydro's hydroelectric power plants' emissions into the atmosphere are caused by auxiliary equipment and transport operation only.

## Pollutants emission<sup>4</sup> into the atmosphere from JSC RusHydro's HPPs

Unit of measurement: ton

Item No.	JSC RusHydro's branch	Waste	2009	2010
1	Bureyskaya HPP	solid		0.257
		gaseous and liquid		0.976
		total	0.196	1.233
2	Volga HPP	solid		4.523
		gaseous and liquid		16.827
		total	22.318	21.350
3	Votkinskaya HPP	solid		0.809
		gaseous and liquid		7.609
		total	8.418	8.418
4	Geoterm	solid		0.152
		gaseous and liquid		508.820
		total	-	508.972
5	Dagestan branch	solid		1.527
		gaseous and liquid		28.873
		total	32.846	30.400
6	Zhigulevskaya HPP	solid		0.035
		gaseous and liquid		2.320
		total	2.35	2.355
7	Zagorskaya PSHP	solid		0.213
		gaseous and liquid		10.685
		total	12.206	10.898
8	Zeyskaya HPP	solid		0.735
		gaseous and liquid		7.189
		total	7.924	7.924
9	Irganayskaya HPP	solid		4.448
		gaseous and liquid		4.410
		total	1.678	8.858
10	Kabardino-Balkarsky branch	solid		1.886
		gaseous and liquid		0.412
		total	0.481	2.298
11	Kamskaya HPP	solid		0.042
		gaseous and liquid		0.055
		total	0.097	0.097
12	Karachaevo– Cherkessian branch	solid		0.009
		gaseous and liquid		0.158
		total	0.943	0.167
13	Cascade of Verkhnevolzhskiy HPPs	solid		0.037
		gaseous and liquid		1.620

<sup>4</sup> Emissions are an actual mass of chemicals appeared in the atmosphere.

		total	2.04	1.657
14	Cascade of Kubanskiye HPPs	solid		0.029
		gaseous and liquid		0.634
		total	0.807	0.663
15	Kolymskaya HPP	solid		0.834
		gaseous and liquid		2.464
		total	-	3.299
16	Nizhegorodskaya HPP	solid		0.299
		gaseous and liquid		2.722
		total	3.0	3.021
17	Novosibirskaya HPP	solid		0.082
		gaseous and liquid		0.835
		total	0.917	0.917
18	Pauzhetskaya GeoPP	solid		0.229
		gaseous and liquid		10.834
		total	-	11.063
19	Saratovskaya HPP	solid		0.386
		gaseous and liquid		2.824
		total	3.28	3.210
20	Sayano-Shushenskaya HPP n.a. P.S. Neporozhny	solid		7.923
		gaseous and liquid		25.155
		total	18.911	33.078
21	Northern Ossetia Branch	solid		0.000
		gaseous and liquid		0.202
		total	0.3054	0.202
22	Cheboksarskaya HPP	solid		0.289
		gaseous and liquid		0.445
		total	0.059	0.734
	JSC RusHydro	solid		24.744
		gaseous and liquid		636.069
		<b>TOTAL:</b>	<b>118.776</b>	<b>660.813</b>

#### Discharge of Pollutants from JSC RusHydro's HPPs into marine environment

Unit of measurement: ton

Item No.	JSC RusHydro's branch	2009	2010
1	Bureyskaya HPP	0	0
2	Volga HPP	0	0
3	Votkinskaya HPP	0	0
4	JSC Geoterm	-	81.874
5	Dagestan branch	10.298	2.737
6	Zhigulevskaya HPP	12.8	88.09
7	Zagorskaya PSHP	227.102	107.46



8	Zeyskaya HPP	17.741	20.54
9	Irganayskaya HPP	0.192	1.75
10	Kabardino-Balkarsky branch	5.396	5.396
11	Kamskaya HPP	18.3	17.0
12	Karachaevo-Cherkessian branch	0	0
13	Verkhnevolzhskiy Cascade HPPs	18.61	16.738
14	Kubanskiye Cascade HPPs	0	0
15	Kolymenskaya HPP	-	2.4684
16	Nizhegorodskaya HPP	0.008	1.08
17	Novosibirskaya HPP	396.125	282.657
18	Saratovskaya HPP	3,495.056	4,063.899
19	Sayano-Shushenskaya HPP n.a. P.S. Neporozhny	140.772	274.597
20	Northern Ossetia Branch	0.0503	0.0531
21	Cheboksarskaya HPP	87.477	91.705
22	Pauzhetskaya GeoPP	-	1,013.77
	<b>TOTAL</b>	<b>4,429.927</b>	<b>6,071.814</b>

**Measures for reduction of the polluted waste water discharge and decrease of pollutants emission into the atmosphere in 2010**

Item No.	JSC-HPP name	Measures
1	Nizhegorodskaya HPP	<ul style="list-style-type: none"> <li>– Development of draft reconstruction and main conduit slopes, tube drainage wells of dams No. 1-2, 3, 4, 5.</li> <li>– Financial support for Protect river banks project</li> <li>– Monitoring of composition and properties of:               <ul style="list-style-type: none"> <li>a) waste and storm water;</li> <li>b) surface water</li> </ul> </li> <li>– Discharge and intake of polluted waste (sewage) water to biological treatment facilities</li> </ul>
2	Votkinskaya HPP	<ul style="list-style-type: none"> <li>– Surface water monitoring in marine reservoir head and tail ponds</li> <li>– Replacement of runners seals on two hydraulic turbines</li> <li>– Overhaul repair of the HPP downstream head wall surface and piers in the area of tail pond water variable level</li> <li>– Overhaul repair of one gate slot, overflow spillway lip (span 1)</li> <li>– Upgrade of ground dam No. 2 drainage system</li> <li>– Upgrade of the oil drainage system from the transformer bay</li> </ul>
3	Verkhnevolzhskiy Cascade HPPs	<ul style="list-style-type: none"> <li>– Chemical analysis of water in the head and tail ponds of Rybinskaya, Uglichsкая and Experimental HPPs</li> <li>– Chemical analysis of waste water of Rybinskaya and Uglichsкая HPPs</li> <li>– Waste water biotesting</li> <li>– Replacement of hydraulic unit No. 2 at Uglichsкая HPP</li> <li>– Construction of the storm sewage system of logistics base</li> </ul>
4	Zeyskaya HPP	<ul style="list-style-type: none"> <li>– Monitoring of waste water and water body state</li> <li>– Evaluation of dust-trapping unit operation efficiency</li> </ul>

		<ul style="list-style-type: none"> <li>– Storm sewage reconstruction project design</li> <li>– Development of sites for waste temporary storage</li> <li>– Overhaul repair of hydroturbine (replacement of runner blades seals)</li> </ul>
5	Saratovskaya HPP	<ul style="list-style-type: none"> <li>– Replacement of runner seals of hydroturbine PL-20/661-VB-1030: hydraulic unit st. No. 2, 4, 9, 13</li> <li>– Overhaul repair of collecting drains on the island territory of Balakovo town.</li> <li>– Repair of concrete and ground faces of the left-bank dam.</li> <li>– Repair of concrete and ground faces of a channel dam.</li> <li>– Disposal of used mercury-vapor lamps: LB-20,40,80; DRL-250,400,700</li> <li>– Monitoring of waste water quality and water body monitoring</li> <li>– Cleaning trash screens from logs, snags and garbage during the spring flood and interflood periods.</li> <li>– Laboratory check of air quality and noise at the sanitary protection zone boundary of the enterprise.</li> </ul>
6	Zhigulevskaya HPP	<ul style="list-style-type: none"> <li>– Replacement of runners seals</li> <li>– Hydraulic turbine equipment reconstruction and upgrade using environmentally friendly designs to prevent pollutants discharge into water bodies</li> <li>– Surface water monitoring</li> <li>– Training of personnel of JSC RusHydro branch – Zhigulevskaya HPP in environment protection and safety area</li> <li>– Training of personnel admitted to hazardous substances handling</li> <li>– Project design for treatment plant system for HPP facilities' drain water (detail design with approves section)</li> <li>– Replacement of 220 kV oil-filled cable lines with cross-linked polyethylene insulation</li> <li>– Chemical laboratory certification</li> <li>– Reconstruction of oil facilities</li> <li>– Inspection audit in the environmental management system</li> </ul>
7	Volga HPP	<ul style="list-style-type: none"> <li>– Operation of treatment facilities</li> <li>– Performing works on cleaning the trash screens from floating trash</li> <li>– Performing works on repairing an underwater protection of left bank of the Volga river</li> <li>– Replacement of runners seals at overhauls</li> </ul>
8	Sayano-Shushenskaya HPP n.a. P. S. Neporozhny	<ul style="list-style-type: none"> <li>– Disposal of hazardous production waste</li> <li>– Cleaning the sanitary water storage basin area from floating logs</li> <li>– Sayano-Shushenskaya HPP water storage basin banks cleaning in variable water level of sanitary zone</li> <li>– Bank protection activities in Mainskoye water storage basin area</li> </ul>
9	Kamskaya HPP	<ul style="list-style-type: none"> <li>– Reconstruction of hydraulic units Nos. 17, 9 and 22 with replacement of a runner for an environmentally friendly one;</li> <li>– Cleaning of trash screens.</li> <li>– Implementing a program of regular monitoring of Kamskoye and Votkinskoye water storage basins state and their water conservation areas in Kamskaya HPP area</li> <li>– Reconstruction of the industrial storm sewage system</li> <li>– Water conservation activities</li> </ul>
10	Zagorskaya PSHP	<ul style="list-style-type: none"> <li>– Recovery and protection of slopes</li> <li>– Hydraulic seal works</li> <li>– Monitoring of drain, storm and leakage water</li> <li>– Regular territory cleaning with maximum motorization of the cleaning works, regular dispatching of production and consumption waste from the enterprise territory</li> </ul>
11	Novosibirskaya HPP	<ul style="list-style-type: none"> <li>– Construction of treatment facilities</li> <li>– Replacement of package transformers T1-T5.</li> <li>– Reconstruction of 6 kV GIS and 0.4 kV SCG.</li> </ul>
12	Kolymskaya HPP	<ul style="list-style-type: none"> <li>– Implementation of Environmental management system</li> <li>– Training of managers and personnel of the branch on environment protection and ecological safety</li> </ul>

		<ul style="list-style-type: none"> <li>– Training of personnel admitted to hazardous waste handling</li> <li>– Systematic control of waste water composition at the plant's discharge outlets into Kolyma river, Kolymskoye water storage basin water quality upstream waste water discharge, Kolyma river downstream the plants' waste water discharge Monitoring of water coming into water body</li> <li>– Cleaning the trash screens and intake channel from logs</li> <li>– Collection and dispatching of non-toxic solid domestic waste to the settlement approved dump</li> <li>– Collection and dispatching of mercury-vapor lamps, used batteries for disposal</li> <li>– Specialized hydro-meteorological and hydro-chemical support</li> <li>– Draining system cleaning</li> <li>– Adjustment of Designed Standard of Permissible Discharges into the atmosphere</li> <li>– Water bacteriological analysis</li> </ul>
13	Cheboksarskaya HPP	<ul style="list-style-type: none"> <li>– Motor vehicle inspection</li> <li>– Control of contaminants content in the atmosphere on the boundary of sanitary protection zone</li> <li>– Monitoring of waste quality (waste water from HPP building, storm drain water)</li> <li>– Monitoring of river water quality in head and tail ponds of Cheboksarskaya HPP</li> <li>– Visual inspection of oil filled equipment</li> <li>– Check of transformer oil collecting, tanks proper emptying when they are accumulated</li> <li>– Polyurethane filters for waste water treatment replacement</li> <li>– Check the state of settling pond, filter material, oil products accumulation in oil pit</li> <li>– Cleaning the settling pond off sludge, filter material, pumping out oil products from oil pit</li> <li>– Transfer of fluorescent lamps for disposal</li> <li>– Collection and dispatching of oily rags and used polyurethane</li> <li>– Transportation of waste to the municipal solid domestic waste dump</li> </ul>
14	Kubanskiye Cascade HPPs	<ul style="list-style-type: none"> <li>– Water conservation activities (bank protection works)</li> </ul>
15	Karachaevo– Cherkessian branch	<ul style="list-style-type: none"> <li>– Control of toxic and smoke properties of motor vehicles</li> <li>– Monitoring of surface, underground water behavior and exogenetic geological processes; performing the physical and chemical analysis of surface water</li> <li>– Reconstruction of diversion unit on Aksaut river with a fish-way arrangement</li> <li>– Arrangement of waste storage area with conformance to sanitary regulations</li> <li>– Improvement and amenity planting of the plant territory, hydraulic units and canal</li> </ul>
16	Bureyskaya HPP	<ul style="list-style-type: none"> <li>– Disposal of mercury containing bulbs and devices</li> </ul>
17	Dagestan branch	No works have been performed
18	Irganayskaya HPP	<ul style="list-style-type: none"> <li>– Trash cleaning and disposal from the water storage basin.</li> <li>– Storm water chemical analysis</li> <li>– Design of water treatment system for household water needs for buildings No. 1 and No. 3.</li> </ul>
19	Northern Ossetia Branch	<ul style="list-style-type: none"> <li>– Inspection of Zaramag treatment facility</li> <li>– Monitoring of oil containing facilities and equipment</li> <li>– Water resources monitoring</li> </ul>
20	Kabardino-Balkarsky branch	<ul style="list-style-type: none"> <li>– The draft projects for sanitary-protection zones of Kashkhatau HPP are developed</li> <li>– The site for temporary waste storage was arranged when cleaning the Baksanskaya HPP building</li> <li>– Draft waste generation standards and waste disposal limits are developed (DWGSDL) for Baksanskaya HPP</li> </ul>

21	JSC Geoterm	<ul style="list-style-type: none"> <li>– Monitoring of discharged waste water quality</li> <li>– Cleaning treatment facilities septic tanks for domestic sewage</li> <li>– Approval of permissible standards for pollutants and microorganisms discharge into water bodies</li> <li>– Development of a draft for Maximum permissible emission of pollutants into the atmosphere from the sources at Verkhnemutnovskaya GeoPP</li> <li>– Cleaning the sanitary protection zone from trash, metal scrap</li> <li>– Observation for water bodies</li> </ul>
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## Industrial waste

Any production process is inevitably accompanied by industrial waste. Industrial waste of RusHydro's enterprises is mainly classified as IV and V hazard classes – that is as low-hazardous and almost non-hazardous waste.<sup>5</sup>

Wastes generation<sup>6</sup> at JSC RusHydro's HPP,

Unit of measurement: ton

Item No.	JSC RusHydro's branch	Waste	2009	2010
1	Bureyskaya HPP	I class	0.672	0.709
		II class	0.863	0.4157
		III class	22.068	5.32745
		IV class	27.427	32.5603
		V class	30.248	5.1297
2	Volga HPP	I class	0.865	1.384
		II class	0.426	0.437
		III class	24.049	22.261
		IV class	511.538	548.291
		V class	1470.013	678.725
3	Votkinskaya HPP	I class	0.545	0.287
		II class	0.3	0.434
		III class	108.219	95.645
		IV class	134.114	150.963
		V class	556.601	470.006
4	Geoterm	I class	-	0.338
		II class	-	1.062
		III class	-	7.694
		IV class	-	8.9
		V class	-	44.1
5	Dagestan branch	I class	0.172	0.3
		II class	0.057	0.241
		III class	1.328	7.812
		IV class	15.437	15.772
		V class	1.512	6.384
6	Zhigulevskaya HPP	I class	0.57	0.51

<sup>5</sup>There are the following hazard classes to define waste hazard class: I class – extra hazardous waste; II class – very hazardous waste; III class – moderately hazardous waste; IV class – low-hazardous waste; V class – almost non-hazardous waste.

<sup>6</sup>Production and consumption wastes are remainders of raw materials, materials, half-finished products, and other devices or products, which generated during production or consumption, as well as item (products) which lost their consumer properties.

		II class	0.85	5.018
		III class	55.61	123.845
		IV class	913.37	777.563
		V class	1324.34	1473.694
7	Zagorskaya PSHP	I class	0.19	0.26
		II class	48.85	0.2
		III class	0	20.8
		IV class	4.04	125.677
		V class	104.6	15.178
8	Zeyskaya HPP	I class	0.525	0.876
		II class	0.33	0.159
		III class	41.446	49.754
		IV class	25.319	35.3
		V class	121.845	22.461
9	Irganayskaya HPP	I class	0.013	0.013
		II class	0.132	0.132
		III class	2.139	0.123
		IV class	3.929	10.364
		V class	2.754	3.104
10	Kabardino-Balkarsky branch	I class	0.646	0.011
		II class	0.519	12.419
		III class	1.106	18.586
		IV class	76.894	179.028
		V class	80.539	258.074
11	Kamskaya HPP	I class	0.33	0.464
		II class	0	0.1
		III class	88.72	39.442
		IV class	58.20	101.916
		V class	1862.59	1084.054
12	Karachaevo–Cherkessian branch	I class	0.11	0.026
		II class	0.01	0
		III class	1.732	1.17
		IV class	22.702	15.413
		V class	36.979	60.826
13	Verkhnevolzhskiy HPPs	I class	0.04	0.04
		II class	0	0.748
		III class	92.80	16.67
		IV class	98.23	96.415
		V class	1693.03	331.408
14	Kubanskiye HPPs	I class	0.137	0.064
		II class	0	0
		III class	5.594	0.572
		IV class	34.234	17.51
		V class	122.55	75.031
15	Kolymskaya HPP	I class	-	0.19
		II class	-	0
		III class	-	0
		IV class	-	20.731
		V class	-	5.7

16	Nizhegorodskaya HPP	I class	0.226	0.051
		II class	0	0
		III class	40.578	19.617
		IV class	54.160	151.579
		V class	144.165	307.929
17	Novosibirskaya HPP	I class	0.188	0.137
		II class	0	0
		III class	111.387	69.252
		IV class	63.730	48.982
18	Pauzhetskaya GeoPP	V class	138.660	249.294
		I class	-	0.001
		II class	-	0.03
		III class	-	0.101
		IV class	-	0.21
19	Saratovskaya HPP	V class	-	0.123
		I class	2.67	1.169
		II class	0	0
		III class	102.44	175.406
		IV class	1357.15	1154.628
20	Sayano-Shushenskaya Neporozhny HPP n.a. P.S. Neporozhny	V class	537.99	455.872
		I class	3.598	2.274
		II class	0	12.81
		III class	627.33	151.643
		IV class	255.417	2492.711
21	Northern Ossetia Branch	V class	1797.06	10273.772
		I class	0.00975	0.015
		II class	0.054	0.072
		III class	1.6805	2.108
		IV class	10.05	10.219
22	Cheboksarskaya HPP	V class	12.555	13.316
		I class	0.355	0.23
		II class	0	0
		III class	124.356	329.382
		IV class	247.47	212.612
	JSC RusHydro	V class	330.879	409.242
		I class	11.86175	8.82
		II class	52.391	33.1857
		III class	1452.5825	1149.4155
		IV class	3913.411	6177.5033
		V class	10368.91	16193.5
		<b>TOTAL:</b>	<b>15799.15625</b>	<b>23562.424</b>

### Management of investment projects' environmental risks

RusHydro seeks to analyze and to prevent environmental problems in due time. At every stage of an investment project lifecycle (HPP design, construction and operation), RusHydro carries out a package of activities intended to observe environmental legislation and avoid negative impacts that might arise during project implementation.

Design	Construction	Operation
<p>Assessment of possible environmental and social impact in the area of RusHydro's future hydroelectric power generating facility.</p> <p>Public consultations held on Technical Assignment draft for an Environmental impact assessment. Incorporation of public representatives', environmental organizations' remarks made during public consultations into the final version of Technical Assignment.</p> <p>Developing section Environmental protection of the construction project which provides for measures on a possible reduction of negative impact.</p>	<p>Implementation and monitoring of measures provided in the approved technical design according to the legislation of the Russian Federation and RusHydro's environmental policy.</p> <p>Ecological monitoring program development for the area subjected to a hydraulic unit impact (including water storage basin); according to this program, prior to commissioning a hydroelectric power generating facility ecological monitoring shall be performed to assess environmental changes caused by the hydraulic unit construction. By results of ecological monitoring, in case a negative impact is revealed, measures for its elimination (minimization) shall be elaborated. Taking measures during water storage basins' beds preparation, including the following:</p> <ul style="list-style-type: none"> <li>• population resettlement from inundated territories (as well as from partly inundated ones);</li> <li>• commercial timber logging/forest clearing (brush/fruit trees cutting);</li> <li>• protection and rescue of (archeological) works;</li> </ul>	<p>Technological risks management (e.g. risk of environment pollution because of oil leakages into the river from HPP's hydraulic units) based on implementation of a perspective program of technical update and reconstruction.</p> <p>Environmental risk management (e.g. risk of water level rise above the marks in head and tail ponds<sup>7</sup> of the hydraulic unit in comparison with a long-time average annual value). JSC RusHydro dams back high waters and prevents floods, controls water levels in the mode strictly specified by inter-departmental commission, and based on weather forecasts informs users in due time about possible changes in the river level for them to take necessary measures.</p>

<sup>7</sup> Pond is a part of a river, canal water storage basin or another water body adjacent to a hydraulic facility. A head pond is located upstream and a tail pond is located opposite the hydraulic facility.

## Environmental policy implementation by RusHydro in 2010

In 2010 RusHydro's Management Board developed and approved a Program for Implementing Environmental Policy by RusHydro for the 2010–2012. In compliance with this program, in 2010 the company took a set of measures to reduce environmental impact and to manage environmental risks including enterprises technical up-date and reconstruction, marine conservation activities in marine bodies, waste handling. An important part of the program implementation was introduction of environmental management. Data on environmental protection general expenses in JSC RusHydro's branches are given in the table below.

Plant name	Type of works
Bureyskaya HPP	Development of Water resources regulation of Bureyskoye water storage basin of the Bureya River; elaborated by the Institute Lengidroproject. Water resources regulation of Bureyskoye water storage basin of the river Bureya was developed.
	Environmental and social impact assessment because of Bureyskaya HPP construction and operation. (Scientific, social and environmental monitoring was performed by Institute for Water and Environmental Problems, FEB RAS performed work on scientific, social and environmental monitoring)
Volga HPP	Replacement of a hydroturbine PL-587-VB-930 (115 MW) with a new one PL-30/877-V-930 (125.5 MW) of st. Nos 12, 85
	Reconstruction of pumping plants at concrete dams 40, 41, 42 with units for water consumption accounting
	Development of a reconstruction design for harnesses (220 kV cables) with replacement of oil filled cables with dry ones.
	Equipment replacement at oil facilities (12 reservoirs)
Votkinskaya HPP	Replacement of runners seals of two hydroturbines
	Reconstruction of oil draining system from the transformer bay
Zhigulevskaya HPP	Hydroturbine equipment reconstruction and upgrade with the use of environmentally friendly structures to prevent pollutants discharge into water bodies
	Replacement of 220 kV oil-filled cable lines with cross-linked polyethylene insulation
Zagorskaya PSHP	Vacuum switches 6 kV GIS Nos 1–2 supply and mounting.
	Reconstruction design for outdoor switchgear 500 and replacement with 500 kV GIS.
Kamskaya HPP	Drowned and draining pumping plants replacement.
	Repair of HPP's canal reinforced concrete protection of slopes and dumping with crushed stone
	Replacement of ODG 50000/220 transformer with ORDTs-63300/220 kV transformer
	Replacement of MGG-10 generator switches with a new type of switches – VGG-10.
Verkhnevolzhskiy HPPs	Replacement of Uglichskaya HPP hydraulic unit No. 2
	Transformers replacement
Novosibirskaya HPP	Replacement of package transformers T1-T5.
Kabardino-Balkarsky branch	Project development for an outdoor switchgear 110 kV at Baksanskaya HPP complex reconstruction (oil drainage reduction from transformers and switches)



**General Expenses for Environmental Protection, Rub.**

<b>Item No.</b>	<b>JSC RusHydro's branch</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
1.	Bureyskaya HPP	793,600	915,430	48,220
2.	Volga HPP	2,603,431	4,709,448	607,556
3.	Votkinskaya HPP	112,346	111,747	101,500
4.	JSC Geoterm	-	-	711,610
5.	Dagestan branch	5,162,152	3,000,150	32,546,960
6.	Zhigulevskaya HPP	2,561,900	1,474,700	2,135,600
7.	Zagorskaya PSHP	1,996,100	3,356,740	88,130
8.	Zeyskaya HPP	5,103,500	5,031,200	162,100
9.	Irganayskaya HPP	557,702	1,500,278	112,717,879
10.	Kabardino-Balkarsky branch	15,097	15,100	162,200
11.	Kamskaya HPP	7,861,800	23,385,300	267,090
12.	Karachaevo–Cherkessian branch	944,500	797,400	145,200
13.	Verkhnevolzhskiy Cascade HPPs	25,410,400	10,442,570	83,500
14.	Kubanskiye Cascade HPPs	29,332,500	26,922,400	111,100
15.	Kolymskaya HPP	-	-	2,545,976
16.	Nizhegorodskaya HPP	522,100	680,400	197,700
17.	Novosibirskaya HPP	698,800	1,001,500	29,700
18.	Pauzhetskaya GeoPP	-	-	103,131
19.	Saratovskaya HPP	14,741,900	61,202	206,500
20.	Sayano-Shushenskaya Neporozhny HPP n.a. P.S. Neporozhny	8,388,314	86,315,500	2,959,700
21.	Northern Ossetia Branch	3,999,778	3,255,029	97,323
22.	Cheboksarskaya HPP	6,726,575	2,831,893	509,670
23.	JSC RusHydro (total)	117,532,495	175,807,987	156,538,345

### Marine conservation activities

In compliance with the implementation of Environmental Policy Program, in 2010 the company performed a package of marine conservation activities.

#### Information on Marine Conservation works performed on Marine Bodies in 2010

Item No.	Object description	Works
1.	Nizhegorodskaya HPP	<b>Bank protection hydrotechnic works</b>
2.	Zagorskaya PSHP	<b>OWCA</b>
3.	Votkinskaya HPP	-
4.	Saratovskaya HPP	<b>Regulation, cleaning, dredging of water bodies</b>
5.	Kamskaya HPP	<b>Regulation, cleaning, dredging of water bodies; bank protection hydrotechnical work, OWCA</b>
6.	Volga HPP	<b>Bank protection hydrotechnical work, OWCA</b>
7.	Zeyskaya HPP	<b>OWCA</b>
8.	Novosibirskaya HPP	-
9.	Sayano-Shushenskaya Neporozhny HPP n.a. P.S. Neporozhny	<b>OWCA</b>
10.	Volga HPP	<b>Bank protection hydrotechnical work, OWCA</b>
11.	Verkhnevolzhskiy Cascade HPPs	<b>Bank protection hydrotechnical work, OWCA</b>
12.	Zhigulevskaya HPP	-
13.	Kolymskaya HPP	-
14.	Kubanskiye Cascade HPPs	<b>Bank protection hydrotechnical work</b>
15.	Cheboksarskaya HPP	<b>Cleaning floating waste from water space</b>
16.	JSC Geoterm	<b>OWCA</b>
17.	Karachaevo– Cherkessian branch	<b>Bank protection hydrotechnical works</b>
18.	Northern Ossetia Branch	-
19.	JSC Puzhetskaya GeoPP	<b>Regulation, cleaning, dredging of water bodies, OWCA</b>
20.	OP Verkhne-Mutnovskaya GeoPP	-

OWCA – other marine conservation activities

### Interaction with interested parties

When implementing environmental policy, the company communicated actively with a wide circle of stakeholders. RusHydro is constantly engaged in a dialogue with environmental organizations.

### Environmental policy implementation by RusHydro

#### Key benchmarks for the year 2011:

- Environmental management system introduction in JSC RusHydro's branches;
- Environmental management system certification in JSC RusHydro's branches;
- Environmental management system re-certification in JSC RusHydro's branches;
- Performing technical audits including issues of environmental legislation observance of JSC RusHydro's branches/subsidiaries
- Providing a set of measures to reduce a negative environmental impact of JSC RusHydro's enterprises

- Best existing technologies introduction in branches and subsidiaries of JSC RusHydro, environment protection equipment update and reconstruction
- Improvement of corporate regulatory and methodological base in the field of environmental protection taking into account active federal legislation and the legislation being drawn up. Participation in development and follow-up in state authority bodies of regulatory legal acts, making regulation legal base in the field of environment protection.
- Positive image making of the company.
  - Conducting dialogue with a coalition of environmental NGOs, other interested parties discussing issues of environment protection;
  - Arrangement of PR-campaigns, round-table conferences, environmental programs

#### **4.3 Social efficiency: Developing Staff Potential.**

Developing staff potential is an important strategy of JSC RusHydro's activities, requiring the company to plan and implement national and industrial development programs. This includes target orders generation for specialists training, recruiting personnel with secondary technical educations in the hydro-power industry, establishing a club for young hydro-power engineers based on technical creative youth centers in the regions where the company is present, expanding co-operation with field-specific education establishments and research institutes.

RusHydro's human resources policy is based on the belief that human resources constitute the company's main value. The company makes sure that its employees see their personal accomplishments as a contribution to the company's success and growth as a whole. The company pays special attention to motivational, material and moral incentives, and social protection for personnel.

JSC RusHydro's employee policy is based on the following principles:

- personnel professional development via training programs;
- providing employees with the best wage supplements in the power industry;
- personnel motivation/incentive system enhancement to increase performance efficiency of the employees and the company, as a whole;

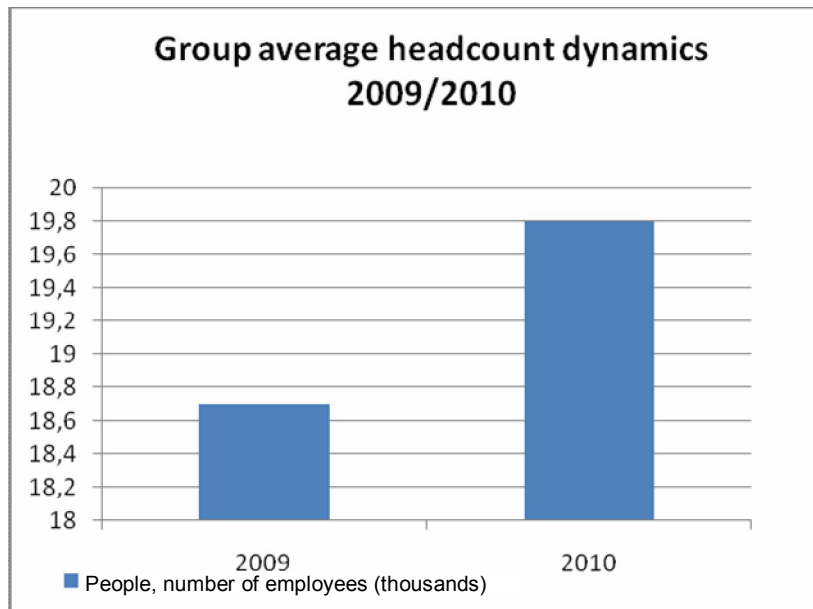
One of the main JSC RusHydro's tasks in personnel management is to increase efficiency of human resources.

#### **Manpower changes in RusHydro Group, including JSC RusHydro**

##### a) RusHydro Group, including JSC RusHydro

*Average manpower in RusHydro Group* in 2010 amounted to 19,800 people, including basic activity personnel (industrial and production staff) – 18,700 people. The same index in 2009 amounted to 18.3 and 17.3 thousand people, respectively.

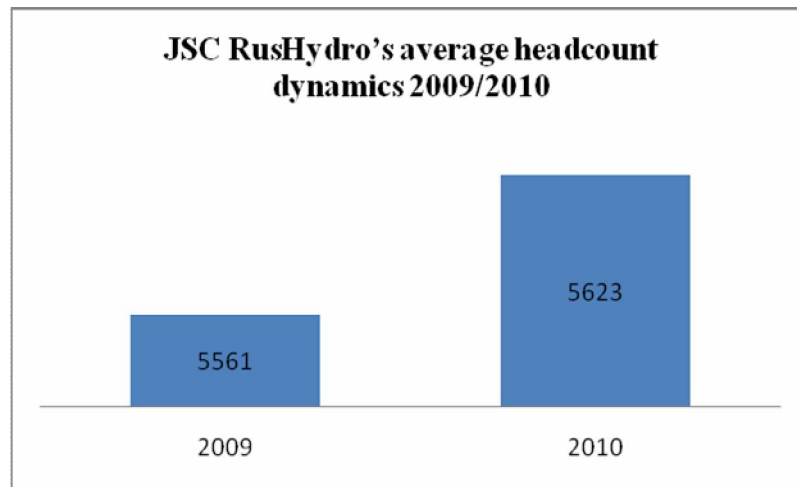
Main factors that influenced the manpower dynamics in 2010 are: JSC Institute Hydroproject takeover in 2010, repair personnel staff increase because of SShHPP reconstruction and other works scope increase performed by repair enterprises and institutes of the Group.



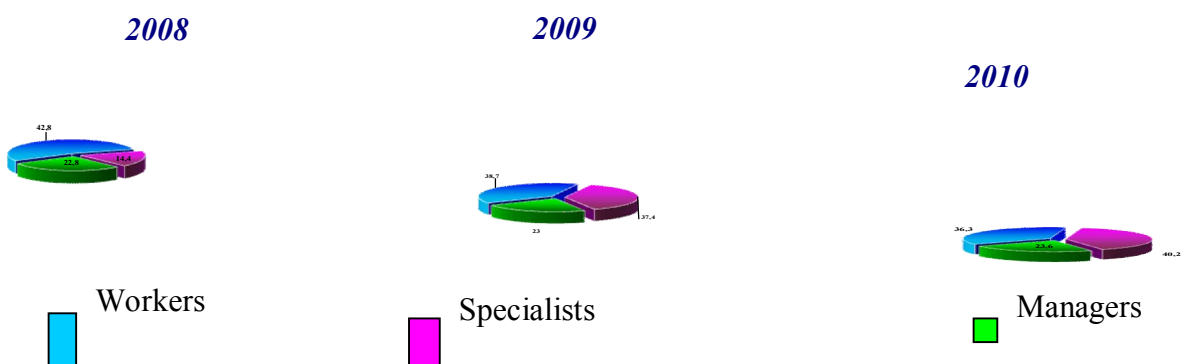
**b) Company**

The company's employees headcount in 2010 amounted to 5730 people which is 307 people more than in 2009. The headcount increase was influenced by the following factors:

- increase of security personnel headcount ensuring security of the company as a whole and security of each facility;
- organizing departments which activity is related to restoration work at Sayano-Shushenskaya Neporozhny HPP after an accident in 2009.

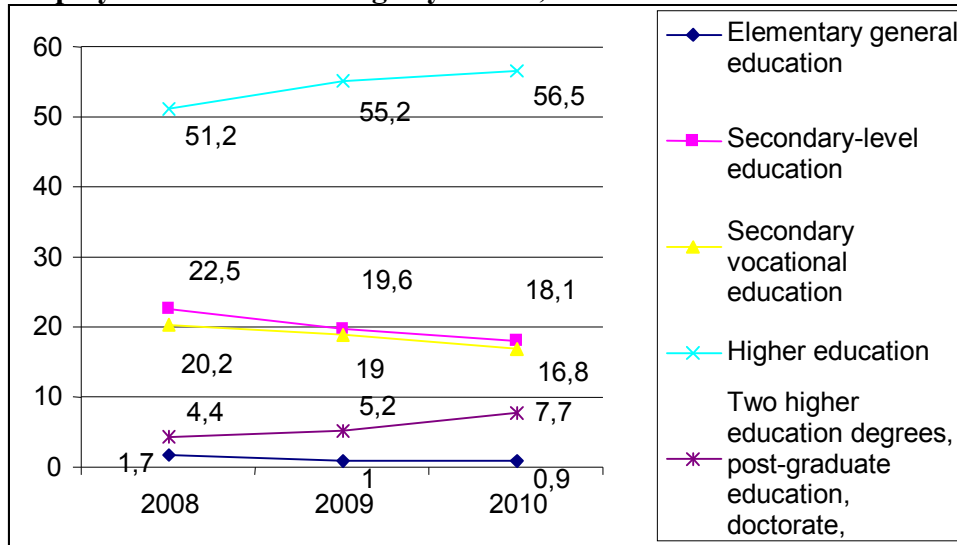


**JSC RusHydro's PERSONNEL STRUCTURE by categories, %**



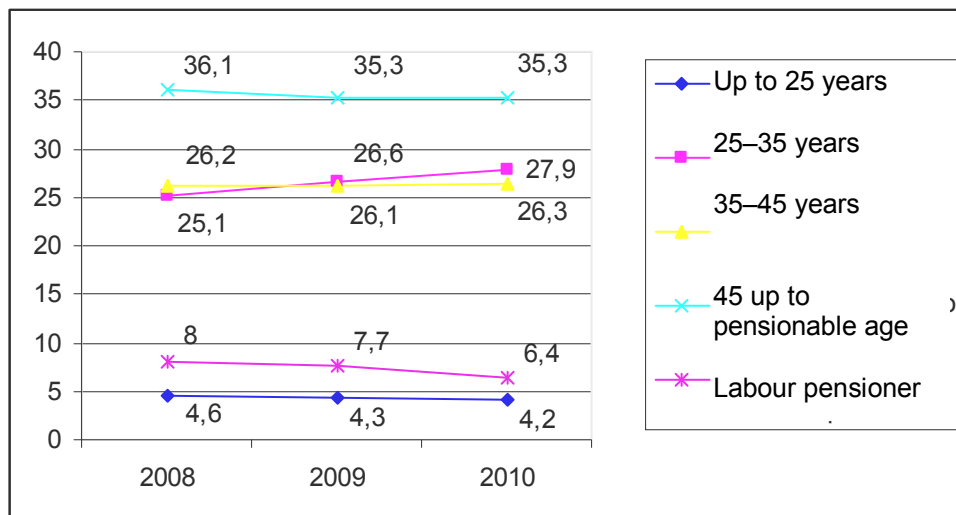
Decrease of a number of workers by the end of 2010, compared to the year 2009, results from out staffing non-core activities personnel

**Employees education change dynamics, %**



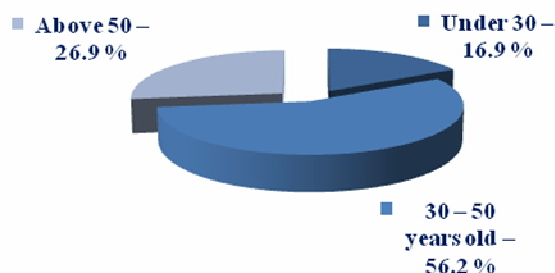
During the last three years the vocational qualification level of the company's employees is constantly growing. The number of employees with higher education has increased by 5.3% from 2008 till 2010, during the same period a number of employees with two higher education degrees, post-education training, or doctorate has increased by 4.3%.

**Employees age composition change dynamics, %**



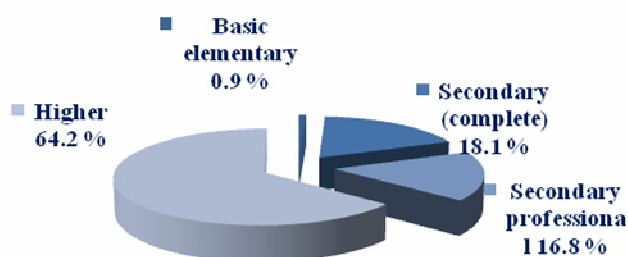
## Personnel structure in 2010

### by age



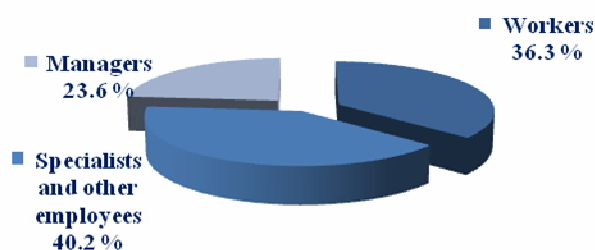
In comparison with the year 2009, headcount of the employees of age category 30–50 decreased by 0.8 % in 2010, the age category under 30 increased by 0.4 %.

### by education



In comparison with the year 2009 a headcount of employees with higher education increased by 3.8 % in 2010, headcount of personnel without higher education decreased by 4%.

### by categories



### The Most Important Directions of JSC RusHydro's Human Resources Policy

- personnel training and retraining, improved qualifications;
- ensuring personnel professional and career development;
- personnel reserve formation and development;
- improving personnel life and health protection, preventing industrial injuries;
- establishing a non-government retirement insurance and contributing to improved housing.

The main priority of the company's human resources policy is improving the remuneration system which contributes to personnel motivation. With this purpose, in 2010 RusHydro analyzed all essential changes in the remuneration system for a number of the company's employees.

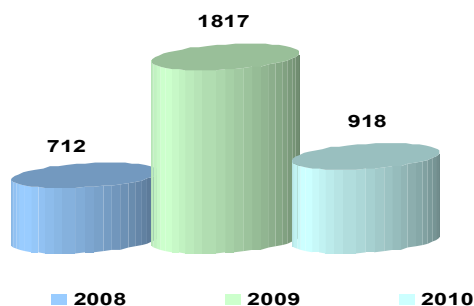
Besides material reward the company involves moral incentives when handling the personnel.

In order to increase efficiency of hydro-power industry enterprises, develop corporate culture, motivate and reward the employees, ensure reliable and constant operation of hydro power facilities, in 2010 the company instituted corporate awards:

- Title of honour Veteran of Hydro Power Engineering
- Plaque For Irreproachable Work in Hydro-power Engineering;
- Plaque Honoured Hydro-power Engineer
- JSC RusHydro's Letter of Award;
- JSC RusHydro's Acknowledgement
- Plaque For Hydro-power Engineering Development;
- JSC RusHydro's Commemorative Diploma;
- JSC RusHydro's Diploma;
- A Letter of Gratitude from a Chairman of the Management Board, JSC RusHydro
- Entering on Board of Honour of JSC RusHydro;
- Badge of merit For off-gauge Ideas and Creative Approach;
- Badge of merit For Professional Skill;
- Badge of merit For Mentoring;
- Badge of merit For Contribution to Sport;
- JSC RusHydro's Branch's Letter of Award;
- Entering on Board of Honour of JSC RusHydro's branch;

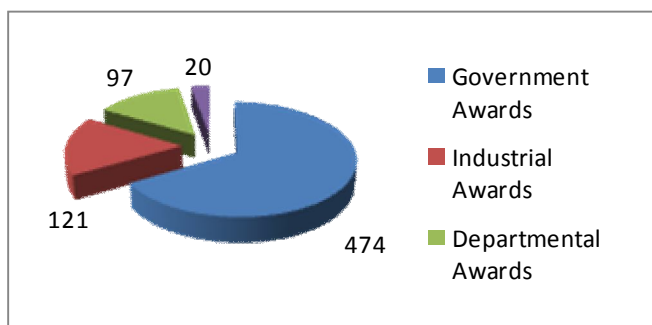
In total, for 2010, employees of the holding and company were awarded with 16 government awards, 205 departmental awards, 57 industrial rewards, and 640 corporate rewards for high professional skill, conscientious and fruitful work.

### Rewards dynamics in the holding

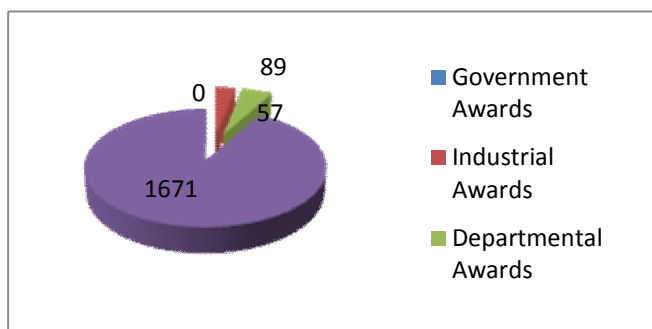


The growth of a number of rewards in 2009 is related to rewarding the employees who participated in emergency recovery work at Sayano-Shushenskaya HPP.

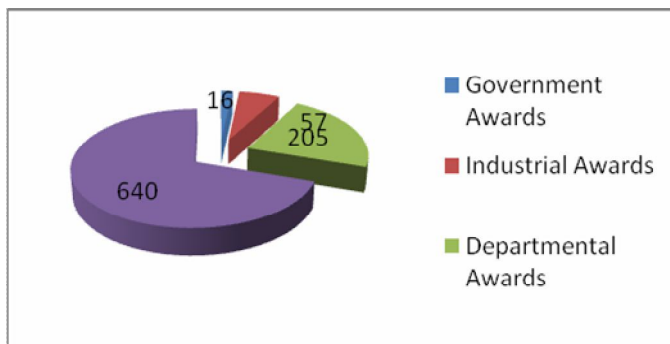
### The number of rewards in 2008 by types:



### The number of rewards in 2009 by type:



### The number of rewards in 2010 by type:



### Personnel reserve formation

In order to ensure a personnel reserve, the company carries out work on managing a personnel reserve data base including formation of a data base consisting of external candidates for vacancies.

This data base contains CVs of the candidates for executive positions divided into the following categories: general managers, financiers, economists, specialists in the field of HR, PR and GR, production, sales and procurement, legal groundwork.

The internet-portal of JSC RusHydro contains information about vacancies in the company. This web-site is available to personnel departments of the company and other energy companies.

In order to effectively select and promote candidates for general managers' positions at energy companies, in 2010 the company started a personnel commission.

#### 1) *Social policy*

One of the warranties to reach the specified strategic goals of the Holding JSC RusHydro is to develop a social partnership in the industry.

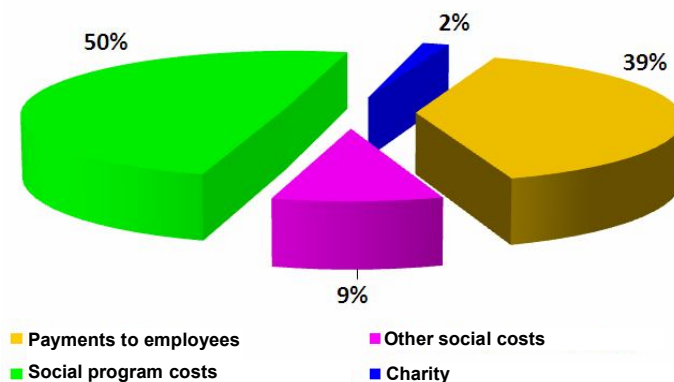
According to collective contracts of the company's branches, JSC RusHydro establishes and implements the following social programs, benefits, corporate payments and compensatory payments, besides the ones established by the Government of the Russian Federation:

- social programs for the employees – private retirement insurance, voluntary medical insurance, voluntary accident and health insurance, a housing program, health resort treatment and tourism;
- Additional paid family leave days – on the Day of Knowledge, on the birth of a child, the day of the employee's marriage registration (the first time), the day of employee's children's marriage registration (the first time), death of employee's spouse, family member (children, parents, blood brothers and sisters), son being discharged for services in the Russian Army;



- additional unpaid family leave days – employee’s children’s marriage registration, moving to a new place of residence, employees with children under 7 years old – maximum 7 days;
- material aid to employees (and their families) and pensioners of the branch (and their families) – in case of employee’s death at the place of production or at home, confirmed disability resulting from the employer’s fault or occupational disease, death of a branch’s pensioner or an employee’s close relatives, birth/adoption of a baby, employee’s marriage registration (for the first time);
- One-time payments to employees – going on a regular leave; quarterly compensation for electricity costs; dismissal on the draft to the Russian Army; 50<sup>th</sup> anniversary; assignment of industrial, departmental awards, titles of honor; reaching retirement age on common and privileged grounds depending on the service record at energy enterprises, etc.;
- Care for employees’ children – annual free-of-charge presents for the New Year party, vouchers to children’s summer camps, compensation for the childcare centers expenses; monthly child care leave payments for children under the age of 3.

Based on results of 2010, the employer paid 716,878,500 rubles under the Collective Agreement:



In December 2010, JSC RusHydro’s Board of Directors approved the revised version of the standard collective agreement for JSC RusHydro’s branches for the years 2011-2013, which significantly improves employees’ social protection, and particularly:

1. it changes the list of benefits and protection for families of accident victims and injured employees, it increases the amount of payment and compensation to the employee’s family in case of the employee’s death in the execution of his/her duties, caused by an accident, as well as in emergency situations;

2. in order to attract young specialists to hydro-power engineering and to ensure commissioning of new capacities, the company added a subsection which provides for monthly payments (corporate scholarships) to employees’ children-students studying for the first time in special and high education establishments in the Russian Federation with excellent and good marks for field-specific courses;

3. In order to develop national state projects in the company and to implement a socially responsible position for the company in relation to young families, the company increased one-time payments for important events which happen with young employees of the company, e.g. birth of a baby, marriage registration, child-care leave for children under 3 years old.

A new collective agreement will make it possible to enhance prestige of engineering professions and working at the company, to keep skilled personnel, to attract young specialists to the company graduated from higher education establishments with degrees in energy specialties.

These measures will make it possible to ensure personnel recruitment and avoid the risk of equipment and hydraulic facilities being poorly operated.

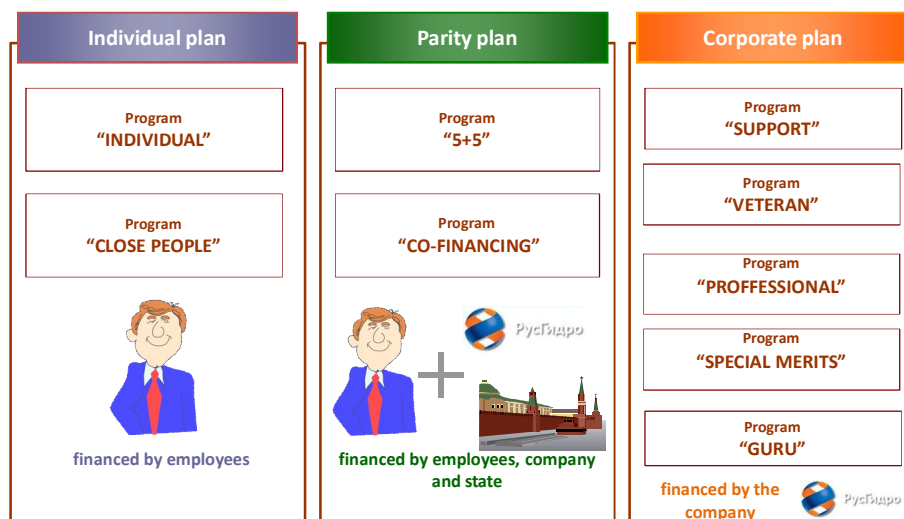
## Private retirement insurance

Private retirement insurance (PRI) is an efficient tool to implement the company's social policy in relation to its employees, and together with mandatory pension insurance it is an important condition to allow for a decent standard of living when an employee retires.

In 2010 JSC RusHydro being a socially responsible company continued implementing PRI for the employees of RusHydro holding and company; it is designed to establish a long-term system of private retirement insurance in the framework of a single approach, common goals, principles. It is intended to ensure both a decent standard of living of the holding's and the company's employees once they reach retirement age, and an efficient solution of personnel issues related to attracting, keeping and motivation of the personnel at energy companies.

In 2010 the PRI program was complemented with additional retirement plans: co-financing, Close people, Guru, Special merits, Professional, etc. These plans are intended to generate additional pension accruals for special groups, particularly – for the employees with significant work experience in this industry, awarded with industrial and state rewards, employees of scarce industrial jobs, etc.

## Структура негосударственного пенсионного обеспечения



PRI program CO-FINANCING added in 2010 expands the government's policy in the sphere of retirement insurance in accordance with the Federal Law No. 56-FZ On additional insurance amounts for a funded part of the retirement pension and government support in pension amounts generation dd. 30.04.2008; under this program the employee, the company and the Government equally co-finance the employee's retirement insurance, while the program Close people makes it possible for the employee to finance pension of his close people.

The number of participants in PRI program in 2010 increased by more than 300 people because of new retirement plans introduction.

In total 425.3 mln rubles were allocated to implement the program in 2010.

## Corporate contribution to improving employees' housing

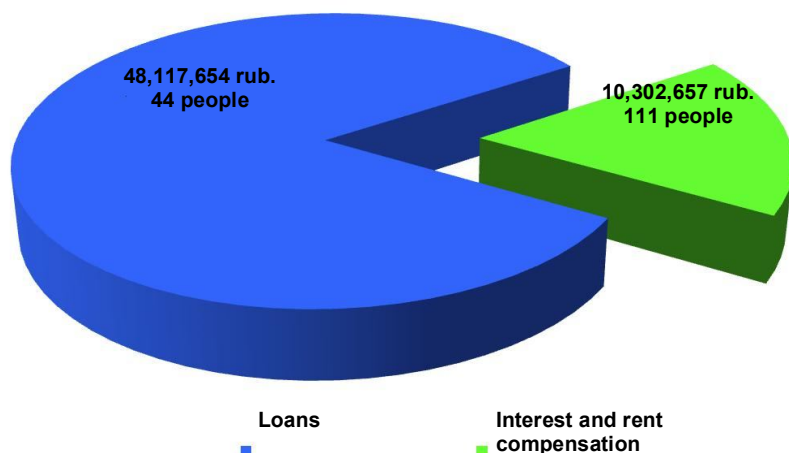
In 2010 JSC RusHydro implemented a housing program. Young specialists under 30 who do not possess their own housing, specialists invited to the branch or who have moved from another region, key and highly experienced specialists have the priority in participating in this program.

Main forms of corporate contribution to the employees' dwelling conditions improvement are:

- special-purpose interest-free loan,
- interest on mortgage credits compensation,
- compensation for renting expenses.

Besides that the company may contribute to improving housing conditions of all employees; thus the company may arrange co-operation between its employees and credit, realtor and insurance companies with better terms than those available on the market (a lower interest rate, a more convenient time for application processing, beneficial insurance rates, etc.).

In total, in 2010, 155 people took part in the housing program.



### **Voluntary and mandatory medical insurance and voluntary accidental and health insurance**

In 2010 the program of employees' insurance was revised. Every year the company revises and signs contracts for voluntary medical insurance and accidental and health insurance in order to expand and to improve the range of available medical services. This program covers all of the company's employees. Under the frame of voluntary medical insurance the employees receive outpatient and ambulatory services (including doctor calls), emergency and scheduled medical treatment, remedial treatment, etc.

### **Social support to family members of victims and injured workers as a result of the accident at Sayano-Shushenskaya HPP.**

In 2010 JSC RusHydro continued a complex program of social assistance and rehabilitation of the injured and family members of the victims after the accident. The emergency took the lives of 75 people – employees of Sayano-Shushenskaya Neporozhny HPP and contract organizations, 60 people were injured.

185 mln rubles – this is the amount approved by the Board of Directors at JSC RusHydro to eliminate the social impact of the accident at Sayano-Shushenskaya Neporozhny HPP (material assistance to family members of victims and injured employees).

The company continues monthly payments to 32 families of the victims with children under 18 to the sum at the same rate as the salary of the victim. This assistance will be valid until the youngest child in the family reaches the age of 18.

On March the company started payments of scholarships to children of deceased employees who study in the Russian primary, secondary or higher professional educational establishments for the first time.

Monthly non-state pensions will be paid for five years starting from this February to 59 parents and spouses of the accident victims. The other 21 program participants will receive a non-state pension on reaching retirement age. The total financing sum under private retirement insurance program amounts to 5.5 mln rub.

The company has paid all compensation to the injured employees as a result of the accident at Sayano-Shushenskaya HPP. Sixty people were acknowledged to be injured. Among them: 37 people are employees of JSC Sayano-Shushensky Hydroenergomont, seven people are the plant's employees, six people are employees of SaynService LLC, two employees from the companies Technostroy, Avangard-S and JSC SShTTs, each, three employees are from STALT Ltd, and one is the employee of Priroda LLC. The total sum of payments to the injured employees amounted to 5.9 mln rubles.

Fifty-four family members of the accident victims at JSC RusHydro's Sayano-Shushenskaya Neporozhny HPP are employed: 30 people are employed by JSC RusHydro's branch – Sayano-Shushenskaya Neporozhny HPP named after P.S. Neporozhny, 18 people are employed by JSC Sayano-Shushensky Hydroenergomont, 2 people are employed by CJSC Sayansky main facilities control department, 4 people are employed by other companies.

On the decision of JSC RusHydro, 256 people who at the date of the emergency 17.08.2009 happened to be at SShHPP obtained payments for personal things lost because of the accident with a total amount of 5.12 mln. rub.

As of January 01, 2011, JSC RusHydro rendered material assistance to the total sum of 170 mln. rub., the payments are still being made.

#### **Co-ordination Committee on assistance lending to the families of the victims and injured workers during the accident at Sayano-Shushenskaya HPP.**

Personal assistance to family members of accident victims and injured employees of Sayano-Shushenskaya Neporozhny HPP began on August 17, 2009, a Co-ordination Committee was established in January based on charity funds and other sources. The Co-ordination Committee includes representatives of the Government of the Republic of Khakassia and RusHydro company, authorities of the town of Sayanogorsk, Holding IDGC, public and trade union organizations (11 people).

Five meetings of the Co-ordination Committee have been held, 327 applications from the relatives of the injured workers and accident victims have been considered in order to solve the specified tasks.

On its decision, based on the charity funds' resources, the Co-ordination Committee rendered material assistance for acquisition of four flats for family members of accident victims, besides that it paid personally for education, treatment, loan repayment. etc.

The Co-ordination Committee on rendering assistance to the families of accident victims and injured workers of Sayano-Shushenskaya Neporozhny HPP has approved payments to victims' parents in order to compensate of damage, including moral impact compensation. By this moment, 53 people have received payments with total amount of 8.5 mln. rub.; the money was raised under JSC RusHydro's Charity program We are with you, Sayano! The assistance is still being rendered.

From June 01, 2010, within the framework of implementing the Co-ordination Committee's solutions, a program of health-resort treatment, leisure time activities and rehabilitation for the injured employees and family members of accident victims has begun. The program will be valid for five years. The program will cover about 290 people. The program includes four spheres: Service medicated support, Children's summer camps, Remedial treatment, Sport and recreation center.

The program provides each participant with compensation for a voucher to health-resort treatment to the sum of up to 30,000 rubles. It will cover travelling expenses to the holiday resort

and back to the sum of 20,000 rubles. The program provides each family member who has lost a member of their nuclear family 5000 rubles compensation for sport and leisure centre. Annually the program compensates medical expenses to the sum of 10,000 rubles. The program provides 30,000 rubles annual compensation for children under 14 years old to go to summer camps.

Already 126 people have made use of the program services, among them 79 people have spent time and underwent a remedial treatment at Russian resorts: Belokurikha and Altay Castle (Altay), Krasnoyarskoye Zagorye (Krasnoyarsk Territory) and Yuzhnoye Vzmorye (Sochi), Lake Shira (Khakassia) and Ust-Kachka (the Urals); 24 participants of the program have obtained compensation for medical supplies expenses, 23 people have made use of sport and leisure complex.

In total, to implement its solutions, the Co-ordination Committee spent 58,601,500 rubles out of voluntary donations, raised in charity funds.

### **JSC RusHydro's community liaison office**

In order to increase management efficiency, further improvement of corporate culture and to provide each employee (as well as an injured one or family member of the accident victim at Sayano-Shushenskaya HPP) with a possibility to address directly to JSC RusHydro's management, the company established a community liaison office in April.

Activities of JSC RusHydro's community liaison office are based on principles of partnership with regional and municipal authorities, commercial and non-profit organizations of the Republic of Khakassia. It is designed to provide quick, comprehensive and quality consideration of citizens' applications in Sayanogorsk for commercial and non-profit organizations in the region.

Every person who has addressed the community liaison office of RusHydro obtained consultations and explanations to the questions relating to benefits, compensation, material assistance and assistance in domestic duties, health-resort treatment, education and employment, nursery school issues, youth leisure activities, social infrastructure repairs and reconstruction.

During seven months of 2010 the community liaison office obtained 411 applications, 277 of them were in written form, among them: 253 applications were addressed (194 positive solutions, and 64 refusals).

## **5. Immediate tasks in the sphere of company's sustainable development.**

### **Main tasks in the sphere of the company's sustainable development are:**

- Constant update of production in order to increase energy efficiency and to reduce environmental impact.
- Contribution to introduce innovations;
- Partnership development between the company and research, as well non-profit organizations in order to elaborate environmentally friendly technical and managing approaches at the company's enterprises;
- Implementing a project for biodiversity protection and introducing obtained results into JSC RusHydro's practice;
- Projecting and implementing programs to prevent global climatechange;
- Measures for reasonable use of water resources with business-projects for water supply and drainage optimization;

- Company position in new business areas, as a developer in the field of wind energy and nonconventional renewable power sources (small-scale hydropower generation, tidal power plants).
- Introduction of quantitative methods of risks assessment;
- Structural interactions development with stakeholders and others.

## Appendix 1. Table of used GRI-G3 indices

Item No.	Index	Indicator on the information disclosure
1.1	The statement of the senior person possessing the right to make decisions in the company (for example, executive director, chairman of the board of directors, or similar position), accepting the report about sustainable development significance for the company and its strategy	See Chapter 1, Section 1.1 A word from the Chairman of the Management Board
1.2	Description of key impact, risks and possibilities	See Chapter 2. Section 2.2. Risks management
2.1	Name of the organization	Open Joint-Stock Company Federal Hydro-Generating Company (JSC RusHydro)
2.2	Main brands, types of products and/or services	See Chapter 1. Section 1.2. Company Profile
2.3	Functional structure of the organization, including main divisions, operation companies, subsidiaries and joint companies	See Chapter 1. Section 1.2. Company Profile
2.4	Location of Organization's headquarters	Company's main office is located at the address: 51 Architektora Vlasova st, Moscow
2.5	A number of countries where the organization performs its activities; names of the countries where main activities are executed or that are of a significant importance for a sustainable development covered by the report.	See Chapter 1. Section 1.2. Company Profile
2.6	Property type, type of business entity	Open joint-stock company with state participation in the registered capital
2.7	Markets where the organization functions (including a geographic split, sector maintaining and consumers and beneficiaries categories)	See Chapter 4. Section 4.1 Economic efficiency, «RusHydro's place and role in the power engineering in Russia»
2.8	Organization range including: <ul style="list-style-type: none"> <li>• Number of employees;</li> <li>• Net sales (for private organizations) or net revenue (for state organizations);</li> <li>• General capitalization with division into loan and own capital assets (for private organizations);</li> <li>• Quantitative characteristics of the production or rendered services</li> </ul>	See Chapter 4. Section 4.3. Social efficiency: Staff potential development. See Chapter 4. Section 4.1 Economical efficiency
2.9	Significant changes in the scale, structure or property that took place during a report period including: <ul style="list-style-type: none"> <li>• Location or nature of the activities change, including foundation, closing or expansion of an enterprise</li> <li>• Stock capital structure change and other actions to generate, maintain or change capital assets (for private organizations)</li> </ul>	There are no significant changes

2.10	Rewards during report period	See Chapter 4. Section 4.3 Social efficiency: Staff potential development
3.1	Report period (for example, financial/calendar year) which contains this information	Calendar year
3.2	Issue date of the previous report (if any)	2011
3.3	Reporting cycle (year, two-year, etc.)	year
3.4	Contact information to answer the questions about the report or its contents	See Appendix 2 Contact information
3.5	Process of report's content determination, including <ul style="list-style-type: none"> <li>• Essentiality determination;</li> <li>• Topics priorities determination within the report;</li> <li>• Interested parties determination considered to be potential users of the report.</li> </ul>	See Chapter 3. Section 3.2. Interested parties list; main trends, forms and results of interaction, dialogue development
3.6	Report boundaries	See Chapter 2
3.7	Coverage area or report boundaries limitations	See Chapter 2
3.8	A reason to include into the report data on joint enterprises, subsidiaries, production facilities lease, partial transfer of the functions to external contractors and other organizational entities which may significantly impact comparability with the previous reports and/or other organizations.	See Chapter 2 Sustainable development report for the year 2010: overview and goals
3.9	Methods to measure data and calculations including suggestions and procedures used to prepare indices and other information included into the report.	See Chapter 2 Sustainable development report for the year 2010: overview and goals
3.10	Significance of any restatements of the information given in previous reports as well as reasons for such restatements (for example, acquisition/merger, reporting periods, business nature and evaluation methods changing)	There were no restatements
3.11	Significant changes in previous reporting periods of the covered area, boundaries or measurement methods used in the report	Reporting period is changed, previous report period covered the years 2008–2009
3.12	Table indicating location of Standard elements in the report.	Appendix 1. Table of used GRI-G3 indices.
4.1	Structure of organization management including main committees as part of superior management board responsible for particular tasks, for example, for strategy working out or a general control of the company's activities.	See Chapter 3. Section 3.1.1. Corporate management



4.2	Is a chairman of a superior management board also an executive manager of the company?	No, he is not.
4.3	A number of independent members of a superior management board and/or members not related to executive management of the company.	<i>Independent members of the Board of Directors as part of the Board of Directors active in the year 2010 – Boris Yuryevich Kovalchuk, Victor Vasilyevich Kudryavy, Grigory Markovich Kurtser, Andrey Borisovich Malyshev, Rashid Ravelevich Sharipov</i>
4.4	Mechanisms used by shareholders or the company's employees to control activities of the superior management board or to give recommendations	See Chapter 3. Section 3.1.1. Corporate management
4.5	A correlation between payments to members of a superior management board, representatives of superior executive management and senior managers (including discharge allowance) and results of the company's activities (including social and environmental results).	There is no correlation.
4.6	Existing processes in a superior management board designed to avoid conflict of interests.	Provision on industrial conflicts resolution is developed
4.7	Procedures to evaluate qualification and competence of members of superior management board in order to outline a strategy of the organization in economical, environmental and social topics [sustainable development].	There were developed criteria to assign and substitute members of JSC RusHydro's Management Board.
4.8	Mission or values statements, developed in the organization, codes of corporate conduct and principles significant as far as economical, environmental and social efficiency is concerned, as well as degree of their implementation.	See Chapter 3. Section 3.1.1 Corporate management
4.9	Procedures used by a superior management board to supervise the organization's evaluation and management of its economical, environmental and social efficiency, including risks and possibilities, as well as observance or compliance to international standards, codes of corporate conduct and principles.	<p>The efficiency of the System of internal risk control and management (SIRC&amp;M) is regularly evaluated.</p> <p>The goal of SIRC&amp;M efficiency regular evaluation is to determine reliability of the internal control system and probability to reach the purpose of control procedures which are used by the risks owners for an effective control.</p> <p>Schedule of internal audit control activities provides control of events intended for risks management during inspections.</p> <p>In compliance with the policy, the reports on the company's risks are considered by the audit committee at the Board of Directors at least once a year.</p>

		There are no procedures used by a superior management board to supervise the organization's evaluation of its social efficiency.
4.10	Procedures used by a superior management board to evaluate its efficiency, particularly, the ones relating to economical, environmental and social efficiency of the company.	Procedures used by a superior management board to evaluate its efficiency are based on the key performance indicators (KPI).
4.11	Does the organization implement precautionary principle, in what way?	When planning its activity and implementing new projects, the company evaluates possible risks in compliance with the procedures approved by the company, it elaborates and introduces measures on risks management, as well as performs risks monitoring related to the company's activities.

4.12	Economic, environmental and social charters, principles and other initiatives developed by the third parties and accepted and supported by the company.	Industrial tariff agreement in power engineering in the Russian Federation for the years 2009–2011 (mandatory performance). Signed on June 28, 2008.  See Chapter 2. Section 3.2. Interested parties list; main trends, forms and results of interaction, dialogue development
4.13	Membership of associations (e.g. industrial associations) and/or national and international organizations on interests protection in which the company <ul style="list-style-type: none"> <li>• Takes place in management bodies;</li> <li>• participates in projects or committees;</li> <li>• Provides an essential financing beyond common membership fees; or</li> <li>• Considerers its membership to be a strategic one.</li> </ul>	See Chapter 3. Section 3.1.1 Corporate management
4.14	List of interested parties with whom the company interacted.	See Chapter 3. Section 3.2.  Interested parties list; main trends, forms and results of interaction, dialogue development
4.15	Basis for disclosure and selection of the interested parties with the purpose of further interaction.	See Chapter 3. Section 3.2.  Interested parties list; main trends, forms and results of interaction, dialogue development

4.16	Approaches to interaction with the interested parties including interaction periodicity by forms and interested groups	See Chapter 3. Section 3.2. Interested parties list; main trends, forms and results of interaction, dialogue development
4.17	Main topics and interests raised or revealed during interaction with the interested parties, and answers of the organization to the topics and interests including its reporting.	See Chapter 3. Section 3.2. Interested parties list; main trends, forms and results of interaction, dialogue development
EC1	Created and distributed straight economic value including revenues, operational costs, remuneration to the employees, donations and other investments into communities, undistributed profit, payments to capital assets suppliers and governments.	See Chapter 2. Section 2.10 Corporate charity See Chapter 4. Section 4.3 Social efficiency: Staff potential development
EC2	Financial aspects and other risks and possibilities for the company's activities taking into account the climatic changes.	See Chapter 2. Section 2.5 Environmental Protection
EC3	Securities of the company's obligations related to a retirement plan with established benefits.	See Chapter 4, Section 4.3 Social efficiency: Staff potential development
EC4	Significant financial assistance secured from public authorities.	Budgetary allocations for reconstruction of Baksanskaya HPP
EC6	Policy, practical approaches to purchases from local suppliers, and share of such purchases in main regions of the company's activities.	Taking into account the nature of production, there are no purchases from local suppliers
EC7	Local population engagement and share of superior managers involved from local population in the main regions of the company's activities.	99 % – share of superior managers engaged from the local population in the main regions of the company's activities
EC8	Development and impact of the investments into infrastructure and services primarily rendered for the public benefit in the form of a commercial, natural or charitable participation.	See Chapter 2. Section 2.10. Corporate charity
EN1	Employed materials, their weight and volume.	See Chapter 4. Section 4.2 Environmental efficiency
EN2	Share of materials that represent processed or recycled waste	There are no materials that are processed or recycled waste
EN3	Direct use of the energy, primary sources	N/A
EN4	Indirect use of the energy, primary sources	N/A
EN8	Total amount of consumed water, by sources.	See Chapter 4. Section 4.2 Environmental efficiency
EN11	Location and area of lands owned, leased, controlled by the organization, and located at protected natural territories and territories with valuable biological diversity beyond the limits, or adjacent to such territories.	There is no information on lands owned, leased, controlled by the organization, and located at protected natural territories and territories with valuable biological diversity beyond the limits, or adjacent to such territories.
EN12	Description of significant impact caused by activities, production and services onto biodiversity at protected territories and	See Chapter 4. Section 4.2. Environmental efficiency.

	territories with valuable biodiversity beyond the limits.	
EN16	Total direct and indirect emissions of greenhouse gases, their mass.	See Chapter 4. Section 4.2 Environmental efficiency
EN17	Other significant indirect emissions of greenhouse gases, their mass.	See Chapter 4. Section 4.2. Environmental efficiency.
EN19	Emissions of ozone destroying substances, their mass.	See Chapter 4. Section 4.2. Environmental efficiency.
EN20	NOX, SOX and other significant pollutants emissions into the atmosphere, their type and mass.	See Chapter 4. Section 4.2. Environmental efficiency.
EN21	Total volume of discharges, quality of waste water and accepting facility.	See Chapter 4. Section 4.2. Environmental efficiency.
EN22	Total mass of wastes by type and handling method.	See Chapter 4. Section 4.2.
EN23	Total number and volume of essential spills.	See Chapter 4. Section 4.2. Environmental efficiency.
EN26	Initiatives on mitigating environmental impact of the products and services and impact mitigation range	The company monitors environment and holds activities on banks cleaning (“Oberegay!” action) and water storage basins desilting.
EN27	Share of sold production and its packages, returned for processing to the manufacturer, by categories.	No products have been returned. Main activity is power generation.
EN28	Monetary value of significant fees and total number of nonfinancial penalties imposed for nonobservance of the legislation and regulatory requirements.	See Chapter 2. Section 2.5. Environmental Protection
LA1	Total manpower by employment patterns, employment contracts and regions.	99 % – regular employment, indefinite term employment agreement
LA2	Total number of employees and staff turnover by age, gender and region	See Chapter 4. Section 4.3 Social efficiency: Staff potential development
LA4	Share of employees covered by collective contracts	See Chapter 4. Section 4.3 Social efficiency: Staff potential development
LA5	Minimum notification period(s) in relation to significant changes in the company’s activities; is it indicated in the collective agreement?	2-month notice
LA7	Level of industrial injuries, occupational diseases, missed days coefficient and absence coefficient, as well as total number of fatal cases related to the occupation, by regions.	Coefficients are not converged
LA8	Existing educational, training, consulting, risk preventing and control programs, to assist employees, members of their families, and population in relation to severe diseases	Mite vaccination

LA10	An average annual number of training hours for an employee, by employee categories	See Chapter 2. Section 2.8. Personnel development
LA13	Executive staff and the company's personnel by gender and age, minorities representatives, and other diversities.	See Chapter 4. Section 4.3. Social efficiency: Staff potential development
LA14	Ratio between men and women basic salary, by employees categories.	No difference.
HR1	Percentage and total amount of significant investment agreements including provisions for human right observance or that passed evaluation in relation to human rights protection	Total number of investment agreements including provisions for the human rights observance or that have passed evaluation for the human rights observance, equals 100 %, and is equal to the total number of the company's projects.
HR2	Share of significant suppliers and contractors who have passed evaluation for human rights observance, actions undertaken.	requirements to human rights observance stated in the legislation of the Russian Federation are fully observed.
HR4	A total number of discrimination cases, measures undertaken	There is no discrimination
HR5	Activity under which there is a risk to association freedom and collective negotiations holding, and undertaken measures for these rights support.	There are no limitations
HR6	Activity under which there is a significant risk of child labor involvement, and undertaken measures for child labor elimination.	Child labor is not involved.
HR7	Activity under which there is a significant risk of compulsory and mandatory work involvement, and undertaken measures for forced and mandatory labor elimination.	Forced and mandatory labor is not involved.
S01	Nature, coverage and efficiency of programs and approaches to evaluate the company's activities' impact onto communities and to control this impact including the beginning of the activities, their implementation and completeness.	See Chapter 4.
S02	Share and total amount of business units that were analyzed in relation to risks related to corruption practices.	All business units in the company are analyzed
S03	Share of employees who have completed their training in anti-corruption policies and company's procedures.	There is no statistics

	Actions in response to corrupt practices	We have created a “Confidence Line” which makes it possible for every person to express his/her opinion to RusHydro’s management about existing problems and failures in the company’s activities. Information is checked for possible corruption practices within the frame of official investigations.
S05	Position in relation to the state policy and participation in the development of the state policy and lobbying.	See Chapter 3. Section 3.1.5 Position in relation to the state policy and participation in the development of the state policy and lobbying.
S08	Monetary value of significant fees and total number of nonfinancial penalties imposed for nonobservance of the legislation and regulatory requirements.	No significant fees or nonfinancial penalties were imposed in the year 2010.
PR1	Lifecycle stages at which impact on health and products and services safety are estimated in order to reveal possible improvements, and share of significant products and services subjected to these procedures.	Impacts are constantly estimated
PR3	Types of information on products and services parameters, required procedures and share of significant products and services to which these requirements to the information are implied	There are no requirements
PR6	Programs to ensure compliance with the legislation, standard and voluntary codes in the field of marketing communications, including advertising, products promotion and sponsoring	No programs were developed

## Appendix 2

**Engagement with stakeholders** – a process which enables the company to comprehend stakeholders' interests, expectations and concerns, helps to involve them into the activities and decision making process, taking into account the problems they are most concerned about.

**Dialogue with interested parties** (stakeholders dialogue) – an interactive engagement between the company and its stakeholders, performed on a voluntary basis, under which the company and its key stakeholders' interests and motivation are specified, various events and scenarios preferred by the key stakeholders are taken into account and coordinated, vision of the future activities is agreed.

**Corporate social responsibility, CSR** – a series of liabilities for the corporation in particular and a level of development, regularly revised, voluntarily and concurrently elaborated with participation of the key interested parties, performed mainly at the expense of corporation's funds and intended for carrying out internal and external social programs which contribute to the company's development (increase of production volume, services quality enhancement, corporate brands promotion), reputation and image, creating a corporate identity, as well as expansion of structural relations with the government, business partners, local communities and civic organizations.

**Non-financial risks** – political, social, reputation, environmental risks, government regulation and corporate management risks, as well as other risks that might impact an investment project implementation within the prescribed terms and of a prescribed volume.

**Interested parties coverage** – one of the main principles of social reports according to GRI management. According to this principle, a company preparing a report shall determine the parties interested in its activity and to explain in the report in what way their reasonable expectations and interests are considered during the creation of the report.

**Risk** – an accidental event with two parameters:

- 1) probability of the event occurrence (beginning);
- 2) damage as consequences of this event.

**Risk event** – an event that leads to occurrence of a loss or a benefit for the company. It is necessary to account both for negative events (threats) and for favorable events (probabilities).

**GRI guideline on preparing reports in the field of sustainable development** – an international document, proposing a detailed approach to generating reports' content reflecting economic, environmental and social results of the company.

Global Reporting Initiative (GRI) was founded in 1997 by the Coalition for Environmentally Responsible Economies (CERES) in partnership with the United Nations Program on Environmental Protection (UNEP) in order to develop, promote and to distribute a common approach to reporting, reflecting economic, environmental and social results of the company. In 2002 GRI became an independent organization.



**Social reporting** – 1. determination, evaluation, control and publication of information on the company's actual contribution to the society's, country's and region's development;  
2. a process of generating a non-financial report of the company.

**Social report** – 1. a document describing evaluation of the company's social influence;  
2. means to analyze and to estimate the company's activities in economic, social and environmental spheres, as well as a method to inform all interested parties (target audience) about the obtained results;  
3. means to manage non-financial risks of the company.

**Sustainable development** – a term first introduced in Europe in the 1980s and meaning that development shall “meet modern demands not depriving future generations of the capacity to cover their requirements”.

**Report boundaries in the field of sustainable development** – a circle of organized units whose activities are reflected in the company's report.

### **Appendix 3. Brief feedback questionnaire Contact information.**

Your opinion on this report is very important to the company.

We kindly ask you to fill in this feedback questionnaire and to send it to the company by any way with a remark “Social Report”:

- by mail: 51 Architektora Vlasova str, Moscow, 117393
- by e-mail: Chief of Department of a corporate governance of ZavalkoM.V.  
[ZavalkoMV@gidroogk.ru](mailto:ZavalkoMV@gidroogk.ru),  
The main expert of Department of a corporate governance  
Khutornaya E.A. [KhutornayaEA@gidroogk.ru](mailto:KhutornayaEA@gidroogk.ru);
- by fax:+7 (495) 225-37-37

1. Was this report useful to you? (yes; no; no answer)
2. How would you evaluate the completeness and truthfulness of the information given in this report? (empty field for a reply)
3. What section of the report seemed the most interesting and useful to you? (empty field for a reply)
4. What section of the report seemed the least interesting and useful to you? (empty field for a reply)
5. What information does this report lack, in your opinion? (empty field for a reply)
6. What category of interested parties would you refer yourself as being? Please, mark two variants at most (a list of interested parties)
7. If you would like to receive additional comments, please, indicate your contact information, and we will get in touch with you (full name, telephone number, address, email) (empty field, at least 2 lines available for a reply)