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PERFORMANCE OF ROSATOM 2015

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REPORT PROFILE

THE ANNUAL PUBLIC REPORT (THE REPORT) OF STATE ATOMIC ENERGY CORPORATION ROSATOM FOR 2015 IS THE SEVENTH REPORT PUBLISHED BY THE CORPORATION ON A VOLUNTARY BASIS AND INTENDED FOR A BROAD RANGE OF STAKEHOLDERS.

THE REPORT FOCUSES ON ROSATOM'S CONTRIBUTION TO THE SOCIAL AND ECONOMIC DEVELOPMENT OF RUSSIA; THIS TOPIC WAS SELECTED BY THE TOP MANAGEMENT AND KEY STAKEHOLDERS.

STANDARDS AND REGULATORY REQUIREMENTS
THE REPORT HAS BEEN PREPARED IN COMPLIANCE WITH:

- THE PUBLIC REPORTING POLICY OF ROSATOM, AND THE PUBLIC REPORTING STANDARD OF ROSATOM AND ITS ORGANIZATIONS;
- THE INTERNATIONAL INTEGRATED REPORTING FRAMEWORK (INTERNATIONAL <IR> FRAMEWORK);
- THE SUSTAINABILITY REPORTING GUIDELINES OF THE GLOBAL REPORTING INITIATIVE (GRI G4, THE CORE 'IN ACCORDANCE' OPTION);
- THE AA1000 SERIES OF STANDARDS;
- THE RSPP GUIDELINES FOR USE IN THE GOVERNANCE PRACTICE AND CORPORATE NON-FINANCIAL REPORTING (BASIC PERFORMANCE INDICATORS).

STAKEHOLDER ENGAGEMENT

TO IMPROVE TRANSPARENCY AND ACCOUNTABILITY AND TO DETERMINE THE MATERIALITY OF INFORMATION TO BE DISCLOSED, THE REPORT WAS PREPARED IN COOPERATION WITH STAKEHOLDERS IN ACCORDANCE WITH INTERNATIONAL STANDARDS (AA1000SES, GRI GUIDELINES, THE INTERNATIONAL <IR> FRAMEWORK). TO IDENTIFY MATERIAL ASPECTS TO BE DISCLOSED IN THE REPORT, A POLL WAS CARRIED OUT AND TWO DIALOGUES WITH STAKEHOLDERS WERE HELD, INCLUDING TWO PUBLIC CONSULTATIONS ON THE DRAFT REPORT. THE REPORT INCORPORATES KEY RECOMMENDATIONS AND REQUESTS VOICED BY THE STAKEHOLDERS DURING THESE DIALOGUES.

SEE SECTION 7.1 FOR MORE INFORMATION ON THE REPORT AND THE PROCESS OF DEFINING ITS CONTENT.

ALL DISCLOSED INFORMATION AND ADDITIONAL MATERIALS ARE ALSO AVAILABLE IN THE ONLINE VERSION OF THE REPORT AT HTTP://AR2015.ROSATOM.RU/?/EN

ROSATOM

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CORPORATION OF THE FUTURE

ANNUAL PUBLIC REPORT

PERFORMANCE OF STATE ATOMIC ENERGY CORPORATION ROSATOM IN 2015

TABLE OF CONTENTS

STRATEGIC OVERVIEW

ROSATOM IS A MULTI-FUNCTIONAL COMPANY POSSESSING ASSETS AND COMPETENCIES AT ALL STAGES OF THE NUCLEAR PRODUCTION CHAIN, INCLUDING URANIUM EXPLORATION AND MINING, URANIUM CONVERSION AND ENRICHMENT, NUCLEAR FUEL FABRICATION, MECHANICAL ENGINEERING, NPP DESIGN AND CONSTRUCTION, NUCLEAR POWER GENERATION, DECOMMISSIONING OF NUCLEAR FACILITIES, SPENT NUCLEAR FUEL (SNF) AND RADIOACTIVE WASTE (RAW) MANAGEMENT.

ROSATOM TODAY

State Atomic Energy Corporation Rosatom (hereinafter referred to as ROSATOM, the Corporation) was established on December 18, 2007.

ROSATOM's status, purpose and goals, functions and powers are defined by Federal Law No. 317-FZ on State Atomic Energy Corporation Rosatom dated December 1, 2007.

ROSATOM is authorized by the Russian Government to fulfil Russia's international commitments related to the peaceful use of nuclear energy and maintaining the non-proliferation regime, and to pursue the state policy on the use of nuclear power.

ROSATOM is a multi-functional company possessing assets and competencies at all stages of the nuclear production chain, including uranium exploration and mining, uranium conversion and enrichment, nuclear fuel fabrication, mechanical engineering, NPP design and construction, nuclear power generation, decommissioning of nuclear facilities, spent nuclear fuel (SNF) and radioactive waste (RAW) management. The Corporation also includes the Innovation Management Unit specializing in R&D, the Nuclear and Radiation Safety Unit, the Nuclear Weapons Division, and the Nuclear-Powered Icebreaker Fleet.

ROSATOM is one of the largest power generation companies in Russia and one of the leading players on the global market for nuclear technologies.

The Corporation carries out numerous large-scale international projects and generates substantial overseas revenues *(see the section 'International Business' for details).* Apart from traditional nuclear technologies and services, ROSATOM supplies innovative products to non-nuclear markets *(see the section 'Business Diversification' for details).*

No.1 IN THE WORLD IN TERMS OF URANIUM ENRICHMENT (OVER 1/3 OF THE GLOBAL MARKET)

No.1 IN THE WORLD IN TERMS OF THE NUMBER OF NPP POWER UNITS IN THE PORTFOLIO OF FOREIGN PROJECTS

No.2 IN THE WORLD IN TERMS OF URANIUM RESERVES (13% OF THE GLOBAL PRODUCTION)

950 MILLION RUB ANNUAL EXPENSES ON CHARITY PROGRAMMES

18.6% OF ELECTRICITY GENERATION IN RUSSIA

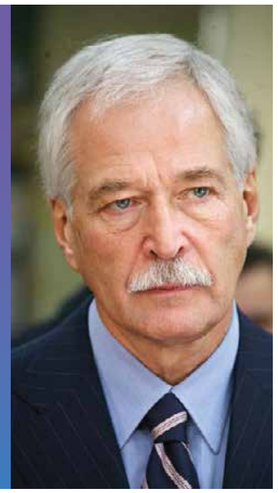
31.4 BILLION RUB EXPENSES ON ENVIRONMENTAL PROTECTION IN 2015

340 ORGANIZATIONS AND BUSINESSES WITHIN THE CORPORATION

THE WORLD'S ONLY NUCLEAR-POWERED ICEBREAKER FLEET

256,600 EMPLOYEES

ADDRESS BY THE CHAIRMAN OF THE SUPERVISORY BOARD



70 years ago, Russia created a nuclear shield, which marked the start of work towards harnessing nuclear energy; subsequently, the Soviet Union became the first country in the world to use atomic energy for peaceful purposes, as it started to build nuclear power plants.

Dear colleagues,

2015 was an anniversary year for the Russian nuclear industry.

70 years ago, Russia created a nuclear shield, which marked the start of work towards harnessing nuclear energy; subsequently, the Soviet Union became the first country in the world to use atomic energy for peaceful purposes, as it started to build nuclear power plants. Today, ROSATOM is a worthy successor to the Soviet nuclear industry. The Corporation successfully continues to implement projects that are strategically important for Russia; in addition, it is a global technological leader in the markets for nuclear technologies and services.

All 2015 key performance indicator targets set for ROSATOM by the Supervisory Board were met or exceeded. Cumulative performance against key performance indicator targets stood at 105.7%. Moreover, instructions from the government and the state defence order were 100% fulfilled.

In the reporting year, ROSATOM ensured safe and steady operation of enterprises in the nuclear industry. No events rated at level 2 or higher on the international INES scale were detected at nuclear facilities of ROSATOM (level 1 and 0 deviations pose no risk to employees operating the facilities, local residents or the environment). The federal target programme on nuclear and radiation safety for the period from 2008 through 2015 was completed; the final level of performance against the targets set in FTP NRS totalled 109.7%, despite a reduction in public funding.

Strong performance against the targets set in FTP NRS was achieved through operational efficiency, and following its successful completion, in 2015 the Government of the Russian Federation approved a new FTP on nuclear and radiation safety for the period from 2016 through 2030.

In 2015, ROSATOM completed its Long-Term Operational Programme for the period from 2009 through 2015. The outcome of the Programme proves that ROSATOM makes an important contribution to increasing the country's defence capabilities and promoting its social and economic development.

ROSATOM's industry-wide efforts to improve operational performance deserve high praise.

I would like to thank ROSATOM's employees for their work, and I wish them every success in attaining the goals set for the next year!

Chairman of the Supervisory Board of ROSATOM

Boris Gryzlov

KEY RESULTS IN 2015

Indicator	*2013*	*2014*	*2015*	*2015/2014*
Key performance indicators set by the Supervisory Board				
Adjusted free cash flow[1], RUB billion	157.1	202.1	245.4	**+21.4%**
10-year portfolio of overseas orders, USD billion	72.7	101.4	110.3	**+8.8%**
Increase in revenue from other products of the enterprises of the Nuclear Weapons Division (within comparable boundaries), %	20	7	15	-
Fulfilment of state tasks, %	100	100	100	-
Events rated level 2 and above on the INES scale	0	0	0	-
Electricity generation, billion kWh	172.2	180.5	195.2	**+8.1%**
Implementation of JSC Rosenergoatom Concern's investment programme, %	97.0	96.3	99.8	-
Unit semi-fixed costs (as a percentage of revenue), %	-	39.0	29.2	-
Integrated innovation KPI[2], %	-	-	128.9	The indicator was not set in 2014 and 2013
Increase in consolidated labour productivity vs 2011 (in current prices, excluding the Nuclear Weapons Division), %	28.5	37.5	93.5	-
Other key performance indicators				
IFRS revenue, RUB billion	529.2	618.3	821.2	**+32.8%**
IFRS net assets, RUB billion	1,550.1	1,722.2	2,029.4	**+17.8%**
IFRS intangible assets, RUB billion	48.0	48.0	55.9	**+16.5%**
Foreign NPP construction projects, number of power units	19	29	36	**+24.1%**
Overseas revenue, USD billion	4.97	5.20	6.26	**+20.3%**
NPP capacity factor, %	77.9	81.6	86.0	-
Natural uranium resources in Russia (+overseas assets), kt	541.9	524.7 (+224.1)	521.2 (+213.1)	-
Natural uranium production, kt	8.3	7.85	7.85	-
Taxes paid to Russian budgets of different levels, RUB billion	99.0	101.9	164.5	**+61.4%**

[1] Calculated as net cash flow from operating activities adjusted for the revenues from disposal of non-core assets, dividends and interest before lease payments and reserve funds.

[2] The calculation includes the number of foreign patents, income from the sale of innovative products and results of implementation of ROSATOM's new innovative development programme.

ADDRESS BY THE CEO

Dear colleagues and partners,

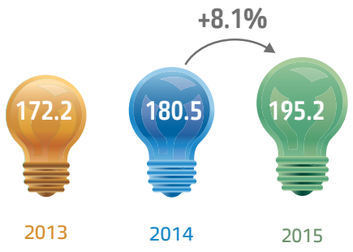
I would like to present ROSATOM's public annual report for 2015. The report was prepared in close cooperation with stakeholders, whose proposals were incorporated in the final version of the report. The information provided here reflects ROSATOM's performance against its long-term strategic goals in 2015, which are as follows:

- to increase ROSATOM's share on international markets, to promote continued growth of the portfolio of overseas orders;
- to reduce the cost of our products and lead time;
- to develop new products for the markets in Russia and abroad.

Despite economic challenges, in 2015, ROSATOM continued to expand its portfolio of overseas orders. At year end, the 10-year order portfolio totalled USD 110.3 billion (against USD 101.4 billion in 2014), while the project portfolio comprised 36 power units of NPPs worldwide. Another important achievement was the signing of an intergovernmental agreement on the construction and operation of a nuclear power plant in Egypt equipped with four power units based on Russian technologies.

ROSATOM's international projects make an important contribution to Russia's social and economic development. Overseas NPP construction projects are long-term projects; this means that enterprises in the Russian industry will be provided with orders for 60 years at the least, thus generating steady income and creating new jobs in the economy.

Fig. Electricity generation, billion kWh



Financial resources available to ROSATOM are estimated primarily based on changes in adjusted free cash flow (AFCF). At year-end 2015, AFCF totalled RUB 245.4 billion, up by 21.4% compared to 2014 (RUB 202.1 billion). The main growth drivers included additional electricity generation by Russian NPPs, the supply of nuclear fuel cycle products to overseas markets and the implementation of cost-cutting initiatives.

ROSATOM also achieved impressive results in terms of labour productivity, which is another important key performance indicator. Consolidated labour productivity (in current prices, excluding the Nuclear Weapons Division) increased by 93.5% compared to 2011. This was a result of ROSATOM's organizations meeting ambitious targets for revenue, growth of production and sales of nuclear fuel and NPP components abroad, as well as implementing production optimization programmes.

Looking at ROSATOM's key achievements, it is worth noting that in 2015, Russian nuclear power plants once again produced a record amount of electricity. 10 operating NPPs generated 195.2 billion kWh, which was 8.1% more than in 2014 (180.5 billion kWh). By year end, the total share of Russian NPPs in the country's energy mix increased to 18.6% (compared to 17.2% in 2014). The record power generation was made possible by an improvement in operational efficiency of power units at NPPs. Faster repairs enabled additional generation totalling 2 billion kWh; an increase in the capacity of units currently in operation accounted for 2.5 billion kWh; in addition, power unit No. 3 of Rostov NPP was launched ahead of schedule and generated 1.3 billion kWh.

In 2015, the Corporation achieved considerable success in the diversification of its business. ROSATOM's revenue from new products totalled RUB 125 billion, up by 59.2% compared to 2014 (RUB 78.5 billion). The portfolio of orders for new products for the next 10 years reached RUB 583.5 billion (up by 76.6% compared to 2014, when it totalled RUB 330.4 billion). Today, ROSATOM offers innovative products in such areas as nuclear medicine, composite materials, superconductors, automated process control systems, inspection and security systems, supercomputers, research reactors, small and medium-sized reactors, laser technologies and additive manufacturing. In 2015, the ALABUGA-VOLOKNO plant was opened; it is capable of fully meeting Russia's demand for carbon fibre. Several dozen surgical operations to treat cancer were successfully performed using domestically produced microsources manufactured by ROSATOM which use the iodine-125 isotope.

Fig. 10-year portfolio of overseas orders, USD billion

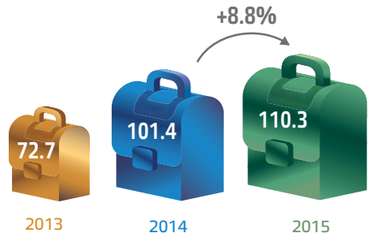
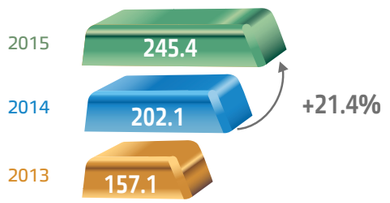


Fig. ROSATOM's adjusted free cash flow, RUB billion



The introduction of new products is closely linked to the development of research facilities and the design of breakthrough technologies. ROSATOM's key long-term project in the field of nuclear power of the future is aimed at closing the nuclear fuel cycle using fast neutron reactor technologies. The key achievement of the year in this sphere is the power start-up of power unit No. 4 of Beloyarsk NPP equipped with a BN-800 reactor. BN-800 is the world's first pilot fast neutron reactor running on MOX fuel. The power start-up of BN-800 has helped Russia and ROSATOM assert their leadership in fast reactor technologies.

ROSATOM's contribution to sustainable development includes a traditionally wide scope of efforts to ensure environmental safety. In 2015, we allocated RUB 31.4 billion for environmental measures; this accounted for 6% of the total environmental expenditure across the Russian Federation. In addition, ROSATOM is a major taxpayer: in 2015, payments to budgets of various levels totalled RUB 164.5 billion.

In 2015, we developed a framework for establishing priority social and economic development areas in all ten closed administrative and territorial formations (CATFs) in the nuclear industry. The first areas of this kind will start functioning as early as in 2016; in the future, we expect the number of jobs and investment to increase significantly and new businesses to be developed in our nuclear cities by 2025.

I would like to express my sincere thanks to all employees of ROSATOM and our partners for their cooperation and wish them every success in 2016! Undoubtedly, the highlights of the year will include the launch of power unit No. 6 of Novovoronezh NPP. This is the first generation III+ power unit, and it will be the most technologically advanced power unit not only in Russia, but also globally, which will considerably strengthen ROSATOM's leading position in the global nuclear industry.

In the medium term, we will continue to pursue our strategy informed by ROSATOM's values in order to provide the world with clean, safe, affordable energy and innovations based on nuclear technologies.

CEO of ROSATOM

Sergey Kirienko

KEY EVENTS IN 2015

8 intergovernmental agreements were concluded with foreign countries and international organizations, including intergovernmental agreements on NPP construction with Egypt and Jordan.

A Russian-Indonesian consortium won the tender for the preliminary engineering design of a multipurpose experimental reactor in Indonesia.

In 2015, 35 power units of 10 operating NPPs produced record amounts of electricity in the entire history of Russian nuclear energy (195.2 billion kWh). The share of Russian NPPs in Russia's energy mix rose to 18.6%.

Construction of the world's most powerful multipurpose fast neutron research nuclear reactor (MBIR) started in Dimitrovgrad, Russia; the reactor will be used for projects aimed at developing the global nuclear power industry of the future.

JSC PIMCU, the main uranium mining company of the Mining Division, reduced the cost of uranium mining by 12%.

The Atommash industrial complex in Volgodonsk, Russia, was restored and integrated into the process chain of ROSATOM.

Pilot production of microsources for brachytherapy to treat cancer was launched.

Reactor vessels of two reactors for the RITM-200 power unit were assembled for Arktika, the world's largest new generation nuclear-powered icebreaker, which is currently under construction.

In 2015, ROSATOM became a national leader in terms of the number of patent applications for inventions and utility models. The number of patents obtained in Russia and registered items of know-how totalled 1,141, while the number of international applications submitted and international patents obtained by ROSATOM totalled 101.

THE FEDERAL TARGET PROGRAMME ON NUCLEAR AND RADIATION SAFETY FOR THE PERIOD FROM 2008 THROUGH 2015 (FTP NRS) WAS COMPLETED SUCCESSFULLY. THE FINAL LEVEL OF PERFORMANCE AGAINST THE TARGETS SET IN FTP NRS TOTALLED 109.7%. THE GOVERNMENT OF THE RUSSIAN FEDERATION APPROVED A NEW PROGRAMME FOR THE PERIOD FROM 2016 THROUGH 2030.

AN EPC CONTRACT WAS SIGNED FOR THE CONSTRUCTION OF AN NPP IN BANGLADESH.

POWER UNIT NO. 4 OF BELOYARSK NPP WITH A BN-800 REACTOR WAS CONNECTED TO THE GRID AND STARTED ELECTRICITY GENERATION FOR THE POWER SYSTEM OF THE URAL REGION AND RUSSIA. INDUSTRIAL PRODUCTION OF MOX FUEL WAS COMMENCED FOR THE POWER UNIT.

THE ALABUGA-VOLOKNO CARBON FIBRE FACTORY WAS OPENED IN THE ALABUGA SPECIAL ECONOMIC ZONE, THE REPUBLIC OF TATARSTAN (THE FACTORY WAS BUILT BY ORDER OF ROSATOM).

EVENTS AFTER THE REPORTING DATE

IN MAY 2016, AS PART OF THE FIRST CRITICALITY PROGRAMME, POWER UNIT NO. 6 OF NOVOVORONEZH NPP REACHED THE MINIMAL CONTROLLABLE POWER LEVEL; IN AUGUST 2016, THE POWER UNIT WAS CONNECTED TO THE GRID AND STARTED ELECTRICITY GENERATION FOR THE POWER SYSTEM OF RUSSIA. THIS POWER UNIT WILL BECOME THE MOST TECHNOLOGICALLY ADVANCED UNIT BOTH IN RUSSIA AND WORLDWIDE.

ADDRESS BY A STAKEHOLDER REPRESENTATIVE

ROSATOM performs government functions pertaining both to nuclear power and nuclear weapons and to the development of its operating regions.

Finding opportunities for sustainable urban development is a key topic of discussion among urbanization specialists, social scientists and economists. This topic is especially relevant for towns and cities in closed administrative and territorial formations (CATFs) and their residents, as CATFs are subject to a special legal regime which imposes restrictions on business opportunities and citizens' rights.

ROSATOM performs government functions pertaining both to nuclear power and nuclear weapons and to the development of its operating regions. Ten closed towns and cities in the nuclear industry, from Zelenogorsk in the east to Sarov in the west of Russia, are committed to constructive cooperation with ROSATOM for the implementation of new operational and social projects aimed at improving standards of living. Another aspect of sustainable development of closed towns and cities is related to the state. Our towns and cities accommodate key research and manufacturing centres promoting the development of science and technology and ensuring the national security and energy independence of Russia.

The Association of CATFs in the Nuclear Industry continuously cooperates with the management of ROSATOM and specialized divisions. This cooperation involves formulating proposals for amending the law on CATFs, government support measures (including subsidies for job creation schemes), increasing budget allocation to CATFs and targets for allocation of personal income tax payments to local budgets, fostering health care development and participating in such projects as Territory of Culture and ROSATOM's School.

Joint efforts made in 2015 to exploit the potential provided by the federal law on priority social and economic development areas are an excellent example of this partnership. In late 2014, the law on priority social and economic development areas (PSEDAs) was amended to enable such areas to be established in CATFs. Throughout 2015, all CATFs in the nuclear industry closely cooperated with ROSATOM to develop a framework for PSEDA establishment within their boundaries, which was then presented to the Ministry of Economic Development of Russia. This framework determines key projects and social and economic outcomes of PSEDA establishment in CATFs. These efforts will produce tangible results as early as in 2016.

I believe that in the future, a sustainable economy and well-developed infrastructure will enable CATF local governments, in cooperation with ROSATOM, to implement a focused social policy for the benefit of local residents and to support initiatives undertaken by organizations and communities seeking to enrich and diversify life in the towns and cities.

President of the Association of CATFs in the Nuclear Industry
Head of the Administration of Sarov

Alexey Golubev

BUSINESS STRATEGY OF ROSATOM

BUSINESS STRATEGY

ROSATOM's strategy until 2030 was developed based on the goals set by the State for the civilian branch of the Russian nuclear industry, and was approved by the Corporation's Supervisory Board on October 31, 2014.

The development of ROSATOM is based on the long-term technological policy, which involves mastering new generation nuclear technologies, including fast neutron reactors and the closed nuclear fuel cycle, as well as strengthening the export potential of Russia's nuclear technologies (construction of nuclear power plants abroad, rendering uranium and nuclear fuel enrichment services, etc.).

Given the scarcity of investment resources and the current and forecasted global environment, as well as the current competitive advantages and technological capacity of the Russian nuclear power sector, the strategy is to improve the efficiency of the nuclear power business, which will lead to exponential improvement of the key financial and economic results by 2030.

ROSATOM's strategic goals until 2030

To increase the Corporation's share in international markets. *The Corporation is currently expanding its footprint in over 40 countries around the world, and the 10-year portfolio of overseas orders exceeds USD 110 billion. The share of foreign businesses is expected to increase from 52% in 2015 to 67% in 2030 (for more details, see the section 'International Business').*

To reduce production costs and lead time *by at least 30% (compared to 2015). ROSATOM plans to boost labour productivity by a factor of 3.5 by 2030 (for details, see sections 'ROSATOM's Production System', 'Procurement Management', 'Financial Management' and sections on the performance of divisions).*

To develop new products for the Russian and international markets. *The Corporation plans to increase the share of new businesses in its revenue from 15% in 2015 to 30% in 2030 (for details, see the section 'Business Diversification').*

To achieve the strategic goals, the following objectives must be met:

- Ensuring safe use of nuclear energy;
- Non-proliferation of nuclear technologies and materials;
- Preventing the negative environmental impact;
- Ensuring that the nuclear power development is socially acceptable;
- Developing the Corporation's innovative potential;
- Shaping a corporate culture focused on results and performance improvement;
- Ensuring that the state defence order is fulfilled;
- Ensuring full compliance with Russian legislation, including the Law on State Secrets.

VALUES OF ROSATOM

One step ahead. We strive to be the leader in the global market. We are always one step ahead of the market in terms of technology, knowledge, and the skills of our people. We foresee what will happen tomorrow and prepare for it today. We continuously develop and learn. Every day we try to do our work better than the day before.

Responsibility for the result. Each of us is personally responsible to the state, the industry, colleagues, and customers for the outcome and quality of our work – we set our standards very high. It is not the effort that we evaluate but the results. Successful results pave the way to our new achievements.

Efficiency. We always find the best solutions to various problems. We are efficient in everything we do. We efficiently use the company's resources and continuously improve our working processes. No obstacles can prevent us from finding the most efficient solutions.

One team. We all represent ROSATOM. We have common goals. Working in a team of like-minded people, we achieve unique results. Together we are stronger and are capable of achieving the most ambitious goals. The success of our employees is the success of our company.

Respect. We respect all our customers, partners, and suppliers. We always listen attentively and understand each other, regardless of the position or place of employment. We respect the history and traditions of the nuclear industry. Our past achievements inspire us to aim for new victories.

Safety. Safety is our top priority. In our work, we think about the safety of people and the environment above all. In the field of safety, everything is important: we are well aware of safety rules and abide by them with no violations.

ROSATOM aims to provide the world with clean, safe and affordable energy and innovations based on nuclear technology.

Key competitive advantages of ROSATOM:

- *Integrated offer for the entire NPP life cycle, which guarantees a competitive cost per kilowatt-hour (LCOE[3]);*
- *The use of reference technologies with the highest possible safety level;*
- *Assistance in securing project funding (including under the BOO scheme) and building project infrastructure (legal framework, employee training, PR, etc.).*

ROSATOM's Agenda for Sustainable Development

Due to the high social significance of the nuclear industry, ROSATOM gives high priority to the sustainable development (SD) of the nuclear industry and the Corporation, and seeks to contribute to the SD of the country and the world's population. Given the wide range of activities performed by ROSATOM in various areas, SD is managed and regulated individually for each activity *(for more information on SD management, see the relevant sections of the 2012 public annual report of ROSATOM).*

The Corporation aims to ensure sustainable business development through the following:

- Non-proliferation of nuclear weapons, nuclear materials and critical nuclear technologies;
- Ensuring nuclear and radiation safety, and reliability of nuclear facilities;
- Ensuring energy security;
- Managing the life cycle of nuclear facilities;
- Ensuring environmental safety;
- Creating state-of-art technologies for radioactive waste management and tackling the 'nuclear legacy' challenges;
- Applying nuclear technologies in the industries that determine the quality of people's life and their life expectancy;
- Positive economic and social impact on the regional, national and international scale;
- Providing opportunities for professional and career growth of employees, ensuring safe working conditions and implementing social programmes;
- Minimizing the environmental impact, including on the planet's climate;
- More efficient use of capitals;
- Efficient stakeholder engagement;
- Improving transparency and accountability;
- Ensuring public acceptance of the nuclear energy development.

See relevant sections of the Report to learn more about the implementation of the 2015 SD agenda.

[3] *LCOE stands for levelized cost of electricity over the NPP life cycle.*

Value Creation and Business Model

ROSATOM manages assets of the Russian nuclear industry at all NFC stages, the cycle of NPP construction, operation and decommissioning, and other segments associated with the use of nuclear energy. Realizing its significance for the Russian economy and society, ROSATOM undertakes to sustainably develop its business, including by increasing its total value for the Corporation, a variety of stakeholders and the country's population. The term value means not only creating products, rendering services and generating financial results, but also a combination of the Corporation's economic, social and environmental impact on its stakeholders and the entire world.

ROSATOM defines its business model as a system that creates value in the short, medium and long term and helps achieve strategic goals.

The business model rests on ROSATOM's long-term strategy, and is part of the business value chain.

Key elements

- Available capitals;
- A management system aimed at the most efficient use of capitals *(see the section 'Management Efficiency');*
- Operating results and their contribution to the long-term increase of capitals, which is defined through performance against strategic targets.

The business model specifically focuses on the environment since: a) the Corporation obtains some types of capital from the external environment, and a significant share of the results is related to it; and b) the external environment is a source of main risks and opportunities.

This scheme represents an integrated process of value creation. ROSATOM's business model is the core of this process that determines the range of activities and results, contributing to the changes in the basic types of capital in a reporting period. The Russian nuclear asset management model is presented in the section 'Corporate Governance'.

The Corporation's capitals

ROSATOM's capitals are one of the key elements of the value chain. The capitals change over the course of commercial or other activities (this may involve their increase, decrease, transformation, etc.), which creates value in the medium and long term.

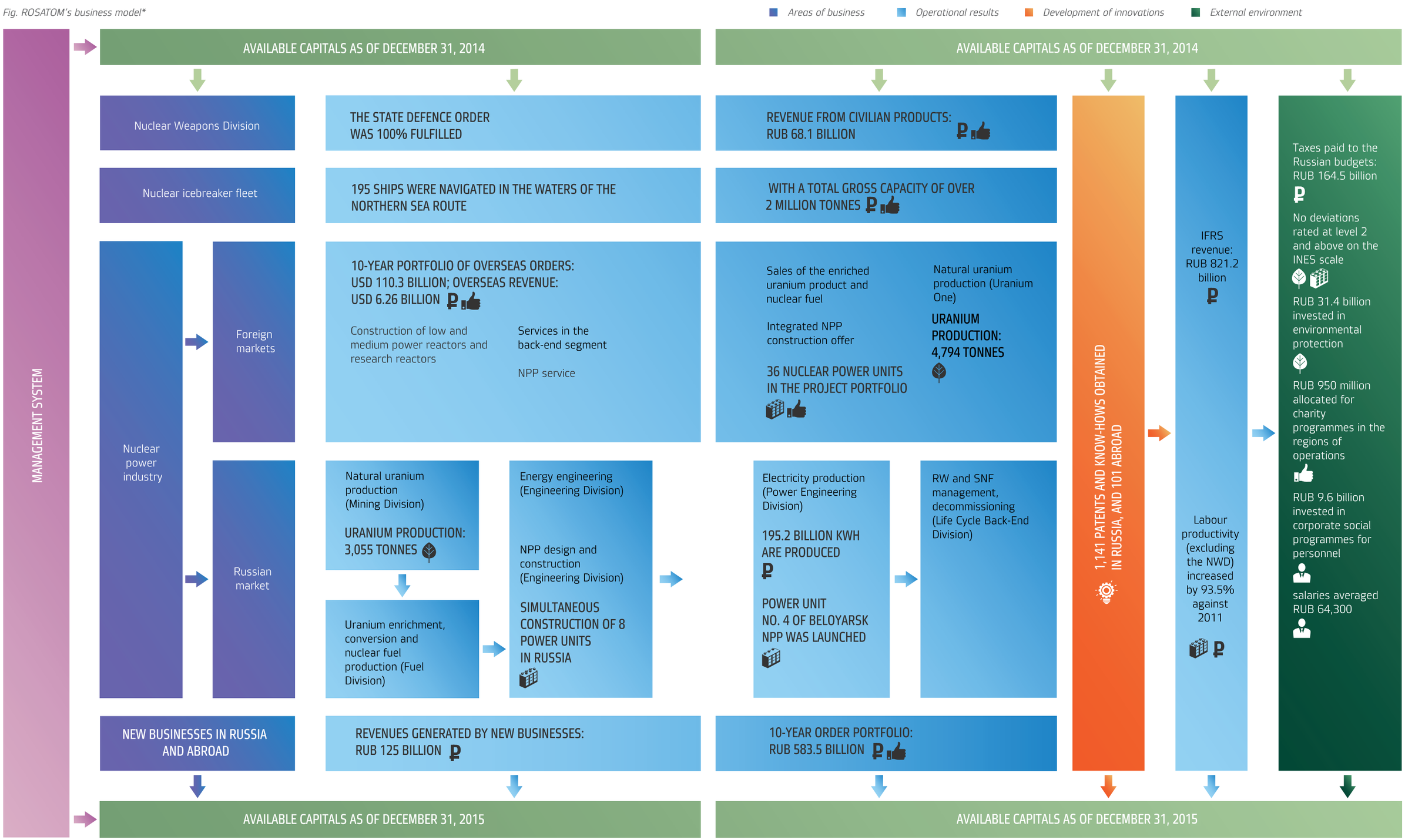
The Corporation defines capitals as particular resources (reserves) of tangible and intangible assets utilized in the course of business. The Corporation acknowledges that some of the available capitals are owned jointly with other stakeholders (e.g., natural resources and public infrastructure), and therefore handles them in a responsible way. ROSATOM distinguishes six types of capital: financial, manufactured, human, intellectual, social and relationship, and natural. Integral increase or decline of the capitals causes an increase or decrease in the Corporation's value, and the Corporation therefore attaches great importance to the management and improved efficiency of using available capitals.

Table. Value creation results (changes in capitals)

Type of capital	*Indicator*	*2014*	*2015*	*2015/2014*
Financial	Adjusted free cash flow, RUB billion	202.1	245.4	**+21.4%**
	Net assets under IFRS, RUB billion	1,722.2	2,029.4	**+17.8%**
Manufactured	Number of power units in operation, pcs.	33	35[4]	**+6.1%**
	Capacity factor of Russian NPPs, %	81.6	86.0	↑
Intellectual	Intangible assets under IFRS, RUB billion	48.0	55.9	**+16.5%**
	Share of innovative products in sales revenues, %	10.95	12.4	↑
Human	Average number of employees, thousand people	258.0	256.6	**-0.5%**
	Employee engagement, %	75	78	↑
	Share of professionals aged under 35, %	32.6	32.5	↓
Social and relationship	Support to the Russian nuclear industry, %	72	75.5	↑
	Number of countries where international projects are implemented	40	41	↑
Natural	Uranium resources (Russian assets), thousand tonnes	524.7	521.2	**-0.7%**
	Uranium resources (foreign assets), thousand tonnes	224.1	213.1	**-4.9%**

[4] *Including power unit No. 4 of Beloyarsk NPP at the stage of low power testing.*

*Fig. ROSATOM's business model**



* The diagram presents results for 2015 broken down by type of capital:

- manufactured capital
- intellectual capital
- social and relationship capital
- financial capital
- human capital
- natural capital

2

ONE STEP AHEAD IN 2015

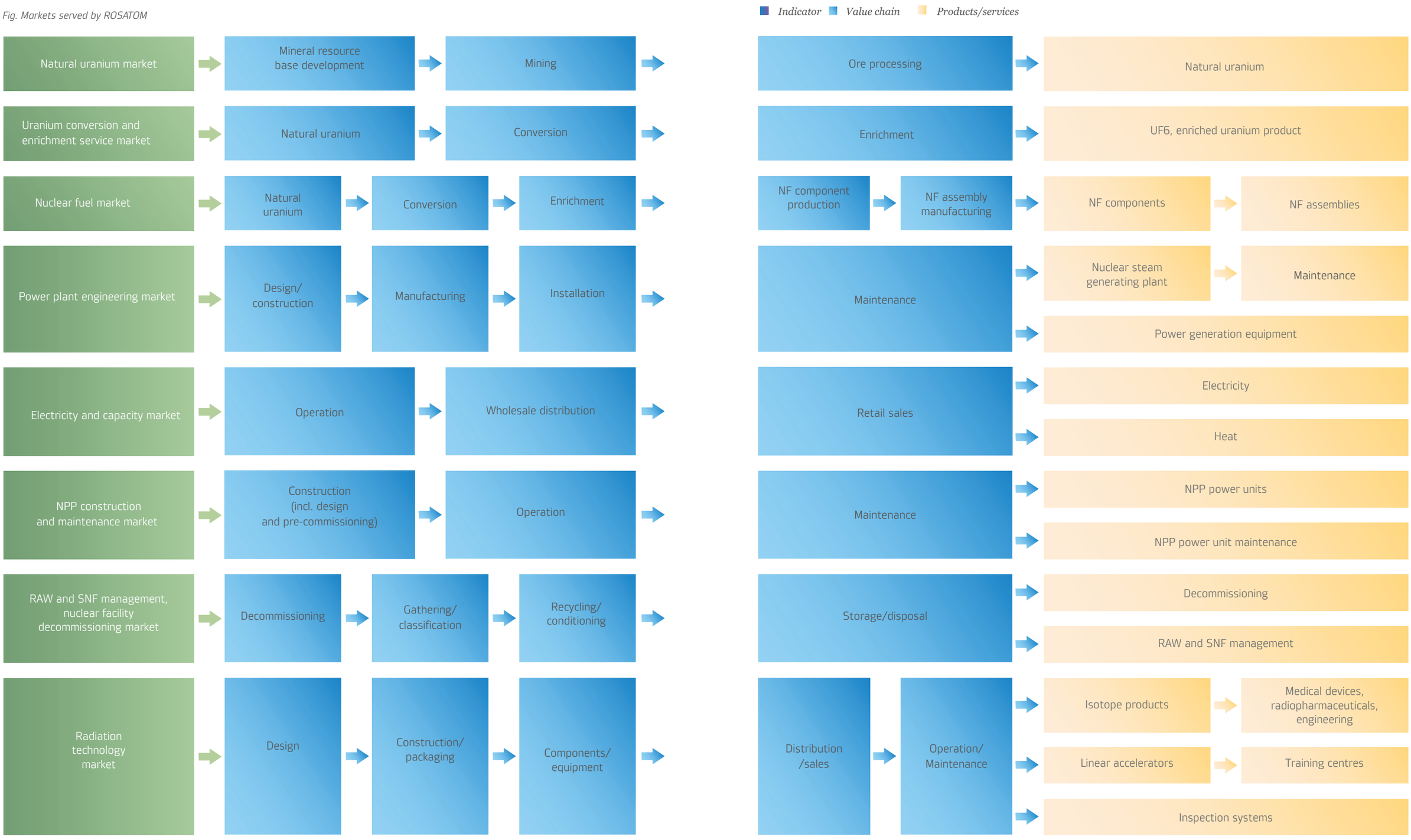
8 AGREEMENTS CONCLUDED WITH FOREIGN COUNTRIES AND INTERNATIONAL ORGANIZATIONS, INCLUDING INTERGOVERNMENTAL AGREEMENTS ON NPP CONSTRUCTION WITH EGYPT AND JORDAN

110.3

USD BILLION
10-YEAR ORDER PORTFOLIO

2.1. MARKETS SERVED BY ROSATOM

Fig. Markets served by ROSATOM



2.1.1. TRENDS IN THE DEVELOPMENT OF THE NUCLEAR SECTOR IN RUSSIA AND WORLDWIDE

The nuclear industry is influenced by a number of factors, including:

- Global population growth from 7 to 9 billion people in the next 50 years;
- Steady increase in global GDP by 2-3% per annum in the long term;
- Growth of global electricity consumption by a factor of 1.5 by 2050 due to both population growth and increasing needs of industries (the world will consume more energy during the next 50 years than during the entire history);
- Accumulating greenhouse gases. The world emits about 30 billion tonnes of CO_2 per year, and emissions continue to grow. In the 21st century, the concentration of greenhouse gases in the atmosphere is predicted to more than double compared to the pre-industrial period.

The global nuclear power industry will remain competitive in the long run compared to other energy sources. In particular, thermal power generation will yield to nuclear energy primarily because of CO_2 emissions, which negatively impact on the environment and drive up the cost of energy since many countries impose CO_2 emission fees. Unpredictable prices for raw hydrocarbons are yet another major disadvantage of thermal power generation.

The Russian nuclear industry maintains global leadership in terms of research and technical developments in reactor design, processing stages of the nuclear fuel cycle (NFC), NPP operation, and the qualifications of NPP personnel.

Nuclear energy holds a special place among electricity generation technologies with the minimal impact on the environment. NPPs emit almost no greenhouse gases, and NPPs across the globe prevent emissions of approximately 4 billion tonnes of carbon dioxide over three years (which exceeds the annual amount of emissions produced by all passenger cars in the world).

Regarding renewable energy, even if energy generating and storage technologies get significantly cheaper, additional traditional backup facilities will need to be built to secure stable supplies of energy, which will entail higher capital expenses.

Leading analytical agencies foresee a significant increase in the installed capacity of the nuclear power industry by 2030: the International Energy Agency, UxC consulting company and the World Nuclear Association expect to see an increase in the capacity of operating NPPs to 543 GW, 541 GW and 510 GW respectively under the medium scenario. The IAEA predicts the floor and the cap for the global NPPs capacity, 385 GW and 632 GW respectively. The forecast by ROSATOM is in line with the analytical agencies: the global installed NPP capacity is expected to increase to 521 GW by 2030.

The Russian nuclear industry maintains global leadership in terms of research and technical developments in reactor design, processing stages of the nuclear fuel cycle (NFC), NPP operation, and the qualifications of NPP personnel. Russia holds the most advanced enrichment technologies; nuclear power plants with water-cooled water-moderated power reactors (VVER) have proved their reliability over one thousand reactor-years of fail-free operation. The high quality of products and services is confirmed by the successes in international tenders for the supply of nuclear fuel and construction of NPPs in other countries. Currently, ROSATOM is the largest global market player in terms of the number of NPP construction projects: its order portfolio comprises 36 power units *(for more details, see the section 'International Business').*

The plummeting oil prices had mixed effects but in general impacted positively on the competitive position of ROSATOM. On the one hand, dropping oil prices caused gas prices to decrease too, which, in turn, helped reduce the cost of thermal power generation and improved the competitiveness of the technology. On the other hand, the drop in oil prices caused a devaluation of the Russian rouble, and thus reduced the foreign currency cost of NPP construction projects in other countries and improved the Corporation's competitiveness. Economic sanctions imposed against Russia had little impact on ROSATOM as they did not affect NPP construction agreements.

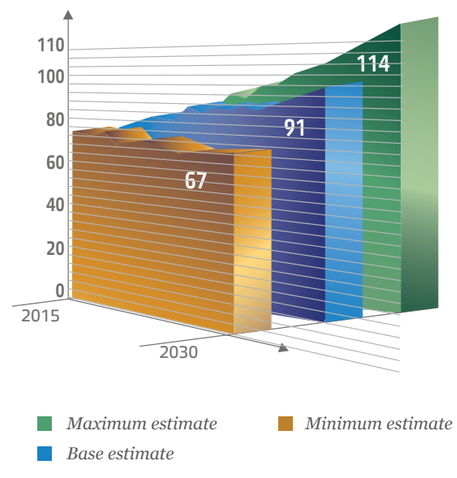
2.1.2. NATURAL URANIUM MARKET

Forecast for changes in uranium demand by 2030

The Fukushima Daiichi nuclear disaster in Japan in 2011 caused the market price for uranium to drop but did not affect the medium- and long-term fundamental drivers for demand for uranium. 2015 saw the first signs of recovery in the global uranium market. After a two-year hiatus, Japan resumed nuclear power generation: two power units were restarted at Sendai NPP in 2H2015, and over 20 power units are being prepared for re-launch.

The demand for uranium totalled 62,000 tonnes in 2015, according to the World Nuclear Association (WNA). Under the base scenario, the global demand for uranium will increase to 91,000 tonnes by 2030.

Fig. Forecast for changes in uranium demand, kt



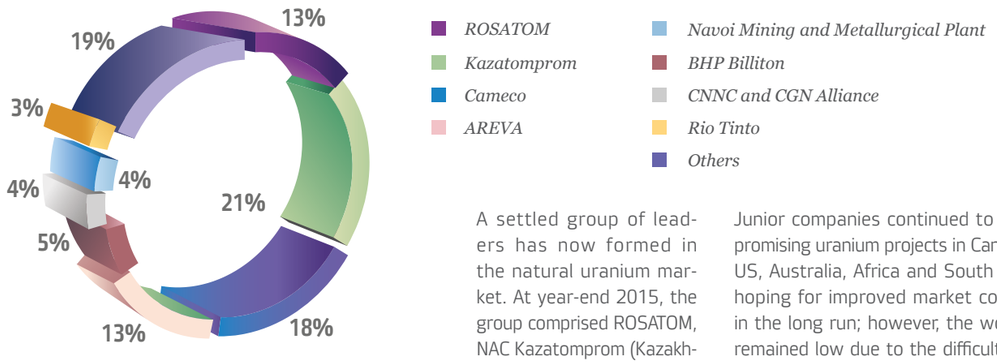
Source: *World Nuclear Association*

Natural uranium market overview

In 2015, global production of natural uranium exceeded 61,000 tonnes (an increase of 7% YoY). Supplies from secondary sources (inventories of energy companies and some states, repreparation of depleted uranium hexafluoride, reprocessed uranium, etc.) totalled 12,000 to 15,000 tonnes of uranium equivalent.

Natural uranium production is expected to increase by 2030 in line with the growing demand (the full potential for boosting production totals up to 98,000 tonnes). In 2030, supply from secondary sources will total about 12,000 tonnes of uranium equivalent.

Fig. Largest players on the natural uranium market



A settled group of leaders has now formed in the natural uranium market. At year-end 2015, the group comprised ROSATOM, NAC Kazatomprom (Kazakhstan), Cameco (Canada), AREVA (France), BHP Billiton (Australia-United Kingdom), an alliance of CNNC and CGN (China), Navoi Mining and Metallurgical Plant (Uzbekistan), and Rio Tinto (Australia-United Kingdom). The eight largest players in the global market account for over 81% of the total uranium output.

However, the pace of developing new projects slowed down. Mining commenced in December 2015 as part of the Lance project (operated by Peninsula Energy) in the US, and the finished products will be delivered in 2016. The Husab mine in Namibia (the largest enterprise under construction among those controlled by the Chinese CGN) was expected to start production in February 2016, but the launch was postponed.

The eight largest players in the global market account for over 81% of the total uranium output.

Junior companies continued to develop promising uranium projects in Canada, the US, Australia, Africa and South America hoping for improved market conditions in the long run; however, the work pace remained low due to the difficulties with funding and confirming sales.

As the controversial uranium market environment persisted in 2015, major foreign manufacturers continued to optimize their existing assets and revise their plans for promising projects. Kazatomprom, Navoi Mining and Metallurgical Plant, Rio Tinto and Paladin Energy intensified their efforts to improve the efficiency of their uranium business. In February 2015, the Chinese CNNC ceased operations at the Azelik mine in the Republic of Niger as it failed to achieve targets and struggled with financial issues. In June 2015, ERA, a subsidiary of Rio Tinto, abandoned the switchover to underground mining at the Ranger mine in Australia: the project was seen as unprofitable under the then-current market conditions.

See the section 'International Business' and the 2015 annual report of JSC Atomredmetzoloto.

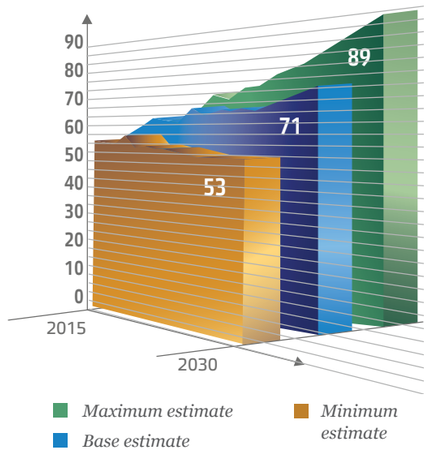
2.1.3. URANIUM CONVERSION AND ENRICHMENT MARKET

Uranium enrichment is one of the main stages of the front end of the nuclear fuel cycle (NFC). Products sold on the market include enriched uranium product (EUP) and the uranium enrichment service measured in separative work units (SWU).

Forecast for changes in the demand for uranium enrichment services by 2030

In 2015, global demand for enrichment totalled 47 million SWU. Given the current oversupply of uranium enrichment services, long-term prices decreased by 20%. The development of the nuclear industry in the next 15 years will positively impact

Fig. Forecast for changes in demand for uranium enrichment services by 2030, million SWU



Source: *World Nuclear Association (WNA)*

on the market of natural uranium enrichment services. The future may see a shortage on the enrichment market as the demand is growing, plants using the gaseous diffusion technology in Europe and the US are being shut down and the US-Russian HEU Agreement has expired. The global demand for enrichment will grow up to 57 million SWU and 71 million SWU by 2020 and 2030 respectively, according to the base scenario of the WNA.

Uranium conversion and enrichment market overview

The main providers of uranium enrichment services in the world along with ROSATOM are URENCO (United Kingdom, Germany, Netherlands), AREVA (France) and China, which altogether control about 90% of the market. All players use a modern gas centrifuge technology for uranium enrichment.

In 2015, the Corporation met most of the demand for uranium enrichment services, with a market share of 39%. URENCO is the main competitor of ROSATOM. As of December 31, 2015, its total installed capacity was ~19 million SWU/year. It may be further increased to ~20 million SWU/year by 2020.

See the section 'International Business' and the 2015 annual reports of JSC TVEL and JSC TENEX

2.1.4. NUCLEAR FUEL FABRICATION MARKET

In 2015, the global market capacity for nuclear fuel fabrication totalled about 11,000 tonnes of heavy metal (tHM), with fuel requiring uranium enrichment accounting for 8,000 tHM (including over 1,000 tHM of fuel for VVER reactors) and fuel for heavy-water reactors accounting for 3,000 tHM. As the reactor fleet will be expanding, the demand for fabrication services will increase to the forecast 13,000 tHM by 2020 and to 15,000 tHM by 2030.

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Global suppliers on the fabrication market are Westinghouse/Toshiba, AREVA, Global Nuclear Fuel, and ROSATOM.

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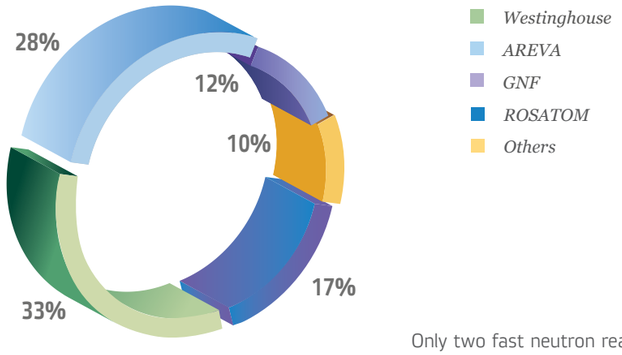
Westinghouse Electric Company fabricates nuclear fuel for nearly all types of light-water reactors (LWR). The major markets are the US and Western European countries. Moreover, Westinghouse is actively seeking to enter the market for fuel for VVER reactors and gain a foothold there. The company is the largest player holding 33% of the market.

AREVA produces fuel for PWR and BWR rectors, and holds nearly a third (28%) of the global fabrication market, with Western Europe being its main sales market.

Global Nuclear Fuel (GNF) is a joint venture of GE, Hitachi and Toshiba, holding 12% of the market. GNF consists of two divisions: GNF-J operating in Japan and GNF-A operating on other markets. The company only produces fuel for BWR reactors.

In 2015, Russian nuclear fuel met the demand of entire Russia, as well as the demand of a number of other countries, including Iran, the Czech Republic, Slovakia, Hungary, Bulgaria, Ukraine, and Armenia. ROSATOM's overall share of the nuclear fuel fabrication market totalled 17%. The Corporation meets 36% of demand on the Finnish market, 4% on the Chinese market, and 17% on the Indian market.

Fig. Shares of players on the nuclear fuel fabrication market in 2015, %



Only two fast neutron reactors (FNRs) are currently in operation in the entire world, both of which are located in Russia: BN-600 and BN-800. The first reactor runs on uranium, and the second will fully run on MOX fuel manufactured by the plant established in 2014. Thus, ROSATOM holds 100% of the market of MOX fuel for fast neutron reactors *(see the section 'Innovative Development').*

See the section 'International Business' and the 2015 annual report of JSC TVEL.

2.1.5. POWER ENGINEERING MARKET

The three largest players in Russia hold 58% of the power engineering market: these are OJSC Power Machines (25%), ROSATOM (23%) and PJSC United Heavy Machinery Plants (10%).

In 2015, the global power engineering market totalled USD 110 billion, of which thermal power generation equipment accounted for 60%, gas and petrochemical equipment for 25%, and nuclear power generation equipment for 15%. The market may exceed USD 150 billion by 2030.

In 2015, most investments in equipment were made in the thermal power sector. Investments in equipment in the nuclear power industry are expected to level those in the thermal power industry by 2030.

In 2015, the power engineering market in Russia was approximately RUB 350 billion, with equipment in the thermal power industry accounting for 60% of the total, equipment in the gas and petrochemical industry for 29%, and equipment in the nuclear power industry for 11%. Preliminary estimates suggest that the market capacity may increase to RUB 500 billion by 2030, with an average annual growth rate of 2.2%.

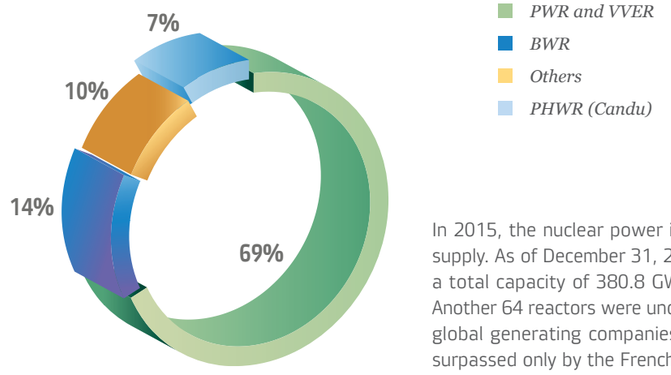
The main areas for developing Russia's power engineering market are linked to the commissioning of new generating capacities according to the General Scheme of Placement of Power Generation Facilities until 2020 with an Outlook until 2030 and the Roadmap of Nuclear Power Plant Construction being developed by ROSATOM.

The three largest players in Russia hold 58% of the power engineering market: these are OJSC Power Machines (25%), ROSATOM (23%) and PJSC United Heavy Machinery Plants (10%). Russian nuclear engineering enterprises are technological leaders on the global market.

See the section 'Mechanical Engineering Division' and the 2015 annual report of JSC Atomenergomash.

2.1.6. NPP CONSTRUCTION AND OPERATION MARKET

Fig. Operating reactors in the world, % of the total installed capacity



In 2015, the nuclear power industry accounted for 6% of the global energy supply. As of December 31, 2015, 438 power reactors were in operation with a total capacity of 380.8 GW (including the suspended Japanese reactors). Another 64 reactors were under construction. ROSATOM ranked second among global generating companies in terms of installed NPP capacity (26.2 GW), surpassed only by the French EDF (74 GW).

For details, see the 2015 annual report of JSC Rosenergoatom Concern.

Light-water reactors (PWR, VVER, BWR) are the main type of operating reactors used around the globe, and account for 83% of the global market (as a percentage of the total installed capacity). PHWR (CANDU) heavy-water reactors account for 7% of the installed capacity.

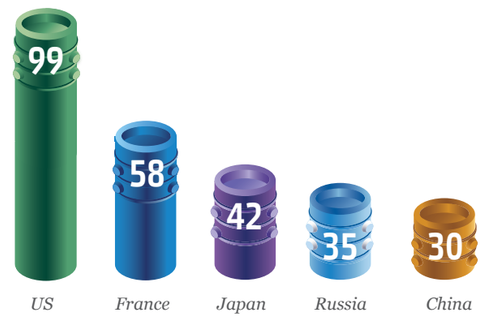
ROSATOM ranked second among global generating companies in terms of installed NPP capacity (26.2 GW), surpassed only by the French EDF (74 GW).

The strongest demand for NPP construction comes from Asian countries, which is due to the growing demand for electricity in this region.

The Corporation is actively expanding its global footprint: it is the largest global player in terms of the number of projects in its export portfolio *(see the section 'International Business').*

AREVA and Westinghouse/Toshiba will remain ROSATOM's main competitors until 2030, with more intense competition coming from Chinese and South Korean companies.

Fig. Leading countries by the number of operating NPP power units in 2015



2.1.7. MARKET FOR RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL MANAGEMENT AND DECOMMISSIONING OF NUCLEAR FACILITIES

Market for RAW and SNF management, processing and disposal

In 2015, the market for RAW management, processing and disposal totalled USD 8.6 billion. It will gradually be growing in the coming years due to the decommissioning of many nuclear facilities around the world, and will range from USD 11 billion to USD 13 billion after 2020. Key market players include ROSATOM, AREVA, Energy Solutions, URS, and Washington Group International.

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The market for SNF management, processing and disposal is expected to be the most active segment in the NFC back-end market, with the average annual growth totalling 6.5% in the period from 2015 through 2030. In 2015, the market totalled USD 4 billion. It will reach USD 5.9 billion by 2020 and USD 10.3 billion by 2030. Key market players include ROSATOM, AREVA and INFL.

Market for decommissioning of facilities posing nuclear and radiation hazards

In 2015, the global market for decommissioning of facilities posing nuclear and radiation hazards totalled around USD 7.4 billion. The market will gradually grow as the largest number of reactors will be decommissioned in the coming years. It will reach its maximum, USD 8.7 billion, in 2019. In subsequent years, fewer nuclear facilities are expected to be decommissioned, and the market capacity is therefore expected to gradually decrease. The forecast capacity in 2030 is USD 7.1 billion. Key market players include: ROSATOM, AREVA, Energy Solutions, URS, Washington Group International, Studsvik, CH2MHILL and SOGEDEC.

In 2015, the global market for decommissioning of facilities posing nuclear and radiation hazards totalled around USD 7.4 billion.

See the section 'International Business'.

2.1.8. RADIATION TECHNOLOGY MARKET

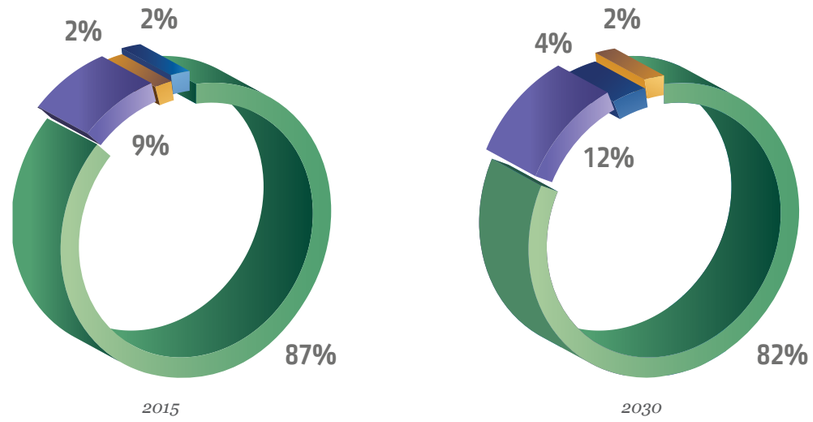
In 2015, the global nuclear medicine market totalled USD 17.7 billion, and is expected to increase by USD 24 billion by 2020 and USD 43 billion by 2030. The largest market players include GE, Siemens, Philips, Toshiba, and Lantheus. The Corporation intends to gain around 12% of the global nuclear medicine market by 2030. In 2015, the Russian market was estimated at USD 0.7 billion and may grow fivefold by 2030. The Corporation intends to gain approximately 30% of the market by 2030.

The Russian market is assessed at USD 6.8 billion, and is expected to grow to USD 8.2 billion by 2030.

The global environmental market (water treatment, waste disposal) totalled USD 164 billion in 2015, and is expected to grow to USD 200 billion by 2020 and USD 300 billion by 2030. The largest market players include GE, CNIM, Martin, Babcock Wilcox Volund, Doosan, and Veolia. The Corporation's share is expected to reach 2% by 2030. The Russian market is assessed at USD 6.8 billion, and is expected to grow to USD 8.2 billion by 2030.

The global irradiation centre market totalled USD 3 billion in 2015, and is expected to grow to USD 5 billion by 2020, and to USD 13-14 billion by 2030.

Fig. Forecast global radiation technology market growth



The largest market players include Nordion, IBA, Hungaroster, and Sterigenics. The Corporation's share on the global market will reach 12% by that time. The Russian market totalled USD 14.4 million in 2015. It will reach USD 45 million by 2020 and USD 294 million by 2030. The Corporation's share on the Russian market is expected to total 77% by 2030.

The local market totalled USD 58 million in 2015, and is expected to grow to USD 83 million by 2020, and to USD 126 million by 2030.

The global market for inspection systems and non-destructive testing totalled USD 3.6 billion in 2015. It is expected to reach USD 4.6 billion by 2020 and USD 7.6 by 2030. The largest market players include Smiths Detection, Rapiscan, and L3 Communication. The Corporation's potential global market share will be 6% by 2030. The local market totalled USD 58 million in 2015, and is expected to grow to USD 83 million by 2020, and to USD 126 million by 2030. The Corporation's share on the Russian market is expected to reach 40% by 2030.

See the section 'Business Diversification'.

2.2. INTERNATIONAL BUSINESS

KIRILL KOMAROV,
FIRST DEPUTY CEO FOR CORPORATE DEVELOPMENT AND INTERNATIONAL BUSINESS

Key results in 2015:

- The 10-year order portfolio totalled USD 110.3 billion (+8.8% YoY);
- 36 energy units in the overseas project portfolio;
- Overseas revenue increased to USD 6.26 billion (+20.3% YoY);
- Overseas projects in 41 countries.

— In 2015, ROSATOM was actively developing its order portfolio not only in NPP construction but in other nuclear segments as well (in particular, NPP servicing, research reactors, back-end). How important and promising are these areas for ROSATOM? What are the objectives in these segments?

— ROSATOM works hard to diversify its business by entering new markets and offering new products to the global market. All our products are competitive. Today, our export is not limited to NPP construction alone. For many years we have been active on the market for enriched uranium and nuclear fuel. We deliver our fuel to Russian-design reactors abroad. We have been successfully working on the natural uranium market for many years. We have entered the market of servicing Russian-design NPPs abroad, and are doing very well in this area. ROSATOM's service portfolio has already reached USD 430 million, and we expect this figure to increase.

We have also strengthened our positions on the foreign markets for constructing research reactors. We are implementing a project in Vietnam; we have made the decision to construct a Science and Technology Centre in Bolivia; and at ATOMEXPO 2016 we signed an intergovernmental agreement to construct a Nuclear Research and Technology Centre in Nigeria.

Back-end services are another promising area of ROSATOM's business. We know that the market potential totals hundreds of billions of US dollars. Given the aging of the global reactor fleet, we expect this market to become even more competitive in the coming decades than the NPP construction market. Therefore, it is crucially important for us to create a solid technological base and test relevant solutions in Russia to subsequently supply them to the international market. In 2015, we achieved a number of results in this area: we won the tenders for decommissioning power unit No. 1 of Philippsburg NPP, Germany, for ensuring nuclear safety and supporting safe treatment of low- and intermediate level radioactive wastes in Iraq, and continued operations on Ignalina NPP, Lithuania.

In the South and South-Eastern Asian countries, as well as in the Middle East we are ready to offer cooperation in developing low-power reactors to generate electricity and demineralize water; as well as in practical applications of radiation technologies, including nuclear medicine, agriculture, manufacturing, transportation and security.

When it comes to nuclear medicine, we expect to supply not only equipment for cancer diagnosis and treatment but also the end product itself, i.e. medical services. We intend to develop these segments in partnership with local medical companies.

We are capable of producing equipment for more than just nuclear power generation: we are currently entering the local and foreign markets for non-nuclear energy products based on the capabilities of our engineering enterprises. This includes equipment for traditional energy generation, the gas and petrochemical industry, high-tech electrical engineering products, security systems, and inspection systems. To put it short, we have a lot of products and developments at hand, which we intend to supply to the markets.

— At year end, ROSATOM's 10-year portfolio of overseas orders totalled over USD 110 billion, and comprised many large-scale long-term projects with a wide range of works. To what extent is ROSATOM ready to fulfil these contracts in terms of manufacturing, financial, intellectual, human and other resources?

— ROSATOM is the only nuclear corporation in the world that operates along the entire value chain, from natural uranium mining and up to NPP construction, maintenance and decommissioning; it combines the functions of an operator and technology supplier. This provides us with a unique set of competences and an ability to offer turnkey solutions, which is crucial for new countries.

Essentially, Russia did not have a 'nuclear pause', and new NPPs were built, and research and development, including scientific research, was performed even in the post-Chernobyl period and after the collapse of the Soviet Union. Unlike our competitors, we have constructed, put into operation and connected to the grid the latest generation (generation III and III+) power units, meaning that before offering our projects to potential clients we implement them for ourselves, thus obtaining relevant references.

We approach our partners with integrated offers. This means generation III+ projects with all the post-Fukushima

Next →

safety systems, including fuel supplies and building facilities to produce NPP equipment, which makes it possible to localize the production. We also support national supervisory bodies in developing nuclear infrastructure and the legal framework, and on matters related to radioactive waste and spent nuclear fuel management. We train personnel and develop nuclear education: starting from 2010, ROSATOM has been running an employee training project for partner countries which is aimed at preparing qualified specialists for the nuclear industry. We also organize events to promote nuclear energy and cooperate with stakeholders. In addition, we benefit from the economy of scale due to our strategy of global expansion: we receive the best terms from our suppliers through guaranteeing order volumes.

ROSATOM uses various tools to fund its projects ranging from assistance in the provision of intergovernmental loans to build NPPs to interests in the authorized share capital of the companies that construct and then operate NPPs.

The participation of foreign companies in our projects, development of an international chain of suppliers and localization of production are top priorities of ROSATOM's global strategy. The life cycle of our new NPPs with generation III+ VVERs is over 100 years. Within this period our foreign partners may not only participate in supplying equipment but also in servicing NPPs, conducting required servicing and modernization of the NPPs in cooperation with us, and decommissioning the relevant facilities.

Today, ROSATOM's overseas projects are delivered strictly on schedule. Since the demand for the construction of new nuclear stations has not only returned to the pre-Fukushima-1 level but also exceeded it, we expect to be implementing new projects on both traditional and new markets.

2.2.1. GLOBAL TECHNOLOGICAL LEADERSHIP OF ROSATOM

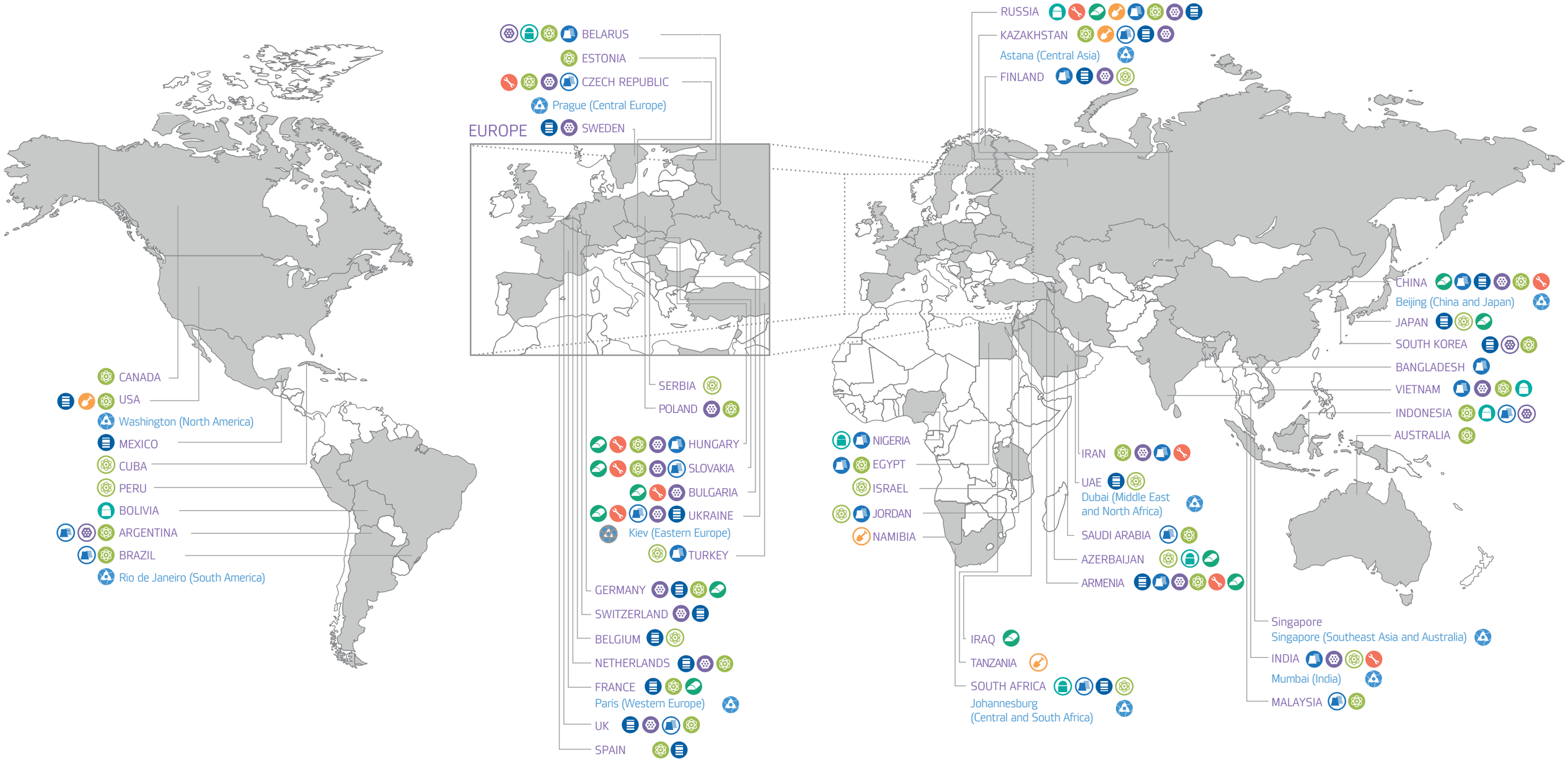
As of December 31, 2015, ROSATOM's foreign regional network comprised 11 regional centres.

ROSATOM achieves technological leadership on international markets for nuclear technology and services by providing a unique integrated offer: a set of products and services from Russian nuclear power organizations which provides full support to the national nuclear programme of the customer's country at all stages and provides the customer with access to the entire range of products and services throughout the NPP life from one supplier.

Global competitive advantages of ROSATOM

- ROSATOM is the only nuclear corporation in the world operating in all value chain segments ranging from natural uranium production through NPP construction and maintenance to NPP decommissioning. It simultaneously acts as both an operator and technology supplier, which gives it a unique set of competences and enables it to provide turnkey solutions;
- Control over the cost of each production stage and kWh of electricity produced by NPPs built by the Corporation;
- Reliable reference nuclear technologies (generation III+ reactor) proven over time and compliant with all post-Fukushima safety requirements;
- Guaranteed cooperation: fuel supply; construction of facilities to manufacture equipment for NPPs enabling localization of construction; support to states in building the nuclear infrastructure and regulatory framework to ensure effective management and supervision over the use of nuclear energy; support in managing radioactive waste and spent nuclear fuel; training personnel and providing nuclear education; conducting events to promote nuclear power and building relations with stakeholders;
- Various project funding tools ranging from facilitating intergovernmental loans for building NPPs to investing in the authorized share capital of the companies responsible for the construction and future operation of NPPs;
- Economy of scale stemming from the global expansion strategy and allowing to negotiate more favourable supply terms by providing suppliers with guaranteed orders;
- Experience in cooperating/partnering with competitors;
- Guaranteed performance of all obligations;
- Unlike other countries, there was no 'nuclear pause' in Russia: new NPPs were built and R&D projects were running even during the post-Chernobyl hiatus and the collapse of the Soviet Union;
- Readiness to cooperate not only in large NPP construction, but also in the development of low-power reactors (to generate electricity and desalinate water), mobile research reactors, and in applied radiation technologies (nuclear medicine, agriculture, manufacturing, transportation, security, etc.).

Fig. ROSATOM's global footprint



Promising project/ Ongoing project
Uranium exploration and mining

Promising project/ Ongoing project
Supplies of LEU and uranium enrichment services

Promising project/ Ongoing project
Supplies of nuclear fuel and its components

Promising project/ Ongoing project
Products and services based on radiation technologies

Promising project/ Ongoing project
NPP construction

Promising project/ Ongoing project
Construction of research reactors

Promising project/ Ongoing project
Service and modernization

Promising project/ Ongoing project
Nuclear fuel cycle back-end

ROSATOM's regional centres (and their area of responsibility)

Regional centres of ROSATOM

The establishment of a network of regional centres was completed in the reporting year to expand the global footprint of ROSATOM and improve the performance of its subsidiaries on foreign markets. The centres form a foreign regional network for international sales and the promotion of products manufactured by nuclear companies of the Corporation. The centres are managed by the Private Institution Rusatom International Network.

As of December 31, 2015, ROSATOM's foreign regional network comprised 11 regional centres.

In 2015, 14 target seminars and 2 forums were conducted abroad for suppliers (Atomex Europe and Atomex Armenia), involving the demonstration of the entire range of ROSATOM's products. About 2,000 foreign guests attended these events. Nuclear enterprises participated in 6 large foreign exhibitions, including the 21th International Energy and Environment Fair and Conference ICCI-2015 (Turkey), the PowerGen Africa International Exhibition and Conference (South Africa), and the 40th Annual Symposium by the World Nuclear Association (WNA Symposium 2015) (UK).

2.2.2. PORTFOLIO OF OVERSEAS ORDERS

In 2015, despite economic challenges, ROSATOM continued to build up its portfolio of overseas orders. At year end, the 10-year order portfolio reached USD 110.3 billion (USD 101.4 billion in 2014), and the project portfolio included 36 NPP power units worldwide. Due to expansion of the scope of work under previously concluded contracts, overseas revenue increased to USD 6.26 billion (USD 5.20 billion in 2014).

Table. Changes in the 10-year portfolio of overseas orders and overseas revenue of ROSATOM, USD billion

	2013	*2014*	*2015*	*2015/2014*
Overseas revenue	4.97	5.20	6.26	**+20.3%**
Portfolio of overseas orders	72.7	101.4	110.3	**+8.8%**

Table. Breakdown of the portfolio of overseas orders of ROSATOM, USD billion

	2013	*2014*	*2015*
10-year portfolio of overseas orders, including:	**72.7**	**101.4**	**110.3**
Construction of NPPs abroad	34.5	66.0	75.9
Uranium products	24.2	21.8	21.1
Nuclear fuel assembly and other activities	14.0	13.6	13.3

Table. Breakdown of overseas revenue, USD billion

	2013	*2014*	*2015*
Overseas revenue, including:	**4,973**	**5,202**	**6,259**[5]
Construction of NPPs abroad	708	948	1,565
Uranium products	2,069	2,227	2,667
Nuclear fuel assembly and other activities	2,196	2,027	2,026

In 2015, ROSATOM signed a MoU with Schneider Electric, which stipulates cooperation in international NPP construction projects and technological cooperation to produce modern electrical equipment and process control systems based on the technologies of Schneider Electric for nuclear enterprises.

[5] *The total amount has been rounded.*

In 2015, ROSATOM established an International Expert Council in order to pursue its international strategy.

In the reporting year, an EPC contract for NPP construction in Bangladesh was signed.

NIAEP – ASE United Company and Vietnam Electricity Company (EVN) signed a master framework agreement on implementing the first phase of the Ninh Thuận 1 NPP construction project.

The construction of an NPP (two power units) in Jordan was at the pre-investment stage. In 2015, project details were discussed in accordance with the intergovernmental cooperation agreement signed between Russia and Jordan.

Implementation was continued of the Strategic Vision for Strengthening Cooperation in Peaceful Uses of Atomic Energy between Russia and India, involving the construction and commissioning of at least 12 units over the next 20 years (in accordance with the 2008 Agreement). Unit No. 2 at Kudankulam NPP is scheduled for commissioning in 2016. A production localization programme was signed for Russian-design NPPs in India.

In 2015, ROSATOM entered the foreign contracting segment for small- and medium-sized reactors. Indonesia's National Atomic Energy Agency (BATAN) declared the Russian-Indonesian consortium the winner of a tender for preliminary engineering design of a multipurpose experimental high-temperature gas-cooled reactor. The work was performed and accepted by the Indonesian customer.

At the 7th meeting of the Russian-Brazilian High-Level Commission, a Memorandum of Understanding was signed between ROSATOM and Nuclebrás Equipamentos Pesados S.A. (NUCLEP, Brazil's leading company in the nuclear industry providing heavy engineering services); the Memorandum is aimed at developing partnership in the nuclear and power engineering industries.

See the section 'International Cooperation'.

In the reporting year, the Company's international business was restructured. In 2015, the decision was made to restructure operations of JSC Rusatom Overseas. Thus, JSC Rusatom Overseas Inc. was vested with the powers of an industry agent to promote the integrated offer across overseas markets for NPP and research reactor construction projects. JSC Rusatom Energy International became the developer of BOO projects.

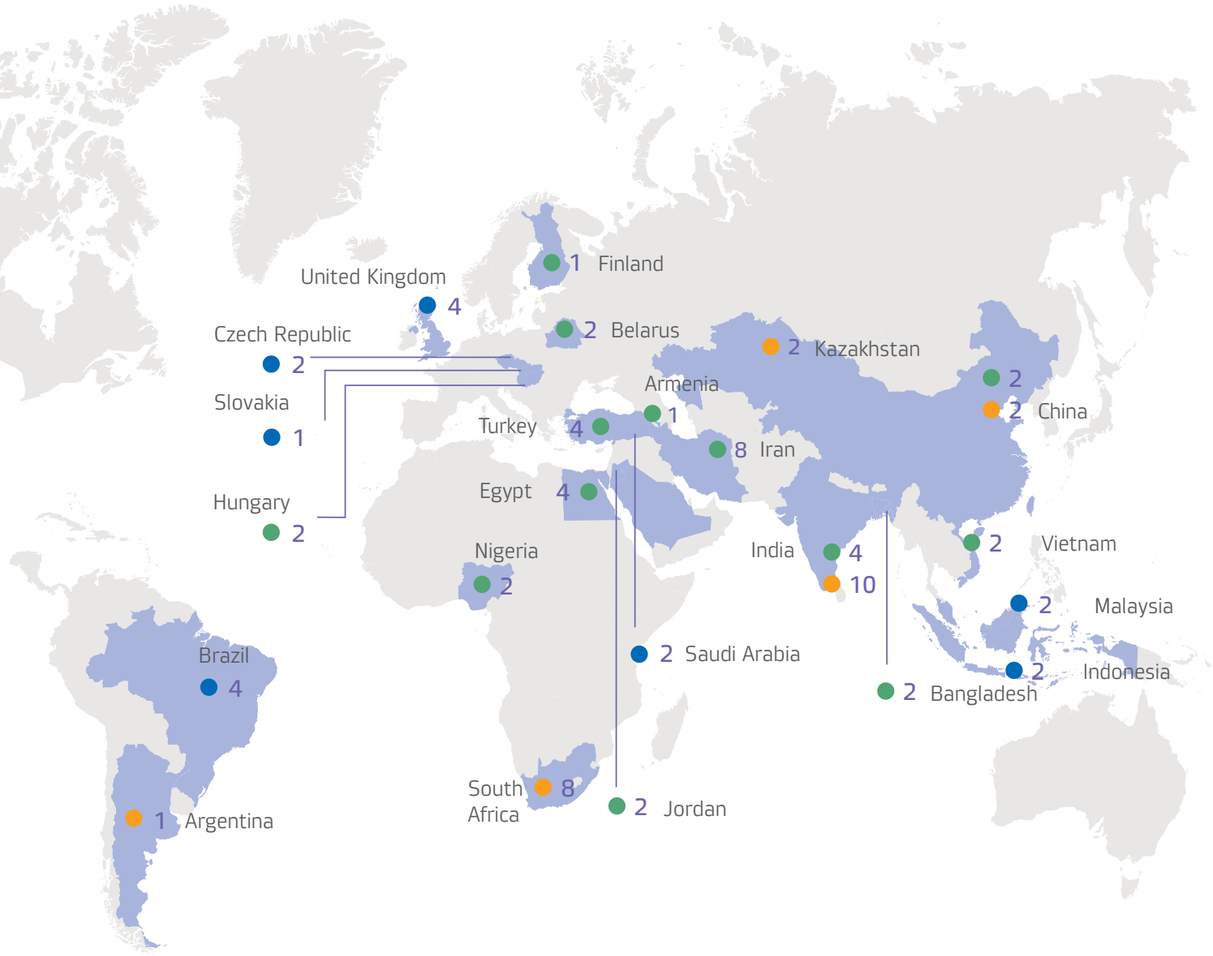
2.2.3. RESULTS IN 2015

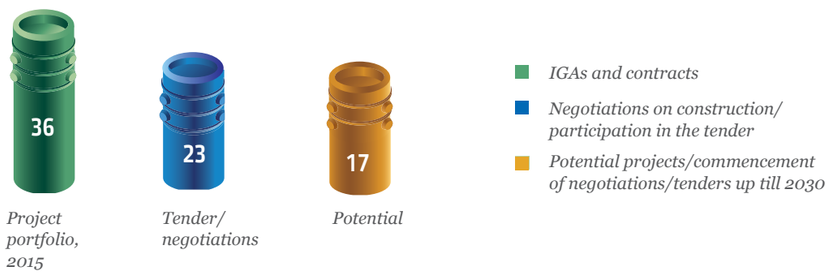
Overseas NPP construction projects

Table. Key results of NPP construction projects in 2015

NPP / country	*Results*
Asia	
Kudankulam NPP, power units No. 1-4, India	At power unit No. 1: — Trial runs were performed; — The first reactor cycle was completed; — Scheduled preventive maintenance was performed. At power unit No. 2: — Hot testing was performed; — The unit underwent a second audit. A contract was signed for developing detailed design documentation for power units No. 3 and 4.
Ruppur NPP, power units No. 1 and 2, Bangladesh	Works were completed under the contract for performing a feasibility study and environmental impact assessment of the NPP; all required engineering surveys and environmental studies were performed. Works were completed under the contract for the development of designs and specifications, primary detailed designs and surveys for the design stage of NPP construction. An EPC contract for NPP construction was signed.
Tianwan NPP, power units No. 3 and 4, China	Major construction works were completed related to the building of power units; installation of the main and auxiliary equipment was started. A polar crane was mounted at power unit No. 3. The reactor vessel was assembled at power unit No. 3; assembly of the main coolant pipeline was started. Construction works were completed to build a site at the level of 34m in the reactor building of power unit No. 4. The containment dome of the reactor building of power unit No. 4 was lifted. The dome of the reactor building of power unit No. 4 was welded; the polar crane was mounted.
Europe	
Ostrovetskaya NPP, power units No. 1 and 2, Belarus	The reactor vessel for power unit No. 1 was delivered to the site. The core catcher at power unit No. 2 was aligned. An NPP training centre and a group of buildings and structures of the fire department were put into operation.
Paks NPP, power units No. 5 and 6, Hungary	Stage 1 'Preparatory period' was initiated.

Fig. Position of ROSATOM on the international market for NPP construction, number of power units





Project portfolio, 2015

Tender/ negotiations

Potential

- *IGAs and contracts*
- *Negotiations on construction/ participation in the tender*
- *Potential projects/commencement of negotiations/tenders up till 2030*

Integrated servicing of Russian-design NPPs

ROSATOM's share of the NPP service market is steadily growing. Three years ago, ROSATOM (via its subsidiary JSC Rusatom Service) started off with five power units with VVER reactors abroad, whereas now it services 18 out of 37 Russian-design units currently in operation.

In 2015:

- A contract was signed for extending the life of power unit No. 2 of the Armenian NPP;
- A contract was signed for the supply and upgrade of generator equipment at power unit No. 5; the upgraded generator stator on power unit No. 6 of Kozloduy NPP, Bulgaria, was finally assembled and put into operation;
- The first major contract was signed to supply distributors for the main circulation pump of Paks NPP, Hungary.

Uranium mining abroad

Uranium mining companies managed by ROSATOM's subsidiary Uranium One implemented in full the annual production programme for the portfolio of overseas projects and maintained their leading positions in terms of production costs on the global market for natural uranium.

4,794 tonnes of natural uranium were produced by foreign enterprises.

Table. Uranium mining by Uranium One enterprises[6]

Country	*2013*	*2014*	*2015*
Uranium mining, including:	**5,086**	**4,857**	**4,794**
Kazakhstan	4,629	4,640	4,749
US	362	217	45
Australia[7]	95	0	—

[6] Production of natural uranium in the US and Australia dropped in 2014 and 2015 compared to 2013 due to a change in global market conditions and reduced prices for natural uranium.

[7] The Honey Moon asset was sold in November 2015.

The estimated mineral resource base of the Uranium One enterprises under international reporting standards totals 213,100 tonnes of natural uranium[8]. At year end, the cash cost of sale of a pound of produced triuranium octoxide was below USD 12, which was the best result among the top five global manufacturers of natural uranium.

Export of uranium products and natural uranium enrichment services

In 2015, ROSATOM continued to expand its footprint on the uranium product market. JSC TENEX, a subsidiary of Atomenergoprom, concluded 15 agreements to supply uranium products and made shipments to 30 foreign customers in 15 countries, including the U.S., the EU, the Asia-Pacific Region, the Middle East, and Africa.

Six out of 68 shipments of uranium products were made through the terminal of Vostochnaya Stevedoring Company LLC (the port of Vostochny, Primorsky Territory, Russia) to the Republic of Korea and Japan. Having established a regular traffic flow through the Far Eastern transport corridor, JSC TENEX continues to improve the supply logistics within the region.

ROSATOM supplies a significant portion of uranium enrichment services to satisfy the needs of foreign-design reactors. Sales of uranium products by JSC TENEX totalled ~USD 2.7 billion in the reporting year..

Table. Uranium product export structure by region, %

	2013	2014	2015
Supplies to the Americas	20	41	41
Supplies to the EU	65	45	33
Supplies to the Asia-Pacific Region, the Middle East, and Africa	15	14	26

The 10-year portfolio of overseas orders of JSC TENEX increased by 23% and exceeded USD 21 billion.

Export of nuclear fuel

In 2015, export revenue of ROSATOM's Fuel Division totalled USD 1.6 billion. The portfolio of export orders for products of the front end of the nuclear fuel cycle totalled USD 10.3 billion. A contract was signed to supply nuclear fuel to Paks NPP (Hungary), and another contract was signed to supply fuel pellets to Tarapur NPP (India).

The Company also signed a contract for fuel supply for the Maria research reactor in Poland: ROSATOM won a competition and returned to that market after a long break. Moreover, PJSC Novosibirsk Chemical Concentrates Plant (an organization forming part of the Fuel Division) was selected as the supplier of fuel assemblies for a high-flux research reactor in the Netherlands.

JSC TVEL, a holding company of the Fuel Division, and Argentinian companies Comision Nacional De Energia Atomica and Invap S.E. signed memoranda of understanding providing for the supply of low-enriched nuclear fuel and its components to meet the needs of Argentina's research and power reactors, the supply of zirconium components of the NFC, as well as joint research and development initiatives.

See the section 'Fuel Division'.

In 2015, ROSATOM continued to form the institute of industry integrators. JSC TENEX has been appointed as the integrator of international sales in the field of back-end. This decision was taken due to the fact that the company has considerable experience in foreign trade activities, extensive competencies in the nuclear fuel cycle, its own global network of foreign sales companies and a positive image in key markets.

Foreign operations in the back end of the nuclear fuel cycle

In 2015, ROSATOM continued to expand its presence in the international market in the final stage of the nuclear fuel cycle (back-end) in order to take a significant share of this market in the long term.

Despite the complexity of the political situation, we signed a supplementary agreement for three years with the Ukrainian operator of nuclear power plants State Enterprise National Nuclear Energy Generating Company Energoatom on importing Ukrainian SNF for processing in 2016-2018, which led to an increase in ROSATOM's order portfolio in the foreign market to ~ USD 300 million.

In 2015, a piece of infrastructure for SNF treatment was, for the first time, included in ROSATOM's integrated proposal for the construction of the El Dabaa NPP (Egypt).

[8] *The mineral resource base includes the 100% share in Mantra Resources Pty Limited.*

Nukem Technologies GmbH, a subsidiary of ROSATOM, won one of the key 2015 tenders on the Western European market in the back-end segment: a tender for decommissioning unit No. 1 of the Philippsburg NPP (Germany).

A consortium led by ROSATOM's organization NUKEM Technologies won the tender for the project on nuclear safety and support of safe management of low and intermediate level waste in Iraq.

We have continued work on the Ignalina NPP (Lithuania). A phase of 'cold' tests without the use of radioactive elements has begun at the facility for handling and storage of solid radioactive waste. We will sort, process and store short- and long-lived solid radioactive waste in the facility, totalling 120,000 m^3.

2.2.4. PLANS FOR 2016

NPP service

Work under existing contracts will be continued at the Armenian NPP, Kozloduy NPP and Bushehr NPP. ROSATOM plans to expand its footprint in Hungary, the Czech Republic, Slovakia, India, Iran and China and step up its efforts at new NPP sites in South Asia.

Uranium mining abroad

Objectives of Uranium One:

- To manage the asset portfolio efficiently;
- To develop commercial infrastructure and increase the share in the global natural uranium market;
- To reduce costs and improve operating performance;
- To diversify the business;
- To optimize the loan portfolio.

Supply of uranium products and nuclear fuel

- To conclude a five-year contract for the supply of natural uranium pellets to Indian NPPs,
- To negotiate and sign supply contracts for NPPs in Eastern Europe,
- To boost sales by increasing traditional exports of goods and services of the front end of the nuclear fuel cycle and expanding their range (including supplies of uranium products with non-standard specifications).

Construction of NPPs abroad

NPP/country	*Plans*
Asia	
Bushehr-2 NPP, power units No. 2, 3, Iran	Official start of work under the contract for construction of the NPP, laying of the foundation stone.
Kudankulam NPP, power units No. 1, 2, India	Completion of warranty maintenance and final commissioning of power unit No. 1 for acceptance by the customer. Fuel loading, achievement of minimally controlled level and synchronization of power unit No. 2 with India's power system.
Kudankulam NPP, power units No. 3, 4, India	Purchase of long-lead equipment.
Ruppur NPP, power units No. 1, 2, Bangladesh	Completion of the preparatory phase of construction of the nuclear power plant. The signing and entry into force of an intergovernmental agreement on the provision to the Government of the People's Republic of Bangladesh of a state export loan to finance the main period of construction of the NPP in Bangladesh.
Tianwan NPP, power units No. 3, 4, China	Completion of the main installation works on unit No. 3 and the commencement of pre-commissioning activities. Performing 'cold' test for power unit No. 3. Commencement of installation of the main circulation pipeline, unit No. 4.
Europe	
Ostrovetskaya NPP, power units No. 1, 2, Belarus	The beginning of the installation of main equipment (reactor pressure vessel, steam generators, turbine generator).
Paks NPP, power units No. 5, 6, Hungary	Continuing the work of phase 1 'Preparation Period'.
Africa	
El Dabaa NPP, power units No. 1, 2, Egypt	The signing of the EPC-contract for construction of the NPP. The beginning of full-scale engineering surveys.

2.3. INTERNATIONAL COOPERATION

NIKOLAY SPASSKIY,
DEPUTY CEO FOR INTERNATIONAL RELATIONS

Key results in 2015:

- Conclusion of 8 intergovernmental agreements and 16 interdepartmental agreements;
- Creation at the intergovernmental level of the legal framework for NPP construction according to the Russian design in Jordan and Egypt;
- Completion of the creation of the contract base required to deploy works both for equipment purchase for units No. 3 and 4 of Kudankulam NPP in India and at the NPP site;
- Signing of the Master Contract for Ruppur NPP Construction in Bangladesh;
- Transportation from Iran of excessive low-enriched uranium and other nuclear materials in exchange for Russian natural uranium, which led to the announcement of the start of the implementation of the Joint Comprehensive Plan of Action under Iran's Nuclear Programme and the cancellation of sanctions against Iran;
- Approval of the Uniform Industry Procedure for Interaction of ROSATOM and its organizations with the IAEA;
- Reforming of the industry system of export control at ROSATOM.

— Intergovernmental cooperation in the nuclear power industry is a long-term and multistage process. Each and every contract requires meticulous work to create the appropriate legal framework. What is the role of the international cooperation in ROSATOM's international activity, how does it contribute to global business results?

— First, I must make a banal statement: unlike megaprojects in other industries, any joint nuclear power project, even if it is relatively small, requires a clear international legal framework. Our projects, especially in such a core area as NPP construction, have two main features: long periods of implementation (the life cycles of facilities are up to 100 years) and a large scale (amounts in excess of USD 10 billion are common). Therefore, this international legal framework must comply with very stringent requirements. It must be robust, reliable and conform to the interests of the Russian nuclear industry. It has to be in strict compliance with the basic international treaties regulating the use of nuclear power for peaceful purposes and with the Russian legislation. These are the main distinguishing features of intergovernmental agreements on NPP construction that we conclude with our potential partners.

We often have to prepare such intergovernmental agreements in force majeure conditions when there is not enough time for lengthy and unhurried negotiations. Nobody is going to wait for us. Our competitors are almost always in close pursuit and they are not always scrupulous about their methods. Our cooperation partners also have their own agendas regarding both domestic and foreign policy and their own ideas about project implementation periods – and we have to take these into account. It should be remembered that Russia has a very long-standing legal tradition and a bureaucratic culture – in a positive sense. Therefore, preparing a solid and acceptable intergovernmental agreement within a deadline is a real challenge requiring our best efforts. But if we are successful, the return for the industry is rather significant. And the feeling of inner satisfaction is overwhelming.

Without going into details, for obvious reasons, I would say that in recent years the preparation of the intergovernmental agreement on the NPP construction in Egypt together with our colleagues from the International Business Unit and JSC Rusatom Overseas was one of the most remarkable examples of our work.

— In 2015, international arrangements were reached on Iran's Nuclear Programme. What opportunities does this create for ROSATOM in the Iranian market?

—The Russian Ministry of Foreign Affairs definitely played the most important role in resolving the situation associated with Iran's Nuclear Programme; however, ROSATOM was also involved in the process. We provided expert support to the Russian delegation throughout the negotiations. And after the adoption

Next →

of the Joint Comprehensive Plan of Action (JCPOA) aimed at resolving the issue that was approved by Resolution of the UN Security Council No. 2231 dated July 20, 2015, ROSATOM ensured the fulfilment of the obligations assigned to Russia. It should also be noted that it was not just about fulfilment of Russia's international obligations – they were stipulated in the Russian legal framework by Decree of the President of the Russian Federation No. 567 dated November 23, 2015.

It was Rosatom and more specifically JSC TVEL that organized the transportation from Iran of all excessive nuclear materials in exchange for counter-delivery of naturally-enriched uranium, as was provided for by the UN Security Council Resolution. That was a very challenging and, frankly speaking, stressful task – in terms of negotiations, logistics, and the technical process. Finally, on December 28, 2015 a Russian vessel Mikhail Dudin moved out all excessive nuclear materials from Iran. That was the key condition to start the so-called practical implementation of the JCPOA. Meeting this condition meant that international sanctions against Iran could be cancelled. The relevant decision was adopted on January 16, 2016.

What does it give to the Russian nuclear industry? First, it opens up the prospects for construction in Iran of eight Russian design nuclear power units – the corresponding agreement was fixed in the Russian-Iranian intergovernmental protocol dated November 11, 2014. However, Iran continues to experience sanction pressure, Iranian partners have very limited investment resources, normal financing transactions with Iran are impossible, and there is no SWIFT system. For these reasons, it is unlikely that the agreement can be fulfilled.

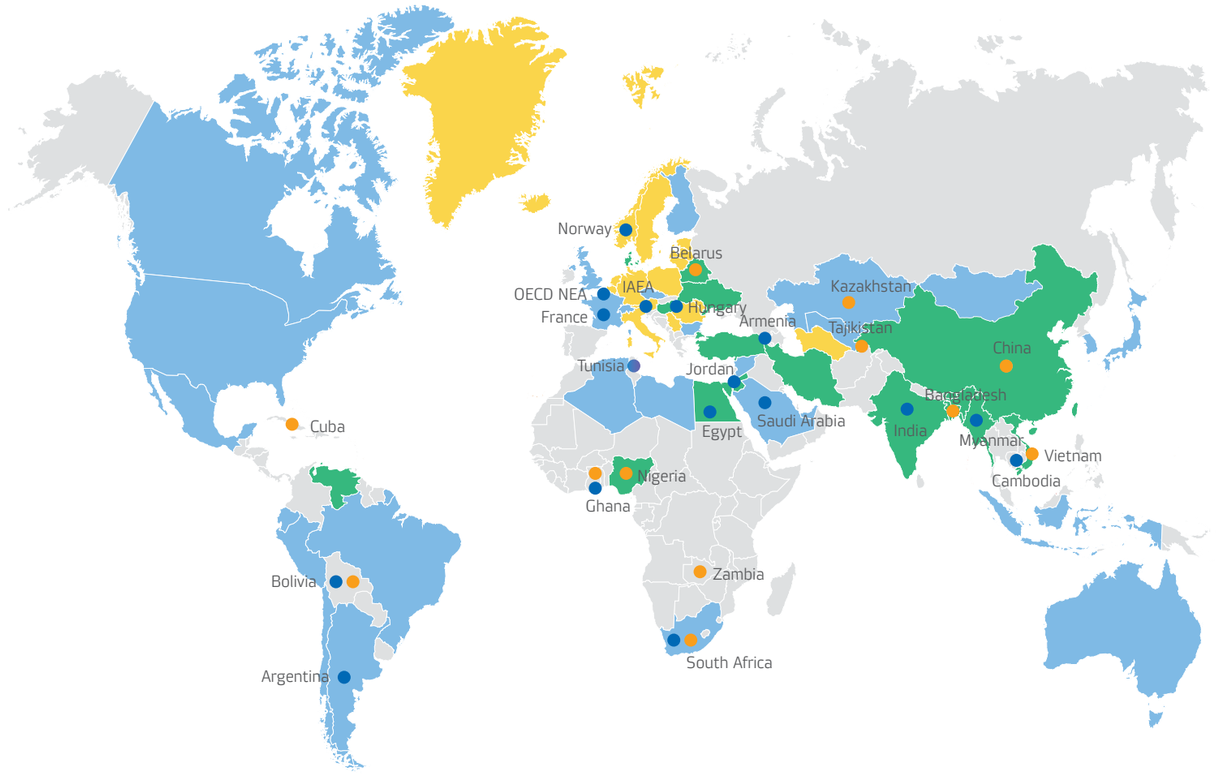
In a broader sense, Iran's comeback to the world economy does create major prospects in a whole range of areas for Russia and the Russian nuclear industry. Even now we have several new and important projects under development.

2.3.1. STRENGTHENING THE INTERNATIONAL LEGAL FRAMEWORK FOR COOPERATION

In 2015, expansion of the international legal framework continued in order to promote Russian nuclear technologies in the world. Eight inter-governmental agreements (IGAs) and 16 interdepartmental arrangements were signed, including intergovernmental agreements on NPP construction with Egypt and Jordan.

ROSATOM's international activity is aimed at creating a favourable international legal and political environment for promoting Russian nuclear technologies in the world market, strengthening nuclear safety and non-proliferation regimes, and active work in international organizations and forums.

Fig. Existing international legal framework of ROSATOM at year-end 2015 and plans for 2016[9]



- *Results of 2015 (15 countries and 2 international organizations): Egypt, Jordan, Ghana, Saudi Arabia, Armenia, France, Hungary, Norway, India, Argentina, South Africa, Bolivia, Cambodia, Myanmar, Tunisia, IAEA, OECD NEA* ***New IGAs or critical interdepartmental arrangements were signed***
- *Plans for 2016 (12 countries and one international organization): Bangladesh, Bolivia, Belarus, Vietnam, Ghana, Zambia, Kazakhstan, China, Cuba, Nigeria, Tajikistan, South Africa, CIS* ***Work on IGA preparation will be continued***
- *IGAs on NPP and research reactor construction (16 countries): Armenia, Bangladesh, Belarus, Hungary, Venezuela, Vietnam, Egypt, India, Jordan, Iran, China, Myanmar, Nigeria, Slovakia, Turkey, Ukraine*
- *Framework IGAs on the peaceful use of nuclear energy (44 countries): Australia, Algeria, Argentina, Armenia, Bangladesh, Belarus, Bulgaria, Brazil, United Kingdom, Hungary, Venezuela, Vietnam, Ghana, Egypt, India, Indonesia, Jordan, Iran, Kazakhstan, Canada, Kyrgyzstan, China, Libya, Mexico, Mongolia, Nigeria, United Arab Emirates, Peru, Republic of Korea, Saudi Arabia, Syria, Slovakia, USA, Turkey, Uzbekistan, Ukraine, Finland, France, Czech Republic, Chile, Switzerland, Ecuador, South Africa, Japan*
- *Other IGAs (43 countries and 4 international organizations): Austria, Azerbaijan, Armenia, Belarus, Belgium, Bulgaria, United Kingdom, Hungary, Vietnam, Germany, Denmark, India, Iceland, Italy, Kazakhstan, Canada, Kyrgyzstan, China, Latvia, Lithuania, Libya, Moldavia, Mongolia, Netherlands, Norway, Poland, Republic of Korea, Romania, Serbia, Slovakia, USA, Tajikistan, Turkey, Turkmenia, Uzbekistan, Ukraine, Finland, France, Czech Republic, Sweden, Estonia, South Africa, Japan, IAEA, OECD NEA, European Community, European Atomic Energy Council*

[9] *Agreements signed as of December 31, 2015*

Table. Cooperation with key partners in strengthening the international legal framework

Arab Republic of Egypt	An IGA on cooperation in NPP construction and operation was signed. The agreement provides for cooperation in the construction and operation in the Arab Republic of Egypt of an NPP comprising four VVER power units with a capacity of 1.2 GW each.
Hashemite Kingdom of Jordan	An IGA on cooperation in NPP construction and operation was signed. As part of cooperation, two NPP power units with VVER-1000 reactors will be constructed under the BOO (build-own-operate) model. A project company will be established to become the NPP owner and operator. JSC Atomstroyexport, which won the related tender in 2013, will be the general contractor.
Kingdom of Saudi Arabia	A framework IGA was signed on cooperation in the peaceful use of atomic energy. The agreement will make it possible to promote Russian nuclear technology across the Middle East markets.
Republic of Ghana	A framework IGA was signed on cooperation in the peaceful use of atomic energy. The IGA outlines areas of possible cooperation between the two countries.
Republic of Armenia	An IGA was signed on early notification of a nuclear accident and exchange of information on nuclear and radiation safety. The document complies with the recommendations of the IAEA contained in the Convention on Early Notification of a Nuclear Accident and contributes to the safety of the nuclear power industry.
French Republic	An IGA was signed on cooperation in operating research reactors. The document paves the way for further development of a long-term cooperation between the two countries in this field, including high-tech areas.
Hungary	An interdepartmental memorandum was signed on personnel training in the nuclear power industry and related industries. The document sets out a framework for cooperation on personnel training for the nuclear power industry of Hungary.
Kingdom of Norway	An interdepartmental protocol was signed to fulfil obligations under the IGAs on early notification of a nuclear accident and the exchange of information on nuclear facilities dated January 10, 1993. The document sets out details of the arrangements set forth in the IGA concerning procedures for notification and exchange of information on nuclear facilities of the parties.
Republic of India	An Action Programme was signed between ROSATOM and the Department of Atomic Energy, Government of India, on the production localization for Russian-design NPPs in India. The document is intended to supplement the Strategic Vision for Strengthening Cooperation in Peaceful Uses of Atomic Energy between Russia and India signed in December 2014, and provides for a gradual increase in Indian production of NPP equipment and components as new power units with Russian-design reactors are constructed in India.
Argentine Republic	An interdepartmental memorandum was signed on the construction of a Russian-design NPP. The memorandum reflects an understanding on key elements for the next stage of cooperation: preparation of an IGA on NPP construction.
Plurinational State of Bolivia	Interdepartmental memoranda were signed on cooperation in peaceful uses of atomic energy. These documents are intended to become a starting point for a bilateral dialogue on cooperation in the nuclear field. The signing of framework intergovernmental agreements will be the next step stipulated by the memoranda.
Kingdom of Cambodia	
Republic of the Union of Myanmar	
Republic of Tunisia	
IAEA	The Government of the Russian Federation and the IAEA signed an Agreement on Transit of Low-Enriched Uranium to the IAEA LEU Bank in the Republic of Kazakhstan and from the IAEA LEU Bank in the Republic of Kazakhstan through Russia.
OECD NEA	An Agreement was signed to extend the Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems.

2.3.2. SUPPORT FOR LONG-TERM INTERNATIONAL PROJECTS

Assisted by ROSATOM, JSC NIAEP signed supplements to the General Framework Agreement and other documents to implement the second stage of the construction project for Kudankulam NPP, India. Thus, the contractual framework for both equipment procurement and carrying out works on the NPP site was completed. The Indian regulatory authority granted a construction license. The design for power units No. 5 and 6 of Kudankulam NPP was selected.

Supported by ROSATOM, the protocol of final acceptance of the first power unit of Bushehr NPP, Iran, was signed, as well as the protocol to initiate the Contract for the construction of the second stage of Bushehr NPP (power units No. 2 and 3).

In 2015, contracts were carried out related to the preparatory phase of Ruppur NPP, Bangladesh. At year end, ROSATOM assisted in signing the General Contract providing for the transition to the main stage: NPP construction.

The projects to build Ninh Thuan 1 NPP and the Centre for Nuclear Science and Technology of the Socialist Republic of Vietnam were supported, and employee training for the country's nuclear industry was carried out. In particular, the General Framework Agreement for the construction of Ninh Thuan 1 NPP was signed in July 2015 stipulating priorities in implementing the project. Supported by ROSATOM, funding for the construction of the Centre for Nuclear Science and Technology was obtained.

Negotiations with China were continuously held at different levels. Various possibilities to expand cooperation were discussed.

With the expert support from ROSATOM, the P5+1 (UK, Germany, China, Russia, USA, France) and Iran developed the Joint Comprehensive Action Plan (JCAP) aimed at removing the sanctions imposed by the UN Security Council against Iran for its nuclear programme. The Plan was approved by resolution No. 2231 of the UN Security Council dated July 20, 2015.

On December 28, 2015, the Russian ship 'Mikhail Dudin' exported excess low-enriched uranium and other nuclear materials from Iran in accordance with the UN Security Council resolution of July 20, 2015, in exchange for Russian naturally-enriched uranium. Thus, ROSATOM fully and on time fulfilled one of the most important and time-consuming conditions to announce the Start Day for implementing the JCAP and lifting the sanctions against Iran. A parallel study was conducted on the reconfiguration of two stages at the Fordow Uranium Enrichment Plant into the production of stable isotopes, the responsibility for which was assigned to Russia under the JCAP.

2.3.3. COOPERATION WITH INTERNATIONAL ORGANIZATIONS

In 2015, the IAEA Director General Yukiya Amano visited Russia and met with the country's leaders, the Foreign Ministry of Russia, Rostekhnadzor and ROSATOM. Yukiya Amano visited the International Uranium Enrichment Centre.

IAEA

ROSATOM participated in:

- The 59th session of the IAEA General Conference and the scientific forum for the development of radiation technologies (Practical Agreements on nuclear safety cooperation between ROSATOM and the IAEA were signed as part of the General Conference);
- The diplomatic conference on reviewing the Swiss Confederation's proposal to amend the Convention on Nuclear Safety;
- The 5th meeting of the contracting parties to the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management;
- International conferences on research reactors, NPP SNF management, computer security in the nuclear world, operational safety, ensuring global emergency preparedness and response.

The Russian government approved the programme of Russia's participation in the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) in 2016-2018 *(see the section 'Innovative Development'.)*

The IAEA Technical Cooperation Programme for 2016-2017 included three Russian projects: on nuclear infrastructure and the safety of VVER-type reactors, remediation and climate change.

Nuclear Energy Agency of the Organization for Economic Cooperation and Development (OECD NEA)

For the first time in Russia a number of activities under the auspices of the OECD NEA were carried out:

- The 4th international seminar on science and achievements in radiation safety decision-making;
- The 40th session of the Political Group of the Generation 4 International Forum (GIF) and the 34th meeting of the GIF Expert Group;
- The OECD NEA International Conference 'Decommissioning of Nuclear Installations: Strategies, Practices and Challenges'.

Russia's participation was ensured in seven international OECD NEA projects aiming to solve issues regarding improving the safety of Russian NPPs and building future generations of nuclear reactors.

Russian organizations participated in the OECD NEA International Nuclear Emergency Exercises (INEX-5).

William Magwood, Director General of the OECD NEA, visited Russia. He met with the senior management of the Russian Foreign Ministry, Rostekhnadzor and ROSATOM.

Committee of the CIS member countries on the peaceful use of nuclear energy

In 2015, ROSATOM prepared the resolution by the Council of the CIS Government Heads concerning the new version of the Intergovernmental Target Programme 'Remediation of the Territories of the CIS Member Countries Affected by Uranium Production'.

The CIS Economic Council approved the draft agreement of the CIS member countries on information exchange on the movement of radioactive sources.

The Committee of the CIS member countries on the cooperation in the field of peaceful use of nuclear energy:

- Developed an international programme for research activities on the Kazakhstan tokamak;
- Approved initiatives to prepare the CIS Intergovernmental Target Programmes on the development of draft national strategies for radioactive waste management in the CIS member countries and joint preclinical studies of promising radiopharmaceuticals.

2.3.4. STRENGTHENING THE NUCLEAR NON-PROLIFERATION REGIME

The programme for importing nuclear fuel from Russian-design research reactors to Russia has been in operation since 1999. The programme covers 14 countries, including the Republic of Belarus, the Republic of Bulgaria, Hungary, the Socialist Republic of Vietnam, the Federal Republic of Germany, the Republic of Kazakhstan, the Republic of Latvia, the State of Libya, the Republic of Poland, Romania, the Republic of Serbia, the Republic of Uzbekistan, Ukraine, and the Czech Republic.

In 2015, two projects were implemented:

- Removal of liquid HEU fuel from Uzbekistan. Upon its completion, Uzbekistan became another country free of HEU fuel (the tenth of the fourteen countries covered by the programme). The project was unique as it was the first project to transport this type of fuel.
- Fresh HEU fuel was exported from the research reactor Breeder-1 of the Tbilisi State University in Georgia. Georgia is not a member of the Programme; however, fuel was removed as part of the Programme.

The Global Nuclear Safety and Security Institute under the auspices of the IAEA conducted five training courses on physical protection of nuclear materials, nuclear facilities and radioactive sources and a regional workshop for Russian-speaking countries on promoting adherence to and implementation of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material.

2.3.5. COMPLIANCE WITH THE INTERNATIONAL OBLIGATIONS AND RUSSIAN LEGISLATION IN THE FIELD OF EXPORT CONTROL

In 2015, ROSATOM reformed the industry export control system. The Uniform Industry Export Control Procedure was approved in the Corporation and its organizations for carrying out international activities, aiming to organize work and build a vertical system of interactions in this area.

Under the Uniform Industry-Wide Procedure, 221 draft contracts (agreements, contracts) were reviewed without appeal. Following the review, decisions were filed to industrial organizations.

The industry seminar 'Export Control in ROSATOM: Challenges, Development Paths' was organized.

2.3.6. DEVELOPING THE NETWORK OF ROSATOM'S REPRESENTATIVE OFFICES AFFILIATED WITH EMBASSIES AND TRADE MISSIONS ABROAD

Pursuant to Russian Presidential Decree No. 603 of May 6, 2011, ROSATOM continued to develop the system of representative offices abroad.

In 2015, a specialized ROSATOM task force was established as part of Russia's Permanent Mission affiliated with international organizations in Vienna.

At year end, ROSATOM's representative offices acted under Russia's Permanent Mission affiliated with international organizations in Vienna, under the Russian Embassies in the People's Republic of Bangladesh, the Republic of Belarus, the Republic of India, the Islamic Republic of Iran, the Republic of Kazakhstan, the People's Republic of China, the Republic of Turkey, and Japan, and the trade missions of the Russian Federation in the Argentine Republic, the Socialist Republic of Vietnam, Hungary, the United States of America, and the French Republic.

2.3.7. KEY ISSUES RESTRICTING THE ESTABLISHMENT AND EXPANSION OF INTERNATIONAL COOPERATION IN THE REPORTING PERIOD, AND SOLUTIONS

Key problems restricting international cooperation in 2015 included:

- Attempted pressure from partner countries;
- Changes in the internal political situation and economic turmoil in a number of countries;
- Tougher competition from the countries with low costs and large-scale financial capabilities entering the global NPP construction market;
- Attempted negative PR campaigns in foreign media.

Key solutions to the problems included:

- Clear coordination with all affected Russian institutions (primarily the Ministry of Foreign Affairs, the Ministry of Economic Development and Trade and the Ministry of Finance), as well as Russian diplomatic and trade missions abroad;
- Providing immediate political and practical support to the nuclear industry organizations on the global market;
- The use of the platform of the IAEA and other relevant international organizations;
- Initiatives to raise awareness, including at international conferences and forums.

The comprehensive efforts undertaken by ROSATOM helped neutralize the influence of the external negative factors.

See the section 'Risk Management'.

2.3.8. PLANS FOR 2016 AND FOR THE MEDIUM TERM

In 2016, the Corporation will continue its efforts to develop the international legal framework, including the signing of new IGAs to construct Russian-design NPPs and implement other large-scale projects in cooperation with partner countries. Moreover, general agreements will be prepared paving the way to practical cooperation in the future.

Major international projects carried out by ROSATOM's divisions in the NFC, including uranium mining, will receive political and legal support.

ROSATOM will continue to fulfil its obligations as part of the JCAP on the Iranian Nuclear Programme and will start practical cooperation with the IAEA on creating a Low-Enriched Uranium Bank in the Republic of Kazakhstan. The Corporation plans to develop and start implementing a programme to prepare, select and promote specialists in the industry to regular positions in the IAEA and the OECD NEA. ROSATOM will also prepare for and take part in the anniversary 60th General Conference of the IAEA.

Internationally, ROSATOM's medium-term objectives are as follows:

- To promote ROSATOM's integrated offer of services related to NPP construction and servicing across foreign countries *(see the section 'International Business').*
- To expand the international legal framework for cooperation;
- To fulfil Russia's international obligations;
- To strengthen the nuclear non-proliferation and nuclear safety regimes.

2.4. INNOVATIVE DEVELOPMENT

VIACHESLAV PERSHUKOV,
DEPUTY CEO FOR INNOVATION MANAGEMENT

Key results in 2015:

- Number of patents obtained in Russia and registered items of know-how: 1,141; number of international applications submitted and international patents obtained by ROSATOM: 101;
- Construction of the world's most powerful multipurpose fast neutron research reactor (MBIR) started in Dimitrovgrad, Russia.

— In 2015, ROSATOM drew up a new innovative development programme; what are the main differences compared to the previous programme?

— The key differences in the new programme reflect the overall strategic changes in the Corporation. These include, first and foremost, a focus on developing new innovative products, taking them to the market and reducing the amount of time required for their development. For instance, we have developed a new integrated product: a complete life cycle of additive technologies, including development and manufacture of industrial multi-laser systems and metal alloy powders.

Secondly, we have adopted a system of strategic technology-related priorities. We focused on strategically important areas of research and development. For instance, in the power industry we used to focus on the VVER-TOI technology, as it was 'a thing of the future', whereas now it is an everyday reality. In terms of technology, we are currently prioritizing fast neutron reactors and technologies for thermal nuclear reactor decommissioning, because we will soon need to launch them on the market, and there is almost no reference experience in the world.

Thirdly, we are seeking to expand our partnerships in the field of innovation. We are entering foreign markets with our research programmes, and in Russia we are engaging small and medium-sized enterprises. By fostering innovations, ROSATOM is able to improve its performance and develop a flexible network of suppliers capable of providing substitutes for imported products, if necessary.

— In the reporting year, ROSATOM produced the first Russian microsources for prostate cancer treatment, and several dozen successful surgical operations have already been performed using these microsources. What other high-tech developments that help improve living standards in Russia can ROSATOM offer at present?

— Nuclear medicine is indeed one of the key areas of ROSATOM's operations. Apart from microsources for brachytherapy, the Corporation plans to develop the production of radiopharmaceuticals and equipment for radiological diagnostics and therapy and create a Russian positron emission tomography scanner that will make it possible to detect cancer and other diseases at the earliest possible stage. Overall, our main objective in the field of research is to develop a wide range of products for nuclear medicine.

At the same time, it can be said that, in one way or another, almost all of ROSATOM's efforts are aimed at improving the standard of living both in Russia and throughout the world. For instance, NIIgrafit is continuing to develop new graphite-based materials which are used to make unique biocompatible prostheses with properties that are far superior to those of polymer or metal analogues. These prostheses are of great benefit to millions of patients.

ROSATOM's competences enable it to establish centres for radiation sterilization and disinfection: this is the safest technique compared to chemical or thermal sterilization. Research in this sphere has been conducted for a long time, and the technique has proved to be efficient. Today, we can use radiation to sterilize medical and cosmetic products. We are actively developing this area in Russia, and we are ready to promote our high-tech products abroad.

It is a well-known fact that in a large number of densely populated countries people have limited access to clean drinking water. To tackle this issue, ROSATOM is developing new water

Next →

purification technologies and systems that will remove various contaminants and harmful compounds.

Another important area is the development of superconductor technologies. We have produced pilot samples of engines, generators, energy storage devices and current limiters based on high-temperature superconductors. At the moment, these are only pilot samples, but in the future these devices will be used to reduce losses in electricity grids, create high-speed electric trains, develop so-called alternative power generation and for many other applications that will be of global benefit.

2.4.1. INNOVATIVE DEVELOPMENT PROGRAMME

Key innovative projects in 2015:

- *Construction of a Multipurpose Fast Neutron Research Reactor (MBIR);*
- *Proryv (Breakthrough) Project aimed at closing the nuclear fuel cycle (NFC);*
- *Start of pilot production of microsources for brachytherapy to treat cancer;*
- *Development of pilot technical equipment to manufacture high-temperature superconductors.*

The Innovative Development and Technological Modernization Programme comprises projects and initiatives aimed at achieving strategic goals of ROSATOM, first and foremost the goal of remaining a technological leader and maintaining the country's defence capabilities. At the same time, the Programme helps improve performance of all enterprises in the industry, which directly impacts on both operating performance and salary levels at ROSATOM.

In 2015, over 50 projects were implemented as part of the Programme with the following aims:

- To make Russia's nuclear power sector competitive in the short and medium term (projects to upgrade existing technologies);
- To ensure long-term competitiveness (projects to develop new technologies for energy markets);
- To strengthen the position and expand the footprint of Russian nuclear enterprises or help them enter global non-energy markets (projects to upgrade existing technologies and develop new technologies for non-energy markets).

Targets set for 2015 for all technology projects were met.

In 2015, the system for innovation and innovative infrastructure management was expanded with a number of institutional, organizational and managerial innovations:

- Transition to a new system for documenting responsibility for target achievement was completed; the innovation target for 2015 and subsequent years was documented for all executives;
- A project-based management approach was adopted;
- The introduction of monitoring of design and manufacture of innovative products and innovative technical solutions based on the concept of the Technology Readiness Level (TRL) was started;

- A knowledge management system was implemented; tools were developed for acquiring, storing and spreading knowledge, including both formalized knowledge (via databases, information repositories, etc.) and unformalized knowledge (via expert institutes, expert directories, mentorship systems, professional network communities, etc.);
- An intellectual property management system was implemented in all organizations in the industry to facilitate the creation and identification of potentially protectable R&D results;
- Over 50 Russian universities, including 14 specialized universities, were engaged to train specialists in areas relevant to ROSATOM and cooperated in scientific research *(see the section 'Developing Human Capital')*; apart from training highly qualified employees for ROSATOM, specialized universities take part in research projects commissioned by organizations in the industry;
- An agreement was signed with JSC Federal Corporation for Small and Medium-Sized Business Development; its primary aim is to increase the share of small and medium-sized businesses in procurement in the nuclear industry, including purchases of innovative and high-tech products *(see the section 'Procurement Management').*

The main objective for 2016 is to launch a new version of the Innovative Development and Technological Modernization Programme of ROSATOM until 2030 in order to achieve the strategic goal of becoming a global leader in the nuclear industry in terms of growth rates and performance.

2.4.2. MULTIPURPOSE FAST NEUTRON RESEARCH REACTOR (MBIR)

2015 saw the start of construction of a Multipurpose Fast Neutron Research Reactor (MBIR) at JSC SSC RIAR in Dimitrovgrad, Russia; the reactor will be used for projects required to develop the global nuclear power industry in the future. The Company intends to use MBIR to establish an International Research Centre to study new types of nuclear fuel, structural materials and coolants. The project forms part of the FTP titled 'New-Generation Nuclear Power Technologies for the Period from 2010 through 2015 with an Outlook until 2020'.

In 2015, power unit No. 4 of Beloyarsk NPP equipped with a BN-800 reactor was connected to the grid.

BN-800 is the world's most powerful fast neutron reactor running on MOX fuel (a mixture of oxides of plutonium and uranium). In 2015, ROSATOM started industrial production of MOX fuel for power unit No. 4 of Beloyarsk NPP.

The power start-up of BN-800 has helped strengthen the leading position of Russia and ROSATOM in the field of closed fuel cycle technologies and provides an insight into the economic efficiency of fast neutron reactors, with a view to potentially beginning their large-scale commercial construction in the future.

Key results in 2015:

- Site preparation and civil works required for MBIR construction were completed;
- Construction and installation works started as part of the main construction period: a concrete foundation was laid for MBIR.

In 2016, the Company intends:

- To conduct scheduled R&D to provide rationale for adopted technical solutions for MBIR systems and equipment;
- To proceed with a set of measures to conclude contracts, manufacture and deliver MBIR equipment.

2.4.3. PRORYV (BREAKTHROUGH) PROJECT AIMED AT CLOSING THE NUCLEAR FUEL CYCLE (NFC)

The Proryv (Breakthrough) Project is aimed primarily at the qualitative transformation of the nuclear industry. The project comprises a number of initiatives which demonstrate the possibility of closing the NFC using fast neutron reactors and are aimed at developing the relevant technologies. A closed NFC will significantly improve the efficiency of fuel usage and will help solve the issue of nuclear waste and secure a reliable long-term source of clean energy.

Development of integrating designs of pilot and demonstration energy facilities and industrial energy facilities using fast neutron reactors with a closed NFC and conforming to the principles of natural safety and competitiveness

In 2015, power units with fast neutron reactors proved to be competitive with other electricity generation sources, both in Russia and abroad.

In 2016, the Company intends to complete the design of an industrial power unit with a sodium-cooled fast reactor.

Development and construction of a pilot and demonstration power unit with a lead-cooled fast reactor

In 2015, a positive opinion was obtained from the Main State Expert Review Board (Glavgosexpertiza), allowing the Company to start construction of the power unit. In addition, a series of R&D activities were conducted to substantiate the operability and safety of the reactor unit equipment.

In 2016, the Company intends to test mock-ups of equipment on test benches and adjust engineering designs of the reactor unit in line with the R&D results.

In 2015, researchers from ROSATOM and the Russian Academy of Sciences created a pilot plant using a method for americium recovery from spent nuclear fuel, which is planned to be burnt in fast neutron reactors, thus helping solve the problem of radioactive waste.

Designing an industrial power unit with a sodium-cooled fast reactor

In 2015, adjustments were made to engineering designs of the reactor unit and designs of the power unit based on R&D findings in 2015. The work will be completed in 2016.

Spent nuclear fuel processing and permanent disposal of radioactive waste

In 2015, three experimental units were manufactured in order to test a 'dry' SNF processing technology; a new filtration technique was developed for RAW management making it possible to capture 100% of carbon-14 particles, which is a 20% improvement over previous results.

In 2016, engineering designs will be developed for full-scale mock-ups of units for high-temperature processing of high-level waste, and functional assemblies will be designed for full-scale mock-ups of high-temperature RAW processing units.

Design of experimental fuel elements and fuel assemblies based on mixed nitride uranium-plutonium (MNUP) fuel for fast neutron reactors

In 2015, experimental fuel assemblies with various types of cladding were manufactured and installed into a BN-600 sodium-cooled power reactor and a BOR-60 research reactor in order to prove the operability of MNUP fuel. This was the first test of this kind in the world.

A set of working designs was developed for a set of pilot equipment samples for the MNUP fuel fabrication module. A set of experimental units incorporating pilot samples of the main technical equipment was built.

In 2016, pilot technology for MNUP fuel production will be developed.

2.4.4. START OF PILOT PRODUCTION OF MICROSOURCES FOR BRACHYTHERAPY

In 2015, ROSATOM with support from the Ministry of Health of the Russian Federation started pilot production of microsources for brachytherapy aimed at treating cancer. The Company built a manufacturing site at JSC SSC RF-IPPE (Obninsk, Russia) to produce microsources using the iodine-125 isotope and other next-generation sources for brachytherapy. The project is aimed at introducing competitive domestically produced microsources using the iodine-125 isotope into Russian health care institutions, to subsequently replace imported sources and foster the use of brachytherapy in treating prostate cancer. In the reporting year, the first clinical trials were conducted, and 36 successful surgical operations were performed. The introduction of Russian sources significantly reduced the cost of surgical operations, as these sources are almost five times cheaper than imported analogues; moreover, they have a considerable export potential. Commercial sales are scheduled to commence in 2016.

In 2015, TANDETRON, the world's best-in-class particle accelerator which is unique in Russia, was launched. It will be used for radiation doping (ion beam irradiation) of silicon wafers used in micro- and nanoelectronics for the manufacture of diodes and transistors. TANDETRON will also enable the development of medical technologies for neutron capture therapy of cancer that is resistant to gamma irradiation, as well as production of short-lived isotopes for positron emission tomography.

2.4.5. MANUFACTURE OF HIGH-TEMPERATURE SUPERCONDUCTORS

2015 saw the completion of the Superconductor Industry initiative, which forms part of the Innovative Energy Project run by the Presidential Council for Economic Modernization and Innovative Development. The prime objective of this project is to build innovative technical facilities to improve the energy efficiency of the country's economy. To do so, ROSATOM designed pilot samples of a wide range of electrical equipment using cutting-edge technologies and unique materials: high-temperature superconductors (HTSCs).

HTSC tapes make it possible to develop electrical devices that are much more efficient (without any power losses in the course of operation) and compact. The project was implemented quickly and with limited funding and helped to bridge the 20-year gap between Russian and foreign HTSC developments. For the first time in Russia, a set of pilot technical equipment was developed to produce HTSC tapes with a unit length of up to 1,000 metres, which is the basic material for manufacturing HTSC-based electrical equipment. In the reporting year, the first kilometre of the tape was produced.

In 2016, ROSATOM plans to build on the results achieved to date and develop a programme to design integrated power systems to be incorporated in the country's transport infrastructure; this will help improve the energy efficiency of marine and railway transport systems.

2.4.6. PARTICIPATION IN INTERNATIONAL INNOVATIVE PROJECTS

International Thermonuclear Experimental Reactor (ITER)

ITER is a project to build the world's first experimental fusion reactor; it is being implemented in France by the international community. In 2015, a superconducting cable was delivered for toroidal field coils. The coils will help to keep hot plasma in the ITER reactor. In 2016, equipment for the PF1 coil, the vacuum chamber and the first deliverable gyrotron complex will be manufactured and tested; preliminary designs of the layout of diagnostic equipment will be completed; prototypes of diagnostic system elements will be manufactured and tested.

Generation IV International Forum (GIF)

GIF facilitates international cooperation in the development of fourth-generation reactor systems with improved nuclear and energy safety, resource consumption and proliferation resistance that may be licensed, built and put into operation after 2030.

In 2015, ROSATOM signed an agreement on extension of the Framework Agreement with GIF until 2025 on behalf of the Russian Government. Extension of the Framework Agreement marks the start of a new stage involving a transition from confirming the feasibility of promising fourth-generation reactor technologies to the selection of design parameters of equipment and systems for promising reactor designs and their demonstration.

In 2016, a Framework Agreement on an International R&D Programme for a Sodium-Cooled Fast Reactor System (phase II) is expected to be signed.

Facility for Antiproton and Ion Research in Europe (FAIR)

In 2015, total supplies of equipment and services for FAIR commissioned by the Meeting of FAIR Members from Russian organizations reached EUR 89.3 million, and the value of concluded contracts totalled EUR 40.1 million (in 2005 prices).

IAEA International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)

As part of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), IAEA Member States make joint efforts to define and develop areas of innovative development of nuclear power to meet the growing energy needs of the 21st century in a sustainable manner. The project is run by the INPRO Section of the IAEA's Department of Nuclear Energy.

In 2015, work continued on the following topics of INPRO: Global Scenarios, Innovations, Sustainability Assessment of Nuclear Energy Systems and Strategies, Dialogue and Outreach. Specialists from ROSATOM participated in work in all these areas. In 2015, the IAEA presented the contribution of Russian specialists to INPRO projects in the following documents in the Nuclear Energy series:

- INPRO Methodology: Environmental Impact from Depletion of Resources;
- INPRO Methodology: Environmental Impact, Modelling Nuclear Energy Systems with Message: A Users Guide.

In the reporting year, the Corporation launched a project to analyse cooperative approaches to the back end of the nuclear fuel cycle. Large-scale international events were held, such as the INPRO Dialogue Forum on Cooperative Approaches to the Back End of the Nuclear Fuel Cycle and the INPRO Dialogue Forum on Roadmaps for a Transition to Globally Sustainable Nuclear Energy Systems. Proposals for the development of nuclear energy innovations formulated during these forums were highly appreciated by the international community. To enable Russian specialists to participate in INPRO more efficiently, in 2015 the INPRO Council was re-established and started functioning at ROSATOM.

In 2016, Russian institutions will continue their work on INPRO projects. They plan to expand the scope of work in the sphere of the nuclear fuel cycle, small modular reactors and the assessment of nuclear energy systems in accordance with the INPRO Methodology.

2.4.7. KNOWLEDGE MANAGEMENT SYSTEM

In 2015:

- Cooperation between ROSATOM and the IAEA was extended under practical arrangements for nuclear knowledge management for the period from 2015 through 2018; agreements on cooperation in knowledge management were concluded with an international publisher Elsevier and OJSC Transneft;
- The range of online training courses and training modules in the sphere of knowledge management was expanded and made available to all employees in the industry; a mobile version of the integrated social networking service for ROSATOM's experts started to function on a permanent basis;
- The size of the library on the research and technical information (RTI) portal reached 114,457 items.

Plans for 2016:

- To build integrated infrastructure for nuclear knowledge management throughout the life cycle of complex process facilities;
- To organize and hold the international RKM 2016 Nuclear Knowledge Management Forum;
- To roll out ROSATOM's knowledge management competences in Russia and abroad.

Table. Contents of the RTI portal, number of documents

	2013	*2014*	*2015*
Number of documents	17,814	30,438	114,457

Table. Social networking service for scientific experts, number of visitors

	2014	*2015*
Total number of unique visitors	1,043	5,000

2.4.8. INTELLECTUAL PROPERTY MANAGEMENT

In 2015:

- To optimize legal protection and protection of the interests of the state, a new system was developed for scientific and technical experts to assess the outcomes of R&D commissioned by ROSATOM on behalf of the Russian Federation;
- Full-scale operation of an information system for managing the rights over intellectual property (IP) was started; over 8,300 items of intellectual property owned by the Corporation and by organizations in the industry were entered into the system;
- An improved industry-wide system for remunerating authors of intellectual property and persons contributing to IP development and use was developed and implemented.

Given the expansion of ROSATOM's portfolio of overseas orders, in 2015, the main priority of the intellectual property management system was to protect key products and technologies of the industry abroad. The establishment of an Industry-Wide Competence Centre for Intellectual Property Management enabled a significant performance improvement in this sphere: in 2015, the scope of international patenting expanded sixfold compared to 2014, as the number of international patent applications submitted and international patents received by ROSATOM increased from 17 to 101.

Plans for 2016 are as follows:

- To submit at least 260 applications on international markets;
- To develop road maps for legal protection in strategically important areas of technological development, including development of the Superconductor Industry project, radiation technologies, etc.;
- To adopt a methodology for forming portfolios of rights over technologies and making decisions on technology transfer in a manner that would help protect ROSATOM's interests on foreign markets;
- To integrate at least 60% of intellectual property created in ROSATOM into the Corporation's operations.

Table. Patent activity

Indicator	*2013*	*2014*	*2015*
Number of patents obtained for inventions, utility models and industrial designs, certificates for computer software and databases, number of registered items of know-how, pcs. per year	1,076	1,091	1,141
Number of applications for state registration of protectable intellectual property, pcs. per year	593	826	853

In 2015, ROSATOM became a leader in Russia in terms of the number of patent applications for inventions and utility models. According to the Federal Service for Intellectual Property, in 2015, the Corporation submitted 203 patent applications for IP created under government contracts alone, far surpassing other applicants.

2.5. BUSINESS DIVERSIFICATION

OLEG BARABANOV,
DIRECTOR FOR DEVELOPMENT AND RESTRUCTURING

— In 2015, ROSATOM demonstrated strong growth of the portfolio of new businesses and related revenues. How could you comment on the results achieved?

— Sales of ROSATOM's new products are increasing: in 2015, we grew by almost 60% to RUB 125 billion; in 2016 we are planning to reach RUB 150 billion. According to ROSATOM's strategy, the total share of revenue from new businesses should be no less than 30% by 2030.

In 2015, the revenue from nuclear areas of new businesses increased by 70%, and for non-nuclear areas it increased by 55%. The revenue from nuclear products has grown primarily in the following fields: construction of reactors for shipbuilding, service contracts for nuclear power plants, decommissioning of facilities, and management of radioactive waste. The last two fields also contributed to the growth of overseas revenue from new products: its share reached 15% in 2015. In the non-nuclear fields, the retail sale of electricity, laser technologies, electrical goods, and security systems contributed most to the revenue growth.

The portfolio of orders for new nuclear businesses grew compared with the last year by more than 70% and for non-nuclear businesses by more than 80%. The greatest increase in orders among the nuclear businesses was in the following fields: decommissioning of facilities, treatment of radioactive waste, maintenance services, and research reactors. The portfolio of orders for non-nuclear businesses expanded most in sales of electricity, equipment for the thermal power industry, and laser technologies.

In terms of divisions, the Power Engineering Division, the Mechanical Engineering Division and the Engineering Division, as well as the Nuclear Weapons Division contributed most to the changes in the portfolio of orders and revenue from the new products.

We should also highlight the new areas for which the indicators of the portfolio of orders were calculated for the first time in 2015, for example, deliveries to foreign customers of enriched uranium produced from reprocessed raw materials, manufacture of automotive catalysts and titanium.

One of our most important goals is still to increase the rate of development of new knowledge-intensive innovative products. To do this, we will need to continue to form efficient infrastructure to develop new businesses and further improve the conditions for implementing ROSATOM's existing opportunities.

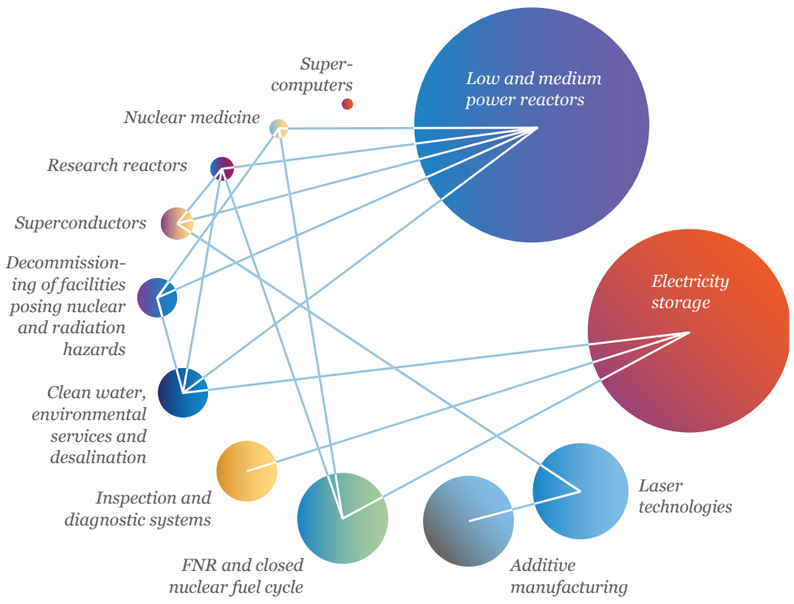
Key results in 2015:
- Revenue from new businesses amounted to RUB 125 billion, and its share in the total revenue amounted to 15.2%;
- The 10-year portfolio of orders for new businesses reached RUB 583.5 billion.

— Which new ROSATOM's products would you say are the most promising in the medium term?

— In creating new products, ROSATOM takes into account innovative global trends, and the priorities of Russia's National Technological Initiative. In this regard, the promising fields that we are working in include the wind power industry, small and medium-sized reactors, energy storage devices and energy converters, new materials, additive technologies, composite materials, digital design and modelling, automated control systems, security systems, water desalination, products for the superconductor market, and maintenance of NPPs abroad. These areas, as well as nuclear medicine and the technology of the radiation processing of products are, in our opinion, the most promising.

2.5.1. NEW BUSINESSES OF ROSATOM

Fig. New products for the Russian and international market[10]

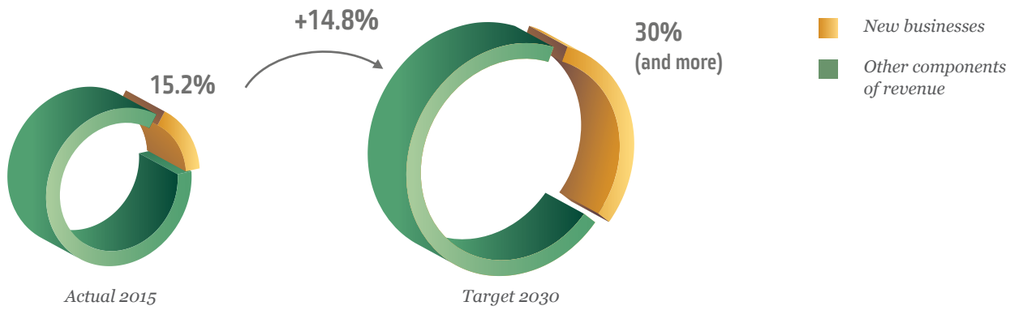


In the context of economic stability, ROSATOM's presence in different market segments with different products allows it to adapt quickly to internal and external changes and to develop further. Moreover, the development of new businesses makes it possible to ensure production capacity utilization, employ highly qualified specialists, and increase labour productivity and return on assets.

Business diversification in ROSATOM includes business expansion based on the Corporation's intellectual and production capabilities, import substitution and innovations enabling a qualitative increase of business and process efficiency.

In accordance with the Corporation's strategy, by 2030 revenue from new businesses is expected to account for at least 30% of total revenue.

Fig. Projected increase in revenue by 2030



[10] *The circle size illustrates the potential market size; dashed lines represent connections between technologies.*

ROSATOM seeks not only to diversify its products but also to diversify into other market segments. Currently, the government is ROSATOM's main customer, and projects in the B2G segment account for 91% of total revenue. In order to diversify risks connected with the political climate, the Corporation seeks to build relationships and look for new consumers among private companies and individuals. By 2030 it plans to reduce the share of revenue generated by new businesses in the B2G segment to 70% and at the same time increase the share of revenue from the B2B and B2C segments to 20% and 10% respectively.

In particular, in nuclear medicine we plan to develop methods for the diagnosis and treatment of cancer, heart diseases and neurological disorders using radiopharmaceuticals and to start production of such radiopharmaceuticals. The ultimate consumers are patients who seek diagnostic and therapy services (PET, SPECT diagnostics, radionuclide therapy, contact radiation therapy, ion/proton therapy) in health care centres. The same model will be used when selling radiopharmaceuticals to corporate entities in the B2B segment.

LLC UIC is a centre for the Corporation's business projects in nuclear medicine and radiation technology; its task in the industry value chain is to commercialize promising research and technological developments of ROSATOM's enterprises. The projects of LLC UIC in nuclear medicine and industrial irradiation and sterilization of materials are in different implementation phases, including the operating phase.

Factors behind the establishment of new businesses include R&D conducted by ROSATOM. For instance, based on existing developments, in 2015 a pilot project was launched to create a solution reactor for the manufacture of medical isotopes, which also has export potential.

2.5.2. RESULTS IN 2015

In 2015, ROSATOM's revenues from new businesses reached RUB 125 billion (48% more than in 2014). The Power Engineering Division (46.3%) and the Nuclear Weapons Division (20.4%) contributed most to this indicator.

The 10-year portfolio of orders for new businesses reached RUB 583.5 billion. The Power Engineering Division and the Mechanical Engineering Division made up the largest share of the portfolio in 2015: 46.5% and 19.9%, respectively.

For the results of new business divisions and organizations of ROSATOM, see the sections of this Report 'International Business', 'Mining Division', 'Fuel Division', 'Mechanical Engineering Division', 'Engineering Division', and 'Power Engineering Division'.

2.5.3. PLANS FOR 2016 AND FOR THE MEDIUM TERM

In the medium term, ROSATOM is planning to tap into new markets and build up a 10-year portfolio of orders to ~ RUB 800 billion in 2018. To achieve this target, we will continue our work to optimize the product portfolio on the basis of global trends and technological development and develop the competitiveness of ROSATOM's product offer in terms of quality, price, reliability, timing, and service.

3

KEY RESULTS

195.2 BILLION KWH
NEW RECORD FOR ELECTRICITY GENERATION AT RUSSIAN NPPS

REVIVAL OF ATOMMASH

THE ATOMMASH INDUSTRIAL COMPLEX IN VOLGODONSK, RUSSIA, HAS BEEN REVIVED AND INTEGRATED INTO THE PROCESS CHAIN OF ROSATOM

3.1. FINANCIAL AND ECONOMIC RESULTS[11]

NIKOLAY SOLOMON,
FIRST DEPUTY CEO FOR CORPORATE FUNCTIONS — CHIEF FINANCIAL OFFICER

Key results in 2015:
- Overseas revenue increased by 20%;
- Cash flow grew by 21%

— What do you think is the main financial result of 2015? What indicators should be highlighted from the point of view of their momentum and positive impact on the activities of ROSATOM? How did you manage to achieve them?

— In 2015, despite the difficult economic environment we managed to improve virtually all key financial and economic indicators compared to 2014.

For example, revenue grew by 33%, including overseas revenue which increased 20% to USD 6.3 billion, primarily thanks to the Sales and Trading Division and the Fuel Division. Power generation rose 8% and reached the record level of 195.2 billion kWh as a result of faster repairs of NPP power units and the commissioning of power unit No. 3 of Rostov NPP.

Due to the reduction in costs and the special attention paid to the working capital, adjusted free cash flow (AFCF) grew by 21%. The overall growth of effectiveness can also be seen in return on equity and return on assets, which increased from 1.71% to 6.94% and from 1.11% to 4.46% respectively.

— What is your opinion of the current situation on the financial markets (including international markets) – what opportunities and risks does it pose for the activities of ROSATOM?

— From my point of view, it is very difficult to say, at this moment in time, that the situation on the financial markets has changed dramatically over the past year. I think that the difficulties remain roughly the same, primarily uncertainty in terms of the possibility of attracting sufficient funding. The market is still characterized by a fairly high cost of borrowing. We have managed to keep the average interest rate on the total debt portfolio at a level below 10% due to the significant share in the portfolio of long-term loans that were taken out in 2012-2014.

Given the successful placement by Russia's Ministry of Finance of the 10-year Eurobond issue in May 2016, I hope that we are moving towards a more stable situation and the restoration of foreign investors' interest in the Russian market.

— Could you give a forecast on ROSATOM's key financial and economic indicators for 2016 and for the medium term, in terms of the revenue for example? What will be the growth drivers of these indicators?

— The key tasks of ROSATOM for the medium term are to develop international business, increase the share of new products in the total volume of business and increase the efficiency of the operating and investment activities.

The key indicator to assess the long-term sustainability of our business is the portfolio of overseas orders for 10 years. At the end of 2015, this indicator had risen to USD 110.3 billion, of which ROSATOM will receive USD 22.9 billion of foreign revenue as early as in 2016-2018. In essence this

Next →

[11] *For details on financial and economic results of ROSATOM's core divisions, see public reports of JSC Atomenergoprom, JSC Rosenergoatom Concern, JSC TVEL, JSC Atomenergomash, JSC TENEX, JSC NIAEP and JSC Atomredmetzoloto.*

means additional growth against the level of 2015 by no less than 20% on average over three years.

Our goals in terms of performance are no less ambitious. We plan that by 2018 labour productivity will increase by 44% compared to 2015; the inventory turnover rate should increase by 33%, and the non-production costs of ROSATOM's organizations will decrease by no less than 30% in 2015 prices.

Table. Key IFRS results, RUB billion

	2013	*2014*	*2015*	*2015/2014*
Revenue	529.2	618.3	821.2	+32.8%
Net assets	1,550.1	1,722.2	2,029.4	+17.8%
Intangible assets	48.3	48.0	55.9	+16.5%

2015 revenue growth (by 32.8% YoY) was driven mainly by the following factors:

- An increase in export revenue (sale of uranium products by the Sales and Trading segment and sale of nuclear fuel by the Fuel Division) and its rouble equivalent (due to currency fluctuations);
- An 8.1% increase in electricity production (by 14.7 billion kWh YoY) due to additional output at two operating NPP power units, faster repairs of NPP power units, commissioning of power unit No. 3 of Rostov NPP contributed to revenue growth. The growth was, however, offset by negative factors, such as a reduced price following a competitive capacity auction on the wholesale electricity market;
- Increase in revenue from engineering services related to NPP design and construction abroad (including projects to construct the Belarusian NPP; Tianwan NPP, China; Ruppur NPP, Bangladesh).

Table. Profitability ratios, %

Indicator	*2014*	*2015*
Return on sales (ROS)	4.75%	17.16%
Return on assets (ROA)	1.11%	4.46%
Return on equity (ROE)	1.71%	6.94%

Profitability ratios increased significantly in 2015, primarily due to a year-on-year increase in profits in the reporting period.

3.2. MINING DIVISION[12]

3.2.1. GOALS AND OBJECTIVES OF THE DIVISION

Key results in 2015:

- **Uranium resources totalled 521,200 tonnes;**
- **3,055 tonnes of natural uranium were produced (the production programme was 100% completed);**
- **The cost of end products across the Division's uranium mining companies was reduced by 10% YoY.**

JSC Atomredmetzoloto is the holding company of ROSATOM's Mining Division. The company develops uranium production assets in Russia, which are currently at different life cycle stages ranging from geological exploration to intensive commercial development of deposits.

JSC Atomredmetzoloto's mission is to ensure a competitive and long-term supply of raw materials for developing Russian technologies, especially in the nuclear industry. The Company's strategic aim is to help achieve the governmental and corporate goals of ROSATOM, its main shareholder, through the guaranteed supply of Russian uranium in required amounts at a competitive price and free from any geopolitical risks.

See the Division's business model in the 2015 annual report of JSC Atomredmetzoloto.

[12] *ROSATOM's Mining Division comprises only uranium mining enterprises in Russia. For information on uranium mining abroad, see the section 'International Business'.*

3.2.2. OPERATING RESULTS IN 2015

In 2015, JSC Atomredmetzoloto produced 3,055 tonnes of uranium. The Division's uranium mining enterprises completely fulfilled the production plan.

PJSC PIMCU (Krasnokamensk, Zabaykalsky Territory), the Division's main uranium mining enterprise, managed to reduce the cost of uranium production by 12% by improving its operating processes and implementing innovative technological solutions in operating mines. ROSATOM's long-term development programme involves the construction of Mine No. 6. The mineral resource base of the mine totals 40,900 tonnes (39% of the enterprise's mineral resource base); given the planned uranium production volume, its development will take at least 12 years.

JSC Khiagda launched a sulphuric acid plant with a capacity of 110,000 tonnes a year, which will fully meet Khiagda's demand for sulphuric acid required for uranium extraction.

JSC Dalur launched a new drying complex, which ensured full compliance of the finished product, namely yellowcake[13], with international quality standards in accordance with the specification of the ASTM (American Society for Testing and Materials). Yellowcake moisture content decreased from 30% to 1.5%, which reduced the cost of its further processing and costs along the entire industrial chain.

Table. Mineral resource base and uranium production

	2013	2014	2015
Mineral resource base, kt	541.9	524.7	521.2
Uranium production, t, including:	3,135	2,991	3,055
PJSC PIMCU	2,133	1,970	1,977
JSC Dalur	562	578	590.1
JSC Khiagda	440	443	487.9

[13] *Natural uranium concentrate, uranium oxide.*

Table. Key Performance Indicators

Indicator	*Target value*	*Actual value*
Adjusted free cash flow of the Division, RUB billion	0.2	1.7
Labour productivity, RUB million per person	1.76	2.61
IRR[14] of the project portfolio across new businesses, %	12	21
Revenue from new products within and outside the scope on a competitive basis, RUB million	538.0	626.5
Engagement rate, %	48	53
LTIFR[15]	0.7	0.23

3.2.3. PERFORMANCE IMPROVEMENT

In 2015, geological exploration at the Pavlovskoye Deposit on Novaya Zemlya (one of the largest deposits of lead and zinc in Russia) resulted in a 26% increase in the mineral resource base. The lead and zinc ore reserves are assessed at 47.7 million tonnes.

In 2015, the development of ROSATOM's Production System (RPS) enabled JSC Atomredmetzoloto to save over RUB 255 million. This was made possible, in particular, by reducing the duration of some processes. For example, it now takes 72 hours to build a production well in JSC Khiagda instead of 106 hours, which was achieved through the standardization of work of drilling rig operators and improved planning of material delivery and drilling processes.

To reduce the cost and duration of processes, JSC Dalur standardized the process of releasing and returning vehicles from the line. Other projects implemented by JSC Khiagda and JSC Rusburmash to improve productivity were also effective.

[14] *Hereinafter, IRR stands for internal rate of return.*

[15] *Hereinafter, the lost time injury rate is the number of lost working hours against the total working hours in a reporting year normalized to 1 million man-hours.*

3.2.4. BUSINESS DIVERSIFICATION AND IMPORT SUBSTITUTION

Business diversification is one of the priority areas for the Mining Division. Its key goals include:

- Expansion of the product portfolio to minimize risks related to uranium production as a monoproduct;
- Improving efficiency of operating enterprises, including by improving the processing depth of existing mineral resources due to complete utilization of the existing competences;
- Ensuring the long-term financial and social stability of the Division's enterprises by scaling up the business.

JSC Dalur built a pilot plant and carried out R&D for the associated scandium extraction technology based on the existing operating infrastructure. Input data was obtained to design facilities for the pilot production of scandium concentrate with a capacity of up to 1.6 tonnes per year (calculated for scandium oxide).

Fig. Key areas for business diversification at JSC Atomredmetzoloto

KEY BUSINESS DIVERSIFICATION AREAS FOR JSC ATOMREDMETZOLOTO

Development of service assets based on the existing and new competences	Development of projects in the mining industry and related industries (priorities include improved processing depth for own resource base and industrial waste and development of special-use territories)	Industrial partnership as a territory of priority social and economic development in Krasnokamensk, Zabaykalsky Territory, Russia

The switchover to Russian equipment at the Division's enterprises was one of the main achievements related to import substitution. PJSC PIMCU set up the production of load-haul-dump trucks to substitute for foreign analogues. Nine machines were produced during the reporting year, which reduced equipment costs by over RUB 100 million. Additionally, over RUB 2.1 million were saved through substituting foreign spare parts with their Russian analogues. JSC Khiagda also substitutes German pumps and engines with Russian analogues, significantly reducing overall costs.

See the section 'Business Diversification' for more information on new businesses of ROSATOM and the 2015 annual report of JSC Atomredmetzoloto for details on the Division's new businesses.

3.2.5. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

Table. KPI targets for 2016

Indicator	*Target value*
Adjusted free cash flow of the Division, RUB billion	4.7
Total cost, RUB billion	16.4
Labour productivity, RUB million per person	3.1
Integral indicator for new products[16],%	100.0
Engagement rate, %	52
LTIFR, %	0.6
No violations rated at level 2 or higher on the INES scale	none

Development of uranium production

PJSC PIMCU will continue to restructure the uranium chain in order to improve the efficiency of the operating facilities based on a new technological platform. As part of the Development Programme, construction of Mine No. 6 will commence in 2016. Its commissioning will secure the enterprise's long-term stability.

Moreover, the well-balanced growth of uranium production will be secured across drillhole in-situ leaching enterprises (JSC Dalur, JSC Khiagda), which will help maintain stable uranium production in Russia and improve the overall economic performance of the Division.

The Company intends to maintain uranium production at the level of about 3,000 tonnes per year in 2016 and subsequent years (to be adjusted based on ROSATOM's objectives).

Business diversification

In 2016, JSC Atomredmetzoloto's Engineering Centre, JSC VNIPIpromtechnologii, will continue to be developed. The external order volume will be increased in the medium term to build a competitive company that provides a full range of design and construction services in the mining industry, radioactive waste management and environmental engineering.

Pavlovskoye is the largest project in terms of investments and expected economic benefits. It includes the development of the Pavlovskoye lead and zinc deposit in Arctic Russia. In-situ engineering surveys and design of infrastructure facilities for the mining and processing enterprise are scheduled for 2016. Finished products are expected to be produced starting from 2020 or 2021.

Projects in the mining and related industries will be carried out as part of a comprehensive programme in the following areas:

- **Development of the Pavlovskoye lead and zinc deposit;**
- **Entering other mining segments;**
- **Improving processing depth of the mineral resource base and industrial waste ('Pyrite cinder processing' and 'Scandium' projects);**
- **Gold production (business initiative).**

[16] *Hereinafter, the indicator includes revenue and the 10-year order portfolio for new products. The list of goods and services classified as new products is approved by ROSATOM on an annual basis. At the planning stage, the target figure is 100%, which means full achievement of targets for both components of the indicator.*

3.3. FUEL DIVISION[17]

3.3.1. GOALS AND OBJECTIVES OF THE DIVISION

Key results in 2015:

- All obligations related to nuclear fuel supply to Russian and foreign customers were met;
- Two new ninth-generation gas centrifuge units for uranium enrichment were commissioned;
- Industrial production of MOX fuel for power unit No. 4 of Beloyarsk NPP with a fast neutron reactor was set up and launched;
- The new generation TVSA-12 fuel was supplied to Kozloduy NPP, Bulgaria.

The Fuel Division of ROSATOM is responsible for uranium conversion and enrichment, and nuclear fuel fabrication, supplying the fuel or its components to all NPPs designed in Russia and some NPPs designed by foreign companies. The Division's holding company is JSC TVEL.

One in every six reactors in the world uses Russian nuclear fuel. JSC TVEL supplies fuel for a total of 78 power reactors in Russia, Europe and Asia, as well as research reactors in 9 countries worldwide. Additionally, the Division supplies non-nuclear products to Russian and foreign markets, including the metals industry, mechanical engineering, instrumentation, chemistry, and power engineering.

The Division aims to become a global leader and provide customers with products and services of the front end of the nuclear fuel cycle (NFC) and related industries in strict compliance with the requirements for reliability, security, and environmental and social responsibility.

[17] *This section contains reporting information on the TVEL Fuel Company consisting of the holding company JSC TVEL and subsidiary companies: gas centrifuge, separation and sublimation, fabrication and research organizations.*

The Division's goals are as follows:

- To promote growth on the NFC markets (to increase the share on the fabrication market to 22% and on the enrichment market to 42% by 2030 (including 20% of supplies through JSC TENEX));
- To increase the second business core (to increase revenue from non-nuclear areas, including newly-founded businesses, more than tenfold by 2030 under the comparable conditions of 2014);
- To improve efficiency.

See the 2015 annual report of JSC TVEL for the Division's business model.

3.3.2. PERFORMANCE IN 2015

Table. Key Performance Indicators

Indicator	*Target value*	*Actual value*
Adjusted free cash flow of the Division, RUB billion	78.6	86.6
Semi-fixed costs, RUB billion	38.9	35.9
IRR of the project portfolio for new businesses, %	12	70.1
Integral indicator for new products, %	100	91
Revenue from new products within and outside the scope on a competitive basis, RUB million	4,151.0	4,230.6
10-year order portfolio for new products, RUB million	16,325.4	13,078.4
Labour productivity (JSC TVEL + JSC TENEX), RUB million per person	13	14.2
Overseas revenue, USD million	1,572	1,608.9
10-year portfolio of overseas orders, USD million	10,300	10,305
No violations rated at level 2 on the INES scale and accompanied by employee exposure of over 50 mSv per year	none	none
No violations rated above level 2 on the INES scale across the industry	none	none
LTIFR	0.34	0.14
Fulfilment of governmental orders, %	100	100

In 2015, the Division fulfilled all of its obligations related to supplying nuclear fuel to Russian and foreign customers.

Acceptance tests of the new generation TVSA-12 fuel were carried out. The fuel has improved technical and economic properties, and has been approved for use at 104% of the nameplate capacity. The fuel is supplied to Kozloduy NPP, Bulgaria. The use of this fuel from 2016 onwards will help improve the economic efficiency of the plant.

The pilot batch of TVS-KVADRAT fuel was tested in the core of a power unit of a European NPP *(see also the section 'International Business' for more information on the Division's international operations).*

JSC UEIP (an organization forming part of the Fuel Division), the world's largest uranium enrichment enterprise, launched two new ninth-generation gas centrifuge units. This will boost the efficiency of uranium enrichment.

Works related to closing the NFC included the following:

- Facilities for the industrial production of MOX fuel for power unit No. 4 of Beloyarsk NPP with a BN-800 fast neutron reactor were built and commissioned; the technology for NFA production with MOX fuel is being finalized;
- Experimental REMIX fuel was developed, and its production was launched. The unique fuel will reduce the consumption of natural uranium in the nuclear industry, as it reuses not only plutonium contained in the spent fuel, but also the residual amount of uranium-235.

3.3.3. PERFORMANCE IMPROVEMENT

RPS projects implemented across the Division's organizations are one of the main tools to improve its performance. Reduced lead time was the key outcome of RPS projects in 2015.

JSC TVEL improved the development of promising products, as the time for producing and testing pilot samples was reduced by 53%.

As part of a project to 'balance' NFA production for the VVER-1000 reactor, PJSC NCCP managed to:

- *Reduce the time of NFA production by 17%;*
- *Increase labour productivity by 22%;*
- *Gain economic benefits from related projects totalling RUB 83.7 million.*

The Fuel Division is consistently introducing improvements to ensure its long-term sustainability. PJSC MSZ, PJSC KGIW, JSC UEIP and JSC TVEL were the pilot enterprises to implement the 'Fabrika Idey' (Factory of Ideas) industrial automated system. 1,500 RPS projects were launched and implemented to improve process efficiency. In 2015, employees of the Fuel Division submitted over 108,000 improvement proposals with the economic benefit totalling RUB 380 million.

The Fuel Company develops and implements various performance improvement initiatives to maintain the competitiveness of its products on international markets. These initiatives are aimed at increasing the adjusted free cash flow and labour productivity, as well as at reducing inventories, semi-fixed costs and the costs of goods. The Fuel Division's strategy was operationalized in 2015 to achieve the targets for these indicators.

In 2015, the Fuel Division's sales of rolled titanium, calcium and calcium wire, lithium compounds, automotive catalysts and NPP equipment grew by over 35% or RUB 1.1 billion.

3.3.4. BUSINESS DIVERSIFICATION AND IMPORT SUBSTITUTION

Development of calcium production

The Company adopted the technology for production of a new high-tech product: calcium injection wire for molten steel refining. Prior to this, there was no full production cycle for this product in Russia.

Lithium production

In 2015, sales markets were actively expanded for lithium-7, a stable lithium isotope used in existing nuclear reactors and those under development. Production was organized and the first batches of high-purity lithium-7 in the form of hydroxide monohydrate were supplied.

Titanium production

In 2015, the production of large-diameter seamless hot-worked titanium tubes was set up. In addition, JSC CMP started commercial production of titanium welding wire with unique characteristics.

New power generation technologies (energy storage devices)

The Company launched an initiative to apply its successful experience of implementing Li-ion batteries (LIB) for in-plant electric transport across the nuclear industry.

Additive manufacturing

In 2015, JSC UEIP became an industrial partner of a consortium of Russia's leading research institutes in a project aimed at building a Russian metal 3D printer. Separate elements of the 3D printer are being designed and developed. The project is expected to be completed in 2017.

These new business areas of the Fuel Division will continue to be developed in 2016, including through the participation in import substitution projects in the Russian economy and penetration of international markets.

See the section 'Business Diversification' for more information on the new businesses of ROSATOM, and the 2015 annual report of JSC TVEL for details on the new businesses of the Division.

In 2015, the first sample of Russian beryllium was obtained using the laboratory equipment of the Research Institute at the Tomsk Polytechnic University. An experimental industrial installation in JSC SKhK (an organization within the Fuel Division) is planned to be built in the future. Its production capacity will depend on the market needs.

3.3.5. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

Table. KPI targets for 2016

Indicator	*Target value*
Adjusted free cash flow of the Division, RUB billion	71.3
Semi-fixed costs, RUB billion	40.2
Labour productivity, RUB million per person	8.1
10-year order portfolio for new products, USD million	9,787
Overseas revenue, USD million	1,383
Integral indicator for new products, %	100.0
Revenue from new products within and outside the scope on a competitive basis, RUB billion	6.8
10-year order portfolio for new products, RUB billion	18.6
Reduction of inventories on the front end of the NFC, RUB billion	12.3
LTIFR	0.34
No violations rated at level 2 or higher on the INES scale	none
Fulfilment of governmental orders, %	100

Goals related to nuclear fuel development and improvement in 2016 are as follows:

- To complete the licensing procedure for TVSA-12 in Bulgaria;
- To develop supporting materials for the use of TVS-2M at power units No. 3, No. 4 of Tianwan NPP;
- To strengthen cooperation with organizations interested in promoting the TVS-KVADRAT project across all target markets;
- To conduct research and tests of fuel for a new multipurpose nuclear-powered icebreaker with the RITM-200 reactor unit.

3.4. MECHANICAL ENGINEERING DIVISION

3.4.1. GOALS AND OBJECTIVES OF THE DIVISION

Key results in 2015:

- **The manufacturing facility Atommash in Volgodonsk, Rostov Region, Russia, was revived and integrated into the production and technological chain of ROSATOM;**
- **The order portfolio was RUB 392.7 billion by the end of the reporting period;**
- **The share of revenues from new businesses reached 33%.**

The Mechanical Engineering Division of JSC Atomenergoprom offers a set of efficient solutions to design, produce and supply equipment for nuclear and thermal power generation, the oil and gas industry, shipbuilding and the special steel market. The holding company of the Mechanical Engineering Division is JSC Atomenergomash, which manages about 30 enterprises. The Division's production facilities are located in Russia, the Czech Republic, Hungary and Ukraine. Equipment manufactured by the Division's enterprises has been installed in over 20 countries. New markets account for 33% of the order portfolio, and international projects in the portfolio are worth about RUB 10 billion.

The Division's key strategic goal is to become a single-source manufacturer of key equipment for NPPs (nuclear and turbine island).

Long-term goals (by 2030) include:

- 50% of revenue from the adjacent non-nuclear markets;
- 30% of revenue from foreign transactions;
- Improved profitability and productivity to match the average across the international power engineering industry.

Medium-term goals (by 2019) are as follows:

- To reduce fixed costs by 30%;
- To reduce the full production cycle time by 30%.

See the 2015 annual report of JSC Atomenergomash for the Division's business model.

3.4.2. PERFORMANCE IN 2015

Table. Key Performance Indicators

Indicator	*Target value*	*Actual value*
Adjusted free cash flow of the Division, RUB billion	– 5.4	2.0
Labour productivity, RUB million per person	3.3	2.9
Index of implementation of the investment programme of JSC Rosenergoatom Concern pertaining to the Division, %	100	100
Integral indicator for new products, %	100	120
10-year order portfolio for new products, RUB million	70,748	116,304
Revenue from new products within and outside the scope on a competitive basis, RUB million	22,695	17,134
IRR of the project portfolio for new businesses, %	12	34
Semi-fixed costs, RUB million	23.84	23.45
Overseas revenue, USD million	128	122
LTIFR	0.63	0.42
Fulfilment of the state defence order, %	100	100

Targets for some key indicators were not achieved due to rescheduling of some non-nuclear and foreign long-lead equipment projects and the overall macroeconomic environment.

New agreements concluded by the Division in 2015 are worth a total of RUB 171.9 billion.

In 2015, the Atommash industrial complex in Volgodonsk, Rostov Region, Russia, was revived and integrated into the production and process chain of ROSATOM. Today, Atommash is the only Russian plant producing a full set of equipment for the NPP nuclear island. In 2015, the first reactor and key equipment were installed at the Belarusian NPP, Belarus. This is the first reactor vessel manufactured by Atommash after a nearly 30-year break and the first reactor vessel manufactured by an enterprise of ROSATOM.

The Division successfully fulfilled the steam generator supply agreements for Leningrad NPP-2 and the second stage of Tianwan NPP (power units No. 3 and 4) in China. It also concluded an agreement on the delivery of a complete set of equipment for the reactor building of power units No. 3 and 4 in Kudankulam NPP, India.

In 2015, power start-up and low power testing of power unit No. 4 with a BN-800 fast neutron reactor was initiated at Beloyarsk NPP, Russia. The reactor was designed and installed by the principal design firm specializing in fast neutron reactors: JSC Afrikantov OKBM, an enterprise forming part of the Mechanical Engineering Division *(see the section 'Innovative Development').*

Reactor vessels of two reactors for the RITM-200 power unit were assembled for Arktika, the world's largest new generation nuclear-powered icebreaker, which is currently under construction.

3.4.3. PERFORMANCE IMPROVEMENT

In 2015, the Mechanical Engineering Division implemented a number of performance improvement programmes. In particular, JSC NPO TSNIITMASH designed and implemented a new technology for sectional forging and stamping of the bottom of steam generators, which helps save up to 40% of metal and reduces labour intensity and power consumption.

In May and June 2015, the Division's holding company JSC Atomenergomash carried out a unique logistical operation to deliver oversize steam generators from the production site in Podolsk, Moscow Region, Russia, to the construction site of Leningrad NPP-2 in Sosnovy Bor, Leningrad Region, Russia. A new delivery scheme involving transportation by water resulted in substantial financial savings and helped reduce the delivery time (about three months). Additionally, the need to arrange possession of the railroad line for a special extra heavy flatcar was brought down to the minimum; costs of reinforcing the roadway and bridges, as well as potential issues related to size when crossing power lines, overhead roads, etc. were eliminated.

3.4.4. BUSINESS DIVERSIFICATION AND IMPORT SUBSTITUTION

In 2015, JSC Atomenergomash and its enterprises signed Memoranda of Understanding with foreign companies to continue cooperation in thermal power, including the design and production of pulverized coal-fired boilers, as well as cooperation in establishing enterprises for solid municipal waste treatment in Russia and the CIS countries.

JSC SNIIP, one of the Division's enterprises, implemented Russian software as part of the governmental import substitution programme. JSC TSNIITMASH, another of the Division's enterprises, commenced the development and implementation of power engineering equipment related to gas turbine technologies.

The new businesses were generating 33% of the Division's revenues by year-end 2015.

See the section 'Business Diversification' for more information on the new businesses of ROSATOM and the 2015 annual report of JSC Atomenergomash for details on new businesses of the Division.

3.4.5. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

Table. KPI targets for 2016

Indicator	*Target value*
Adjusted free cash flow of the Division, RUB billion	4.5
Labour productivity, RUB million per person	4.1
Timely supply of equipment under concluded contracts, %	100
Semi-fixed costs, RUB billion	22.7
10-year portfolio of overseas orders, USD million	77
Overseas revenue, USD million	128
Integral indicator for new products, %	100
Revenue from new products within and outside the scope on a competitive basis, RUB billion	25.9
10-year order portfolio for new products, RUB billion	105.4
LTIFR	0.54
No violations rated at level 2 or higher on the INES scale	none
Fulfilment of the state defence order, %	100

In 2016, JSC Atomenergomash is expected to expand its participation in the key nuclear projects of ROSATOM, and to continue the development of non-nuclear businesses.

The size and geography of the Division's traditional nuclear power markets are defined by the scale of ROSATOM's road map for the construction of new NPP units in Russia and worldwide.

In the non-nuclear sector, the strategic goal is to increase revenues from these businesses to 50%:

- In the Thermal Power Generation sector, cooperation with NEM Energy will be fostered to expand the range of waste heat boilers and gas turbines; other plans include cooperation with the main Russian general contractors implementing thermal power projects on foreign markets;
- In the gas and petrochemical industry, the goals are to significantly increase the share of the Division's enterprises on the gas and petrochemical equipment market, and promote internal cooperation;
- In the Special Steel sector, new orders from the largest Russian and international companies are expected to be fulfilled. The Division will also participate in a project to build a multipurpose fast neutron research nuclear reactor *(see the section 'Innovative Development');*
- In the Shipbuilding sector, the Division will continue the import substitution programme, adopt new types of equipment, extend the range of supplied equipment and increase the share of orders fulfilled at the facilities of the Division's enterprises.

3.5. ENGINEERING DIVISION

3.5.1. GOALS AND OBJECTIVES OF THE DIVISION

Key results in 2015:

- Power unit No. 4 of Beloyarsk NPP (Sverdlovsk Region, Russia) with a BN-800 fast neutron reactor was connected to the grid and started electricity generation for the Russian unified power system;
- Power unit No. 3 of Rostov NPP, Rostov Region, Russia, was successfully commissioned;
- Construction and pre-commissioning work was completed at power unit No. 6 of Novovoronezh NPP, Voronezh Region, Russia;
- Eight NPP power units continued to be built in Russia.

In 2015, JSC NIAEP (the holding company; an engineering company specializing in NPP design and construction), JSC ASE (an engineering company specializing in NPP construction abroad), JSC Atomenergoproekt (an engineering company specializing in NPP design and construction) and JSC ATOMPROEKT (a company specializing in NPP design) were merged into ASE Group of Companies.

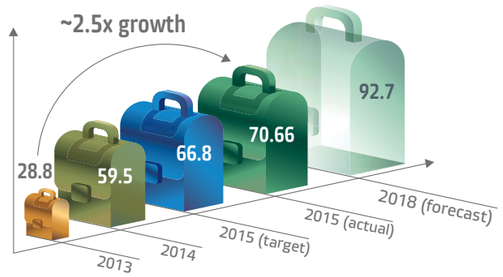
The strategic goals of the Engineering Division include:

- Attaining a leadership position in the construction of large NPPs, in particular by offering a more competitive solution in terms of cost per kWh during the life cycle of a facility (LCOE);
- Achieving operational sustainability (changes to the schedule of some projects should not affect others, which can be achieved by expanding the order portfolio and extending the scale of operations in Russia and worldwide);
- Achieving financial stability and developing the ability to provide resources for the development of other divisions of ROSATOM.

See the 2015 annual report of JSC NIAEP for the Division's business model.

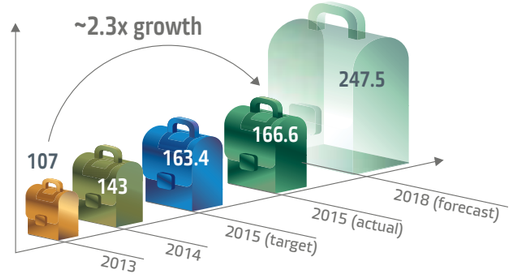
3.5.2. PERFORMANCE IN 2015

Fig. Portfolio of overseas orders, USD billion



For information on the results of NPP construction abroad and changes in the portfolio of overseas orders, see the section 'International Business'.

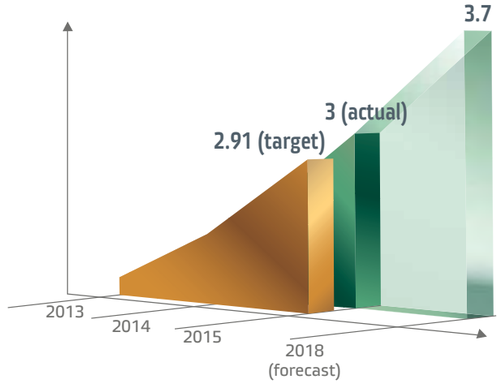
Fig. Revenue of ASE Group of Companies (excluding JSC ATOMPROEKT), RUB billion



Key revenue growth drivers in 2015:

- Tianwan NPP
- Novovoronezh NPP
- NPPs in the Republic of Bangladesh.

Fig. Labour productivity based on the Company's own income (without contractors), RUB million per person



3.5.3. PERFORMANCE IMPROVEMENT

The Division participates in the Industry-Wide Incentive Programme for the Participants of Investment and Construction Projects aimed at reducing the costs and the time taken to build nuclear facilities. In 2015, the project at Kursk NPP-2, Russia, entered a highly active phase: over 13 proposals were implemented. The received proposals were aimed at reducing the size of structural elements, the weight of some process units and systems, and the cost of the electrical equipment of the facility.

In 2015, the system for submitting and reviewing cost-cutting proposals was simplified; a reward programme was launched to remunerate employees for such initiatives. A burial site for low-level radioactive waste is a prime example of such proposals; it helped reduce the amounts of soil dislodged during primary blasting by a factor of 1.5, consequently reducing the cost of work by almost 20%.

3.5.4. BUSINESS DIVERSIFICATION AND IMPORT SUBSTITUTION

In its new business segments outside of the core business, ASE Group of Companies primarily aims to ensure the operational sustainability of its business in the long run.

Priority is still given to expansion within market segments relevant to the core business:

- Research reactors: winning the tender and performing the contract for front-end engineering design for an experimental nuclear reactor in Indonesia *(see also the section 'International Business');*
- Decommissioning of facilities posing nuclear and radiation hazards; construction and modernization of radioactive waste and spent nuclear fuel management facilities: winning the tender for decommissioning power unit No.1 of Philippsburg NPP, Germany, which was a landmark tender in 2015 in the Eastern European market in the life cycle back end segment *(see the section 'International Business');*
- NPP maintenance and modernization: works to extend the life of operating Russian NPPs in Balakovo, Kursk, Novovoronezh and Smolensk;
- Project Management Consulting (PMC): PMC contracts were signed related to the Kudankulam NPP construction project in India (power units No. 3 and 4), and 100% fulfilment of obligations under PMC contracts was stipulated for power units No. 3 and 4 of Tianwan NPP, China.

See the section 'Business Diversification' for more information on new businesses of ROSATOM and the 2015 annual report of JSC NIAEP for more information on the Division's new businesses.

3.5.5. PROBLEMS OF THE REPORTING PERIOD AND SOLUTIONS

ASE Group of Companies conducts a significant part of its business on foreign markets. 2015 was marked with growing political tension in ASE's strategic regions as well as deterioration of external relations with some partner countries. Therefore, ASE made efforts to extend its global footprint and strengthen relations with current customers

3.5.6. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

Key medium-term objectives of the Engineering Division are centred around retaining its leading position on the global NPP construction market. The portfolio of overseas orders is expected to be increased by over 20% in 2016.

Another priority remains unchanged: to improve ASE's competitiveness, primarily by reducing the time and cost of NPP construction, and improving labour productivity.

Other priorities include: maintaining the share of new businesses in the revenue structure in the amount sufficient for the Company's sustainable operation, i.e. at least 10%, and the build-up of the project portfolio in new business areas.

Power unit No. 6 of Novovoronezh NPP, Russia, is scheduled to be launched in 2016. It will be the most technologically advanced unit both in Russia and worldwide.

3.6. POWER ENGINEERING DIVISION

3.6.1. GOALS AND OBJECTIVES OF THE DIVISION

Key results in 2015:

- The Russian NPPs generated a record amount of electricity: 195.2 billion kWh (which is comparable to electricity consumption in Moscow and the Moscow Region over two years);
- Installed capacity of 10 Russian NPPs (35 power units) amounted to 26.2 GW;
- The NPP capacity factor reached 86.0%

The Power Engineering Division generates electricity and heat at NPPs and serves as an operator of NPPs, radiation sources, storage facilities for nuclear and radioactive materials according to the procedure stipulated by Russian legislation. JSC Rosenergoatom Concern, the Division's holding company, is responsible for reliable and safe operation of all Russian nuclear power plants.

Strategic goals of the Power Engineering Division are as follows:

- To ensure safe, efficient and reliable operation of the operating NPPs, nuclear and radiation safety of nuclear facilities, safety of personnel, population and environment;
- To increase electricity production while ensuring required safety;
- To close the NFC on the basis of power units with BN-800, BN-1200, VVER-TOI fast neutron reactors with mixed uranium and plutonium fuel;
- To increase the share of nuclear power generation in the country's energy mix;
- To develop international operations;
- To improve the efficiency of NPP operation, design and capital construction.

See the 2015 annual report of JSC Rosenergoatom Concern for more information on the Division's business model.

3.6.2. PERFORMANCE IN 2015

In 2015, Russian NPPs generated 195.2 billion kWh of electricity, which was 14.7 billion kWh more than in 2014 and exceeded the target set by the Russian Federal Tariff Service (189.15 billion kWh) by over 6 billion kWh. The record power production contributed substantially to the annual revenue of ROSATOM *(see the section 'Financial and Economic Results').*

The record production was due to the following factors.

- The total duration of scheduled repairs of power units was reduced substantially. In 2014, over 2,050 days were spent on repairs, while in 2015 this was reduced to 1,832 days. The repair time was reduced through the targeted search for and elimination of non-productive loss of working days, by adjusting the repair schedule of power units and allowing extra time for remedying potential defects and through other measures. Moreover, the number of emergency shutdowns and unloading of the power units was reduced (in particular, at Russian NPPs in Balakovo, Kursk and Smolensk). Taken together, these measures made it possible to generate an additional 2.2 billion kWh.
- The total capacity of NPPs increased by 461.6 MW throughout the duration of the programme aimed at increasing the heat generation capacity of power units. In 2015, power unit No. 4 of Kalinin NPP, Russia, was put into pilot operation, with its capacity increased by 40 MW.
- The commissioning of power unit No. 3 in Rostov NPP, Russia, on September 16, 2015, also contributed to the total output, as it enabled the additional generation of 1.47 billion kWh.

Table. Key Performance Indicators

Indicator	*Target value*	*Actual value*
Adjusted free cash flow of the Division, RUB billion	98.8	107.7
NPPs' output, billion kWh	189.45	195.21
Labour productivity, million kWh per person	6.26	6.59
Index of implementation of the investment programme of JSC Rosenergoatom Concern, %	100	99.8

Fig. Electricity production by Russian NPPs, billion kWh

3.6.3. PERFORMANCE IMPROVEMENT

33 power units were modernized to ensure safe and sustainable operation of the power units at the set and increased capacity levels. The operational life of power units No. 4 of Kursk NPP and No. 2 of Smolensk NPP was extended for 15 years, while the life of power unit No. 1 of Balakovo NPP was extended for 30 years. In the reporting year, documents were prepared to extend the operational life of eight other power units in Russian NPPs.

Implementation of ROSATOM's instructions on cost reduction helped save RUB 3.3 billion of the approved budget. As electricity output exceeded the target, unit semi-fixed costs decreased by 8.8% YoY to 329.3 RUB/MWh.

3.6.4. BUSINESS DIVERSIFICATION

The Division invests heavily into the expansion of its services by introducing new products or entering new markets with current products. Key diversification strategies include:

- Providing NPP maintenance in foreign countries *(for more details, see the section 'International Business');*
- Rendering services on related markets (commissioning and maintenance in thermal power, maintenance and repairs in the metals industry);
- Selling electricity to new markets;
- Establishing data centres.

In 2015, JSC Rosenergoatom Concern reached an agreement with PJSC Rostelecom on construction of the largest data centre in Russia, which will host important state information systems. The centre will be located near Kalinin NPP, which will provide it with an independent and cheap source of uninterrupted power supply.

Key results of the development of new businesses in 2015:

- Net electricity output of JSC Atomenergosbyt (an organization forming part of the Power Engineering Division and operating in the electricity market) almost doubled compared to 2014 (7.93 billion kWh), including due to operations as the supplier of last resort in the Kursk, Tver, Smolensk and Murmansk Regions;
- The company generated first revenue from sales and replacement of electricity meters, sales of electrical goods, comprehensive energy audits and sale of financial insurance services;
- A number of memoranda of understanding and agreements on electricity sales from the Baltic NPP (currently under construction) were concluded with major European energy corporations;
- The project to build the Data Centre with a total capacity of 80 MVA enabled ROSATOM to enter a high value added segment and reduce expenditure on computing capacities of nuclear enterprises. The Centre comprises 8,000 server racks.

See the section 'Business Diversification' for more information on new businesses of ROSATOM and the 2015 annual report of JSC Rosenergoatom Concern for details on the Division's new businesses.

3.6.5. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

Table. Target electricity generation by NPPs in Russia

	2016	*2017*	*2018*
Electricity generation by NPPs, billion kWh	196.7	206.8	212.4

With regard to new businesses, the Division's key objectives for 2016 and for the medium term are as follows:

- Product portfolio optimization;
- Stable financial results and a guaranteed order portfolio for all products.

3.7. PERFORMANCE OF STATE FUNCTIONS

TATIANA ELFIMOVA,
STATE SECRETARY, DEPUTY CEO FOR GOVERNMENT RELATIONS AND BUDGETING

Key results in 2015:
- ROSATOM participated in the consideration of over 100 draft laws;
- We completed the implementation of ROSATOM's Long-Term Operational Programme for the period from 2009 through 2015;
- We continued implementing 7 federal target programmes and the state programme of the Russian Federation 'Development of the Nuclear Power Sector'.

— In 2015, ROSATOM completed its Long-Term Operational Programme for the period from 2009 through 2015 and managed to exceed the targets for many indicators. How did you manage to achieve such impressive results?

— The Operational Programme was approved in 2008 when the Russian economy was growing, which is why ambitious goals were set for the nuclear industry for the period until 2015. The programme built on several policy documents adopted in 2006 that were named 'Nuclear Project 2'.

Our success was due to the adoption of the long-term industry development programme and the united team of specialists who implemented it. Adopting the programme made it possible to attract young professionals to the industry in the shortest time possible and ensure the continuity of generations; it is another huge step toward our success, in this case in the long run.

The main results of the Programme implementation include an increase in 2015 of the total capacity of nuclear power plants in Russia to 26.2 GW, the construction and commissioning of four new NPP power units, and new decisions to extend the useful life of the RMBK reactors (high-power channel-type reactors); all this enabled us to achieve a record-breaking level of electricity generation (195.2 billion kW/h). The serial construction of new nuclear power plants made it possible to respond to another major challenge: to restore the production chain of the nuclear engineering complex and create healthy competition in the industry (at the start of the Programme implementation, the industry was essentially monopolized). In turn, the restoration of the mechanical engineering sector enabled Russian exporters to enter the world market and assert their leadership.

— The results of the Operational Programme formed the basis for further improvement of the state programme of the Russian Federation 'Development of the Nuclear Power Sector' and other policy documents. Which of its outcomes could serve as a basis for further development and what documents will incorporate the results of the Operational Programme implementation?

— In 2010 and 2011, the country began to work systematically to switch over to the programme- and target-based planning method designed to significantly improve the efficiency of budget expenditures through close linkage of the results of the measures with the amounts of budget funds allocated for those purposes. In this regard, the Government of the Russian Federation decided to develop state programmes for relevant areas of the country's social and economic development.

Moreover, ROSATOM's Long-Term Operational Programme had already been prepared using the principles of the programme- and target-based planning method and therefore constituted a single and then unique tool, which enabled ROSATOM, as the chief administrator of budget funds, to coordinate the implementation of diverse projects financed from the federal budget and non-budgetary sources. The first version of the state programme 'Development of the Nuclear Power Sector' was approved in 2012; by that time the Operational Programme had already been effective for several years, and its implementation had gained considerable momentum; the results were included in the state programme as a starting point, as a benchmark against which the results and efficiency of further implementation of the state programme are measured.

Starting from 2015, the Programme became the basis for another policy document in the nuclear industry: the Strategic Forecast of the Russian

Next →

Federation developed by the Government. The nuclear industry is so vast that it encompasses almost all production processes and processing stages specific to high-tech industries. Therefore, it is no coincidence that ROSATOM's representatives participated in 90% of working groups created to develop the Strategic Forecast. It should be noted that achieving the targets set in the Operational Programme and included in the state programme 'Development of the Nuclear Power Sector' and the Strategic Forecast was a mandatory requirement. In other words, it was absolutely imperative to achieve those results; otherwise the very possibility of the continuation of the Russian nuclear industry would be compromised. In view of this, the planning of those results in 2008 is a remarkable example of correct and ambitious goal setting.

While the state programme 'Development of the Nuclear Power Sector' is a tool to ensure the efficient use of budgetary funds, due to the methodology of its development it does not cover all of ROSATOM's activities, but only those that are directly related to the participation of the state. To compensate for that gap, internal documents were developed and adopted in the nuclear industry: they are based on the same key principles as the Operational Programme and the state programme, but unlike the latter they encompass the entire production and processing chain. These documents include ROSATOM's long-term development programme until 2020 (LTDP) and ROSATOM's Business Strategy until 2030 (Strategy).

These documents focus on improving the economic performance of ROSATOM and its organizations, including in world markets, and on creating a platform for global growth, including through the development and improvement of technologies capable of ensuring competitive advantages of products of the Russian nuclear industry in the long run. The LTDP and the Strategy cover a wide range of markets served by ROSATOM, from uranium mining and fuel production to reprocessing of spent nuclear fuel, from NPP design and construction in Russia and abroad and electricity generation to NPP decommissioning. These documents also set out ambitious goals to incentivize further progressive development of the industry, including in terms of an increase in the share of non-nuclear businesses. In addition, the LTDP includes measures to increase the efficiency of procurement activities, corporate governance, human resource management, and other functions.

3.7.1. ROSATOM'S LAW DRAFTING ACTIVITY

In 2015, ROSATOM provided advisory support to the newly established State Corporation Roscosmos in developing the relevant federal law.

In 2015, ROSATOM participated in the consideration of over 100 draft laws, including draft amendments to draft laws submitted by the federal executive authorities, the Government of the Russian Federation, and the Federal Assembly of the Russian Federation. We considered and prepared briefing notes for over 200 draft laws as part of preparation for the meetings of the Commission of the Government of the Russian Federation on Law-Drafting Activities.

In pursuance of the Decree of the Russian President, ROSATOM developed a draft federal law on amending Article 31 of the Federal Law on Use of Nuclear Power and submitted it to the Government of the Russian Federation. The draft law is intended to increase the anti-terrorist protection of nuclear facilities by creating special-use areas: protected areas with a special legal regime.

In the reporting year, Federal Law No. 162-FZ on Standardization in the Russian Federation dated June 29, 2015 was adopted. It formalized the powers of ROSATOM as a full-fledged participant in the national standardization system on a par with the federal executive authorities. The Law also takes into account the special procedure for standardizing products subject to the requirements for ensuring the safety of nuclear power use.

In 2015, we continued to create a favourable environment for attracting investments in projects proposed for implementation in priority social and economic development areas (PSEDAs) established in closed administrative and territorial formations (CATFs). According to Federal Law No. 213-FZ dated July 13, 2015 on Amending Certain Laws of the Russian Federation in Connection with the Adoption of the Federal Law on the Free Port of Vladivostok (Article 24), the establishment of PSEDAs in CATFs became possible starting from January 1, 2016.

3.7.2. COOPERATION WITH THE FEDERAL ASSEMBLY OF THE RUSSIAN FEDERATION

In the course of cooperation with the Chambers of the Federal Assembly of the Russian Federation, we prepared information and analytical materials, and ROSATOM's representatives took part in 25 meetings of the Committees, Commissions and Expert Boards, 12 round-table discussions, 8 international forums, congresses and conferences, and 3 parliament proceedings.

In the reporting period, ROSATOM received 91 requests from representatives of the Chambers of the Federal Assembly of the Russian Federation. All of them were considered within the time frame stipulated by law, and the authors of the requests received substantiated answers. The main issues of the requests were as follows:

- ensuring environmental safety of nuclear facilities;
- social security issues;
- financial assistance;
- RAW and spent nuclear fuel management;
- support for research.

In 2015, participation of representatives of the State Duma and the Federation Council of the Russian Federation in three public consultations was organized:

- on the environmental impact of operating power units of Leningrad NPP-2 and the RAW storage and processing facility (3rd start-up facility) – on October 15, 2015 and December 28, 2015 respectively;
- on the findings of the environmental impact assessment of the construction of power units No. 1 and 2 of Kursk NPP-2 (May 18, 2015).

3.7.3. PROVISION OF PUBLIC SERVICES

A key area of work in 2015 included tackling issues related to the provision of public services on a par with the federal executive authorities, finalizing the regulatory framework for the provision of public services in relation to ROSATOM, as well as creating conditions for making the use of the interdepartmental electronic interaction system technically feasible.

In the reporting year, information on ROSATOM's public services and functions was published in the Federal Register of Government Services and on the Common Government Services Portal (CGSP). The service involving the issue of certificates on archive documents in the specified area of activities to be submitted to whom it may concern was arranged electronically on the CGSP.

We developed process charts of interdepartmental cooperation for the Interdepartmental Electronic Interaction System (IEIS) and prepared the system for support of ROSATOM's public services for full-scale operation, taking into account the up-to-date requirements for the IEIS stipulated by the Ministry of Communications and the Ministry of Economic Development of the Russian Federation (we received the Certificate of Compliance with Information Security Requirements).

3.7.4. IMPLEMENTATION OF FEDERAL TARGET PROGRAMMES

The implementation of measures set out in the federal target programmes (hereinafter referred to as 'FTPs') and the federal targeted investment programme in 2015 was aimed at addressing key tasks and achieving primary medium-term targets for the social and economic development of the Russian Federation specified in the Budget Message of the Russian President for the period from 2014 through 2016, the Message of the Russian President to the Federal Assembly of the Russian Federation dated December 4, 2014, and the Concept of Long-Term Social and Economic Development of the Russian Federation until 2020.

In 2015, ROSATOM's enterprises and organizations implemented measures set out in seven FTPs, in four of which ROSATOM is the state customer and coordinator.

In 2015, ROSATOM's enterprises and organizations implemented measures set out in seven FTPs, in four of which ROSATOM is the state customer and coordinator. Reports on the implementation of the FTPs were submitted to the federal executive authorities.

In 2015, the implementation of the FTP on nuclear and radiation safety for 2008 and until 2015 was completed; performance against the main target of the FTP totalled 109.7% *(see section 6.2 of the Report 'RAW and SNF Management and Decommissioning of Facilities Posing Nuclear and Radiation Hazards').*

In 2015, the implementation of ROSATOM's Long-Term Operational Programme for the period from 2009 through 2015 (Operational Programme) was completed.

The implementation of the Operational Programme made it possible to achieve the goals of expanding reproduction of the Russian nuclear industry products based on the development of nuclear weapons, nuclear power generation and research and development sectors, as well as creating a single nuclear and radiation safety complex, preserving the continuity of process chains based on innovative development, increasing international competitiveness of products and services, and improving the state management mechanism with the use of nuclear power.

The results of the Operational Programme implementation will form the basis for further improvement of the main policy documents on the development of the nuclear industry.

3.7.5. IMPLEMENTATION OF THE STATE PROGRAMME OF THE RUSSIAN FEDERATION 'DEVELOPMENT OF THE NUCLEAR POWER SECTOR'

In the reporting year, ROSATOM continued the implementation of the state programme of the Russian Federation 'Development of the Nuclear Power Sector'.

The implementation of measures set out in the state programme in 2015 made it possible to achieve the following targets as compared to the base level of 2011:

- Labour productivity at the enterprises in the nuclear power sector grew by 93.5% (as against 37.5% in 2014);
- Sales of civilian products increased by 35.1% (as against 13.6% in 2014);
- Overseas revenue increased by 31.6% (as against 9.4% in 2014).

There were no deviations in the operation of the nuclear facilities, and no incidents entailing additional exposure of employees and the population to radiation according to the International Nuclear Event Scale (INES).

The efficiency and effectiveness of the implementation of the state programme for 2015 totalled 114.7%.

3.7.6. STATE PROPERTY MANAGEMENT AND NON-CORE ASSET RESTRUCTURING

In 2015, we registered titles to 373 items of real estate (buildings and structures).

In 2015, in accordance with the Non-Core Asset Restructuring Programme for the period from 2013 through 2015 approved by ROSATOM's Management Board, 108 items of real estate were excluded from the scope of the nuclear industry, including:

- 42 items of federal real estate transferred on a grant basis to local governments or to the state in order to address local issues and to provide the population with utility infrastructure facilities;
- 66 items of federal real estate liquidated due to the total or partial loss of their usefulness to consumers.

In 2016, ROSATOM plans to donate and liquidate 392 more items of federal real estate.

3.7.7. PLANS FOR 2016

- To continue improving the legislation on nuclear power use taking into account the current conditions and tasks faced by the state;
- To examine the position of ROSATOM as a participant in the formulation and implementation of the industrial policy, as well as a participant in the strategic planning system;
- To continue consistent efforts to create conditions for the efficient provision of electronic public services.

3.8. NUCLEAR WEAPONS DIVISION

3.8.1. RESULTS IN 2015

Key results in 2015:

- The state defence order was 100% fulfilled;
- Consolidated revenues from civilian products totalled RUB 68.1 billion, which is 15% more than in 2014.

Fulfilment of the state defence order and cooperation with the Ministry of Defence

ROSATOM, together with the Ministry of Defence and the military nuclear support units of the Armed Forces of the Russian Federation, is maintaining and developing the stock of munitions of the Armed Forces to maintain the level of quality and quantity ensuring the implementation of Russia's nuclear deterrence policy.

In 2015, ROSATOM's enterprises conducted research and development in accordance with the approved State Armaments Programme for the period from 2011 through 2020.

The measures stipulated by the state defence order for the reporting year were fully implemented.

Restructuring of the Nuclear Weapons Division (NWD) enterprises

According to the NWD development strategy until 2020, enterprises in the Nuclear Weapons Division are undergoing phased restructuring. In 2015, the management of Federal State Unitary Enterprise V. I. Lenin All-Russian Electrotechnical Institute and its affiliated Experimental Plant was transferred from the Ministry of Education and Science of the Russian Federation to ROSATOM. These organizational changes are aimed at expanding the scope of ROSATOM's applied works by generating both orders in the industry and orders from Russian energy companies and transport organizations.

As part of the Nuclear Weapons Division development strategy, it was decided to integrate Federal State Unitary Enterprise V. I. Lenin All-Russian Electrotechnical Institute and its affiliated Experimental Plant into Federal State Unitary Enterprise Russian Federal Nuclear Centre – E. I. Zababakhin All-Russian Scientific Research Institute for Technical Physics. The reorganization will enhance the efficiency of the use of state enterprises' research capabilities and property, and contribute to the development of the manufacture of civilian industry products by enterprises of the Russian nuclear weapons complex.

In 2015, JSC Rusatom Automated Control Systems (JSC RASU) was established: its task is to develop automation technologies and improve the competitiveness of Russian systems in international and Russian markets (its founders include seven NWD enterprises).

Activity in the civilian sector

In 2015:

- Pilot operation of the Volna ('Wave') software and computing system was started at LLC Gazprom Transgaz Ukhta: it is intended for steady and unsteady simulation of natural gas transportation modes through the gas transmission company's multiline mains;
- Industrial assembly of burners under the licence of the Czech company ENKOM-PBS was organized for the in-house and third-party power facilities;
- Assembly of a line of machines of Buffalo Machinery (a leading company) under the agreement with Baltic Industrial Company was organized;
- The Berkut Monitoring Systems project was launched to establish mobile road scanner production;
- Work was started to create a modern security system at the VDNH complex in Moscow;
- A new business project titled Solution Reactors was launched: it involves creating a complex for isotope extraction for medical purposes (in particular, molybdenum-99) using a solution-type research nuclear plant for potential future distribution in foreign markets.

Performance improvement

The main objective in the reporting year was to increase the operational efficiency of the processes for the manufacturing of main products by NWD enterprises, namely to reduce the lead time and production cycles. Thus, at year-end 2015 an Industry-Wide Project 'Creation of the Flow for Manufacturing Automated Process Control System Equipment for the Belarusian NPP' implemented by FSUE Sedakov Research Institute of Measuring Systems was recognized to be the best project in the industry aimed at improving production efficiency.

3.8.2. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

- 100% fulfilment of the tasks set by the state defence order;
- Achievement of the targets and indicators stipulated by the Federal Target Programmes and commissioning of facilities that are currently at the final stage of construction;
- Generation of additional income from the use of intellectual property in economic and commercial operations.

3.9. NUCLEAR-POWERED ICEBREAKER FLEET

Russia has the world's only nuclear-powered icebreaker fleet and a long track record in the construction and operation of nuclear ships.

Russia has the world's only nuclear-powered icebreaker fleet and a long track record in the construction and operation of nuclear ships. Icebreakers equipped with nuclear power units enable the use of the Northern Sea Route and help Russia maintain a presence in the Arctic. Federal State Unitary Enterprise of the Nuclear-Powered Fleet (FSUE Atomflot) is responsible for the operation and maintenance of nuclear-powered icebreakers and auxiliary vessels.

Key results in 2015:

- 195 vessels with a total gross tonnage of over 2 million tonnes were navigated in the waters of the Northern Sea Route;
- We restored the unique and the world's only nuclear-powered LASH carrier Sevmorput, and extended its service life by at least 15 years;
- We concluded contracts with Russian shipyards to build five port vessels in order to operate them in the port of Sabetta as part of the Yamal LNG strategic gas production project.

The Nuclear-Powered Icebreaker Fleet consists of:

- two nuclear-powered icebreakers with 75,000 h.p. two-reactor nuclear power units: Yamal and 50 Let Pobedy;
- two icebreakers with a one-reactor unit with a capacity of about 50,000 h.p.: Taimyr and Vaygach;
- a nuclear-powered LASH carrier Sevmorput with a 40,000 h.p. reactor unit;
- a nuclear-powered icebreaker Sovetskiy Soyuz, which is in operational reserve;
- floating maintenance bases Imandra and Lotta;
- Serebryanka, a vessel intended for liquid RAW management and SNF transportation; Rossita, a vessel for RAW and SNF transportation; a radiation monitoring vessel Rosta-1.

Fig. Northern Sea Route

Northern Sea Route — 14,000 km

Southern Sea Route — 23,000 km

Table. Arctic projects with participation of FSUE Atomflot

No.	*Project and Operator*	*Designed capacity/year*	*Period, years*	*Project status*
1	1.1 Yamal Trade LLC, LNG tankers 1.2 Yamal LNG, Portoflot	17.6 million tonnes of LNG and gas condensate	2014–2040	contract
2	Novoportovskoye oilfield of Gazpromneft	8.5 million tonnes of crude oil	2014–2035	
3	Norilsk Nickel, village of Dudinka	1.3 million tonnes of nonferrous and precious metals	1975–2040	
4	Payakhskoye oilfield, JSC NNK	7.3 million tonnes of crude oil	2018–2030	The project is at the stage of investment feasibility analysis
5	Arctic LNG-2 (NOVATEK)	16.5 million tonnes of LNG	2022–2045	
6	Coal from the Taimyr Peninsula (Vostok-Ugol)	10 million tonnes of coal	2018–2035	

3.9.1. KEY RESULTS IN 2015

Navigation of vessels and cargo transportation in the waters of the Northern Sea Route[18] (NSR)

195 vessels were navigated in the waters of the Northern Sea Route (NSR) in 2015. The gross tonnage of the navigated vessels totalled 2,042,522 tonnes:

- during the summer and autumn navigation period, nuclear-powered icebreakers conducted 44 vessels with a total gross tonnage of 419,101 tonnes (including 15 vessels with a total gross tonnage of 103,935 tonnes navigated to implement the tasks set by the Ministry of Defence);
- 114 vessels were navigated in the waters of the Gulf of Ob to the port of Sabetta; another 18 vessels were navigated to Cape Kamenny (including 14 navigated tankers with crude oil from the Novoportovskoye oilfield);
- 19 vessels of other customers (including 7 vessels navigated to perform the tasks set by the Ministry of Defence).

Table. Volume of cargo transportation along the NSR

	2013	*2014*	*2015*
Total volume of cargo, t	1,355,897	1,659,207 (gross tonnage)	2,042,522 (gross tonnage)
Total number of runs	71 (22 in ballast)	129	195

Construction of new icebreakers

- The construction of the universal nuclear-powered flagship icebreaker (UNPI) Arktika is nearing completion (the launch is scheduled for the first half of 2016);
- The first serial UNPI Sibir is over 5% completed; keel laying was completed on May 26, 2015;
- The second serial UNPI Ural: contracts for supply of equipment and materials are being negotiated;
- A new Russian nuclear-powered super-icebreaker Lider is being designed: it will enable year-round operation in the High Arctic.

In 2015, FSUE Atomflot actively collaborated with major Russian companies:

- *Under the contract with MMC Norilsk Nickel, we worked for 125 days to transport nonferrous and precious metals;*
- *We concluded a contract with Yamal Trade LLC (a trading company of the Yamal LNG project) for navigation of LNG tankers with the assistance of icebreakers. The contract is valid until December 2040 with potential extension for up to 10 years;*
- *We signed a two-year contract with PJSC Gazprom Neft for the navigation of tankers with crude oil from the Novoportovskoye oilfield.*

[18] *Nuclear-powered icebreakers did not operate on the Baltic Sea in 2015.*

3.9.2. BUSINESS DIVERSIFICATION

In 2015, we signed contracts with Russian shipyards for the construction of vessels as part of a project to build diesel port vessels to be operated in the waters of the port of Sabetta. This will make it possible to diversify the operations of the nuclear-powered icebreaker fleet and create new jobs.

In 2015, we signed contracts with Russian shipyards for the construction of vessels as part of a project to build diesel port vessels to be operated in the waters of the port of Sabetta in the course of implementation of the Yamal LNG strategic gas production project (the Gulf of Ob). This will make it possible to diversify the operations of the nuclear-powered icebreaker fleet and create new jobs. We are planning to construct and operate three ice-class tugs, one port icebreaker, and one icebreaking tug. The tugs are being built by the following shipyards: LLC Kranship (Temryuk) and PJSC Vyborg Shipyard (Vyborg). The acceptance of the first two tugs is scheduled for April/May 2016, and construction of the port vessels is to be completed in November 2018. The contract for port vessel services with JSC Yamal LNG is valid from 2014 through 2040.

3.9.3. ENSURING NUCLEAR, RADIATION AND ENVIRONMENTAL SAFETY

In 2015, FSUE Atomflot's operating expenditures on environmental protection totalled RUB 44 million.

In 2015, separation of irradiated fuel assemblies for unrecyclable SNF was completed: spent nuclear fuel was packed in TUK-120 containers for long-term storage in the onshore repository.

We performed an unscheduled check of the radiation safety status in the course of operation of closed sources of ionizing radiation. No violations were detected.

In 2015, FSUE Atomflot's operating expenditures on environmental protection totalled RUB 44 million.

3.9.4. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

In the next three years, we are planning to put two new-generation nuclear-powered icebreakers into operation.

In the next three years, we are planning to put two new-generation nuclear-powered icebreakers into operation. In addition, we are going to implement measures and make a decision to extend the service life of the reactor units of nuclear-powered icebreakers Vaygach and Taimyr to 200,000 hours.

By the end of 2017, we plan to complete the renovation of the dock shop building to enable the repairs of the UNPI rudder-propeller unit as part of the modernization of the ship repair facilities.

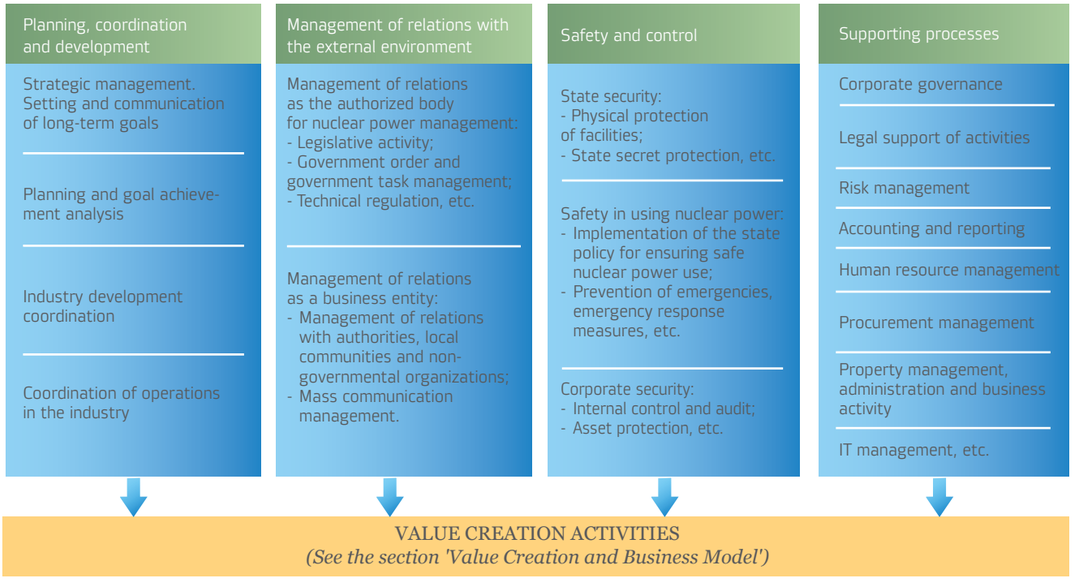
EFFICIENT MANAGEMENT

RUB **18.8** BILLION
TOTAL SAVINGS FROM INTRAGROUP FINANCING WITHIN THE INDUSTRY BETWEEN 2010 AND 2015

RUB **9.4** SAVINGS FROM THE INTRODUCTION OF RPS IN 2015 (INCLUDING RUB 2.86 BILLION FROM INTEGRATED IMPLEMENTATION AT 10 RPS ENTERPRISES)

4.1. CORPORATE GOVERNANCE

Fig. Nuclear industry management processes



ROSATOM's main task in corporate governance is to align management of organizations of the nuclear power industry and the nuclear weapon complex of the Russian Federation, and organizations operating in the area of nuclear and radiation safety, nuclear science and technology, and personnel training.

4.1.1. GOVERNING BODIES

4.1.1.1. ROSATOM's Supervisory Board

In compliance with Article 23 of Federal Law No. 317-FZ dated December 1, 2007 on State Atomic Energy Corporation Rosatom, the Supervisory Board is ROSATOM's supreme governing body. The Supervisory Board's powers are stated on *ROSATOM's official website.*

The Supervisory Board comprises nine persons, including eight representatives of the President of the Russian Federation and the Government of the Russian Federation, as well ROSATOM's Chief Executive Officer being a member of the Supervisory Board by virtue of his position.

The Supervisory Board's members and chairman are appointed by the President of the Russian Federation.

The Supervisory Board's members, except for ROSATOM's Chief Executive Officer, are not included in ROSATOM's executive management.

The Supervisory Board's members receive no remuneration for their participation in the work of the Supervisory Board.

Table. Supervisory Board structure as of December 31, 2015

Boris Gryzlov	Chairman of the Supervisory Board
Igor Borovkov	Chief of Staff of the Military Industrial Commission under the Government of the Russian Federation, Deputy Chief of the Government Staff
Larissa Brychyova	Assistant to the President of the Russian Federation, Head of the Legal Department of the Presidential Administration
Sergey Kirienko	ROSATOM's Chief Executive Officer
Andrey Klepach	Deputy Chairman (Chief Economist), Member of the Board of Vnesheconombank
Alexander Novak	Minister of Energy of the Russian Federation
Yuri Trutnev	Deputy Chairman of the Government of the Russian Federation, Representative of the President of the Russian Federation in the Far East Federal District
Yuri Ushakov	Assistant to the President of the Russian Federation
Yuri Yakovlev	Head of the Economic Security Directorate of the Federal Security Service of the Russian Federation

There were no changes in the structure of the Supervisory Board in 2015.

In 2015, the Supervisory Board held 10 meetings, including 2 face-to-face meetings, and considered 39 issues.

The Supervisory Board approved the following:

- Report on achievement of key performance targets by ROSATOM in 2014;
- ROSATOM's key performance targets for 2015;
- Key performance targets of federal nuclear organizations for 2015;
- ROSATOM's annual report for 2014.

The Supervisory Board approved amendments to ROSATOM's Long-Term Operational Programme (2009 – 2015).

ROSATOM's CEO was charged with monitoring fulfilment of instructions of the Supervisory Board and its Chairman.

4.1.1.2. ROSATOM's Chief Executive Officer

The functions and powers of the CEO are stipulated in the Federal Law on State Atomic Energy Corporation Rosatom. ROSATOM's CEO is the Corporation's sole executive body and manages its daily operations.

Subject to Decree of the President of Russia No. 1663 dated December 12, 2007 on the Chief Executive Officer of State Atomic Energy Corporation Rosatom, Sergey Kirienko was appointed to the position of CEO. *Information on the CEO's background and powers is published on ROSATOM's official website.*

4.1.1.3. ROSATOM's Management Board

The Management Board is ROSATOM's collective executive body. The Management Board includes ROSATOM's CEO being a member of the Board by virtue of his position, and other members of the Board. ROSATOM's CEO manages the activity of ROSATOM's Management Board.

The functions and powers of the Management Board are stipulated in the Federal Law on State Atomic Energy Corporation Rosatom.

Members of ROSATOM's Management Board are appointed to their positions and dismissed subject to the decision of ROSATOM's Supervisory Board as advised by the CEO. The Board members work in ROSATOM on a permanent basis and are employees of ROSATOM's organizations, companies and their subsidiaries, as well as subordinate enterprises.

Information on the background of the Management Board members and the powers of the Board is published on ROSATOM's official website.

Information about income, expenses, property and liabilities of the Management Board members, as well as of other employees of ROSATOM and their relatives can be found on ROSATOM's official website.

In 2015, Evgeny Romanov's powers as a member of the Board were terminated.

Table. Management Board structure as of December 31, 2015

Sergey Kirienko	ROSATOM's Chief Executive Officer, Chairman of the Board
Ivan Kamenskikh	First Deputy CEO for Nuclear Weapons
Alexander Lokshin	First Deputy CEO for Operations Management
Nikolay Solomon	First Deputy CEO for Corporate Functions and Chief Financial Officer
Kirill Komarov	First Deputy CEO for Corporate Development and International Business
Konstantin Denisov	Deputy CEO for Security
Tatiana Elfimova	State Secretary, Deputy CEO for Government Relations and Budgeting
Oleg Kryukov	Director for Public Policy on Radioactive Waste, Spent Nuclear Fuel and Nuclear Decommissioning
Viacheslav Pershukov	Deputy CEO for Innovation Management
Nikolay Spasskiy	Deputy CEO for International Relations
Andrey Nikipelov	Chief Executive Officer of Atomenergomash
Sergey Obozov	Director for ROSATOM Production System
Yuri Olenin	President of TVEL Fuel Company

The Management Board held 50 meetings in the reporting year, including 1 face-to-face meeting, and 49 meetings by absentee voting. The Board considered 549 issues, including key issues:

- Report on achievement of key performance targets by ROSATOM in 2014;
- ROSATOM's key performance targets for 2015.

4.1.1.4. Auditing Commission

ROSATOM's Auditing Commission monitors ROSATOM's financial and business operations.

An extract from the statement of the Auditing Commission on ROSATOM's financial and business operations in 2015 is provided in *Appendix 2.*

Table. Auditing Commission structure as of December 31, 2015

Roman Artyukhin	Head of the Federal Treasury and Chairman of the Auditing Commission
Lidiya Buzina	Deputy Director of the Department for Budget Policy of the State Military and Law Enforcement Services and the Governmental Defence Order of the Ministry of Finance of the Russian Federation
Vladimir Katrenko	Auditor of the Accounts Chamber of the Russian Federation
Andrey Rozhnov	Deputy Head of the 12th Main Department of the Ministry of Defence of the Russian Federation
Vasily Utkin	Office Head of the Department of Defence Industry of the Government of the Russian Federation

4.1.1.5. Commissions, boards, and committees under the governing bodies

In 2015, ROSATOM had 30 permanent committees, boards and commissions under the governing bodies.

ROSATOM and nuclear industry companies adhere to the key corporate governance principles stipulated by Russian legislation and the Corporate Governance Code (e.g. respect for shareholder rights, the procedure, format and scope of information disclosure), with some exceptions stemming from special characteristics of ROSATOM's business as the authorized body responsible for nuclear power management and its organizations, taking into account their legal status stipulated by Russian laws and regulations (restricted civil circulation of shares of joint-stock companies on the lists approved by the Russian President and comprising legal entities that may own nuclear materials or nuclear facilities).

Table. Key collective advisory bodies

Committee/Board/Commission	*Chairman*
Strategic Council	Sergey Kirienko, CEO
Operations Committee	Sergey Kirienko, CEO
Public Council	Sergey Kirienko, CEO
Council for Improving Operational Transparency	Sergey Kirienko, CEO
Staff and Incentives Committee	Sergey Kirienko, CEO
Investment Committee	Alexander Lokshin, First Deputy CEO for Operations Management
Budget Committee	Nikolay Solomon, First Deputy CEO for Corporate Functions and Chief Financial Officer
Committee for Restructuring Non-Core Assets, Real Estate and Equity	Nikolay Solomon, First Deputy CEO for Corporate Functions and Chief Financial Officer
Committee on Cost within International Sales	Kirill Komarov, First Deputy CEO for Corporate Development and International Business
Committee for Strategic Partnerships, Alliances, Mergers and Acquisitions	Kirill Komarov, First Deputy CEO for Corporate Development and International Business
Charity Committee	Kirill Komarov, First Deputy CEO for Corporate Development and International Business
Risk Committee	Sergey Petrov, Director for Strategic Management
Central Procurement Commission	Roman Zimonas, Director for Procurement
Central Arbitration Committee (in procurement)	Pavel Tikhomirov, Head of the Competition Policy Department
Scientific and Technical Board	Nikolay Laverov, Academician and Vice President of the Russian Academy of Sciences

4.1.2. IMPROVEMENT OF THE CORPORATE GOVERNANCE SYSTEM

Achievements in 2015:

- Further improvement of the regulation of the interaction between ROSATOM and the governing bodies of the divisions, business incubators and industry complexes (JSC Uranium One Group, JSC Isotope, LLC United Innovation Corporation), which is a major step towards the transition to the division-based model of the nuclear industry management;
- Due to the implementation of the mechanism for treasury support of budget investments allocated to legal entities according to Article 80 of the Budget Code of the Russian Federation, ROSATOM updated the model for budget financing within additional issues of securities of the nuclear industry companies receiving budget funds, taking into account the special features of the legislation of the Russian Federation;
- The decision on optimization of the operations of the Engineering Division on the basis of the single centre, JSC NIAEP, was implemented; for this purpose, the said organization was granted the powers of the sole executive body of JSC ATOMPROEKT;
- Measures were implemented to create and start trial operation of the comprehensive automated database on ROSATOM's corporate ownership structure in order to streamline corporate governance processes and promptly adopt management decisions.

4.1.3. KEY CHANGES IN THE CORPORATE STRUCTURE

- Establishment of the private institution Institute for Technical Regulation, Uniformity of Measurements and Standardization of ROSATOM (PI Atomstandart) that will provide expert support to ROSATOM in the performance of its technical regulation functions;
- Creation of the private educational institution of additional professional education 'ROSATOM's Institute for Global Nuclear Safety and Security' that will train ROSATOM's specialists in the anti-terrorism protection of nuclear industry facilities and comprehensive global security;
- Subject to the Decrees of the President of Russia, implementation of the measures for corporatization of five companies in federal ownership and their transfer to ROSATOM as an asset contribution of the Russian Federation;
- According to the Resolutions of the Government of the Russian Federation, implementation of the measures for transfer to ROSATOM of 14 companies in federal ownership, including recipients of federal budget funds in 2014, as an asset contribution of the Russian Federation;
- Attracting funds of the National Welfare Fund through the purchase by the Russian Federation of preferred shares of JSC Atomenergoprom (fully-owned subsidiary of ROSATOM);
- Subject to the Decrees of the President of Russia, ROSATOM was granted the powers of property owner in relation to Federal State Unitary Enterprise V. I. Lenin All-Russian Electrotechnical Institute and Federal State Unitary Enterprise Experimental Plant of V. I. Lenin All-Russian Electrotechnical Institute.

4.1.4. MAJOR TRANSACTIONS AND NON-ARM'S LENGTH TRANSACTIONS

In 2015, ROSATOM's Supervisory Board approved no non-arm's length transactions.

According to Federal Law No. 317-FZ dated December 1, 2007 on State Atomic Energy Corporation Rosatom, there is no such term as 'major transaction' for ROSATOM. ROSATOM's Supervisory Board established a limit on property value when transactions in such property should be approved by ROSATOM's Supervisory Board; as a result, four transactions were approved in 2015.

4.1.5. PLANS FOR 2016 AND FOR THE MEDIUM TERM

- Implementation of measures for the corporatization and reorganization of ROSATOM's federal state unitary enterprises, as well the assignment of federal nuclear organization status to a number of the enterprises;
- Inclusion of new legal entities in the scope of ROSATOM's management as part of the implementation of measures aimed at developing new business areas;
- Further improvement of the model for delivering budget funds to organizations receiving budget funds in connection with the changes introduced in early 2016 to the rules for treasury support of subsidies and contributions to authorized capitals funded from the federal budget;
- Further development and distribution in the industry of the comprehensive automated database on ROSATOM's corporate ownership structure.

4.2. RISK MANAGEMENT

NIKOLAY NIKOLAYENKO,
HEAD OF THE RISK MANAGEMENT DEPARTMENT

Risks that could have impacted ROSATOM's performance were detected in a preventive manner at the stage of planning, and the management team implemented appropriate risk management measures.

— What were the main results of the work of ROSATOM's risk management system in 2015?

— In the reporting year, ROSATOM complied with the approved risk readiness parameters both in terms of quantitative (financial) indices and parameters with zero preparedness for a breach (ensuring nuclear and radiation safety, government tasks, etc.).

Risks that could have impacted ROSATOM's performance were detected in a preventive manner at the stage of planning, and the management team implemented appropriate risk management measures.

— How is the risk management work connected with ROSATOM's strategic goals and how does it contribute to achieving them?

— The development of the corporate risk management system is aimed at integrating it within the strategic management process, which should ensure a synergistic effect. This effect is created by adding the analysis of feasibility risks associated with ROSATOM's strategic goals to the standard strategy development and monitoring processes, which enables us to perform proactive strategic management.

— Did any key risks materialize in 2015? What was done to mitigate their negative effect?

— We managed to avoid considerable negative consequences of the materialization of risks in 2015. However, ROSATOM's operations were still significantly influenced by risks of the market of nuclear fuel cycle goods and services caused by uncertainty over the timing of restart of Japanese NPPs and by potential review by a number of countries of their programmes for the development of the nuclear power industry and significant stock accumulation. The impact of those risks in the reporting year was largely mitigated by concluding long-term contracts using various pricing mechanisms. There was also the influence of the currency risk caused by the persistent high volatility of the national currency. The impact of that risk had a positive effect on ROSATOM's financial performance owing to the considerable share of export proceeds. In the reporting year, ROSATOM implemented measures to enhance currency risk manageability. For that purpose, ROSATOM expanded the powers of the divisions and simultaneously increased their responsibility for the implementation of natural and financial hedging measures.

4.2.1. RISK MANAGEMENT SYSTEM

ROSATOM has established a risk management system (RMS) for assessing risks in strategic, budget, investment and business planning processes.

In 2015:

- The corporate Risk Management Policy was updated in accordance with the Guidelines on Preparing Regulations on a Risk Management System by the Russian Federal Property Management Agency;
- The risk management function was directly subordinated to the Strategy Director of ROSATOM to integrate risk information into the strategic decision-making process in the Corporation.

Fig. Risk management process in ROSATOM

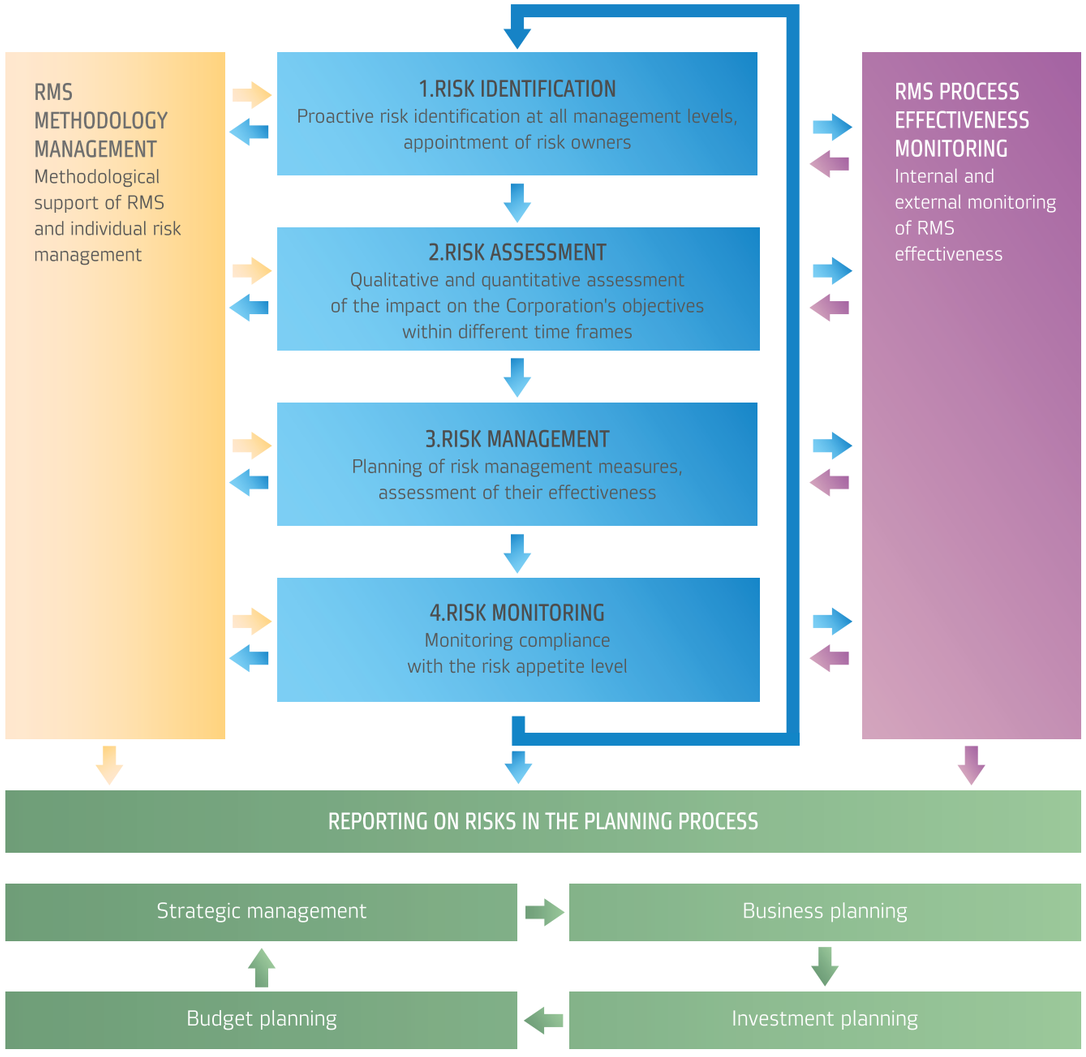
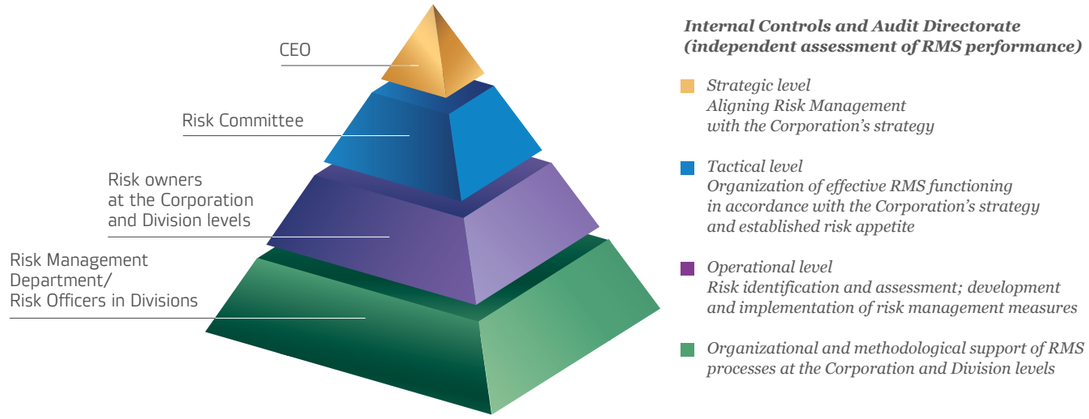


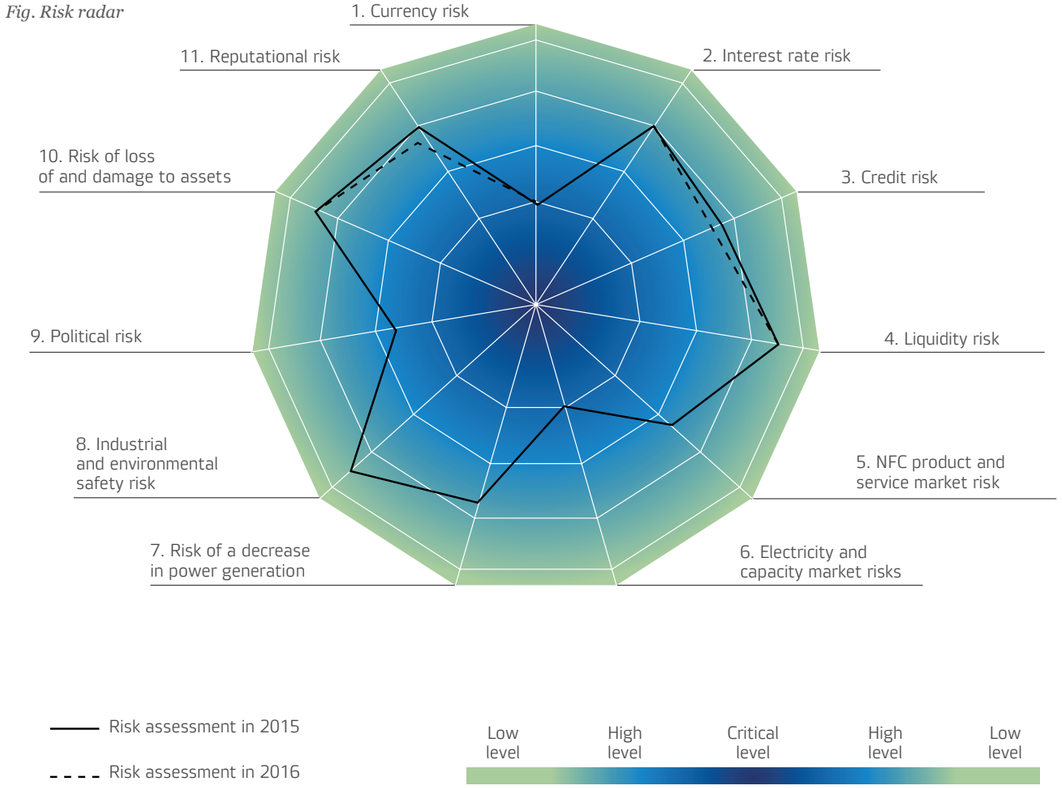
Fig. RMS organizational model in ROSATOM



4.2.2. KEY BUSINESS RISKS OF ROSATOM

As part of RMS processes, a list of critical risks and risk owners was compiled, risks were assessed, and risk management measures were developed and implemented.

Fig. Risk radar



4.2.3. RISK MANAGEMENT IN 2015

Table. ROSATOM's strategic goals:

1 *To increase the international market share*

2 *To reduce production costs and lead time*

3 *To develop new products for the Russian and international markets*

Change in estimated risk levels:

▲ — *increase;*

▼ — *decrease;*

● — *relatively unchanged*

Risks and changes in risk levels (risk owners)	*Risk description*	*Risk controls*	*Connection with strategic goals*
Financial risks			
1. Currency risk ● (Heads of Divisions of ROSATOM)	Adverse changes in exchange rates	**Management approaches:** Maintaining a balance of claims and liabilities denominated in foreign currencies (natural hedging); Use of financial hedging instruments. **Results:** Favourable ratio of assets and liabilities denominated in the same currency.	1 2 3
2. Interest rate risk ● (Treasury Department of ROSATOM)	Adverse changes in interest rates, different timing of interest income and interest expenses	**Management approaches:** Maintaining a balance of interest income and interest expenses in terms of time and amounts; Reasonable selection of interest rates (fixed or floating) for the expected maturity period. **Results:** JSC Atomenergoprom's exchange-traded bonds were listed with a total par value of RUB 30 billion, which strengthened the long-term credit portfolio. *For details, see the section 'Financial Management'.*	1 2 3
3. Credit risk ▲ (Treasury Department of ROSATOM for banks / Directors of the Corporation's organizations for other counterparties)	Failure by counterparties to fulfil their obligations in full and on time	**Management approaches:** Setting limits on counterparty banks; Use of suretyship, warranties, limitations on advance payments in favour of external counterparties; Improvement of the legal framework for the wholesale electricity and capacity market (including an increase in fines, improvement of the system of financial guarantees); Monitoring of accounts receivable. **Results:** No significant losses through the fault of counterparties. **Changes:** The risk increased due to the expected rise in the number of unpaid electricity bills stemming from low or negative growth rates of the Russian economy, and persisting volatility of the Russian financial market.	1 2
4. Liquidity risk ● (Treasury Department of ROSATOM with regard to the Corporation and JSC Atomenergoprom / Heads of divisions)	Lack of funds for fulfilment of obligations by the Corporation and its organizations	**Management approaches:** Centralized cash management; Rolling liquidity forecasts and cash flow budget; Maintaining required amounts of open lines of credit with banks; Reduction in the period of keeping free cash on bank deposits; Placement of JSC Atomenergoprom's exchange-traded bonds; Discussion of matters related to state support with the Russian federal executive authorities. **Results:** Sufficient liquidity to repay liabilities on time, preventing unacceptable losses and managing reputational risk. *For details, see the section 'Financial Management'.*	1 3
Commodity risks			
5. Nuclear fuel cycle product and service market risk ● (Heads of relevant divisions of ROSATOM)	Adverse change of the pricing environment and demand on markets for natural uranium and uranium conversion and enrichment services	**Management approaches:** Use of market-focused and escalation pricing mechanisms in contracts; Stipulating quantitative flexibility and options in contracts with suppliers. **Results:** Despite persisting stagnation of demand and price on the NFC product and service markets, a 10-year portfolio of overseas orders was secured for USD 33.4 billion. *For details, see the section 'International Business' and 2015 annual reports of JSC TENEX and JSC TVEL.*	1 2
6. Electricity and capacity market risks ● (CEO of JSC Rosenergoatom Concern)	Adverse changes in electricity and capacity prices	**Management approaches:** Limited possibilities to manage this risk: poor liquidity of trading platforms makes it difficult to use financial derivatives as a means for mitigating this risk. *For details, see the 2015 annual report of JSC Rosenergoatom Concern.*	1
Operational risks			
7. Risk of a decrease in power generation ● (CEO of JSC Rosenergoatom Concern)	Decrease in power generation due to equipment shutdowns and unavailability	**Management approaches:** Scheduled preventive maintenance and repairs at NPPs; Implementation of the NPP life extension programme and the programme to increase power generation (including the possibility of power units operating at above nameplate capacity). **Results:** Performance against FTS targets for the minimum annual power output totalled 103.2%. Actual power output totalled 195.2 billion kWh, up by 8.1% YoY; The process disruption rate in NPP operations decreased by 20% YoY. *For details, see the section 'Power Engineering Division' and the 2015 annual report of JSC Rosenergoatom Concern.*	1

Risks and changes in risk levels (risk owners)	*Risk description*	*Risk controls*	*Connection with strategic goals*
8. Industrial and environmental safety risk ● (Heads of divisions of ROSATOM)	Major accidents/ incidents at nuclear enterprises	**Management approaches:** Provision of an up-to-date legal framework; Ensuring technical safety of nuclear facilities; Maintaining a high level of professionalism and safety culture among employees. **Results: w** Safe operation of nuclear facilities and hazardous industrial facilities. There were no events rated at level 2 or higher on the international INES scale and no emergencies at hazardous industrial facilities. *For details, see the section 'Nuclear and Radiation Safety'.*	1 3
9. Political risk ● (International Cooperation Department of ROSATOM)	Changes to the regulatory and political climate in foreign countries imposing restrictions on the operations of the Corporation and its organizations	**Key risk factors in the reporting year:** Some countries attempted to use international platforms to amend the existing and draft international nuclear standards and guidelines, which could negatively affect the Russian nuclear industry; Regulators in partner countries tightened their policies on assessing the safety of NPPs under construction and in operation; Some countries may impose bans on supplying high-tech equipment to Russian nuclear organizations for political reasons. **Management approaches:** Cooperation with the Russian Ministry of Foreign Affairs and other authorities; Political support for global operations of nuclear organizations; Using the platform of specialized international organizations; Awareness-raising activities conducted worldwide. **Results:** As of December 31, 2015, the 10-year portfolio of overseas orders totalled USD 110.3 billion, up by 8.8% YoY. The Corporation concluded 8 intergovernmental agreements and 16 interdepartmental agreements, which is a positive trend. *For details, see the sections 'International Cooperation' and 'International Business'.*	1 2 3
10. Risk of loss of and damage to assets ● (Asset Protection Department of ROSATOM)	Corruption and other infringements of law leading to the damage to/ loss of assets	**Management approach:** The Company utilizes an integrated industry-wide anti-corruption and asset protection system. **Results:** Preventive measures and inspections aimed at protecting assets in the sector helped save RUB 5.7 billion in the reporting year. *For details, see the section 'System for Countering Corruption and Other Legal Offences'.*	1 2

Risks and changes in risk levels (risk owners)	*Risk description*	*Risk controls*	*Connection with strategic goals*
11. Reputational risk ▲ (Communications Department of ROSATOM and Heads of divisions)	Changes in stakeholder perception of the trustworthiness and appeal of the Corporation and its organizations	**Management approach:** Measures were taken to shape a positive public opinion on nuclear technologies through improved informational transparency and open and constructive stakeholder engagement. **Results:** 75.5% of the population in early 2016 were in support of the use of nuclear power in Russia, according to a survey by Levada-Centre. **Changes:** The risk increased due to the 2016 Russian State Duma election campaign, with some candidates exploiting the theme of radiophobia for political purposes. *For details, see the section 'Stakeholder Engagement'.*	1 3

4.2.4. RISK INSURANCE

Risk insurance is one of the main risk management strategies employed by ROSATOM. To improve the reliability of its insurance coverage, in 2015 the Corporation, jointly with the insurance community, continued to make efforts to reinsure property risks of Russian organizations in the international pooling system. A significant share of liability of Russian NPPs for potential nuclear damage was transferred for reinsurance to the international pooling system, which proves that the international nuclear insurance community acknowledges the safety and reliability of Russian NPPs.

Key organizations of the industry will continue to be audited for insurance purposes in 2016.

4.2.5. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

To further develop its risk management system, ROSATOM intends to:

- Strengthen the functional risk management hierarchy in the Divisions;
- Ensure compliance with strategic controls requirements[19] of the Russian Accounts Chamber.

[19] *Federal Law No. 41-FZ on the Accounts Chamber of the Russian Federation of November 4, 2014 .*

4.3. INTERNAL CONTROL SYSTEM

Key results in 2015:

- A 100% score on the Internal Control and Internal Audit ranking (Financial Management Quality Monitoring) was assigned by the Russian Ministry of Finance;
- 554 inspections in 144 organizations of the industry were carried out; 13 inspections were conducted by external regulatory authorities, including 5 inspections by the Russian Accounts Chamber; no instances of misuse or illegal use of budgetary funds and assets were detected.

4.3.1. OVERVIEW OF THE INTERNAL CONTROL SYSTEM

The internal control system in ROSATOM and its organizations is based on:

- The COSO model (The Committee of Sponsoring Organizations of the Treadway Commission);
- The IAEA requirements;
- Guidelines for Internal Control Standards for the Public Sector by the International Organization of Supreme Audit Institutions (INTOSAI);
- Russian laws and regulations.

The aim of the internal control and audit system (ICAS) is to secure the achievement of strategic goals and ensure corporate governance efficiency at ROSATOM. The Corporation has in place special internal control bodies (SICB) which perform independent internal audit and inspections.

4.3.2. DEVELOPMENT OF THE INTERNAL CONTROL SYSTEM

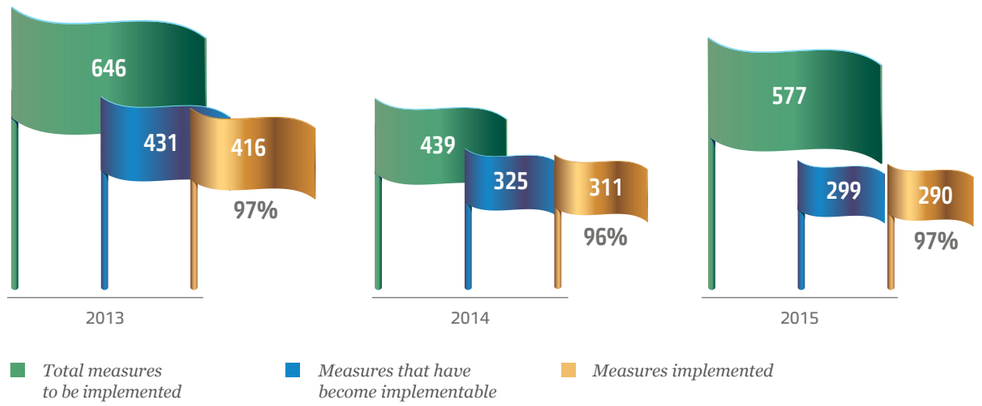
In 2015, the ICAS was supplemented with the following risk mitigation mechanisms:

- Asset impairment monitoring in the organizations within the scope of consolidation of ROSATOM;
- Monitoring of investment and project activities (KPIs of managers and responsibility matrices, real-time project monitoring);
- Monitoring of semi-fixed costs;
- Ban on arrears on inter-company debts within the industry and on exceeding projected expenses;
- Introduction of a standardized procedure for determining and imposing sanctions against employees of ROSATOM's organizations for violating compliance standards.

See the section 'Risk Management'.

The industry-wide hierarchy of specialized internal control bodies comprises 293 employees in 54 organizations of the industry.

Fig. Implementation of corrective measures based on the audit results of the ICAS



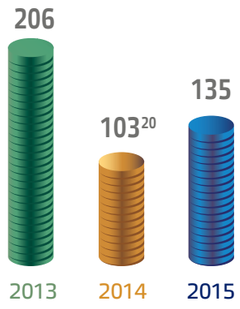
4.3.3. CONDUCTING AUDITS AND IMPLEMENTING CORRECTIVE MEASURES

In 2015, we enhanced the efficiency and effectiveness of corrective measures based on the results of the audit checks through the introduction of a process to review and approve (according to the principles of SMART) corrective action plans developed by the audited organizations.

To implement recommendations of ROSATOM's Auditing Commission, in 2015 internal control over the placement of spare cash was enhanced through the establishment of a special function.

4.3.4. STAKEHOLDER CONTROL

Fig. Direct savings from decisions of arbitration committees, RUB million.



In 2015, the Central Arbitration Committee of ROSATOM and arbitration committees of the Power Engineering and Fuel Divisions considered 657 applications of suppliers containing signs of violations of the Uniform Industrial Procurement Standard. Among them, 252 applications (38%) were recognized as substantiated.

As a result of the activity by arbitration committees of ROSATOM and its organizations, savings of RUB 135 million were achieved during the reporting year.

See the section 'Procurement Management'.

4.3.5. OBJECTIVES FOR 2016 AND FOR THE MEDIUM TERM

- Further development of internal control in processes of strategic risk management, management of international and new businesses;
- Implementation of the programme of internal audit guarantees;
- Further work to enhance the effectiveness of the control and audit activities;
- Development of stakeholder control in terms of the implementation of the business reputation ranking system for nuclear industry suppliers (the supplier's experience in the fulfilment of contractual obligations will be assessed).

[20] Incl. RUB 4 million included by decisions taken by the Procurement Commissions in 2015 pursuant to the decisions taken by arbitration committees in 2014.

4.4. FINANCIAL AND INVESTMENT MANAGEMENT

4.4.1. FINANCIAL MANAGEMENT

Key results in 2015:

- Four issues of exchange-traded bonds of JSC Atomenergoprom with a total par value of RUB 30 billion were placed and were purchased by Russian private pension funds;
- A total of about RUB 18.8 billion was saved through intragroup financing within the industry between 2010 and 2015.

4.4.1.1. Implementation of ROSATOM's financial strategy

ROSATOM's financial strategy until 2020 is an integral part of the Corporation's development strategy. Given the scale of ROSATOM's business, its impact on Russia's GDP, social obligations, global image and competitiveness, the Corporation's management attaches great significance to financial solvency of nuclear organizations, which becomes even more crucial in a changing environment. This financial strategy is based on the principles of economic efficiency and financial stability, which involves raising funds under the most favourable market conditions. Another purpose of this financial strategy is to manage financial risks.

Underinvestment and securing adequate liquidity at a reasonable price in a turbulent financial environment were the main challenges of 2015. If the cost of borrowing increases, the best strategy is to centralize the borrowing function. Therefore, in 2015 the Corporation continued to make efforts to centralize treasury functions and optimize the consolidated debt portfolio of organizations within the industry.

4.4.1.2. Treasury transactions

To improve the performance of treasury functions, in 2015 the Corporation continued to make efforts in the following areas:

- Accumulation of spare cash on the accounts of pool leaders[21];
- Improvement of accuracy of payment scheduling (a rolling liquidity forecast);
- Ensuring competitiveness of the cost of servicing of the consolidated debt portfolio;
- Centralization of treasury transactions.

The established structure of treasuries makes it possible to control 100% of the funds of ROSATOM and its organizations. Between 2010 and 2015, savings from intragroup financing within the industry totalled about RUB 18.8 billion.

[21] A pool leader means an organization of the Corporation, on whose accounts spare cash is accumulated and subsequently redistributed between the Corporation's organizations through loan agreements. A pool leader is appointed under the resolution of ROSATOM's executive bodies.

4.4.1.3. Obtaining loans, issuing bonds and maintaining credit ratings

In 2015, ROSATOM's credit portfolio remained at the level reached in 2014, even taking into account the devaluation of the rouble.

In 2015, the Corporation continued to make efforts to boost the investment appeal of the Russian nuclear industry and engage strategic investors in NPP construction projects in Russia and abroad:

- *On-site visits to the operational Leningrad NPP and the construction site of Leningrad NPP-2 were organized throughout 2015, and were attended by representatives of Russian and foreign banks;*
- *A round-table conference on financing NPP construction projects was held in June as part of the ATOMEXPO 2015 international forum.*

In 2015, a deal was closed to raise a syndicated loan for JSC TENEX totalling USD 300 million over a period of three years from a pool of foreign banks, with JSC Atomenergoprom[22] acting as a guarantor.

In July 2015, the placement of series BO-05 exchange-traded bonds of JSC Atomenergoprom with a par value of RUB 10 billion and series BO-06 exchange-traded bonds with a par value of RUB 5 billion was completed; the bonds have a 10-year maturity term. The terms and conditions of the placement provide for a five-year put option and a two-year call option. The coupon rate was set at 11.9% per annum.

In December 2015, JSC Atomenergoprom bought out series BO-05 exchange-traded bonds and redeemed them before their maturity date. Simultaneously, JSC Atomenergoprom placed two issues of series BO-07 and series BO-08 exchange-traded bonds with a total par value of RUB 15 billion and a 10-year maturity term. The issue of series BO-07 bonds has a seven-year put option and a 4.5-year call option. The issue of series BO-08 bonds has a 5.5-year call option. The coupon rate on these bonds was set at 11.1% per annum.

Additionally, JSC Atomenergoprom raised five-year loans in US dollars and euros, which, along with the exchange-traded bonds, allowed it to extend the average term of the credit portfolio of ROSATOM's group of companies.

In the reporting year, JSC Atomenergoprom continued to work on maintaining its credit ratings assigned by international rating agencies. Each Big Three rating agency (Standard & Poor's, Fitch Ratings, Moody's Investors Service) rated the Company at the level of Russia's sovereign credit ratings: BB+/BBB-/Ba1.

[22] *JSC Atomenergoprom consolidates civilian assets in the Russian nuclear industry; 100% of its voting shares are held by ROSAtOM (http://atomenergoprom.ru/).*

4.4.1.4. Goals for 2015 and medium-term goals

Facing the risk of increasing debt burden as a result of external influences, the Company will:

- Ensure a consistent payment discipline for intragroup financing;
- Improve the accuracy of medium-term cash flow planning;
- Prevent internal competition for credit resources between organizations;
- Continue to centralize cash management;
- Focus on maintaining relations with supporting banks as the most reliable partners providing accessible funds in terms of both volumes and cost;
- Fulfil all of its obligations, including covenants, to current lenders (including for a syndicated loan) and rating agencies.

The Company may also expand the pool of its financing instruments (provided this is economically feasible and market conditions are favourable) in order to reduce the cost of debt service and ensure timely and full financing of the industry organizations' investment programme on acceptable terms.

In 2015, JSC AtomCapital (a wholly-owned subsidiary of ROSATOM acting as a pool leader in FSUE intragroup financing) enabled an optimal debt burden distribution between JSC Atomenergoprom and organizations outside of its scope.

4.4.2. INVESTMENT MANAGEMENT

EKATERINA LYAKHOVA,
DIRECTOR FOR INVESTMENT MANAGEMENT AND OPERATIONAL EXCELLENCE

— What are the main results of the implementation of ROSATOM's investment programme in 2015?

— Out of the entire range of financial and economic results, investment portfolio return has traditionally been the key indicator for any investor. Given the challenging economic situation, we planned that the minimum acceptable return on our portfolio would be 12%. Below this level there is a risk of decumulation of ROSATOM's own assets at the strategy horizon because the cost of raising investment capital becomes higher than its return. However, despite all difficulties, the actual return increased to 16.8%. That was the result of both external factors, primarily the growth in the exchange rate, and internal factors, such as the optimization of the budgets of the investment projects using the technical and economic analysis method introduced in 2014 and the launch of new highly efficient projects.

It should be noted that we are continuing to improve the performance of our investment programme. Over the last few years, the trend has been as follows: 77% in 2013, 82% in 2014, and 83% in 2015. In addition, in 2015 we maintained the declared results or achieved savings on over 70% of the investment projects transferred to the next period. This is a good result.

What else should be mentioned that is not so obvious? We have been systematically reducing investment in cost-intensive initiatives and portfolio projects with no investment benefit: we cut them by 25% YoY in the investment amount in 2014, and by a further 8% YoY in 2015.

Another important result for us is that in 2015, as part of the optimization procedures implemented on a yearly basis, we managed to reduce the budgets of the portfolio projects by over RUB 3 billion. This is a very good result considering that this work is performed regularly and every budget of a project is required to pass a detailed review and be justified before its approval.

— What investment projects turned out to be most successful in the reporting year?

— I would name three completely different projects as examples.

The first one is the project that will enable us to strategically maintain the competitiveness of our enrichment technology in the world nuclear fuel cycle market. We are shifting to new highly efficient generation 9 and 9+ gas centrifuge systems.

Alongside the modern enrichment or NPP construction technologies, we always place great focus on safety issues. This is another example. Thus, in 2015 we built a 'dry' storage of spent nuclear fuel (SNF) of RBMK-100 and VVER-1000 reactors. This will make it possible to partly unload the on-site spent fuel storehouses at NPPs and thus increase the storage reliability.

The third example is the gradual diversification of our activities and sustainability improvement. The project aims to organize a port fleet in the Arctic zone of the Russian Federation, in the Yamalo-Nenets Autonomous District. The fleet comprises five diesel vessels – a port icebreaker, an ice-breaking tug, and three port ice-class tugs. Besides the fulfilment of the strategically important task to increase Russia's presence in the Arctic, this project also strengthens Russia's position as a gas exporter and creates conditions for increasing Russia's share in the rapidly growing liquefied natural gas market.

— In what projects does ROSATOM plan to attract foreign investments in the medium term?

— For us, attraction of foreign investment is often the result of gaining the trust of foreign partners around our internationally recognized high-tech solution. An example of this is the upgrading of the technology for removal of tritium from liquid radioactive waste. We are implementing it together with our Japanese colleagues for the needs of the Fukushima-1 NPP. Our partners provide the majority of the funding for the project.

The second example of our cooperation is the project with AREVA. This is a good example of how it is possible to compete for leading positions in the seemingly mature world energy market. The project aims to construct a 'dry conversion' facility that will enable us to provide services for processing regenerated uranium by direct enrichment.

In addition to projects of this type, we are also striving to implement co-investment schemes with our Russian partners. By 2019, together with PJSC Rostelecom we are planning to create a data processing and storage centre (DPC) at JSC Rosenergoatom Concern. This DPC will be the largest data centre in Russia and one of the largest ones in Europe with a capacity of 80 MVA. In the future, we will potentially be able to enter the external market of DPC services.

4.4.2.1. Key approaches to investment management

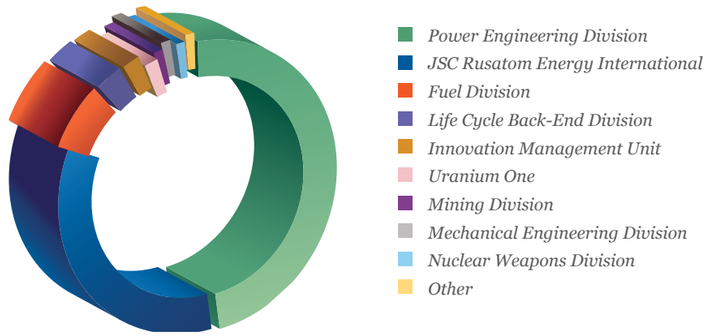
- Collective decision-making on investments by the governing bodies of ROSATOM and its organizations (the level of investment decision-making is determined by the strategic importance of a project);
- Incorporation of opinions of experts independent from the project initiator to improve the efficiency of investment decisions;
- Building the Corporation's project portfolio as a set of projects of all the organizations within the industry for a year and for the medium term based on available investment resources and the required rate of return on investment;
- Decision-making on key milestones and monitoring of projects important to ROSATOM at the level of the Corporation;
- Monitoring of deviations from project implementation plans in the organizations in the industry at the level of the Corporation;
- Use of a phase-gate approach to project implementation;
- Comprehensive audit, which helps formulate recommendations on how to improve planning and implementation of investment projects;
- Development of measures to raise financing as an alternative to the use of ROSATOM's own funds.

Table. Key investment projects of ROSATOM

Beloyarsk NPP, power unit No. 4 *(see the section 'Innovative Development')*
Novovoronezh NPP, power units No. 5, 6 (see the annual report of JSC NIAEP)
Leningrad NPP-2, power units No. 1, 2 *(see the annual report of JSC NIAEP)*
Kursk NPP-2, power units No. 1, 2, at the design stage *(see the annual report of JSC NIAEP)*
Rostov NPP, power units No. 3, 4 *(see the annual report of JSC NIAEP)*
Construction of a dry storage facility for irradiated nuclear fuel from RBMK-1000 and VVER-1000 reactors *(see the section 'RAW and SNF Management and Decommissioning of Facilities Posing Nuclear and Radiation Hazards')*
Modernization of separation facilities at JSC UEIP *(see the annual report of JSC TVEL)*
Expansion of capacities for commercial development of uranium deposits at JSC Khiagda *(see the annual report of JSC Atomredmetzoloto)*
Development of Uranium One *(see the section 'International Business')*
Development of the Pavlovskoye lead and zinc deposit *(see the annual report of JSC Atomredmetzoloto)*
Construction of port vessels to be operated in the port of Sabetta for OJSC Yamal LNG *(see the section 'Nuclear-Powered Icebreaker Fleet')*
Development of a pilot and demonstration energy facility as part of the Proryv project *(see the section 'Innovative Development')*
Construction of a multipurpose fast neutron research reactor *(see the section 'Innovative Development')*
Start of pilot production of microsources for brachytherapy to treat cancer *(see the section 'Innovative Development')*
Construction of a pilot and demonstration facility for spent nuclear fuel recycling based on innovative technologies *(see the section 'RAW and SNF management and Decommissioning of Facilities Posing Nuclear and Radiation Hazards')*
Establishment of a Nuclear Medicine Centre with a research unit (module) in the Primorsky Territory *(see the section 'Business Diversification')*
Establishment of a pilot nuclear medicine centre in the Urals region *(see the section 'Business Diversification')*
Establishment of a pilot nuclear medicine centre on the basis of JSC National Technical Physics and Automation Research Institute *(see the section 'Business Diversification')*
Establishment of a centre for equipment manufacturing for small-scale power generation *(see the section 'Business Diversification')*
Development and start of manufacture of equipment for geophysical surveys for OJSC Rosneft *(see the section 'Business Diversification')*
Start of manufacture of products for NPPs and the gas and petrochemical industry *(see the annual report of JSC Atomenergomash)*

4.4.2.2. Results in 2015

Fig. Investments by core division/complex in 2015[22]



In 2015, ROSATOM's Investment Management Department won a prize in the category 'Project Management Systems in State-Owned Companies, State-Owned Corporations and Development Institutes' in the Project Olympus contest held by the Analytical Centre for the Government of the Russian Federation.

[23] *Investments (actual financing including VAT) in civilian projects from all sources, excluding intragroup turnovers within ROSATOM's network, across consolidated organizations in accordance with the scope of the budget as of December 31, 2015.*

Measures to improve investment efficiency

- Project optimization based on feasibility analysis and implemented industry-wide in 2015 helped reduce the budget of 73 projects by over RUB 3 billion;
- Approval of product strategies for new businesses in 2015 enabled the Corporation to fund 18 projects aimed at diversifying ROSATOM's product range;
- Starting from 2015, ROSATOM performs maturity rating of investment and project activities in the industry, which provides for a systematic approach aimed at improving competencies of project team members, including by sharing information on best practices;
- The industry-wide knowledge management system is now extensively used as a communication platform for the participants of investment and project activities: 150 new users joined the community in the reporting year;
- A project to develop an industry-wide automated system for managing the Corporation's project portfolio was initiated; in 2016, its implementation will help improve the performance of employees in investment departments and members of project teams, improve transparency and make it possible to assign personal responsibility;
- ROSATOM's project management system was issued with a certificate of conformity with the national and international standards of the Project Management series.

4.4.2.3. Challenges of the reporting period and short- and medium-term mitigation measures

Challenge	*Mitigation measures*
Underinvestment (higher cost of credit resources, restrictions on raising funds on the global market), which limits the Corporation's ability to build an investment project portfolio, forcing it instead to give priority to financing its liabilities	Making timely decisions to abandon or suspend a number of projects; Optimizing project budgets using technological and price analysis.
Processing of large amounts of information, time-consuming procedures	Switchover to a more flexible automated project portfolio management system adjusted to the needs of industry managers, integrated with the previously implemented corporate information systems; Development of a system for delegation of powers and responsibility.
Inadequate justification of the need for investments	Standardized requirements for project management, supporting materials, material quality control procedures; Improvement of the project examination institution; Improvement of the industry-wide knowledge base on investment projects; Development of competences of project team members.
Major changes in the external environment (macro parameters)	Development of measures to improve investment efficiency: Search for new projects and technological and design solutions for ongoing projects to optimize investment expenditures; Improvement of accuracy of investment and project planning; Stricter control over the intended use of funds; Abandoning ineffective projects; Improvement of the risk management system.

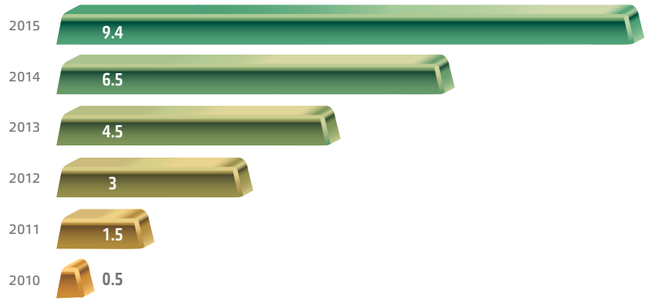
4.5. ROSATOM'S PRODUCTION SYSTEM

Key results in 2015:

- **Savings from the introduction of RPS totalled RUB 9.4 billion (including RUB 2.86 billion from integrated implementation at 10 RPS enterprises);**
- **Seven enterprises of ROSATOM were given the status of RPS Leader, and 13 enterprises gained the Candidate status;**
- **Eight Process Factories were established, where over 3,600 people underwent training.**

ROSATOM's Production System (RPS) is a lean manufacturing culture and a continuous process improvement system providing ROSATOM with competitive advantage on a global level. RPS is intended to boost labour productivity, reduce production cost and improve the quality of ROSATOM's products. The knowledge of RPS tools and the ability to use them are a necessary prerequisite for professional development and career advancement of employees in the nuclear industry.

Fig. Savings from the introduction of RPS, RUB billion



4.5.1. RESULTS IN 2015

RPS Enterprises

The key task of the reporting year was to concentrate efforts and resources on a limited number of ROSATOM's enterprises for the RPS integrated deployment in manufacturing and business processes in order to maximize operating performance. In 2015, we selected 10 RPS enterprises on the basis of their importance in the formation of ROSATOM's main product line and their involvement in the RPS: JSC KGIW, PJSC MSZ, JSC UEIP, Smolensk NPP, Balakovo NPP, JSC CKBM, JSC Afrikantov OKBM, Federal State Unitary Enterprise Start Production Association, JSC IRM, and LLC RosSEM Trust.

We identified 25 product flows[24] at those enterprises, where six integrated teams comprising 36 RPS industry consultants and 340 members of working groups from among the line personnel of the industry enterprises worked.

[24] A flow means a production flow for a core product with a high performance and characteristic RPS tools used in it. An operational analysis system is used for these flows: it is a pull system that involves tackling issues one by one.

The RPS deployment strategy for the selected enterprises involved building the infrastructure and creating the culture of lean manufacturing, and was focused on the following areas:

- mass training in the use of RPS tools for the senior management and participants of projects (6,634 people were trained in 2015, including all top-level managers; eight training exercises on lean manufacturing tools were developed);
- decomposition of ROSATOM's goals to each area supervisor in understandable physical units;
- optimization of production and business processes through the initiation of RPS projects aimed at reducing the lead time, increasing labour productivity, reducing production cost and inventories (the lead time has decreased to 57%, and the amount of work-in-process has decreased to 60% across 25 flows);
- development of incentive programmes for participants of RPS projects.

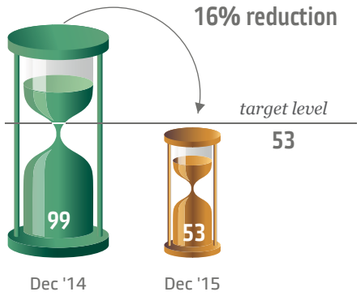
In 2015, the total savings from the integrated deployment at 10 RPS enterprises amounted to RUB 2.86 billion. These enterprises also actively implemented proposals for improvements. During the year, the enterprises submitted over 39,000 proposals, more than 22,000 of which were implemented.

For details on the RPS deployment at the industry enterprises, see the annual reports of ROSATOM's divisions (JSC Atomredmetzoloto, JSC TVEL, JSC Atomenergomash, JSC NIAEP, and JSC Rosenergoatom Concern).

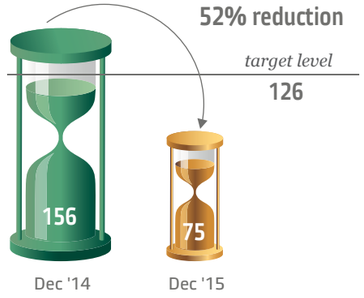
In terms of the decrease in the lead time:

Fig. Main results of RPS integrated deployment at enterprises that obtained the RPS Leader status in 2015

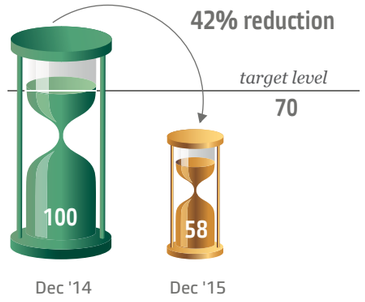
JSC Afrikantov OKBM. Production of a reactor control and safety system. Lead time, days



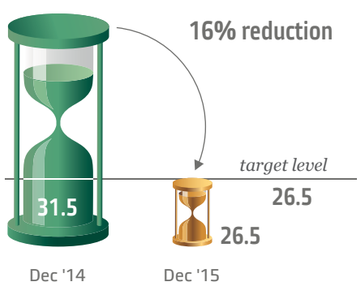
FSUE Start Production Association. Production of an accelerometer. Lead time, days



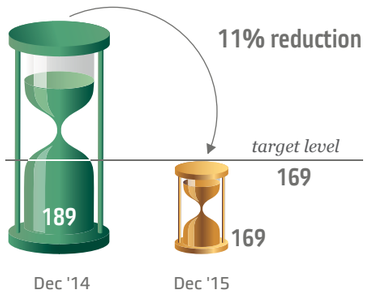
UEIP. Enrichment of uranium products. Lead time, days



MSZ. Production of a fuel assembly. Lead time, days



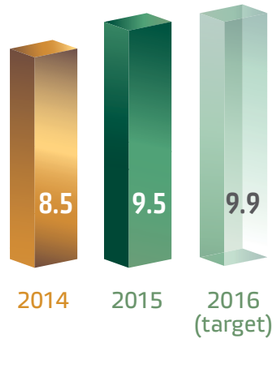
PJSC KGIW.. Production of a gas centrifuge. Lead time, days



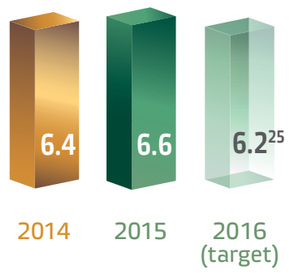
In 2015, JSC Afrikantov OKBM achieved good progress in reducing inventories. RPS projects were initiated that made it possible to decrease the amount of work-in-process in the production of steam generators from 10,000 to 7,000 components, which is equivalent to RUB 6 million in monetary terms. Inventories decreased from 1,042 to 821 pieces due to the optimization of the assembly, testing and manufacture of reinforcement components. Measures implemented by the Company made it possible to increase the production of finished goods in pilot shops compared to the previous periods. The sale of additional products boosted revenue by RUB 208.5 million. Inventories for assembly and manufacture of pumps decreased by a factor of almost 2.5, from 3,597 pieces to 1,480 pieces, which increased the revenue by RUB 616.2 million.

Fig. Labour productivity, million kWh/person

Smolensk NPP



Balakovo NPP



In terms of the increase in labour productivity:

Smolensk NPP

Through the use of RPS tools we reduced the duration of repairs of power units No. 1, 2, and 3 by 16%, which enabled the additional generation of 145.6 million kWh. The savings totalled RUB 41.9 million.

Balakovo NPP

Power unit No. 2: a reduction in the repair time by 15 days enabled additional generation of 327.3 million kWh and savings totalling RUB 345.97 million.

Power unit No. 3 (a project started in 2014): a reduction in the repair time by 6.5 days enabled additional generation of 158.1 million kWh and savings totalling RUB 147 million.

Process Factories

In order to engage employees of other enterprises in the implementation of RPS projects, we organized eight Process Factories (at PJSC KGIW, ROSATOM Corporate Academy, PJSC MSZ, JSC UEIP (2 processes), JSC CMP, JSC NIAEP, and CJSC Greenatom). A Process Factory is an educational platform for practical training in RPS principles and tools. Training sessions organized at a process factory help to change the thinking and attitude of employees towards lean manufacturing. In 2015, over 3,600 people received training at the Process Factories.

4.5.2. OBJECTIVES FOR 2016

In 2016, we will continue to deploy ROSATOM RPS at our RPS enterprises. Ten more enterprises announced their plans for RPS integrated deployment in 2016.

[25] *The target was lowered because of the electricity generation decrease due to repairs at the RBMK reactors.*

4.6. PROCUREMENT MANAGEMENT

ROMAN ZIMONAS,
DIRECTOR FOR PROCUREMENT,
DIRECTOR OF THE DEPARTMENT FOR PROCUREMENT METHODOLOGY AND ORGANIZATION

Key results in 2015:

- Overall savings from competitive procurement procedures (using ROSATOM's own funds and federal budget funds) totalled RUB 27.33 billion;
- The share of electronic procurement totalled 99%;
- The share of contracts signed based on the results of purchases from small and medium-sized businesses amounted to 56.4%; the value of the contracts concluded totalled RUB 28.2 billion.

– In 2015, ROSATOM began to introduce category strategies in procurement activities. What is the idea of category strategies and what results do you plan to achieve with this?

– Category management is an integral part of the logistics support system, and allows us to make wise purchasing decisions. The idea is to increase the power of demand by standardizing technical requirements for products to be purchased and combining the demand for the range of products to be purchased, and also to reduce the power of supply through expanded competition.

Establishing centralized categories and centralized procurement is a key development area for category management. By combining the demand from several organizations, this approach makes it possible to purchase products at a single price that is the most favourable on the market. Centralized procurement enables customer organizations to reduce working hours for preparing and conducting procurement procedures and enables even enterprises with relatively small needs to conclude contracts at the best prices.

In 2015, category management was introduced in 55 of ROSATOM's organizations; the amount of purchases made according to the approved category strategies totalled RUB 320 billion, with additional savings totalling RUB 9.4 billion. In 2016, the scope of organizations implementing category management has been expanded and now comprises 73 companies; we plan to develop category strategies worth over RUB 521 billion. The centralization process will cover over 14 product groups, including machinery and equipment, vehicles, metals, tools, clothing, cleaning services, business trip organization services, etc. We expect that in 2016 the centralization process will comprise purchases of products worth about RUB 42 billion.

– ROSATOM is working hard to provide access for small and medium-sized enterprises (SMEs) to procurement procedures and to increase the SME share in the total purchases in the industry. What difficulties are there in this process?

– At present, there are no significant difficulties in expanding access to procurement procedures for small and medium-sized enterprises, which is proved by the results of 2015. There are some aspects that need to be continuously monitored and adjusted. Sectoral mechanisms to manage this process will of course require improvement, and this is therefore an area where there is potential for development. We have already done a great deal to facilitate the access of SMEs to the industry procurement system. However, we need to constantly improve transparency, develop e-procurement functions and mechanisms in order to create a favourable environment for cooperation, and reduce the time required to purchase products from SMEs.

Managing the list of products purchased exclusively from SMEs is a challenging task. To maintain a balance between the interests of the industry and those of SMEs, we sometimes introduce changes to the conditions of using the list of such products and to the product range. Changes are made on a selective basis and do not affect the achievement of targets for purchases from SMEs set by the Russian Government.

In 2015, all employees of ROSATOM's Contract Service completed training on how to apply Federal Law No. 44-FZ on the Contract System in the Procurement of Goods, Works, and Services for Federal and Municipal Needs.

The Uniform Industrial Procurement Standard (Regulations on Procurement) is the basic document regulating the procurement activities of ROSATOM and organizations of the industry.

Management and supervisory bodies:

- Central Procurement Commission,
- Permanent procurement commissions of the divisions,
- Central Arbitration Committee of ROSATOM and arbitration committees of the divisions,
- Chief Controller.

Official procurement website: www.zakupki.rosatom.ru.

4.6.1. IMPLEMENTATION OF THE ANNUAL PROCUREMENT PROGRAMME

Table. Amount of competitive purchases and achieved efficiency[26], RUB billion.

	2013	2014	2015
Total amount of open competitive placement of procurement orders, including:	509.50	557.4	643.59
using ROSATOM's own funds	379.00	432	622.4
using federal budget funds	130.5	125.4	21.19
Total savings, including:	22.0 (6.2%)	19.5 (5.3%)	27.33 (4.8%)
savings from competitive procurement procedures using ROSATOM's own funds	20.3 (6.7%)	17.1 (6.9%)	26.4 (4.8%)
savings from order placement using federal budget funds	1.7 (3.4%)	2.4 (2.0%)	0.93 (5.3%)

ROSATOM was awarded in the 2015 National Procurement Transparency Rating. The Corporation won in the 'Guaranteed Transparency' category according to the annual survey of the National Association of E-Commerce Participants.

ROSATOM's CEO Sergey Kirienko became the winner in the category 'For Contribution to the Development of Competitive Procurement Regulation'.

[26] *Efficiency of competitive purchases in 2015 is the difference between the set initial maximum purchase price and the purchase price obtained as a result of competitive procurement procedures. Only actual procurement procedures were taken into account.*

In accordance with the Annual Procurement Programme for 2015, 34,896 competitive purchases totalling RUB 622.4 billion were made using own funds of ROSATOM and its organizations. Savings totalled RUB 26.4 billion (4.8% of the actual purchases). As a result of implementation of the annual procurement programme, we concluded contracts with 18,316 counterparties, including 1,724 long-term contracts (scheduled to expire in 2017 and later) worth a total of RUB 564.5 billion. The share of electronic procurement totalled 99%.

1,268 competitive purchases totalling RUB 21.19 billion were made using federal budget funds. Savings totalled RUB 0.93 billion (5.3% of the actual purchases). All purchases were made in accordance with Federal Law No. 44-FZ on the Contract System in the Procurement of Goods, Works, and Services for Federal and Municipal Needs.

4.6.2. EXPANSION OF ACCESS TO PROCUREMENT PROCEDURES FOR SMALL AND MEDIUM-SIZED BUSINESSES

In accordance with Decree of the Government of the Russian Federation No. 1352 on the Features of Participation of Small and Medium-Sized Enterprises in the Procurement of Goods, Works and Services by Certain Types of Legal Entities dated December 11, 2014 (Decree No. 1352), nuclear industry organizations covered by the Decree have concluded contracts with small and medium-sized enterprises (SMEs) worth a total of RUB 28.2 billion since the effective date of the Decree (July 1, 2015), which is 56.4% of the total annual value of contracts concluded by customers under procurement procedures (less the value of contracts related to exceptions provided for by Decree No. 1352). In 2016, ROSATOM's organizations are planning to purchase products worth over RUB 52.5 billion from SMEs.

As part of the implementation of Decree No. 1352:

- The list of products purchased exclusively from SMEs has been updated and posted on ROSATOM's official website; the list includes over 580 OKPD2[27] codes of different levels for a range of administrative and business activities and other products for which a competitive market has been formed and the practice of procurement from SMEs is in place;
- Special tenders are held exclusively for SMEs;
- We included a form 'Information on belonging to the SME category' into the standard procurement documentation to enable bidders to declare that they are SMEs.

In accordance with the action plan titled 'Expansion of Access for Small and Medium-Sized Enterprises to the Procurement of Infrastructure Monopolies and State-Owned Companies' approved by Order of the Government of the Russian Federation No. 867-r dated May 29, 2013[28]:

- We have simplified requirements for bidders that are SMEs, including in terms of providing security for obligations of a bidder (security for an application) and security for contractual obligations;
- We have approved separate standard procurement documentation for bidding among SMEs;
- A cooperation agreement has been concluded between ROSATOM and JSC Federal Corporation for Small and Medium-Sized Business Development; a joint working group has been created to deal with issues related to providing access to procurement for small and medium-sized businesses, and we have prepared a work plan for 2016.

[27] *All-Russian Classifier of Products by Economic Activity.*

[28] *The Order was fulfilled and became invalid in February 2016.*

In 2015, 92 training events were held in ROSATOM's Corporate Academy, including 57 professional development courses on various topics related to procurement activities. A total of 2,346 people underwent training, including 152 representatives of organizations interested in supplies to enterprises in the nuclear industry.

In 2015, we automated reporting on the participation of SMEs in procurement for the nuclear industry, which enables ROSATOM's organizations to analyse the share of procurement from SMEs during a year in order to adjust the plans for achieving the target share of procurement from SMEs set by the Russian Government. In addition, we implemented the automated submission of plans for procurement from SMEs.

In the reporting year, the nuclear industry organizations covered by Decree No. 1352 published their annual reports on the purchase of goods, works, and services by certain types of legal entities from small and medium-sized enterprises in the Unified Information System in a timely manner.

4.6.3. IMPROVEMENT OF THE INDUSTRY-WIDE PROCUREMENT SYSTEM

In 2015:

- We developed category strategies[29] for materials and equipment, as well as for pilot categories of services; the category management of logistics was introduced in 55 of ROSATOM's organizations whose purchases of materials and equipment make up at least 85% of the total annual programme for the purchase of materials and equipment;
- We carried out procurement procedures for different category strategies in the amount of RUB 320 billion; additional savings totalled RUB 9.4 billion; the number of procedures was reduced by over 40%;
- We introduced an industry-wide system for the certification of manufacturers and equipment in order to assess a manufacturer before concluding a supply contract (the system of manufacturers' certification is applicable to NPP equipment in safety classes 1 – 4);
- We limited the time frame for concluding contracts and the time frame for payment for work performed under contracts where the contractor is an SME;
- We changed the method for calculating initial (maximum) contract prices; more specifically, we revised the procedure for searching for price information involving the use of the price database as the basis for contracts, collection of technical and commercial proposals through e-commerce sites, as well as authorizing customers to approve deviations from the method in order to shorten the procurement period;
- We made it possible to challenge non-competitive procurement and expanded the range of persons entitled to challenge the actions (inaction) of a customer, a procurement organizer or a procurement commission;
- We launched a mechanism for the participation of foreign bidders (non-residents of the Russian Federation) in procurement via e-commerce platforms;
- We implemented a number of mechanisms that reduce the time of the procurement process (we revised the regulations, delegated certain powers of independent decision-making to the heads of ROSATOM's organizations, and automated a number of labour-intensive processes).

[29] *A category strategy is an action plan for efficient procurement, supply and inventory management.*

4.6.4. INTERACTION WITH SUPPLIERS AND OTHER STAKEHOLDERS

Atomex International Forum

The VII International Forum of Nuclear Industry Suppliers ATOMEX 2015 took place in Moscow in October 2015. The Forum was attended by representatives of 191 companies, including 158 companies not controlled by ROSATOM.

The main topics of ATOMEX 2015 included the following:

- ROSATOM's procurement activities,
- Opportunities for Russian and foreign suppliers,
- Equipment and services for NPP construction and operation and nuclear fuel cycle enterprises,
- Role of innovative entrepreneurship in ROSATOM's technological leadership,
- Development prospects of the nuclear construction sector in Russia and abroad.

For the first time ever, the programme of the Forum included workshops for suppliers on how to apply the principles of participation in competitive procurement procedures and work with e-commerce platforms. The participants received not only basic knowledge, but also expert recommendations based on the results of quick tests. Over 1,600 people visited the forum.

ROSATOM's representatives also regularly participated in conferences and other events on improving access to procurement (including procurement of innovative products) for small and medium-sized businesses (the Sochi 2015 International Investment Forum, events held by the Ministry of Investments and Innovations of the Moscow Region, the Chamber of Commerce and Industry of the Russian Federation, etc.).

Activities of the Council for Improving Operational Transparency[30]

In 2015, ROSATOM's Council for Improving Operational Transparency held two meetings. The Council considered issues related to changes in the Uniform Industrial Procurement Standard:

- expansion of the powers and responsibility of the heads of the industry organizations,
- strengthening of control over industry leaders.

The Council also considered ROSATOM's approach to establishing the requirements for third parties during the procurement of construction and installation work in order to ensure the safety of nuclear facilities, assess qualifications of manufacturers and contractors, and identify whether the companies in question are SMEs. The Council approved the establishment of integrated requirements both for a bidder and for subcontractors or manufacturers, and recommended to introduce relevant amendments to Federal Law No. 223-FZ on Procurement of Goods, Works, and Services by Certain Types of Legal Entities dated July 18, 2011 in order to avoid ambiguities in the interpretation of the legislation.

[30] *http://archive.rosatom.ru/aboutcorporation/prozrachnost/*

4.6.5. PLANS FOR 2016 AND FOR THE MEDIUM TERM

In 2016, we plan to carry out over 300 competitive procurement procedures using federal budget funds totalling over RUB 37 billion and over 28,000 competitive procurement procedures using own funds of ROSATOM and industry organizations totalling over RUB 738.5 billion.

Procurement schedules were approved and posted in the publicly available section on the websites *www.zakupki.gov.ru* and *www.zakupki.rosatom.ru.*

We will comply with Decrees of the Government of the Russian Federation on the Features of Participation of Small and Medium-Sized Enterprises in the Procurement of Goods, Works and Services by Certain Types of Legal Entities, on Approval of the Rules for Selecting Investment Projects to Be Included in the Register of Investment Projects and for Maintaining the Register of Such Investment Projects, on Procurement of Innovative Products and High-Tech Products by Certain Types of Legal Entities.

Besides, in 2016 we will continue implementing category management. In addition to category strategies for materials and equipment, we will develop category strategies for services and works comprising 50% of the total amount of the Annual Procurement Programme. The scope of actually performed procedures to be covered by category management is expected to total RUB 521 billion (without taking into account possible changes in the Annual Procurement Programme).

4.7. SYSTEM FOR COUNTERING CORRUPTION AND OTHER LEGAL OFFENCES

4.7.1. RESULTS IN 2015

The Company took measures to prevent and counter corruption in accordance with the National Anti-Corruption Plan for 2014 and 2015 and the relevant plan of ROSATOM.

In the reporting year, we improved the regulatory support in the area of countering corruption in ROSATOM and its organizations:

- We introduced the Uniform Industry-Wide Anti-Corruption Policy of ROSATOM and its organizations,
- We adopted a new version of the Code of Ethics and Professional Conduct of the Employees of ROSATOM *(for details, see the section 'Developing Human Capital').*

In 2015, we continued our work to form a zero tolerance attitude to corruption practices among employees of the industry. Over 1,000 employees were trained in anti-corruption procedures at the Asset Protection training centre established in 2015 under the Saint Petersburg branch of ROSATOM-CICE&T (ROSATOM Central Institute for Continuing Education and Training).

The corruption risk evaluation system was created and anti-corruption work monitoring was introduced in the industry organizations.

An interdepartmental working group to improve anti-corruption activities in organizations controlled by state-owned corporations (companies) was established on the initiative of ROSATOM.

4.7.2. PLANS FOR 2016

- To improve the legal framework and organizational mechanisms to prevent and detect conflicts of interest;
- To improve the efficiency of anti-corruption measures in the course of procurement of goods, works, and services for state needs, including through the assessment of corruption risks in business processes and monitoring of compliance of the anti-corruption activities performed in organizations with the requirements of the anti-corruption legislation;
- To intensify outreach activities aimed at fostering anti-corruption awareness among employees of ROSATOM and its organizations and professional development of executives responsible for the prevention of corruption and other offences;
- To strengthen the influence of ethical and moral rules on the executives' compliance with the prohibitions, restrictions and requirements established in order to combat corruption, as well as to establish liability for violating the principles set out in ROSATOM's Anti-Corruption Policy;
- To minimize risks associated with the possibility of the application of foreign anti-corruption laws to ROSATOM and its organizations.

WORKING AS ONE TEAM

75.5%

SHARE OF THE POPULATION IN RUSSIA SUPPORTING THE USE OF NUCLEAR ENERGY

RUB **64,300**

AVERAGE MONTHLY SALARY (+6.5% VS. 2014)

OVER **1,500**

UNIVERSITY GRADUATES WERE EMPLOYED IN NUCLEAR INDUSTRY ORGANIZATIONS IN 2015

5.1. DEVELOPING HUMAN CAPITAL

TATIANA TERENTIEVA,
DIRECTOR FOR HUMAN RESOURCES

Key results in 2015:

- Average monthly salary: RUB 64,300 (+6.5% vs. 2014);
- Share of employees aged under 35: 32.5%;
- Employee engagement level: 78% (the level of world leaders in technological industries);
- Share of executive succession pool members appointed to new positions totalled 33.7%;
- Over 1,500 university graduates were employed in nuclear industry organizations.

— ROSATOM today is a truly global company with a large share of foreign transactions. What opportunities and risks in the HR management area do you see in this context?

— PROSATOM puts strong focus on staff development and training for partner countries. The major risk for the international projects is failure to comply with the schedule for construction and commissioning of facilities being built abroad due to shortage of properly qualified personnel. A newcomer country needs thousands of employees to develop nuclear infrastructure, and construct and operate a nuclear plant. This task should not be underestimated.

To mitigate this risk, ROSATOM provides assistance to partner countries in planning and the training of staff for their nuclear programmes in key categories. For all foreign nuclear projects, we use country plans for staff training that are implemented on the basis of a single information system. A country plan is developed jointly with a partner country at workshops and meetings of working groups. This allows responsible representatives of a country to see the general roadmap for staff training in all categories and for all nuclear projects implemented by ROSATOM, control staff training periods, assess specialist training programmes, and make appropriate decisions to mitigate risks in case of deviation from required deadlines.

Another important area is higher education. This implies the development of inter-university cooperation in order to form educational programmes, arrange academic exchanges, develop education materials, and hold joint research studies. In particular, a joint master's degree programme was developed between three universities: National Research Nuclear University MEPhI, Peter the Great St. Petersburg Polytechnic University, and Lappeenranta University of Technology (Finland). Russian and Finnish students will study according to this programme from 2017 onwards. They will spend one semester in each of the universities.

— The industry system of the executive succession pool has proved to be an efficient tool for managing employees' careers. Could you give some examples of cases where ROSATOM's succession pool members have received promotions?

— The executive succession pool programme primarily aims to prepare pool members for target positions. Succession pool members not only have to master educational modules, but must also implement an individual project. Based on the results of each year, we form a ranking, in which a pool member's rank shows what level of tasks and responsibility he or she will be able to cope with in the future and to what extent he or she complies with the requirements of the target position.

In 2015, three members of ROSATOM's Assets programme were promoted to senior executive roles. Andrey Petrov, Director of Smolensk NPP, was promoted to the position of CEO of JSC Rosenergoatom Concern. Evgeny Pakermanov, CEO of JSC AEM-Technology (an organization of the Mechanical Engineering Division) was appointed to the position of the President of Rusatom Overseas Inc. (ROSATOM's organization promoting the integrated offer for NPP construction projects in foreign markets). Yuliya Vrzhesen, Deputy Director of ROSATOM's Organizational Development Department was promoted to the position of Director of the Department.

There are also cross-divisional rotations. A rotation to another division or another enterprise enables an executive to build up the knowledge and experience required to implement more complex tasks. In 2015, the share of cross-divisional rotations at the top 1,000 level among succession pool members totalled 15% (11 out of 75 appointments).

Next →

Prime examples include Andrey Butko, First Deputy CEO of JSC All-Russian Research Institute for NPP Operation (an organization of the Power Engineering Division), who was appointed to the position of CEO of JSC Rusatom Automated Control Systems (an organization of the Nuclear Weapons Division). While Alexander Tuzov, Deputy CEO for Innovation Management at ROSATOM, was appointed to the position of CEO of State Scientific Centre Research Institute of Atomic Reactors.

Over the past year, the share of promotions of succession pool members to executive positions has risen to 10%. Our target by year-end 2017 is for 70% of appointments to top and senior executive positions to be from among our executive succession pool members.

5.1.1. STAFF INFORMATION

As of December 31, 2015, the headcount of ROSATOM and its organizations totalled 256,600 employees, including 3,200 in foreign organizations. 143,560 employees have a university degree (56.4% of the total headcount). 3,799 members of staff (1.5%) are Candidates and Doctors of Sciences.

Table. Average headcount by area, thousand people

Division/complex/organization	*2013*	*2014*	*2015*
Nuclear Weapons Division	88.68	89.26	92.38
Mining Division	11.67	10.04	8.19
Uranium One Holding[31]	0.03	0.07	0.07
Fuel Division	29.18	25.17	22.53
Sale and Trading Division	0.58	0.55	0.54
Power Engineering Division	47.55	50.15	50.96
Mechanical Engineering Division	21.73	20.46	18.86
Advanced Materials and Technologies	0.76	0.75	0.69
Overseas Division	0.54	0.64	0.7
Engineering Division	15.45	14.44	14.86
JSC ATOMPROEKT	—	3.08	2.99
Life Cycle Back-End Division	10.77	10.27	9.96
Innovation Management Unit	15.19	14.54	12.27
Administrative units	3.93	4.46	6.03
JSC Integrated Thermal Power Company	—	1.5	3.5
Security units	8.29	8.4	8.51
Non-core assets	0.98	1.21	0.36
Foreign organizations	—	3.0	3.2
ROSATOM, total	**255.3**	**258.0**	**256.6**

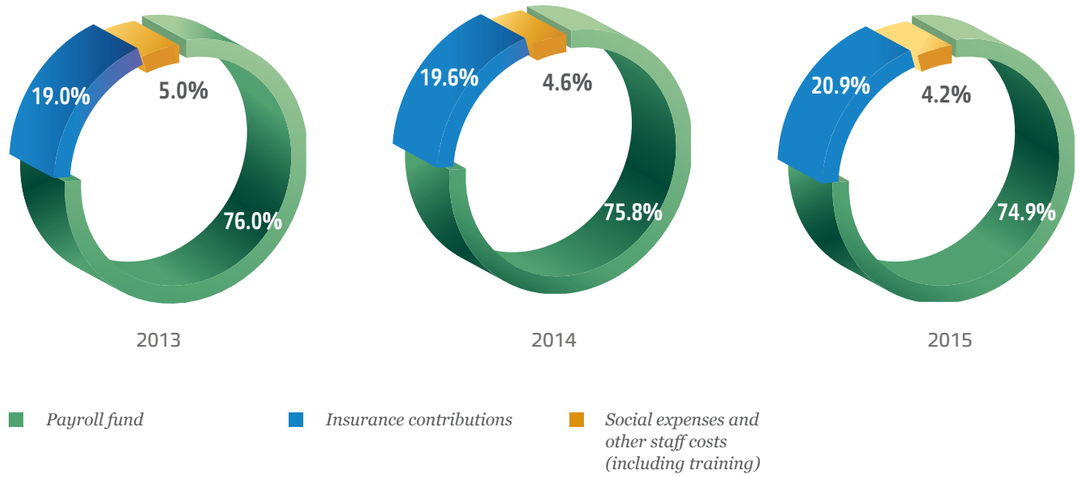
[31] *Data on the Headquarters.*

The age of employees averaged 43.9 years. The share of employees aged under 35 was 32.5%.

5.1.2. STAFF COSTS

In 2015, staff costs totalled RUB 263 billion, which is 7% more YoY. Annual costs per employee increased from RUB 961,000 in 2014 up to RUB 1,033,200 in 2015.

Fig. Structure of staff costs



Remuneration system

ROSATOM's current remuneration system is:

- Adequate and matching the compensation in the best Russian companies;
- Result-based: strengthening the link between employees' compensation and their efficiency and key performance indicators (KPIs). KPIs of ROSATOM's executives are linked to the strategic goals and KPIs established for ROSATOM by the Supervisory Board; strategic goals set for the organizations and enterprises are converted into KPI maps of particular managers and cascaded down to business units and employees.

In 2015, the monthly salary at ROSATOM averaged RUB 64,300, which is 6.5% higher YoY.

5.1.3. CAREER AND SUCCESSION MANAGEMENT

To plan careers and ensure succession at executive positions, ROSATOM is implementing the career and succession management process: executives form career plans and approve successors to executive positions. A specialized information system is being deployed on a step-by-step basis to automate this process. In 2015, we completed the third stage of its deployment with the following result: automation of career planning for 11,000 top, senior and middle-level executives (CEOs, deputy CEOs, directors of departments, heads of directorates/shops in 91 industry organizations). In 2016, the fourth stage starts – cascading of the process to junior executives (heads of units/groups/sites/laboratories and foremen). The total number of process participants will increase to 23,000 executives.

Executive succession pool

A centralized programme to build and develop the executive succession pool (ESP) was launched in 2012 to ensure succession and train executives to later take managerial positions in ROSATOM.

In 2015, ESP members selected in 2013 and 2014 completed their training. They successfully completed a number of modules, including 'Enterprise Resource Management', 'Leadership', 'Change Management', etc., and participated in project activities, including the projects forming part of ROSATOM's Production System (RPS) and initiatives to integrate ROSATOM's values into the corporate culture of industry organizations.

By the end of 2015, the ESP comprised over 2,100 employees. The share of succession pool members appointed to vacant top and senior executive positions reached 41.75%, while the target was 40%.

In 2015, 42,725 employees underwent the RECORD assessment (including the assessment of performance according to KPI maps, the assessment of professional and technical knowledge and skills, and the corporate values assessment).

Table. Number of ESP members (by category of employees)

		Number of participants		
ESP levels	*ESP Development Programme*	*2013*	*2014*	*2015*
Senior executives	ROSATOM's Assets	106	91	155
Middle-level executives	ROSATOM's Capital	390	473	870
Junior executives	ROSATOM's Talents	520	843	1,102
Total		**1,016**	**1,407**	**2,127**

Table. Appointments of ESP members to new positions, %

	2013	*2014*	*2015*
Share of ESP members of senior, middle and junior management appointed to new positions	—	26	33.74
Share of ESP members appointed to vacant top and senior executive positions (top 30 and top 1,000) in the reporting period	28.5	33.75	41.75

Staff assessment

In 2015, ROSATOM and its organizations adopted a competence model based on ROSATOM's corporate values. The competence model is built into the main HR management processes: recruitment, annual performance assessment, career and succession planning, screening and development of the succession pool, training, and an industry-wide mentoring system *(see also the section 'ROSATOM's Values').*

In 2015, ROSATOM actively used the assessment of executives based on the values according to the 360° method. 1,321 people passed the assessment.

Thus, being aware of and abiding by the corporate values, employees can receive further training and build their careers in the nuclear industry.

5.1.4. STAFF TRAINING

Training, professional development and improvement of staff competences are integral to developing, increasing the competitiveness and improving the quality of the internal labour market in the nuclear industry.

In 2015, 117,701 employees of ROSATOM and its organizations underwent training and retraining and completed professional development programmes. The share of employees who completed training programmes in the reporting period amounted to 47% of the total headcount in the industry.

Table. Annual average training hours per employee by personnel category

Category of personnel	*Average number of hours per employee in 2014*	*Average number of hours per employee in 2015*
Executives	39	37
Specialists and office workers	20	18
Workers	24	35

Table. Number of employees who completed training

Category of personnel	*Number of employees who completed at least one training course in 2014*	*Number of employees who completed at least one training course in 2015*
Top executives	15	77
Senior executives	967	1,131
Middle-level executives	7,543	6,562
Junior executives	17,257	14,826
Specialists and office workers	44,210	44,311
Workers	51,295	50,794
Total	**121,287**	**117,701**

HR School

The industry HR school aims to develop professional competences of HR directors and HR specialists of ROSATOM's organizations, establish uniform work standards, and form the HR role as a business partner.

In 2015, the following educational programmes were conducted:

- Eight modules were carried out for HR directors: 'Economy and Finance for HR', 'Business Operation', 'HR as a Business Partner', 'RPS in HR Processes', 'Performance Management', 'Staff Recruitment', 'Measuring Efficiency of HR Processes', and 'Efficient Meetings';
- Three modules were carried out for talent management experts and remuneration package experts: 'Education and Development', 'Staff Recruitment', and 'Remuneration Package Management'.

A total of 110 HR directors and 53 industry experts completed training programmes. The main training courses for experts are scheduled for 2016 and 2017.

At the II WorldSkills Hi-Tech 2015 National Championship of cross-industry professions of high-technology industries in 2015, ROSATOM's team won 6 gold, 1 silver and 2 bronze medals, and came first in the overall standing. Electric welder Alexandr Duymamet from the Volgodonsk Branch of JSC AEM-Technology was named the overall champion and was awarded the main competition prize: RUB 1 million. The participation in the WorldSkills for ROSATOM is a tool to identify best practices and develop new work standards; it also provides an opportunity to assess the professional qualifications of its employees as compared to global standards. ROSATOM adopted the decision to create a system of intra-industry championships according to the WorldSkills methods: it is planned to form a community of WorldSkills Hi-Tech experts in order to exchange experience and find the most effective technologies for training competitive specialists.

5.1.5. COMMUNICATION PROJECTS

Engagement survey

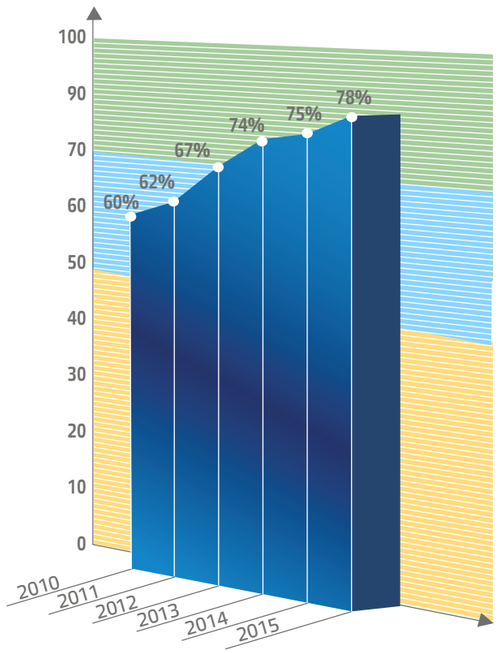
Engagement surveys at nuclear industry enterprises have been carried out since 2011. Over the five years, the number of organizations participating in the survey has increased from 45 to 60 (over 200,000 employees work at these enterprises; 45,000 of them take part in the survey each year).

In 2015:

- ROSATOM's organizations implemented over 5,000 measures to increase the level of engagement;
- The community of 20 employee engagement experts continued their work at 60 industry enterprises; they implemented three industry-wide projects in the reporting year and developed five industry-wide projects for 2016.

According to the Aon Hewitt international company carrying out engagement surveys worldwide, ROSATOM's result in 2015 surpassed the average employee engagement level in Russian manufacturing companies by 19 p.p. and was similar to the employee engagement level of efficient employers all over the world.

Fig. ROSATOM's employee engagement trend



- *Risk zone*
- *Neutral zone*
- *High performance zone*

The target for the future is to not only maintain the average employee engagement in the industry at the level of world leaders of technology industries for the next 3 to 5 years (at or above 72%), but also to ensure this level of engagement in 90% of the industry organizations participating in the survey.

'ROSATOM's Person of the Year' contest

The programme of industry nominations within 'ROSATOM's Person of the Year' contest aims to recognize the services of the best employees of the industry at the highest level – that of ROSATOM's management. The main selection criteria are meaningful results in work, non-standard task solution approaches, compliance with the corporate values, and the professional qualities of candidates. An employee can become a nominee in the contest both independently by filling in an application and receiving a reference from a line manager, and as advised by a line manager. The contest comprises both individual and collective nominations.

All participants in the programme pass through several selection stages. Winners in division professions are chosen at the level of management companies of divisions and industry complexes, in corporate professions – at the level of functions in ROSATOM, and in special categories – by the Central Contest Commission chaired by ROSATOM's CEO. In 2015, 1,252 applications were submitted for participation in the contest. 81 were named as winners.

'Thank You' programme

In 2015, a new tool of non-financial incentives was created for ROSATOM's organizations: the 'Thank You' programme, whereby employees can thank each other on paper and electronic cards. The programme was designed to support such values of ROSATOM as 'Respect' and 'One Team'. The design of 'Thank You' cards is updated according to important holidays: the 70th anniversary of the industry, New Year, February 23rd, and March 8th. Over 8,000 'Thank You' cards were sent across the industry in 2015.

ROSATOM's Code of Ethics

In 2015, the Code of Ethics and Professional Conduct of ROSATOM's Employees was developed (hereinafter referred to as the 'Code of Ethics') so as to update the previous Code adopted in 2009.

The Code of Ethics stipulates the ethical bases that should be observed by ROSATOM's employees in their work. The Code is a document that communicates ROSATOM's values.

The Code of Ethics approved by ROSATOM's CEO stipulates the ethical bases that should be observed by ROSATOM's employees in their work. The Code is a document that communicates ROSATOM's values and establishes the related ethical principles for employees in the course of interaction with a wide range of external and internal stakeholders. The rules of behaviour stipulated by the Code relate to counteracting corruption, ensuring the integrity of resources, property and information, occupational safety and environmental protection, industrial safety, prevention of conflict situations and the settlement of conflicts of interests, as well as compliance with the corporate image.

The Code aims to contribute to:

- Prevention of risks associated with violation of the legislation and ethical rules of behaviour adopted in ROSATOM;
- Enhancement of ROSATOM's business reputation;
- Implementation of the system of corporate values in the nuclear industry.

To efficiently apply the Code of Ethics, ROSATOM formed the Board of Ethics whose main task is to assist employees in the settlement of situations related to the provisions of the Code of Ethics. The Board of Ethics includes executives of ROSATOM's units, representatives of the trade union, and veterans of the industry. The Board of Ethics is chaired by First Deputy CEO for Operations Management Alexander Lokshin.

5.1.6. SOCIAL POLICY

ROSATOM's social policy is designed to:

- Make ROSATOM more attractive as an employer;
- Engage and integrate young professionals and highly skilled specialists;
- Improve employee loyalty;
- More efficiently manage social expenses.

Employment benefits provided to employees and retirees fully comply with the Uniform Industry-Wide Social Policy, which is based on standardized corporate social programmes.

Collective agreements cover 85.8 % of employees working at ROSATOM's enterprises.

Sports events

Development of physical education and sports is a top priority for ROSATOM. We strive to promote a healthy lifestyle, and urge employees to do sports for harmonious development, health improvement and maintenance of labour activity.

In 2015, ROSATOM carried out over 20 national mass sporting events involving the participation of athletes from nuclear industry enterprises. More than 9,000 of the best athletes took part in the VIII winter spartakiad 'Atomiad-2015' including employees of the nuclear, manufacturing and science industries. The final was held in Glazov (Udmurt Republic): the top athletes of the industry competed for 57 sets of medals.

At the World Championship among employees held in Lignano, Italy (8,000 participants from 35 countries worldwide), ROSATOM's team of 32 athletes won 67 medals (41 gold, 14 silver, and 12 bronze).

Table. Expenses for corporate social programmes, RUB billion

Corporate social programmes	*2013*	*2014*	*2015*
Voluntary health insurance	1.0	1.3	1.3
Accident and disease insurance	0.1	0.1	0.1
Health resort treatment and recreation for employees and their children, including:	1.3	1.0	0.9
Health resort and rehabilitation treatment for employees	1.1	0.7	0.6
Health resort treatment and recreation for children	0.2	0.3	0.3
Provision of housing to employees	0.5	0.6	0.8
Non-state pension coverage	1.9	1.0	1.0
Support to retirees	2.3	2.0	1.3
Catering for employees	0.2	0.1	0.1
Organization of sports and cultural work	0.9	1.1	1.3
Aid to employees	1.5	0.9	1.0
Other	2.3	1.9	1.8
Total:	**12.0**	**10.0**	**9.6**

Industry-wide agreement on nuclear power, manufacturing and science

ROSATOM adheres to the Industry-Wide Agreement on Nuclear Power, Manufacturing and Science for 2015 – 2017 (hereinafter referred to as the 'Agreement'). The Agreement is based on the long-term practice of social partnership in the nuclear industry and aims to implement the Integrated Standardized Remuneration System, the Uniform Industry-Wide Social Policy, and the Occupational Safety Management System.

The Industry-Wide Agreement on Nuclear Power, Manufacturing and Science for 2015 – 2017 is adjusted to the new legislation on the special inspection of working conditions (SIWC), which stipulates an additional mechanism for cooperating with the trade union in conducting an SIWC and analysing inspection findings.

The agreement was developed and is being implemented jointly with the Russian Trade Union of Nuclear Power and Industry Workers[32] (as of December 31, 2015, the trade union included 336,000 people).

The Agreement focuses on the protection of employees' life and health (sections 'Occupational Safety' and 'Social Policy'). Jointly with the trade union, employers maintain records of and analyse morbidity among employees, including records of periodic medical examinations and sick leave, and build an integrated healthcare programme 'Health'. The Agreement is adjusted to the new legislation on the special inspection of working conditions (SIWC), which stipulates an additional mechanism for cooperating with the trade union in conducting an SIWC and analysing inspection findings.

See section 6.1.6 'Occupational Safety'.

[32] http://www.profatom.ru/

In December 2015, upon the application from the nuclear power veterans, the Commission under the Government of Moscow adopted the decision to rename designed passage 3880 as Efima Slavskogo Street. Efim Slavsky was the Minister of the Medium Machine-Building Industry of the USSR (1957 – 1986), a triple Hero of Socialist Labour (1949, 1951, 1962), and a winner of the Lenin Prize (1980) and three State Prizes of the USSR (1949, 1951, 1984).

Work of the Interregional Non-Governmental Movement of Nuclear Power and Industry Veterans (INGM NPIV)[33]

The INGM NPIV unites 126 veteran organizations numbering 311,908 people, including 80 of ROSATOM's veteran organizations with 142,480 people.

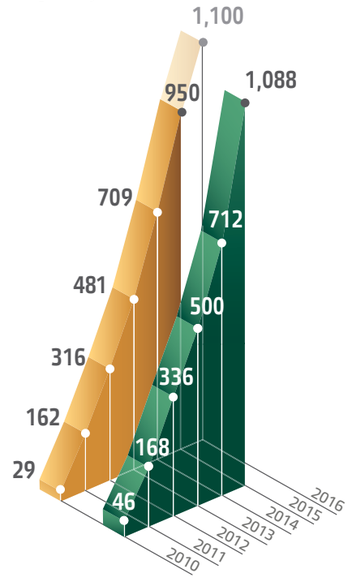
In 2015, the INGM NPIV Executive Directorate considered 2,080 veterans' applications regarding financial assistance, medical services, and presentation of awards for meritorious labour to ROSATOM's veterans.

At the request of the INGM NPIV, merit badges 'Veteran of the Nuclear Power and Industry' were presented to 613 people, awards for meritorious labour and certificates of honour of ROSATOM – to 130 veterans, and anniversary medals '70th Anniversary of the Nuclear Industry' – to 906 veterans.

Veteran organizations received financial aid of RUB 900,000.

5.1.7. WORK WITH UNIVERSITIES AND RECRUITMENT OF YOUNG SPECIALISTS

Fig. Growth trend of the number of foreign students receiving education in nuclear-related areas in Russia under the auspices of ROSATOM[34]



Collaboration with universities

ROSATOM puts strong focus on working with young specialists and attracting young talent to the nuclear industry. In the reporting year, the 'Consortium of Core Universities of ROSATOM' Association (the Consortium) continued its work. The Consortium consists of 14 nuclear-related higher education institutions training specialists for the nuclear industry. The core universities cover over 40% of the total need for young specialists in the industry.

The number of students who received education in 2015 in universities under the order of ROSATOM totalled 2,232. 5,654 students did internships in ROSATOM's organizations. 1,560 graduates were employed.

Work of the NRNU MEPhI

The NRNU MEPhI is a key participant in the implementation of ROSATOM's Innovation Development Programme. The university includes 26 research and education centres organized jointly with leading scientific and production organizations of the nuclear industry. The scope of R&D performed by the NRNU MEPhI in 2015 totalled RUB 2.3 billion (vs. RUB 2.6 billion in 2014), including RUB 224.6 million for the benefit of ROSATOM.

[33] http://www.veteranrosatom.ru/

[34] *Long-term programmes within the quota of the Ministry of Education and Science of the Russian Federation.*

In 2015, ROSATOM together with the NRNU MEPhI continued career guidance work aimed to engage top school leavers of Russian schools into innovation areas of nuclear industry development; approximately 21,000 schoolchildren took part in the contests of the NRNU MEPhI.

In 2015, the competition for the main nuclear-related area 'Nuclear Physics and Technologies' increased by a factor of 1.5 (from 4.2 applicants per place in 2014 up to 6.26 applicants per place in 2015). The university ranked among the top 10 Russian universities in terms of the number of admitted applicants (based on the Unified State Examination average score), in 6th place (vs. 7th in 2014).

The National Research Nuclear University MEPhI was included in leading world and national rankings:

- *Top 50 in the Times Higher Education ranking (THE, list of physical sciences). In 2015, the NRNU MEPhI significantly improved its position and rose to the 36th place (vs. 95th in 2014);*
- *Top 20 in the THE ranking (BRICS and developing countries) – 13th place;*
- *Top 50 in the QS University Rankings: developing European and Central Asian countries, 34th place;*
- *2nd place in the Interfax National Ranking (vs. 3rd in 2014);*
- *3rd place in the RAEX National Ranking (vs. 4th in 2014).*

5.1.8. INTERNATIONAL COOPERATION IN EDUCATION

In 2015, ROSATOM continued creating the system for exporting the Russian nuclear-related education to potentially attractive markets. Foreign students received education in nuclear-related areas in Russian universities. Foreign students receive education in the NRNU MEPhI (including in the Obninsk Branch of the NRNU MEPhI), as well as in ROSATOM's core universities and in partner universities.

All in all, over one thousand students from 28 countries, including Vietnam, Bangladesh, Jordan, Egypt, Algeria, Nigeria, the Republic of South Africa, and Cuba, received education in Russian universities in the reporting year (including 409 people admitted in 2015). In 2016, it is planned that 315 more students will be admitted.

5.1.9. PRIZES AND AWARDS IN HR MANAGEMENT

By year-end 2015, ROSATOM had been named the winner in about a dozen prizes and rankings in the HR management area. The organization:

- Rose from the 27th to the 3rd place in HeadHunter's ranking of the best Russian employers;
- Entered the top 5 best Russian employers in the ranking of the international consulting company Universum among students of technical and natural scientific departments. Over the three years in the ranking, ROSATOM has demonstrated a consistently growing attractiveness as an employer and has maintained first place for students among employers in the engineering and production sector;
- Received the Grand Prix in the category 'Russian World' for an international project aiming to promote Russian nuclear-related education and the Russian language among partner countries, as well as the diploma of the Ministry of Education of the Russian Federation for the project 'Octopus Human Resources Planning Information System' (Octopus IS) in the category 'Technologies of the Future' within the II national contest of employers' best practices in work with children, young people and succession pool members 'Creating the Future';
- Received the Grand Prix of the V anniversary People Management Crystal Pyramid Award-2015 in the category 'Technology Solution' for the industry-wide career and succession management system based on the uniform EtWeb platform;
- Received two awards in the X anniversary HeadHunter's award 'HR Brand of the Year' in the category 'MIR' and in the special category of PJSC Rostelecom 'Leader of Changes' for the comprehensive programme of 'from-scratch' creation of the career and succession pool management system in the nuclear industry 'Young Generation of ROSATOM'.

5.1.10. PLANS FOR 2016 AND FOR THE MEDIUM TERM

- Improve labour productivity;
- Increase the share of new appointments among ESP members;
- Enhance the efficiency of incentives;
- Improve satisfaction of internal clients with the quality of education in ROSATOM's Corporate Academy;
- Increase the level of employee engagement.

5.2. CONTRIBUTION TO THE DEVELOPMENT OF THE OPERATING REGIONS

ALEXANDER KHARICHEV,
HEAD OF THE LOCAL COMMUNITIES RELATIONS UNIT

Key results in 2015:

- RUB 164.5 billion was paid to the Russian budgets of all levels, up by 61% YoY;
- The share of electricity produced by NPPs in the total electricity generation in Russia was 18.6% (17.2% in 2014);
- RUB 949.7 million was allocated for charity programmes.

– How would you assess the efficiency of ROSATOM's cooperation with stakeholders (government authorities, the public, non-governmental organizations) in the operating regions in 2015? What were the most significant outcomes of this cooperation?

– I refer to residents of cities, civil society institutions, and local governments as management teams: by definition, these are different conceptual and target categories. Therefore, we develop different strategies to communicate with them. Overall, I am happy with the work we did together with the management teams of these cities in 2015, and I am pleased with the sincere responses from the residents of these cities who participated at least once in our events or the projects that we supported.

There are projects that we support annually because we believe that people's cultural level can only be improved gradually, year by year, by highlighting issues and acting as a role model to address them. Thus, we support the Green Cross with their initiative, which has evolved into a federal movement known as Clean Shore. Every spring, representatives of the general public, local authorities and anyone who is interested all help to clean shoreline recreation areas and parks with water reservoirs in areas where nuclear facilities are located. In 2015, more than 1,500 proactive citizens participated in clean-up initiatives in six federal subjects of Russia.

For the past ten years, ROSATOM's School has been supporting and modernizing unique educational systems developed in closed cities in line with international trends in education. For example, knowledge of foreign languages is now crucial for education, employment, everyday work and projects (especially in the nuclear industry). I am not expecting children to turn into bilingual professionals, but they should at least reach an advanced level. Therefore, we have to introduce courses in English as early as possible, which is why we have two educators (Russian- and English-speaking) in kindergartens at ROSATOM's School.

We annually conduct a contest of socially important projects supervised by the Public Council of ROSATOM. Every year we receive more and more applications; projects compete with each other, and the selection and discussion process always involves a heated debate, as we have to divide the funds to support the best projects. And the projects must be rotated: we select 30% of projects that we have not supported before, and organizations that we have not dealt with before. Moreover, it is our policy to only fund these projects partially, thus allowing non-governmental organizations and proactive groups to engage in fundraising; we do not pay out salaries to them either.

We know our country needs healthy and energetic people who are tech-savvy and willing to improve the quality of their life. A project called 'Health and Sports. Ural', which was implemented by the Rassvet youth centre in 2015 is a good example. At an open platform, professional and amateur sportsmen, and fitness coaches talked to the public about their simple secrets of an active lifestyle, healthy eating and a trendy sports movement called CrossFit, focusing on simplicity and affordability; the key goal was to promote the benefits of a healthy lifestyle. A public sports ground (workout area) was opened in the Ozersk municipal district and is growing increasingly popular every day. And this is a sign to the management team that they should replicate this experience.

For the fourth year in a row we have been actively supporting the management teams of the cities in tackling the issue of deterioration of the infrastructure. We know that our cities are young: they were founded 30 to 70 years ago; but we are approaching a difficult period when housing, utilities, roads and surrounding grounds need to be partially or fully renovated. To enable this, we make additional tax payments to the regions which have agreed to invest these funds in the restoration of urban infrastructure. Municipalities spent over RUB 3 billion on these works in 2015.

— What are the goals of developing ROSATOM's operating regions in 2016 and in the medium term?

— Strategically, we would like each of the territories in which nuclear facilities are located to turn into so-called technology parks, which would employ highly skilled professionals, develop innovative production facilities, establish R&D centres, and in which the level of life and well-being of the people would meet their aspirations.

ROSATOM has initiated a new mechanism for supporting closed administrative and territorial formations (CATFs) by setting up priority social and economic development areas (PSEDAs). At year end, ROSATOM had developed ten concepts to set up PSEDAs in ten CATFs of the nuclear industry. The first PSEDAs will be functional starting from 2016.

Next →

By 2025, we expect each of the PSEDAs not only to provide new jobs (from 120 to 2,158 in each of the cities) and increase investments (from RUB 1.8 billion to RUB 30.8 billion), but also to develop new businesses, encourage investments, and introduce new types of civilian products of the nuclear weapons division. This will significantly boost the budget revenue of the CATFs, which directly impacts on the social and cultural environment and infrastructural support.

ROSATOM influences the social and economic development of its operating territories in a number of ways. The Corporation contributes significantly to the energy security of a large number of regions. ROSATOM is a large taxpayer that pays taxes to the budgets of all levels. The Corporation has a significant impact on the economy of the regions by providing jobs to highly skilled professionals in the nuclear industry and related industries, and ensuring decent working conditions and remuneration.

5.2.1. CONTRIBUTION TO THE ENERGY SECURITY OF RUSSIAN REGIONS

The share of electricity produced by NPPs in the total electricity generation in Russia totalled 18.6% (17.2% in 2014). Nuclear power generation contributes significantly to Russian integrated power systems (IPSs).

Table. Share of NPP generation in the total electricity generation in Russia in 2015 by region (IPS)

Indicator	*Russia*	*European Russia*[35]	*IPS of the Centre*	*IPS of the Middle Volga*	*IPS of the North-West*	*IPS of the South*[36]	*IPS of the Urals*	*IPS of the East*
Electricity generated by NPPs of JSC Rosenergoatom Concern, billion kWh	195.21	195.0	100.17	32.75	36.99	20.51	4.58	0.22
Share of electricity generated by NPPs of JSC Rosenergoatom Concern, %	18.6	24.6	42.3	31.1	36.5	22.7	1.8	0.5
Electricity generation in Russia[37]	1,049.9	791.55	236.97	105.37	101.28	90,2	257.73	47.7

[35] *European Russia: IPSs of the Centre + IPSs of the Middle Volga + IPSs of the North-West + IPSs of the South + IPSs of the Urals.*

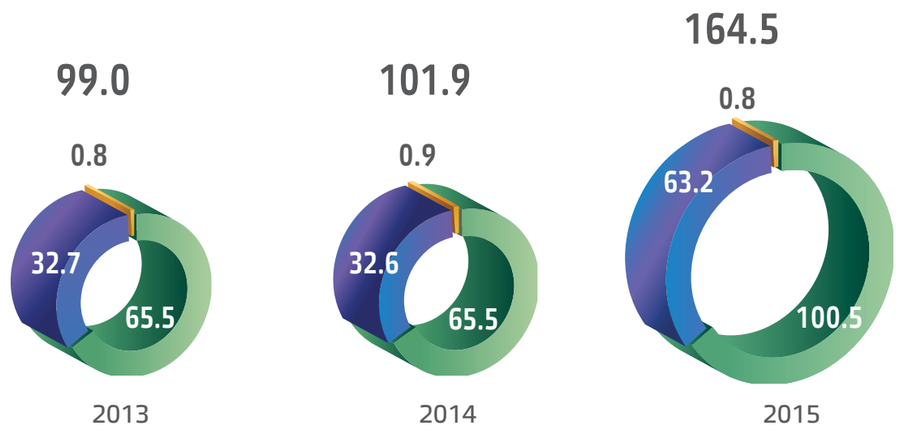
[36] *Including isolated systems.*

[37] *According to the press release by the System Operator of the Unified Power System at year-end 2015 dated January 12, 2016 (SO UPS website: www.so-ups.ru).*

5.2.2. TAX PAYMENTS TO BUDGETS OF DIFFERENT LEVELS

ROSATOM's organizations and enterprises significantly affect budget revenues in their operating regions. In 2015, RUB 164.5 billion was paid to budgets of all levels (including non-budgetary funds), up by 61% YoY.

Table. Taxes paid by ROSATOM and its organizations, RUB billion



In 2015, ROSATOM continued its cooperation with the Association of CATFs in the Nuclear Industry (http://zato.tv/association) in the following areas:

- *Establishing priority development areas in ROSATOM's operating regions;*
- *Improving legislation that governs the functioning of CATFs;*
- *Preventing an abrupt reduction in the state support to health care institutions of the Russian Federal Biomedical Agency providing services to CATF residents;*
- *Organizing celebrations to mark the 70th anniversary of the establishment of the Russian nuclear industry.*

5.2.3. COOPERATION WITH SUPPLIERS AND CONTRACTORS IN THE OPERATING REGIONS

Construction and commissioning of nuclear facilities, including NPP power units, creates new jobs: a number of employees are recruited from local communities within a 100 km radius of the construction site. Additionally, every job in the construction of an NPP essentially creates 10 to 12 additional jobs in related industries (metals, mechanical engineering, etc.).

Table. Number of organizations and individuals engaged in NPP construction in 2015

NPP	*Number of main engaged organizations*	*Total number of employees*	*including*	
			engineering personnel	*workers*
Baltic NPP, power units No. 1 and 2	11	91	15	76
Beloyarsk NPP, power unit No. 4	30	1,023	314	709
Novovoronezh NPP-2, power units No. 1 and 2	39	6,069	612	5,457
Leningrad NPP-2, power units No. 1 and 2	43	2,924	268	2,656
Rostov NPP, power units No. 3 and 4	30	3,518	281	3,237
Kursk NPP-2, power units No. 1 and 2	23	546	123	423
Total	**176**	**14,171**	**1,613**	**12,558**

5.2.4. ESTABLISHMENT OF PRIORITY SOCIAL AND ECONOMIC DEVELOPMENT AREAS IN NUCLEAR CITIES

In 2015, amendments were introduced to the Law on Priority Social and Economic Development Areas in Russia at the suggestion of ROSATOM, allowing such areas to be established within closed administrative and territorial formations (CATFs). ROSATOM initiated the development of a framework to establish priority social and economic development areas (PSEDAs) in all the CATFs of the nuclear industry. Principal enterprises of the CATFs, CATF administrations and federal subjects of Russia in which the CATFs are located participated in designing the framework. The development helped define specific territories where PSEDAs will be established, their specialization and key projects. The draft framework was approved by working groups headed by the leaders of the federal subjects of Russia.

PSEDA specialization is defined depending on both key competencies possessed by the nuclear cities and strategic new business areas developed by ROSATOM:

- Nuclear technologies;
- Space technologies;
- Construction technologies;
- Instrumentation;
- Materials science and engineering;
- Medical industry.

Fig. Effects from setting up PSEDAs in CATFs

A PSEDA is a part of a federal subject of Russia where a special regime is imposed with regard to business and other types of activities

NUMBER OF PROJECTS: 170

INVESTMENTS IN THE PROJECTS: RUB 77 BILLION

NUMBER OF NEW JOBS: 11,400 PEOPLE

TAX BENEFITS:

- Income tax: 0% to the Federal Budget, no more than 5% (during the first 5 years) and at least 10% (during the next 5 years) to the budget of a federal subject of Russia
- Insurance payments: 7.6%
- VAT: the right to accelerated refund
- Property tax, transport tax, land tax: at the discretion of municipalities
- Mineral extraction tax: 0% to the Federal Budget, no more than 5% (during the first 5 years) and at least 10% (during the next 5 years) to the budget of a federal subject of Russia

SPECIAL CONDITIONS FOR BUSINESS

- Duty-free customs treatment
- Providing an infrastructure with all utility systems
- Preferential lease rates on real estate

FOR BUSINESSES

- Reduction in tax burden by 30%
- Reduction in procurement costs by 12%
- Raising federal and regional funding to prepare manufacturing facilities: up to 80% of the costs of infrastructure development
- Reduction in costs of equipment procurement (provided a free customs area is established): up to 30%
- Raising external investments in ROSATOM's new businesses
- Reduction in the manufacturing period for new types of civilian products by 15%

FOR THE INDUSTRY

- Providing a tool to support the launch of civilian products of the Nuclear Weapons Division in the market
- Economic and social stability in the cities of operation
- Improved control over the performance of subcontractors
- Maintaining human resources in the cities at a level required for the development of the nuclear industry

Fig. Results of PSEDA establishment in CATFs

Results in 2015	*Plans for 2016*
Ten PSEDA frameworks in ten CATFs were developed. The frameworks were agreed with ROSATOM, approved by the governors of the federal subjects of Russia and submitted to the Russian Ministry of Economic Development	To agree the frameworks and draft resolutions by the Russian Government by 2Q2016 to include the costs of setting up PSEDAs into the budgets of different levels
Amendments were introduced to the law on PSEDAs making it possible to set up PSEDAs in CATFs starting from 2016	■ To agree frameworks and draft resolutions on PSEDA creation in the federal executive authorities ■ To set up PSEDAs in monotowns ■ To file a budget application for financing infrastructural facilities ■ To establish a federal management company for PSEDAs ■ To approve 5 resolutions by the Russian Government on establishing PSEDAs in CATFs ■ To establish subsidiary managing companies for PSEDAs ■ To select the first residents

Fig. Outlook for PSEDA development in CATFs

Number of new jobs and investments		
Zarechny	400 people	RUB 661 million
Sarov	170 people	RUB 520 million
Snezhinsk	518 people	RUB 1,884 million
Novouralsk	874 people	RUB 2,638 million
Zheleznogorsk	56 people	RUB 436 million
Seversk	840 people	RUB 8,280 million
Ozersk	292 people	RUB 804 million
Lesnoy	918 people	RUB 1,814 million
Tryokhgorny	380 people	RUB 4,000 million
Zelenogorsk	242 people	RUB 647 million

5.2.5. ESTABLISHMENT OF INNOVATIVE TERRITORIAL CLUSTERS

In 2015, ROSATOM continued to support the establishment of innovative territorial clusters (in the CATF of Zheleznogorsk, CATF of Sarov, Dimitrovgrad, the Saint Petersburg—Sosnovy Bor—Gatchina metropolitan area). Construction of high-priority manufacturing and innovative infrastructure was almost completed in 2015.

The opening of a 10,000 m^2 industrial park was one of the main outcomes of developing a cluster in the CATF of Zheleznogorsk in 2015. The park was established with a focus on the core development areas for this cluster: space and nuclear technologies.

An engineering centre was built in Sarov (RUB 78.8 million was invested in equipment and software) comprising a flexible manufacturing and prototyping centre with a unique set of equipment, test facilities, and methodological and certification support for the cluster residents.

5.2.6. COOPERATION AGREEMENTS BETWEEN ROSATOM AND FEDERAL SUBJECTS OF RUSSIA

In 2015, cooperation agreements between ROSATOM and federal subjects of Russia continued to be implemented. The federal subjects of Russia allocated over RUB 3 billion from their budgets to fund state programmes, which helped built residential apartments and leisure centres and complete major repairs of housing, utility facilities and social infrastructure in the nuclear cities.

Table. Results of implementing cooperation agreements between ROSATOM and federal subjects of Russia in 2015

Works performed / initiatives implemented	*Municipality (operating region of ROSATOM)*
Capital construction projects were completed: ■ 2 public housing buildings with 27 apartments each ■ Martial arts centre (central stadium) ■ Community centre	Novouralsk Novovoronezh Kurchatov
Major repairs of housing and utility facilities	Novovoronezh, Lesnoy, Novouralsk, Zarechny (Sverdlovsk Region), Udomlya, Kurchatov, Desnogorsk, Seversk, Glazov, Dimitrovgrad, Krasnokamensk
Major repairs of buildings of cultural, educational and sports organizations, including kindergartens	Novovoronezh, Lesnoy, Krasnokamensk, Desnogorsk, Polyarnye Zori, Kurchatov, Glazov, Dimitrovgrad, Udomlya, Zarechny (Sverdlovsk Region), Seversk
Beautification of streets and grounds around the buildings, repairs of roads and pavements	Novovoronezh, Lesnoy, Novouralsk, Zarechny (Sverdlovsk Region), Udomlya, Kurchatov, Desnogorsk, Seversk, Glazov, Dimitrovgrad, Krasnokamensk, Polyarnye Zori

5.2.7. CONTEST AMONGST THE CITIES OF OPERATIONS

In 2015, ROSATOM conducted the first contest amongst the cities of its operations. The contest was intended to reveal management teams that have the greatest impact on the development of the Corporation's operating cities, encourage self-development and competition between municipal administrations, monitor social and economic indicators and exchange best practices.

The best Russian and international rankings in the sphere of urban development were analysed to develop the contest methodology. As a result, a system was built comprising 24 indicators divided into four categories: 'Population and Living Standards', 'Economy and Budget', 'Employment and Social Sphere', and 'Quality of Urban Environment and Infrastructure'.

Ten CATFs, nine cities near NPPs, as well as the cities of Glazov, Krasnokamensk and Dimitrovgrad participated in the contest. Novovoronezh, Polyarnye Zori and Zheleznogorsk topped the overall ranking. Zheleznogorsk was the absolute leader, and received a money certificate for the provision of urban amenities. The decision on how to invest the funds will be made depending on the opinion of the CATF's residents.

Fig. Overall city ranking

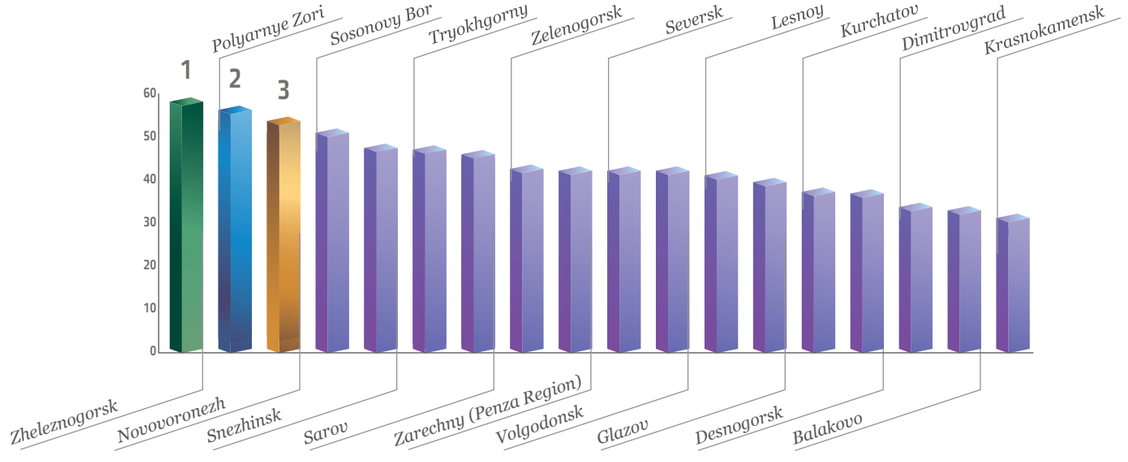


Table. List of indicators for ranking

Population and Living Standards

1. Change in population size during the last year, %
2. Average monthly salary of employees of the organizations, RUB
3. Ratio of the average monthly salary to the cost of a fixed basket of consumer goods for the subject
4. Average granted pension, RUB
5. Housing provision, sq. m per capita
6. Vehicle mobility of the population, pcs. per 1,000 people.

Economy and Budget

1. Budget deficit / surplus, RUB thousand
2. Inter-budget transfers, RUB per capita
3. Fixed investments (excluding ROSATOM's funds), RUB per capita
4. Number of newly established legal entities in the reporting period, entities per 1,000 people
5. Fiscal capacity, RUB per capita
6. Share of tax revenues of the local budget (excluding tax revenues from additional rates for allocations) in the total own revenues of the municipal budget (excluding subvention), %

Employment and Social Sphere

1. Total unemployed population as a percentage of the economically active population (unemployment rate), %
2. Share of population employed outside the municipality in the economically active population, %
3. Average results of the Uniform State Exam across high school graduates
4. Number of educators engaged in additional education, people per 10,000 people
5. Number of SMEs, units per 10,000 people
6. Share of the population regularly doing sports, %

Quality of Urban Environment and Infrastructure

1. Number of accidents in water supply and sewerage systems, heat supply sources, steam and heat network pipelines, power lines, pcs.
2. Mileage of local public highways failing to comply with regulatory requirements as a percentage of the total local public highway mileage, %
3. Utility infrastructure wear, %
4. Multi-dwelling housing area requiring major repairs, sq. m per 1,000 people
5. Number of yards equipped with children's playgrounds with at least 3 structures, pcs. per 1,000 people

5.2.8. IMPLEMENTATION OF SOCIAL AND CHARITY PROGRAMMES IN THE OPERATING REGIONS

Continuing the traditions of the nuclear industry, ROSATOM and its organizations strictly adhere to the principles of responsible business. The Corporation views the social and economic development of Russia, its regions and cities, including CATFs, as its major priority and consistently implements industry-wide social and charity programmes *(details on charity work are provided at http://ar2012.rosatom.ru/upload/ru/Rosatom_AR_2012.pdf)*.

Table. Areas of charity work

Areas of charity work	*Scope, RUB million*
Initiatives to build the historical and cultural heritage of Russia	331.77
Contests of social and charity projects	165.7
Educational initiatives and support for project activities of educational establishments	98.83
Patriotic education and donations to conduct ceremonial events commemorating memorable dates	83.1
Initiatives to develop sports for children and mass amateur sports, promoting healthy lifestyle	80.6
Aid provided at the request of individuals and local authorities, including emergency medical aid and non-financial participation	79.5
Initiatives related to culture and the spiritual and moral development of young people	78.3
Assistance to veterans, disabled people, orphans and people living through hardships	31.9
Total	**949.7**

ROSATOM's School[38]

ROSATOM's School is an industry-wide educational initiative aimed at supporting and modernizing unique educational systems in the cities in which ROSATOM's enterprises are located in line with the leading Russian and global trends in social, economic and technological development.

ROSATOM's Territory of Culture

The multi-year programme 'ROSATOM's Territory of Culture' aims to introduce the best works of art and support local initiatives in the cities where nuclear facilities are located.

In 2015, 30 travelling art exhibitions were conducted, including those to commemorate the 70th anniversary of the Victory in WWII ('1,418 days from Murmansk to Berlin', 'Military Poster') and the 70th anniversary of the establishment of the nuclear industry ('Soviet Childhood').

[38] *http://rosatomschool.ru/*

Fig. ROSATOM's School

FEATURES OF EACH KINDERGARTEN IN THE NETWORK (5 KINDERGARTENS):

- Dual language programme (English and Russian)
- Open Space for children
- State-of-the-art technology

FEATURES OF EACH SCHOOL IN THE NETWORK (4 SCHOOLS):

- High-tech interactive zone for senior school students
- Individual education plans for senior school students

EVENTS IN 2015:

- 4 professional contests for teachers and educators from schools and kindergartens
- 17 of the best teachers and directors conducted on-the-job training for over 200 teachers from 20 participating cities based on original programmes
- 17 of the best teachers underwent on-the-job training in the best schools and kindergarten of Moscow and Russia
- 5 networking events for talented children
- The first meta-disciplinary academic contest in Russia
- All-Russian Children's Centre Orlyonok—two shifts
- 6 nuclear classes were opened

31 tours were organized, including those under the agreement with the Russian Ministry of Culture. Leading theatres such as the Contemporary Drama School, the Maly Theatre and the Russian Academic Youth Theatre, the Moscow Virtuosi orchestra of Vladimir Spivakov, the Pyatnitsky Choir, and Minin's Choir visited the CATF cities.

2015 also saw the 10th All-Russia Contest for students of orchestra departments of children's art schools in the nuclear cities, the industry-wide festival of wind and dance-and-jazz orchestras Novouralskie Fanfary; the 4th All-Russia Contest and Festival Tantsevalny Perekryostok, the U235 industry-wide festival for amateur singer-songwriters and poets in ROSATOM's cities and an industry-wide theatre festival to commemorate the 70th anniversary of the Victory in WWII 'Five Nights to Commemorate the Victory Day'.

5.3. ACTIVITIES OF ROSATOM'S PUBLIC COUNCIL[39]

ROSATOM's Public Council was established in 2006 to engage Russian citizens, public and professional associations, research institutions and local authorities in the development of recommendations for ROSATOM on developing the nuclear industry.

Key areas of work:

- Organization of research, and scientific and expert activities;
- Activities in the regions, conducting public dialogue forums;
- Awareness campaigns, educational, social and cultural activities.

In 2015, the Public Council published a book 'ROSATOM's Imagery' dedicated to the 70th anniversary of the establishment of the nuclear industry in Russia

Organization of research, and scientific and expert activities

In 2015:

- A revised version of the state programme 'Development of the Nuclear Power Sector' was analysed by experts;
- The draft federal target programme on nuclear and radiation safety for the period from 2016 through 2020 and until 2030 was analysed by experts;
- Working groups were created to develop ROSATOM's operating regions and cooperate with SMEs, and to develop recommendations on public monitoring of the nuclear industry.

Public dialogue forums

In 2015, reception offices of the Public Council functioned in the CATFs of Zelenogorsk, Novouralsk and Sosnovy Bor. New reception offices were opened in the Tomsk Region (CATF Seversk), the Krasnodar Territory (CATF Zhelenogorsk) and the Rostov Region (Volgodonsk). A Regional Public Council on Safe Development of Nuclear Industry functioned in the Murmansk Region.

The Public Council traditionally organized dialogue forums in the reporting year dedicated to the safe use of nuclear energy:

- The 8th Regional Public Dialogue Forum '70 years of the Russian Atom. National Interest, Environment and Safety' (June 10-11, 2015, Chelyabinsk, Russia)
- The 10th International Public Dialogue Forum 'Nuclear Energy, Society, Safety' (November 12-13, 2015, Moscow, Russia)

Table. Contest of socially important projects

	Number of presented projects, pcs.	*Number of approved projects, pcs.*	*Cost of the implemented projects, RUB million*
2013	192	127	54.3
2014	360	101	48.0
2015	501	73	47.8

[39] http://rosatom.ru/

5.4. STAKEHOLDER ENGAGEMENT

5.4.1. APPROACHES TO STAKEHOLDER ENGAGEMENT

Key results in 2015:
- 75.5% of the population in Russia supports the use of nuclear energy;
- Viewership of terrestrial and cable channels broadcasting the 'Strana ROSATOM' TV programme totals 11.3 million people.
- 571,000 people visited Nuclear Energy Information Centres;

Due to its scale and special characteristics of its business (simultaneous performance of state and business tasks, operation across a large number of markets), ROSATOM has a wide range of stakeholders both in Russia and worldwide. Targeted work with stakeholders is aimed at achieving strategic objectives and getting the public on board for developing nuclear energy. The Corporation fosters systematic and constructive stakeholder engagement in each area of its business, and communicates with society as a whole.

Fundamental principles of stakeholder engagement are as follows:

- Respect and accommodation of the interests of all participants, open efficient cooperation;
- Timely and exhaustive information on all the activities of ROSATOM;
- Striving to provide specific benefits to all participants;
- Fulfilment of obligations.

Fig. Stakeholder map

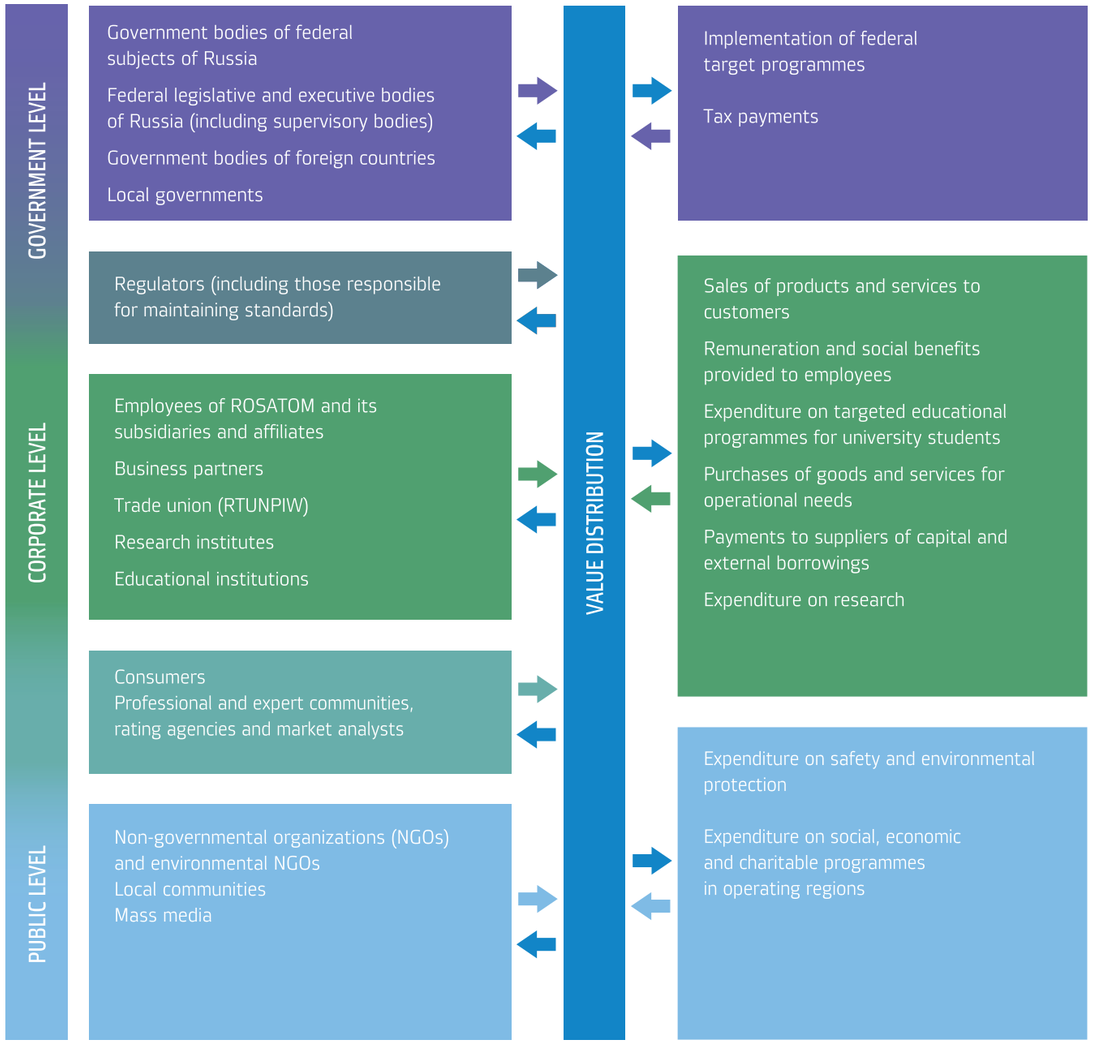
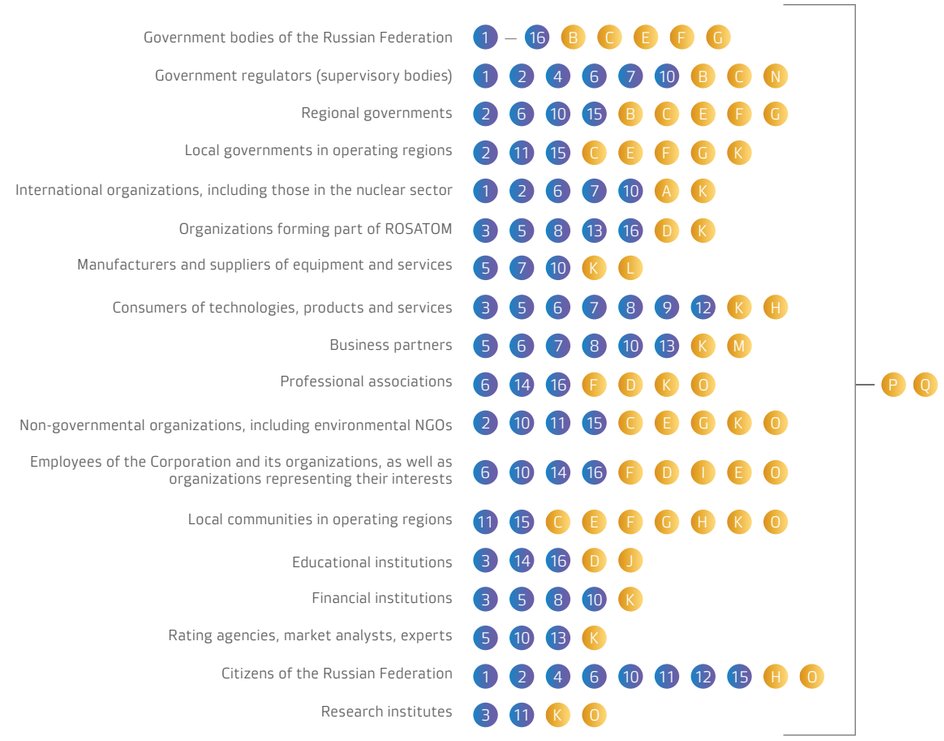


Fig. Interests and types of stakeholder engagement



Stakeholder interests

1. Ensuring non-proliferation of nuclear materials and technologies
2. Nuclear, radiation and environmental safety
3. Technological modernization in the nuclear industry
4. Efficient use of budget funds
5. Economic efficiency of ROSATOM's organizations
6. Compliance with international and Russian legislation
7. Fair competition and responsible behaviour in the market
8. Competitiveness in global markets
9. Improvement of product and service quality
10. Transparency of ROSATOM's operations, including transparency of procurement activities
11. Dealing with the legacy of past business operations and defence efforts in the industry
12. Reliable electricity supply
13. Adoption of international management norms and standards
14. Adequate remuneration to employees; support for professional development of employees; safe working conditions
15. Improvement of the quality of life in operating regions
16. Development of human resources in ROSATOM and its organizations

Types of stakeholder engagement

- A Cooperation with specialized international organizations, participation in international programmes and projects
- B Participation in law-drafting activities
- C Public consultations and public environmental impact assessments of NPP power unit construction projects
- D Employee training and development programmes
- E Social programmes and projects
- F Participation in the development of operating regions
- G Charity work
- H Opinion polls, customer satisfaction surveys
- I Hotlines
- J Programmes of cooperation with specialized universities
- K Dialogues, presentations, forums, conferences
- L Open and competitive procurement procedures
- M Programmes of cooperation with other companies
- N Programmes of cooperation with government regulators (supervisory bodies) and law enforcement agencies
- O Public governing and supervisory bodies
- P Information and communication
- Q Public reports

5.4.2. EXHIBITIONS

In 2015, the Corporation took part in 13 exhibitions and forums across Russia. The 7th International Forum ATOMEXPO 2015 (Moscow) was a landmark event held under the slogan 'Nuclear energy gives momentum to social and economic development'. The forum was attended by about 4,200 people, delegations from 47 countries and over 100 companies (including 29 foreign ones).

In September 2015, the Central Exhibition Hall Manege held a cultural and historical exhibition titled '70 Years of the Nuclear Industry. The Chain Reaction of Success' dedicated to the anniversary of the Russian nuclear industry. The exhibition recreated the historical context and showed why the Russian nuclear industry was given an impetus 70 years ago, in 1945. The exhibition showcased personal belongings of prominent nuclear scientists, declassified archival documents and other unique exhibits from the industry and public museums around the country, as well as interactive and 3D exhibitions dedicated to modern innovative nuclear technologies. The centrepiece of the exhibition was a mock-up of the legendary AN-602 thermonuclear bomb ('Kuzma's mother', the 'Tsar-bomb'), which is the most powerful weapon in history. In total, over 100,000 people attended the exhibition.

5.4.3. NUCLEAR ENERGY INFORMATION CENTRES[40]

Since 2008, ROSATOM has been implementing a project to build a network of nuclear energy information centres (NEIC) in its operating regions. The first centre was opened in 2008. By December 31, 2015, the NEIC network comprised 17 centres in Russia and 6 centres abroad (including a centre opened in the reporting year in Astana, Kazakhstan). During 7 years, over 2 million people visited the centres, including over 571,000 in 2015.

In 2015, the NEIC network continued to organize and conduct events for promoting nuclear energy, science and technology:

- 2,300 people at 16 centres took part in two creative and research contests for high school students: Nuclear Science and Technology, and My Atom;
- The Contemporary Science Film Festival held in CATF Ozersk and Snezhinsk was attended by 4,000 people; 35 film viewings were held;
- The Energy of Science project brought together over 800 people, including university and school students and teachers, who were offered an opportunity to participate in events held by leading Russian scientists and science communicators;
- In Kaliningrad, Russia, about 4,000 participants took part in over 40 events of various formats at 16 venues across the city as part of the Facets of the Future science festival;
- 79 teams took part in the first industry-wide championship in the What? Where? When? intellectual game; the 'Tikhomirny Atom' team representing FSUE VNIIA won the championship.

[40] http://myatom.ru/

Fig. Nuclear Energy Information Centres

5.4.4. THE FORSAZH FORUM

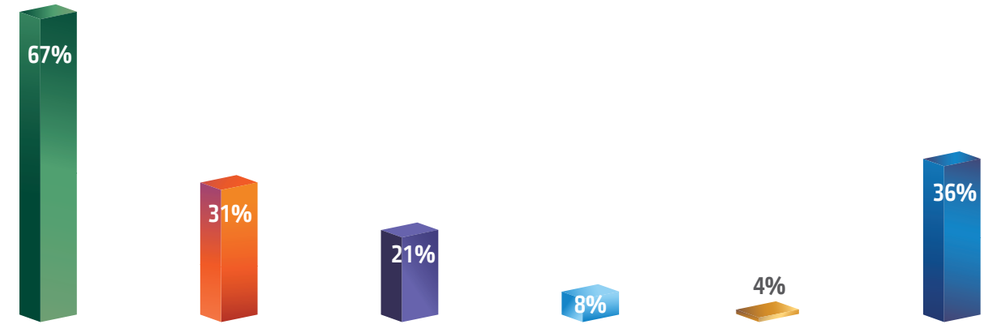
In 2015, the Kaluga Region hosted the fifth Forsazh forum, which was attended by about 800 participants. The forum was designed as a shared communication platform for future professionals from innovative Russian and international companies. Moreover, Forsazh is the face-to-face stage of the Innovative Nuclear Leader competition, which provides young inventors with an opportunity to present their own inventions and receive grants to further develop and finalize these inventions. Every year, young nuclear industry employees submit innovative projects by post; 35 projects selected at the preliminary stage are then presented to the panel face to face. 20 participants are named winners and receive grants of RUB 200,000 each; the other 15 are awarded consolation prizes of RUB 55,000.

5.4.5. WHAT? WHERE? WHEN?

In 2015, the Company continued its cooperation with the What? Where? When? TV game show, which promotes ROSATOM amongst the target audience as the Knowledge Corporation: an area of activities and a business which is underpinned by people's knowledge, innovations and high technologies.

The ROSATOM team, which comprises nuclear specialists from various industry organizations, participated in a series of games in the 40th anniversary season of What? Where? When?, demonstrating the human and intellectual potential of the nuclear industry to the Russian TV audience.

Fig. Industry-related information sources for employees of ROSATOM and its organizations[41]



5.4.6. INDUSTRY MEDIA

In 2015, the Corporation continued to publish Strana ROSATOM ('The Country of ROSATOM'), a weekly industry newspaper with a circulation of 58,000 copies and a readership of over 250,000 people.

The newspaper is designed to:

- Shape an industry-wide information environment consistent with the Corporation's mission, strategic goals and values;
- Increase employee involvement;
- Support the Corporation's image as an employer.

The newspaper includes regional supplements SR-Regions, a scientific supplement Laboratory. SR; a supplement published by the Nuclear Centre FSUE RFNC-VNIIEF, and a supplement published by JSC Rosenergoatom Concern titled Energichnye Lyudi (Energetic People).

The newspaper readership comprises employees of nuclear enterprises ranging from line professionals up to senior managers. The polls indicate, however, that employees' relatives, veterans of the nuclear industry, customers and partners of ROSATOM read the newspaper too. A large part of the readership is comprised of residents of small monotowns, including closed territorial formations.

[41] *According to the annual engagement survey in the industry (% of employees who marked this source of information).*

5.4.7. INDUSTRY TELEVISION

In 2015, an information and analytical TV programme Strana ROSATOM was aired in 24 'atomic' cities across 17 regions of Russia. It was broadcast in 34 organizations of ROSATOM. The viewership of terrestrial and cable channels that broadcast the programme totalled about 11.3 million people.

In 2015, a total of 469 pieces were aired (185 on TV, 397 on the Internet). In the reporting year, the share of items on operational matters increased across the board from 49% to 66.3%. In addition, media services of the Corporation's organizations sent 2.5 times more pieces than the number of those prepared for TV broadcasting, which made it possible to select the best pieces for broadcasting. Thus, pieces on operational matters occupied 80% of the TV schedule (72% on the Internet), which helped reflect more accurately the image of the nuclear industry.

Fig. Broadcasting coverage of the Strana ROSATOM programme

5.4.8. INDUSTRY RADIO

The Strana ROSATOM radio programme is broadcast three times a week (for 15-18 minutes). In 2015, 135 radio programmes were broadcast, including 714 news items, 98 interviews, 44 reports, 55 columns, and 23 special information blocks. The programmes were aired across 50 industry organizations via cable radio or the intranet, and uploaded to ROSATOM's website.

In 2015, the industry radio worked on social networking sites. The number of #atomradio podcast plays on PodFM.ru doubled in the reporting year (from 12,894 to 26,369). The Atomradio audience comprises listeners from over 15 countries. 900 unique visitors per month visit #atomradio pages on social networking websites.

5.4.9. ONLINE COMMUNICATIONS

In 2015, ROSATOM continued to actively use the Internet and social networking sites to inform the general public of its operations. During the year, *ROSATOM's official website* was visited by 793,000 users, according to Google Analytics (up by 13.6% year on year). The total number of page views exceeded 4.27 million (up by 12.4% year on year).

In the reporting year, the Corporation expanded its presence on popular social networking sites. Due to the adoption of new SMM strategies with regard to its presence on VKontakte, Facebook and Twitter, ROSATOM stopped quoting its press releases and adapted the Corporation's newsworthy events to the format of the social networking sites. ROSATOM started creating original content (including multimedia content, e.g. congratulatory and educational video messages). This content was created specifically for the Corporation's profiles on social networking sites, including with assistance from external experts (well-known Russian science communicators and journalists from the federal media reporting on science). As a result, a record rate of growth of the number of subscribers and reach on social networking sites was achieved. By the end of 2015, the Corporation's official community on Facebook expanded by a third, from 7,970 to 11,950 people. The community in VKontakte doubled from 7,540 to 16,890 people; the monthly average subscriber reach on VKontakte totalled 96,000 people (as against 26,000 in 2014, i.e. it increased by a factor of over 3.5). By the end of 2015, 6,597 users followed the Corporation's blog on Twitter (a 63% year-on-year increase). By the end of 2015, ROSATOM's channel on YouTube had 4,059 subscribers (an 87% year-on-year increase). Another important area of work on social networking sites consisted in partnership with large governmental and popular science communities, such as the Ministry of Internal Affairs of Russia, TASS Science, Molniya-Nauka, the Polytechnic Museum, etc.

By the end of 2015, the Corporation's official community on Facebook expanded by a third, from 7,970 to 11,950 people. The community in VKontakte doubled from 7,540 to 16,890 people

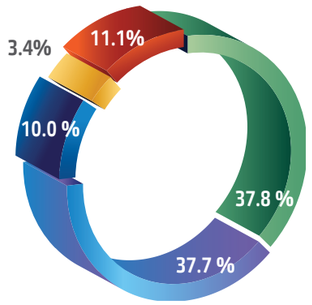
5.4.10. OPINION POLLS

ROSATOM annually analyses the findings of independent opinion surveys on how the Russian population perceives the development of nuclear energy in the country, and adjusts its communications with stakeholders accordingly.

In early 2016, 75.5% of people supported the use of nuclear energy in Russia, according to a survey by ANO Levada-Centre[42] (in the survey, they answered 'Develop it actively' and 'Maintain at the current level'). This reflects the population's acceptance of nuclear energy and trust in the nuclear industry. Moreover, people tend to see nuclear energy as the most promising energy source which will replace hydrocarbons in the future.

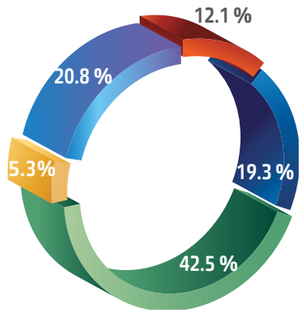
[42] *The survey was conducted between February 12 and February 15, 2016 across a representative sample of Russian citizens comprising 1,602 people aged 18 and above.*

Do you think the nuclear power industry should be actively developed, maintained at the current level, minimized, or totally abandoned?



- *Actively developed*
- *Maintained at the current level*
- *Minimized*
- *Totally abandoned*
- *I do not know*

They say Russia will run out of oil and gas in 20 years. What do you think could replace them as a source of energy?



- *Coal*
- *Water resources*
- *Nuclear energy*
- *Other*
- *I do not know*

SAFETY GUARANTEE

THERE WERE NO EVENTS RATED AT LEVEL 2 OR HIGHER ON THE INES SCALE

THE INJURY FREQUENCY RATE DECREASED FROM 0.43 IN 2014 TO 0.34 IN 2015 (THE AVERAGE RATE FOR RUSSIA WAS 1.6)

NO FINES FOR VIOLATIONS OF ENVIRONMENTAL LEGISLATION WERE IMPOSED ON ANY OF THE 10 RUSSIAN NPPS CURRENTLY IN OPERATION

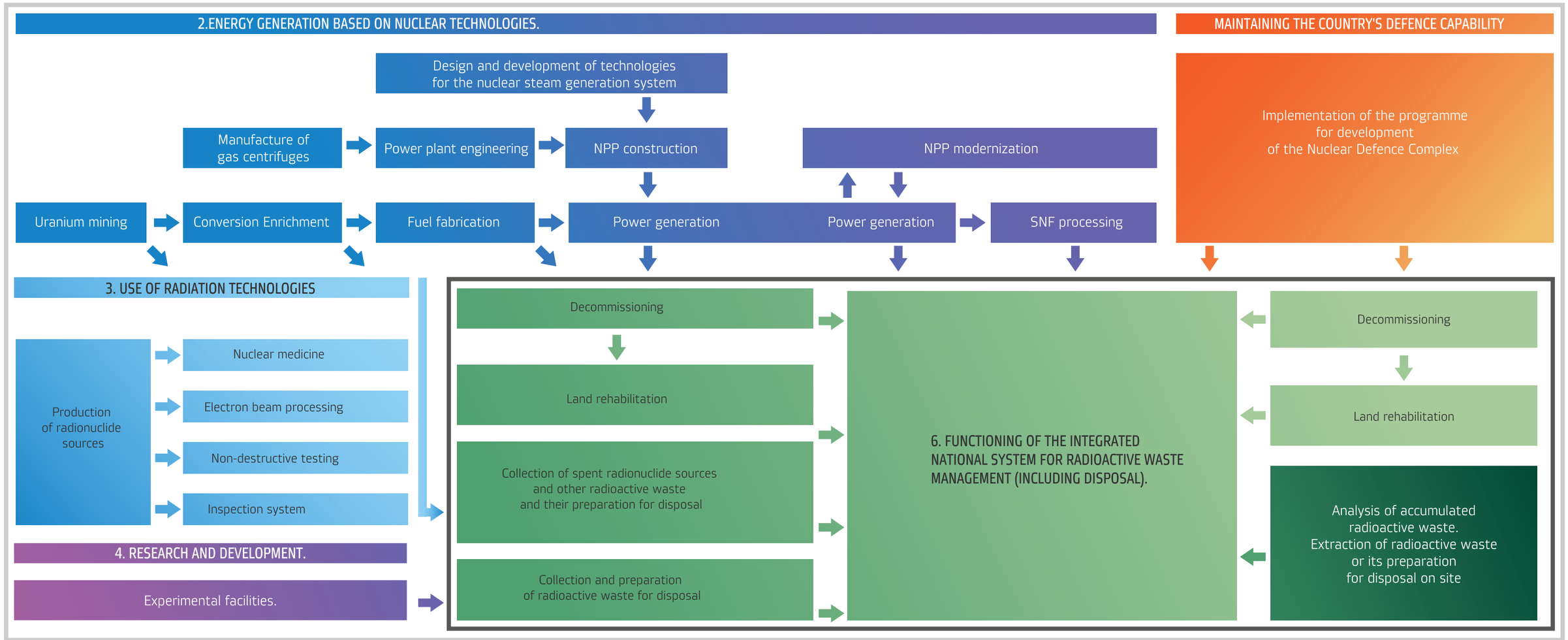
THE FEDERAL TARGET PROGRAMME ON NUCLEAR AND RADIATION SAFETY FOR THE PERIOD FROM 2008 THROUGH 2015 WAS SUCCESSFULLY COMPLETED

6.1. NUCLEAR AND RADIATION SAFETY

6.1.1. NUCLEAR AND RADIATION SAFETY MANAGEMENT

ROSATOM is focused on the effective performance of legally stipulated powers and functions in the management of nuclear power use, the foremost of which is ensuring safety and protecting the environment when using nuclear power. This task is performed with the use of all major state and non-state governance mechanisms with the participation of various units of ROSATOM and its organizations.

Fig. Nuclear and radiation safety management



1. Maintaining the country's defence capability

2. Energy generation based on nuclear technologies

3. Use of radiation technologies

4. Research and development

5. Solution of legacy problems

Nuclear and radiation safety circuit II. Completion of final stages of process cycles

Nuclear and radiation safety circuit I Safe operation of nuclear facilities

6.1.2. NUCLEAR AND RADIATION SAFETY AT NUCLEAR FACILITIES

In 2015, ROSATOM ensured sustainable and safe operation of enterprises in the nuclear industry. There were no incidents involving radiation leaks in 2015. Limits on employee radiation exposure were not exceeded.

Nuclear power plants

In 2015, as in previous years, no events rated at level 2 and higher on the INES scale were detected at ROSATOM's nuclear facilities (level 1 and 0 deviations pose no risk to employees operating the facilities, local residents or the environment).

In 2015, there were three deviations rated at level 1 on the INES scale:

- at Beloyarsk NPP, power unit No. 3: wrong actions of the personnel when preparing the workplace for repairing equipment in process protection circuits of the main circulation pump;
- at Kursk NPP, power unit No. 2: spontaneous opening of a safety valve due to the destruction of the plate of the safety valve shut-off device;
- at Kalinin NPP, power unit No. 2: a leak in the connector of the main loop isolation valve due to a violation in the seal unit assembly method.

Nuclear fuel cycle enterprises

14 events were registered at operating enterprises (FSUE Mayak Production Association and JSC Siberian Chemical Combine) (6 of them were registered on industrial reactors):

- 8 events entailed wounds and damage to employees' skin,
- 2 events were caused by a storm front,
- 4 events occurred as a result of errors made by the personnel.

Those events were recognized to be of no safety significance and were classified as below-scale events (level 0).

Research reactors

In 2015, there were 7 deviations caused by the following factors:

- poor quality of operation, including maintenance and repairs (2 events),
- exceeding the equipment service life (3 events),
- faults in design (2 events).

Fig. Causes of deviations in the operation of NPPs

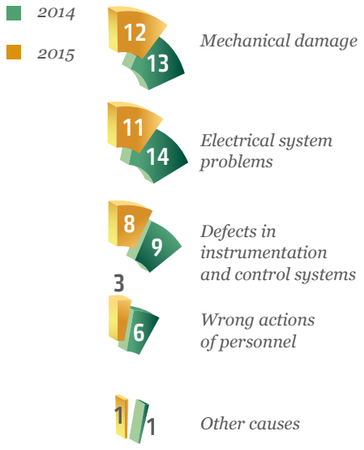
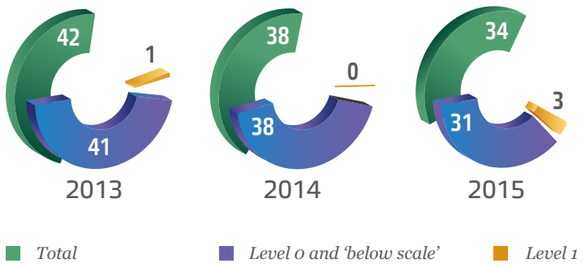


Fig. Changes[43] in the number of deviations in NPP operation on the INES scale, pcs.



[43] *Changes in the total number of deviations, excluding deviations at power units that were in pilot operation after completion of construction or at the commissioning stages.*

The safety status of nuclear facilities is assessed in terms of the number and scale of recorded deviations in their operation that are compared against the International Nuclear and Radiological Event Scale (INES) developed by the IAEA. Events on the scale are rated at seven levels: levels 4–7 are 'accidents'; levels 2–3 are 'incidents', and level 1 events are 'anomalies'. Events of no safety significance are classified as 'below scale'/level 0. Events of no safety relevance are classified as 'below-scale deviations'.

6.1.3. PHYSICAL PROTECTION OF NUCLEAR FACILITIES

The security and physical protection of ROSATOM's facilities posing nuclear and radiation hazards, nuclear and radioactive materials used and stored by the Corporation, including during their transportation, comply with the Russian legislation. Furthermore, Russian regulatory requirements are fully consistent with the IAEA recommendations on physical protection, and in some respects even surpass them. By now, the requirement to have at least two lines of intrusion detection devices based on different physical principles along the perimeter of a protected facility has been fulfilled at all of ROSATOM's nuclear facilities.

By now, the requirement to have at least two lines of intrusion detection devices based on different physical principles along the perimeter of a protected facility has been fulfilled at all of ROSATOM's nuclear facilities.

In 2015, ROSATOM together with the Russian Ministry of Internal Affairs and the Russian Federal Security Service checked the level of security and protection of important industrial and infrastructure facilities, including those under construction, at all nuclear industry facilities in accordance with the instruction of the Government of the Russian Federation. Besides, in 2015, as part of in-house monitoring, we conducted 12 scheduled checks of physical protection in ROSATOM's organizations, including checks of the status of their anti-terrorism security.

We continue upgrading the information system for monitoring the state of the physical protection system of ROSATOM's facilities posing nuclear and radiation hazards. In 2015, the said system was deployed at 6 nuclear facilities. We updated the software of the system installed earlier at 9 nuclear facilities. To date, ~80 automated workplaces of the monitoring information system have been created in the industry organizations, including more than 45 in 2015.

In addition, in 2015:

- We upgraded and replaced security equipment along over 30 km of the perimeters of protected areas of facilities posing nuclear and radiation hazards, including 54 checkpoints for people and vehicles;
- More than 5,200 pieces of equipment were installed in protected areas as part of equipment systems for physical protection;
- Over 105 km of cable routes of physical protection systems were laid;

In 2015, there were no instances of theft of nuclear materials or unauthorized entries of intruders into protected areas for committing sabotage.

- We upgraded physical protection equipment in more than 39 buildings;
- We installed equipment of an automated safety system for the transportation of nuclear and radioactive materials in two special railway cars, six special vehicles, as well as in one control point and one emergency and technical centre. We replaced equipment of automated safety systems with an expired service life in 21 railway cars and one control point;
- Two railway cars and 63 vehicles of industry organizations were equipped with ASTS-GLONASS transport monitoring systems.

6.1.4. EMERGENCY PREPAREDNESS

In order to ensure safe operation of the nuclear industry, protection of employees, local population and territories against the possible consequences of accidents (emergencies), ROSATOM operates an emergency prevention and response system, which is a functional subsystem of the Russian integrated state system for emergency prevention and response.

13 professional emergency response teams (ERTs) and 51 volunteer ERTs were formed as of December 31, 2015; they are in the state of readiness. The total number of emergency response workers in the industry is 2,112 people.

In 2015, the emergency response teams participated in 319 emergency, special tactical and command post exercises and training sessions, including together with the management bodies and forces of functional subsystems of the Russian System of Emergency Prevention and Response of various ministries and agencies. Overall, 545 people and 73 units of special equipment were engaged in the training exercises. The exercises showed the readiness of the management bodies and the emergency response teams to act as intended.

Industry-Wide Automated Radiation Monitoring System (IARMS)

The industry-wide ARMS is a functional subsystem of the Integrated State Automated Radiation Monitoring System (ISARMS). Its main function is to perform state monitoring of radiation levels in the locations of facilities posing nuclear and radiation hazards. The IARMS is one of the tools for emergency notification and for providing information for decisions on accident response.

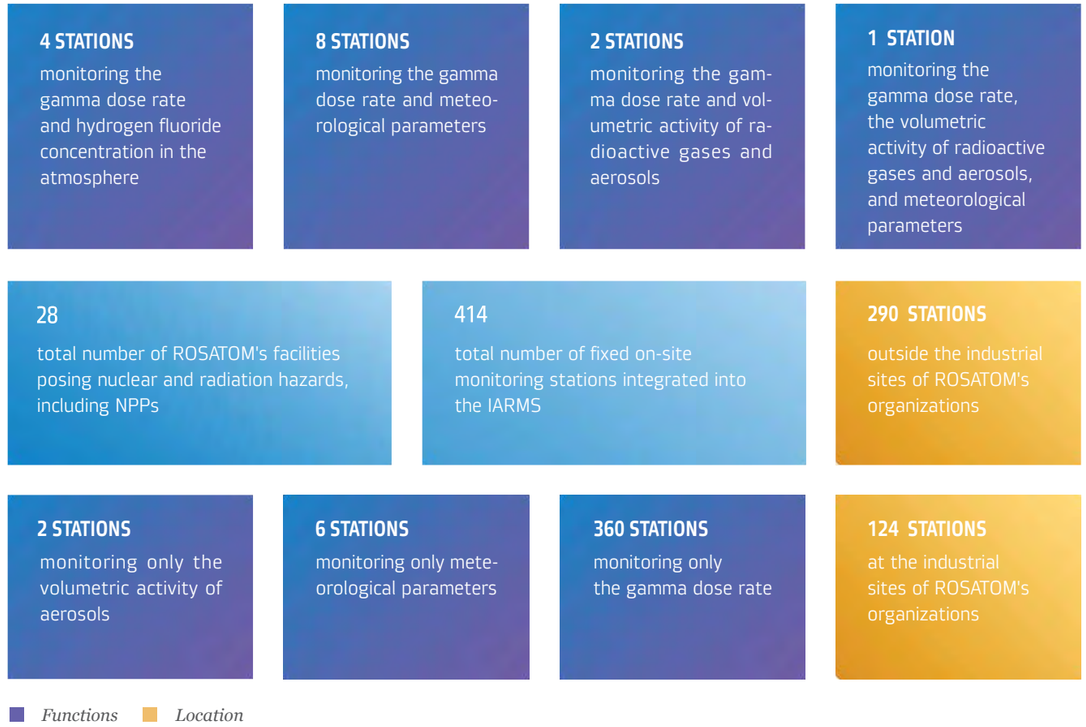
As of December 31, 2015, on-site ARMSs integrated into the IARMS operated in the areas of location of ROSATOM's facilities posing nuclear and radiation hazards, including all NPPs. The total number of fixed monitoring stations is 414 (290 stations are located outside the industrial sites; 124 ARMS stations are located at the industrial sites of ROSATOM's organizations).

Real-time data from the radiation monitoring stations operated by ROSATOM's organizations are available on the website at *www. russianatom.ru.*

Industry-Wide System for On-Site Subsoil Condition Monitoring (IS OSCM)

The IS OSCM is ROSATOM's basic system that ensures continuous radiation and chemical monitoring of the condition of groundwater and surface water, water-bearing materials, soil and snow cover. The main function of the IS OSCM is to ensure radiation and chemical safety of nuclear facilities at all stages of their life cycle, as well as safety of the population living in the areas monitored by the enterprises. OSCM results are required for the development and subsequent maintenance of permanent geofiltration and geomigration models providing the rationale for management decisions on the safe operation or decommissioning of facilities posing nuclear and radiation hazards.

Fig. Industry-Wide Automated Radiation Monitoring System



As of December 31, 2015, all 55 of ROSATOM's enterprises of environmental significance were integrated into the IS OSCM. The total number of observation wells used for monitoring the condition of subsoil at all facilities is 3,774. Monitoring results are archived in the automated information system for OSCM (AIS OSCM) at subscriber stations placed at all enterprises and on the central server of the AIS OSCM. As of December 31, 2015, about 105 results of subsoil condition monitoring were recorded, summarized and analysed in the AIS OSCM, which made it possible to:

- obtain an objective assessment of the subsoil condition and the monitoring system at all environmentally relevant enterprises in the industry; develop recommendations for the improvement of OSCM systems;
- provide a rationale for and complete the renovation of the observation networks at 18 enterprises (21 sites), which greatly improved the accuracy of monitoring results;
- provide 31 enterprises with geological and hydrogeological conceptual models, and 27 enterprises with geomigration models (including 19 enterprises provided with permanent models);
- prepare the rationale for design solutions for decommissioning of nuclear legacy facilities for four enterprises.

We are planning to further develop the methodology and improve the technology of observations, the instruments and the set of methods for field and laboratory analyses applied in the course of OSCM, as well as to improve the information component in the tools for monitoring and control of the impact of facilities posing nuclear and radiation hazards on the environment and people.

6.1.5. INDUSTRIAL SAFETY

As of December 31, 2015, 116 of ROSATOM's organizations operated 773 hazardous industrial facilities (HIFs) (794 facilities in 2014), 8 of which belong to hazard class I , 31 to hazard class II, 282 to hazard class III, and 452 to hazard class IV.

In 2015, there were no events at ROSATOM's industry facilities classified as 'accident at a hazardous industrial facility'. All equipment operated at HIFs under ROSATOM's control undergoes technical inspection and expert examination of industrial safety according to the schedule. Employees operating hazardous industrial facilities have all the required special clothing and personal protective equipment of proper quality.

6.1.6. OCCUPATIONAL SAFETY AND HEALTH

One of the main priorities for ROSATOM is to protect the life and health of employees in the industry. In 2015, systematic work was continued to increase the level of safety in organizations, including efforts to reduce the number of occupational injuries and reduce employee exposure to occupational hazards, as well as to ensure the safety of employees in contractor organizations.

Industrial injuries, accidents, occupational diseases

In 2015, the injury frequency rate (FR) across the industry totalled 0.34. In 2015, the highest injury rate among ROSATOM's enterprises was recorded at FSUE Mining and Chemical Combine (FR[44]=0.95, five accidents), FSUE Atom-Okhrana (FR=0.91, eight accidents) and FSUE Elektrokhimpribor (FR=0.78, seven accidents).

In 2015, the lost time injury frequency rate (LTIFR) stood at 0.2. In 2015, fatal accidents occurred at PJSC Priargunsky Industrial Mining and Chemical Union (two accidents), at PJSC Energospetsmontazh and FSUE Mining and Chemical Combine (one accident each).

In 2015, occupational diseases were first identified among 50 employees, 49 of whom are employees of JSC Priargunsky Industrial Mining and Chemical Union, and 1 employee works at FSUE Mining and Chemical Combine.

Table. OSH indicators

Indicator	*2013*	*2014*	*2015*
Number of accident victims (people)	127	109	91
Number of fatalities (people)	4	4	4
Injury frequency rate, FR	0.51	0.43	0.34
LTIFR	0.28	0.29	0.20
Number of people with a newly identified occupational disease	47	48	50

Fig. Comparative data on industrial injuries in Russia and ROSATOM (FR)

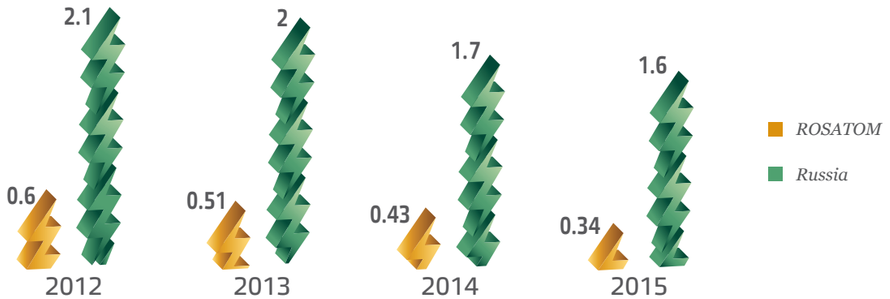
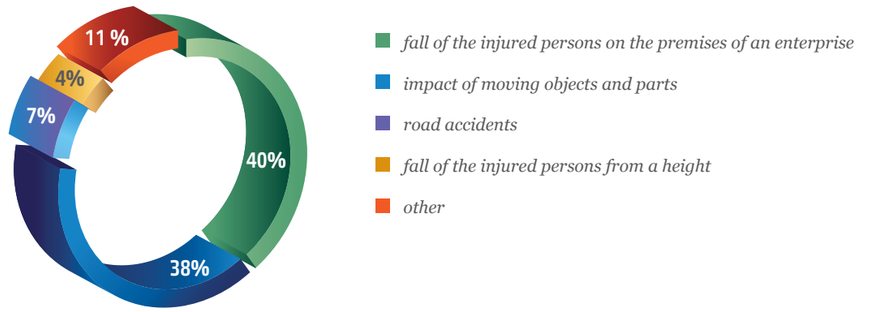


Fig. Causes of injuries in 2015



[44] *FR stands for the number of industrial injuries per 1,000 employees during a certain period of time, usually during a year.*

Table. Changes in LTIFR[45]

ROSATOM's divisions/complexes	*2013*	*2014*	*2015*
Nuclear Weapons Division	0.31	0.21	0.22
Mining Division	0.53	0.85	0.23
Fuel Division	0.15	0.08	0.14
Power Engineering Division	0.05	0.02	0.02
Engineering Division[46]	0.13	0.14	0.16
Life Cycle Back-End Division	0.27	0.45	0.10
Innovation Management Unit	0.49	0.3	0.10
JSC OTEK	0	0	0
Mechanical Engineering Division	0.73	0.51	0.42
Total across ROSATOM	**0.28**	**0.29**	**0.2**

6.1.7. RADIATION EXPOSURE OF EMPLOYEES

Ionizing radiation is a production factor specific to ROSATOM's enterprises. The criteria of employee radiation safety are set out in the Radiation Safety Standards (NRB-99/2009), the Basic Sanitary Rules of Radiation Safety (OSPORB-99/2010), and other regulations. Working conditions that fully meet the requirements of these documents were created at the majority of enterprises in the industry.

Average annual effective radiation dose of employees

In 2015, 66,308 people (group A employees) were under individual radiation exposure monitoring in ROSATOM's organizations. Compared to 2014, that number decreased by 1.1% (710 people).

In 2015, the average annual effective radiation dose of ROSATOM's personnel totalled 1.72 mSv. Over the past seven years, the average annual effective and collective radiation doses of employees have been varying slightly and remain at a low level.

In 2015, as in previous years, the total effective dose for any employee did not exceed 100 mSv over five consecutive years. The annual dose limit of 50 mSv established by the Radiation Safety Standards was not exceeded.

Individual radiation risks of employees

In 2015, we continued monitoring radiation risks for group A employees using the IRAW system (an automated system for measuring individual radiation risks).

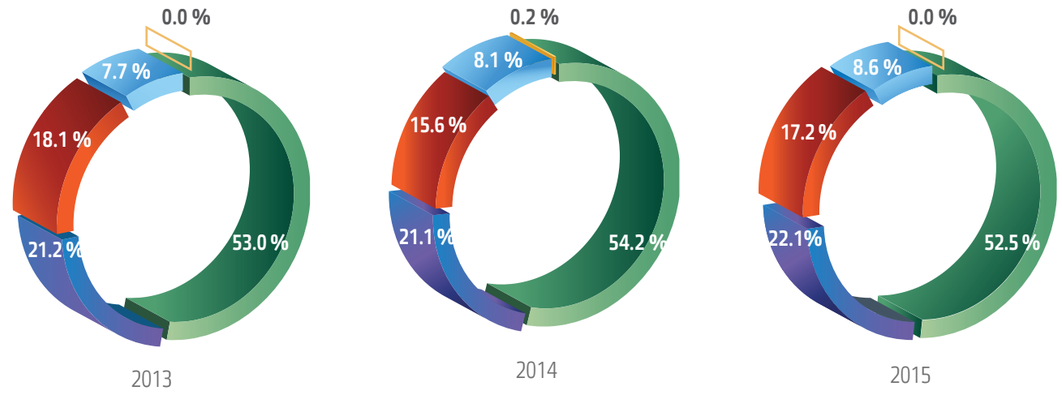
The individual risk was defined for 62,435 people, or 94.3% of the total number of group A personnel. The absolute majority of group A employees work in the conditions of acceptable occupational risk. Individual risk exceeded the established value of 10^{-3} for 845 people (1.36% of the personnel included in the IRAW system). The high risk group largely consists of industry veterans.

Over the past five years, the average level of individual radiation risk for ROSATOM has not exceeded 8% of the established limit, while the maximum level of individual risk has been steadily declining from 0.012 to 0.0066.

In 2015, the overall risk of potential radiation exposure of group A personnel was evaluated for the first time ever. The safety index of potential exposure (SIPE) was assessed for the personnel of 41 organizations. The safety index of potential exposure takes into account the limit for the overall risk (no more than $2*10^{-4}$ per year according to Radiation Safety Standards NRB-99/2009) and makes it possible to monitor the level and forecast the state of radiation protection in the organization in terms of potential radiation exposure of the personnel. The state of radiation protection at the enterprise in terms of potential radiation exposure is considered to be optimal if the index value exceeds 50% and does not decrease over time. In most industry organizations, the SIPE was higher than 50%; the average SIPE for ROSATOM stood at 67% in the reporting year.

Radiation risk monitoring results form the basis for decisions regarding the optimization of the radiation protection of personnel in order to prevent an increase in the size of the group of high occupational risk.

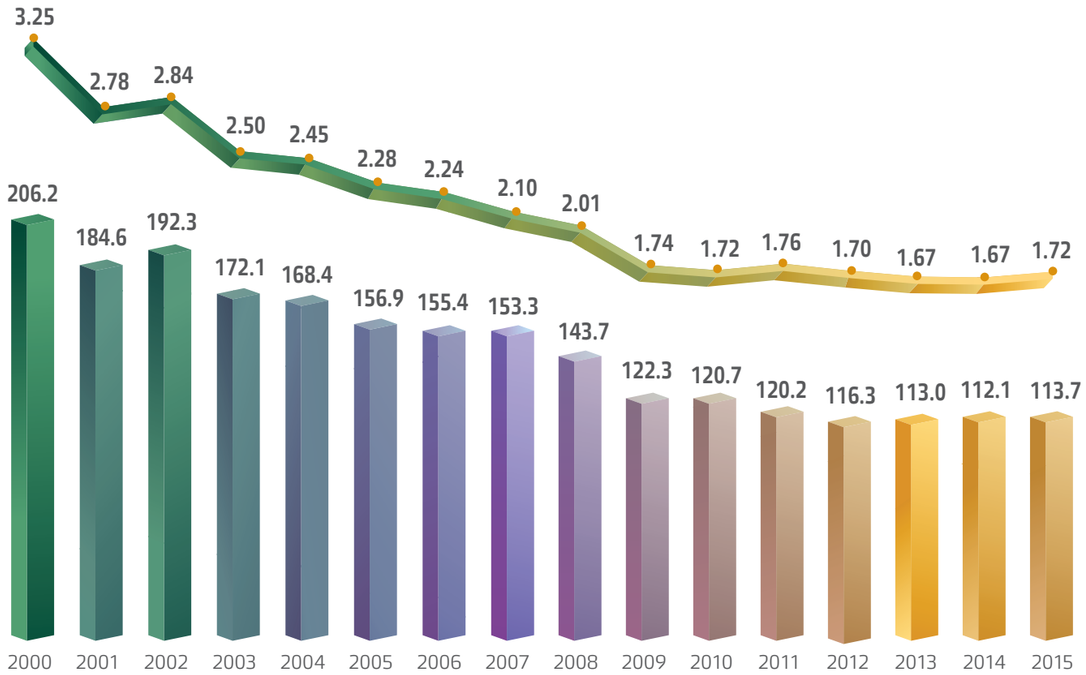
Fig. Distribution of group A employees by dose ranges from 2013 through 2015, % of the total number



[45] *LTIFR is the ratio of total working hours lost due to injuries (1 million man-hours) to total working hours.*

[46] *LTIFR for the Engineering Division does not include JSC Atomenergoproekt, which was included in the Division in the middle of 2015.*

Fig. Radiation doses of employees



Average annual effective radiation dose of personnel, mSv

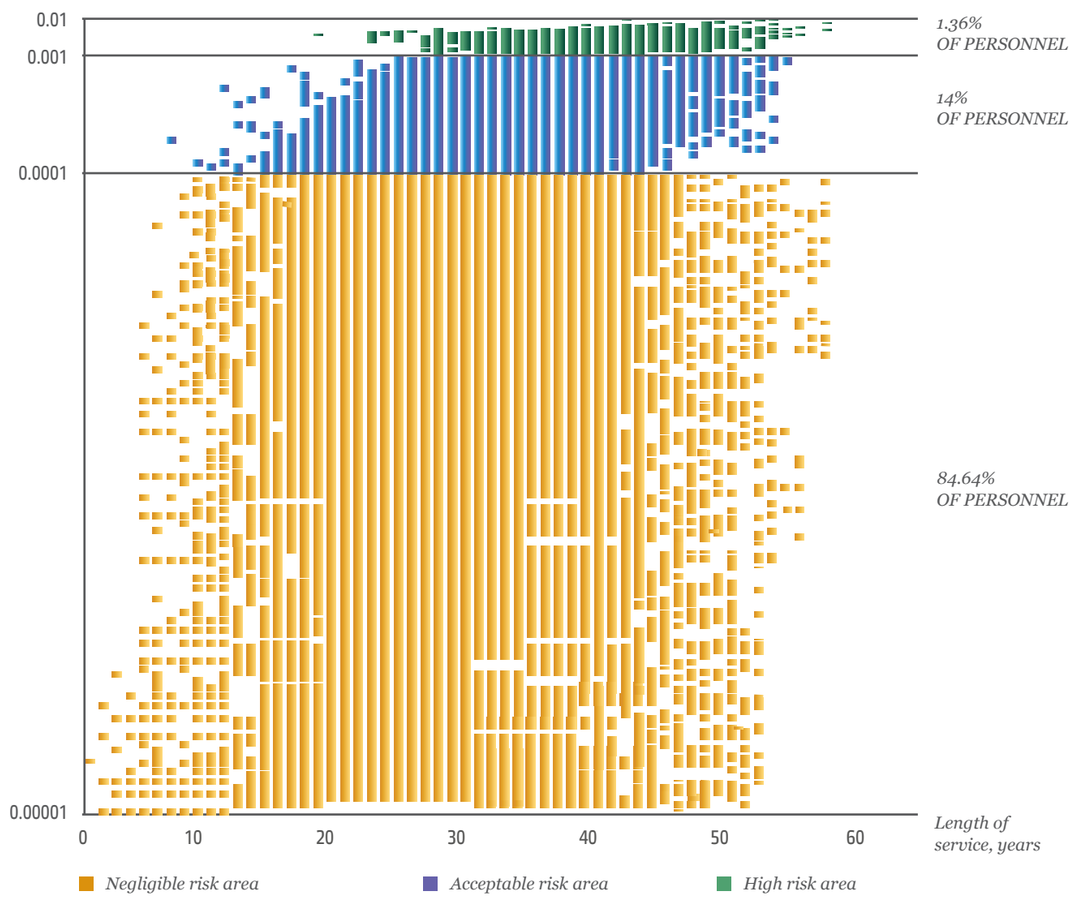
*Collective radiation dose of personnel, man*Sv*

Table. Results of radiation risk monitoring

Group of organizations	*Average individual risk*	*Average SIPE[47]%*
Power Engineering Division	1.2×10^{-4}	67
Fuel Division	3.1×10^{-5}	76
Nuclear Weapons Division	5.0×10^{-5}	65
Mining Division	2.0×10^{-5}	48
Life Cycle Back-End Division	6.8×10^{-5}	77
Innovation Management Unit	1.0×10^{-4}	67
Mechanical Engineering Division	8.5×10^{-5}	74
ROSATOM, total	**7.9×10^{-5}**	**67**

[47] *SIPE stands for the safety index of potential exposure*

Fig. Individual radiation risks of employees



6.2. RAW AND SNF MANAGEMENT AND DECOMMISSIONING OF FACILITIES POSING NUCLEAR AND RADIATION HAZARDS

OLEG KRYUKOV,
DIRECTOR FOR PUBLIC POLICY ON RADIOACTIVE WASTE, SPENT NUCLEAR FUEL AND NUCLEAR DECOMMISSIONING

Key results in 2015:

- The federal target programme on nuclear and radiation safety for
- the period from 2008 through 2015 was successfully completed;
- Lake Karachay in the Chelyabinsk Region, Russia, which served as a storage facility for liquid radioactive wastes, was buried.

— In 2015, the federal target programme on nuclear and radiation safety (FTP NRS) for the period from 2008 through 2015 was completed, and impressive results were achieved in many areas. How did you manage that?

The success of the programme was due to a number of important factors. As we knew that we had to do many things for the first time, we specifically focused on creating new technologies. By developing new technologies for decommissioning facilities that pose nuclear and radiation hazards and treating radioactive waste generated during such decommissioning, remediating the affected territories and introducing ROSATOM's Production System, we managed to reduce the cost of a work unit by two or three times. This made it possible to allocate the savings for the implementation of top-priority measures specified in the FTP NRS as well as perform additional works.

Vigorous development of the regulatory framework was another contributor to our success. A landmark law was introduced, Law No. 190-FZ on Radioactive Waste Management, and regulations on its implementation were developed, including over 30 federal rules, regulations and safety guides.

The third success factor was the introduction of the FTP NRS management system based on a separate Directorate as well as continuous development of the managerial approach. To implement the FTP NRS, over 900 key management decisions were made on the implementation of the Programme, including the improvement of technical specifications, and changes in the cost and duration of tasks. A system was introduced and run continuously to monitor the implementation of the FTP; it covered all implementation stages, including procurement, conclusion, execution and funding of public contracts, delivery and acceptance of works, and analysis of reports from contractors and state-owned customers.

— Regarding issues around the 'nuclear legacy' of the Soviet nuclear past, which of them have already been resolved and which remain to be resolved in the near future?

— The key result of the FTP NRS was that the risk of major accidents at the facilities we have inherited from the nuclear project was eliminated. The open water area of Lake Karachay, the most dangerous water reservoir used to store radioactive waste, was buried. The issue of the Techa reservoir cascade was resolved. We minimized the risk of NPP shutdown and eliminated contaminated facilities located in densely populated cities, including Moscow.

The new FTP NRS for the period from 2016 through 2030 will predominantly focus on eliminating legacy facilities: processing spent nuclear fuel not suitable for long-term storage, including defective fuel, decommissioning industrial uranium graphite reactors that have been shut down, removing federally-owned radioactive waste from enterprises and disposing of such radioactive waste. The scope of legacy works will more than double compared with the completed FTP NRS.

— One of ROSATOM's major innovative projects involves closing the nuclear fuel cycle, i.e. a transition to waste-free production in the nuclear power industry. What are the prospects of transitioning to new SNF and RAW management methods, and how long will it take?

Next →

— The main idea of the NFC is to extract and reuse nuclear fissile materials contained in spent nuclear fuel for fabricating fresh nuclear fuel. In 2015, following the start-up of a BN-800 fast neutron reactor at Beloyarsk NPP and the start of MOX fuel production at the Federal State Unitary Enterprise Mining and Chemical Plant, it became possible to use previously accumulated plutonium in the nuclear fuel cycle. The core of the BN-800 reactor is expected to be fully loaded with MOX fuel by 2019.

A project to manufacture REMIX fuel implemented in ROSATOM will also have an impact on the usage of plutonium in the NFC. If the project is implemented successfully (by 2020), plutonium will be used as a fuel component, including in thermal VVER reactors.

It became possible to use previously accumulated plutonium in the nuclear fuel cycle.

Tackling 'nuclear legacy' issues and preventing its harmful effect on the environment is one of the key priorities for the Company in the sphere of nuclear safety.

Russia is implementing federal target programmes and international programmes for providing technical assistance to gradually eliminate the 'nuclear legacy'. As a successor to the USSR, Russia continues to fulfil its international obligations to return spent nuclear fuel from Russian-design power and research reactors situated abroad.

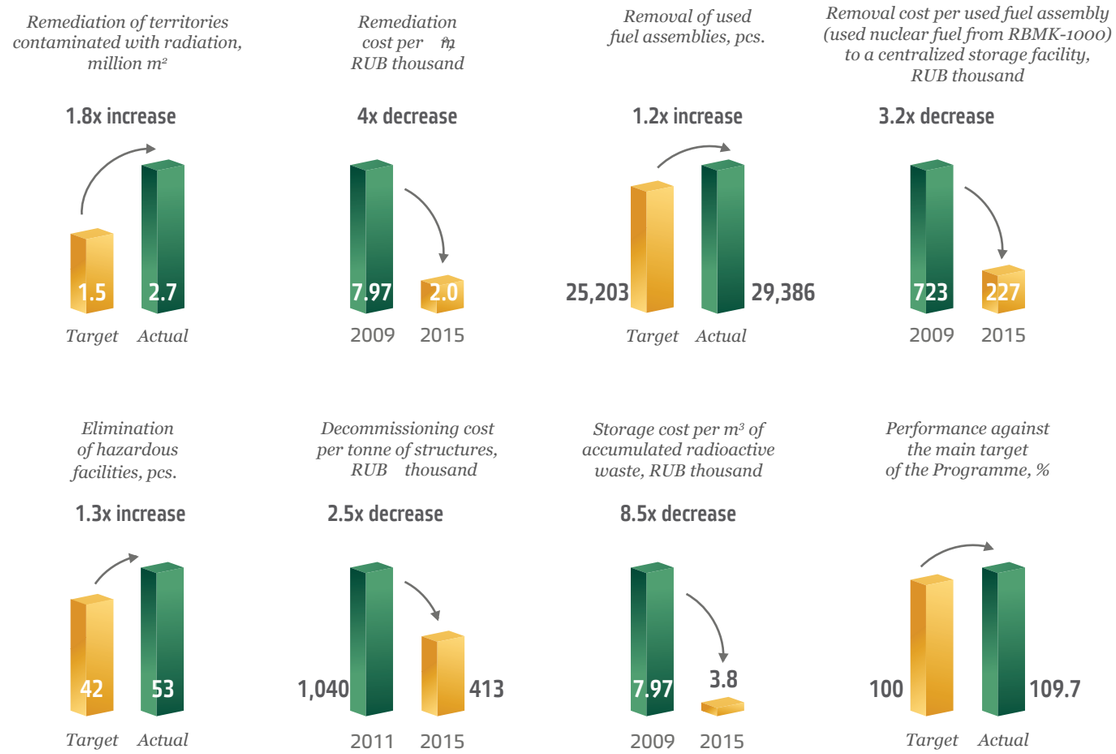
Having gained unique experience in solving 'nuclear legacy' problems, ROSATOM is perfectly equipped to become the leader in this area and share its experience and technologies with the states that also face the issue of 'nuclear legacy'

6.2.1. COMPLETION OF THE FTP NRS FOR THE PERIOD FROM 2008 THROUGH 2015

The year was marked with successful completion of the federal target programme on nuclear and radiation safety for the period from 2008 through 2015 and approval of a new programme for the period from 2016 through 2030 by the Russian Government.

Performance against the targets set in the FTP NRS totalled 109.7%, despite a reduction in the allocated budget funds. Strong performance against the FTP NRS targets was achieved through high operational efficiency.

Fig. Efficiency of FTP NRS the period from 2008 through 2015



In 2015, as part of the FTP NRS:

- The storage facility for liquid radioactive waste on Lake Karachay in the Chelyabinsk Region was finally buried. Prior to the closure, the area of the lake totalled approximately 36 hectares (50 football fields), with the total activity of accumulated RAW exceeding 120 million Ci (which is almost 2.5 times as high as the radioactivity level in Chernobyl); thus, one of the most pressing environmental problems in the region was solved;
- For the first time in the world, an EI-2 industrial uranium graphite reactor in Seversk, Tomsk Region, Russia was decommissioned. A special technology was developed which involves building a site for the long-term storage of special RAW to replace the reactor and its graphite stack; the site is reliably insulated from the environment with barrier materials. According to experts, maximum radionuclide containment was achieved, which will ensure safety for at least 1,000 years;
- Four last radioisotope thermoelectric generators (RTGs) were removed from Antarctica, with strontium-90 activity totalling 80,000 Ci. The successful removal of radioactive materials from Antarctica not only improved the physical, technical and environmental safety of the continent, but also contributed to enhancing global nuclear and radiological safety.

For details about the outcomes of the FTP NRS for the period from 2008 through 2015, see the Russian government website (http://m.government.ru/all/20580/).

6.2.2. BUILDING AN INTEGRATED NATIONAL SYSTEM FOR RAW MANAGEMENT

In 2015:

- The first phase of construction of a radioactive waste disposal facility (RWDF) was completed in the city of Novouralsk, Sverdlovsk Region, Russia. This was the first step in the second phase of development of the integrated national system for RAW management, which involves constructing RAW disposal facilities in a way that ensures their reliable and state-of-the-art insulation throughout the entire period when RAW is potentially hazardous;
- The decision was made to locate and construct three disposal facilities for solid radioactive waste of hazard classes 3 and 4 in the Siberian and Urals Federal Districts.

Storage facilities for RAW disposal

The design capacity of RAW storage facilities of ROSATOM's special organizations (FSUE RosRAO, FSUE Radon) is 8.6×10^5 m^3; by year end, 4.33×10^5 m^3 were filled.

For class 1 and 2 RAW:

- A deep disposal facility for solid high- and intermediate-level long-lived RAW (Nizhnekansky rock deposit, Krasnoyarsk Territory, Russia). It is scheduled for commissioning after the feasibility and safety of RAW disposal is confirmed as part of the works performed by the underground research laboratory. The RWDF capacity for disposal of class 1 RAW totals 4,500 m^3, while that of the RWDF for class 2 RAW totals 155,000 m^3.

For class 3 and 4 RAW:

- The RWDF in the vicinity of JSC UEIP (in operation); the total capacity of the RWDF is 48,000 m^3 (three stages: 19,800 m^3, 19,000 m^3, 9,200 m^3). Commissioning of the second and third stages is scheduled for 2018/2019;
- The RWDF in the vicinity of FSUE Mayak; commissioning is scheduled for 2021; the total capacity is 215,000 m^3;
- The RWDF in the vicinity of JSC Siberian Chemical Plant; commissioning is scheduled for 2021; the total capacity is 150,000 m^3.

For class 5 RAW

Three deep disposal facilities for liquid radioactive waste (DDF LRW) are in operation in Russia:

- Disposal site for sites 18 and 18a, Seversk, Tomsk Region;
- Severny disposal site, Zheleznogorsk, Krasnoyarsk Territory;
- Pilot disposal site, Dimitrovgrad, Ulyanovsk Region.

RAW generation and accumulation

In 2015, 1.82×10^6 m^3 of RAW were generated in Russia, of which 9.25×10^5 m^3 have been placed in long-term storage facilities.

The RAW volume accumulated by December 31, 2015 totalled 5.58×10^8 m^3, of which 5.53×10^8 m^3 were classified as 'nuclear legacy'.

Table. Generation of RAW in 2015

	Very low-level	*Low-level*	*Intermediate-level*	*High-level*
Solid, t	1.02×10^6	4.14×10^3	1.34×10^4	2.04×10^2
Liquid, m^3	—	6.96×10^5	2.13×10^5	1.37×10^4

Fig. SNF removal for storage and recycling, tonnes

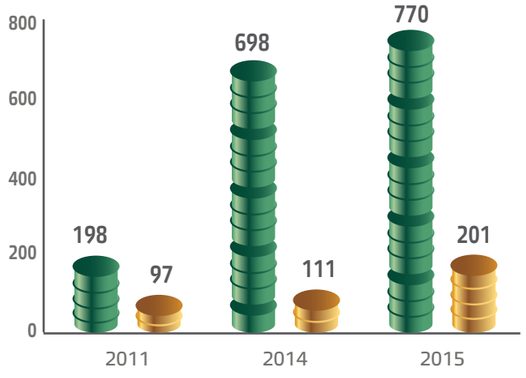
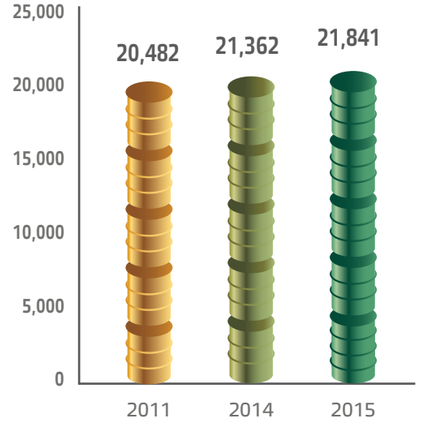


Fig. SNF accumulation in Russia, tonnes



6.2.3. SNF MANAGEMENT

At year end, the volume of spent nuclear fuel accumulated in Russia totalled 21,841 tonnes, of which 617.4 tonnes were accumulated in 2015. In the reporting year, 865 tonnes were placed in long-term storage facilities, and 201 tonnes were recycled.

In 2015:

- The construction of a 'dry' chamber storage facility for spent nuclear fuel from VVER-1000 and RBMK-1000 reactors was completed;
- The construction of a start-up facility at the pilot and demonstration facility for spent nuclear fuel recycling based on innovative technologies was completed at the Federal State Unitary Enterprise Mining and Chemical Plant; it comprises research chambers and an analytical facility. The capacity of the start-up facility for developing innovative SNF recycling technologies totals 5 tonnes per year;
- 5,184 spent fuel assemblies were removed from RBMK reactors at Leningrad and Kursk NPPs and placed into the central 'dry' storage facility at the Federal State Unitary Enterprise Mining and Chemical Plant;
- 445 spent fuel assemblies were removed from VVER-1000 reactors at Russian NPPs and placed into the central 'wet' storage facility at the Federal State Unitary Enterprise Mining and Chemical Plant;
- 59 tonnes of spent nuclear fuel were removed from VVER-440 and BN-600 reactors of Russian NPPs and transported to FSUE Mayak for recycling;
- Spent nuclear fuel continued to be removed from Russian research reactors and transported to FSUE Mayak for recycling; 1,927 fuel assemblies were removed in 2015;
- 201 tonnes of nuclear spent fuel of various types were processed at FSUE Mayak.

The amount of wastes transported for centralized storage and processing as part of the FTP NRS for the period from 2008 through 2015 totalled 29,113 spent fuel assemblies, including 8,207 in 2015.

6.2.4. DEVELOPING THE DECOMMISSIONING SYSTEM FOR FACILITIES POSING NUCLEAR AND RADIATION HAZARDS AND TACKLING THE ISSUE OF 'NUCLEAR LEGACY' IN TERMS OF DECOMMISSIONING FACILITIES POSING NUCLEAR AND RADIATION HAZARDS

In 2015:

- Pilot operation of the corporate level of an industry-wide information system for decommissioning facilities posing nuclear and radiation hazards was started;
- Research building B of JSC VNIINM in Moscow was decommissioned and demolished;
- The regional RAW storage facility in Obninsk, Kaluga Region, was eliminated, and remediation work was completed on the premises of the Institute for Physics and Power Engineering.

6.2.5. DISMANTLING OF NUCLEAR SUBMARINES

In 2015:

- A long-term storage facility for reactor compartments from dismantled nuclear submarines on Cape Ustrichny, Primorsky Territory, and the Regional Radioactive Waste Processing Centre in Sayda Bay, Murmansk Region, were commissioned;
- 19 reactor compartments from nuclear submarines were prepared and placed for long-term onshore storage (including 15 pieces in the North-Western Region, with 5 being ahead of the schedule; 4 pieces in the Primorsky Territory);
- Two floating reactor units from dismantled nuclear submarines were finally transported from the harbour of JSC Zvezdochka Shipyard, Severodvinsk, Arkhangelsk Region, to a temporary storage facility in Sayda Bay, Murmansk Region. Thus, all floating reactor units from dismantled nuclear submarines were removed from the harbour of the shipyard and the port of Severodvinsk;
- The first nuclear maintenance ship was completely dismantled;
- 1.41 tonnes of spent nuclear fuel and 992 m^3 of liquid radioactive waste were recycled;
- Over RUB 44 million from the sale of recycled products were transferred to the Russian federal budget.

In 2015, using international funding for technical assistance (a total of RUB 3.28 billion):

- *Spent nuclear fuel was unloaded from the unique reactors of dismantled nuclear submarine No. 501;*
- *Spent nuclear fuel unloaded from the second reactor of nuclear submarine No. 501 was transported to FSUE Mayak for recycling;*
- *Ten transport packaging containers (TUK-143) were built for transporting the spent removable part of a test facility of FSUE A.P. Alexandrov Research Institute of Technology for subsequent dismantling, and disposal of high-level radioactive wastes from the dismantled spent removable part.*

6.2.6. DISMANTLING AND DISPOSAL OF RADIOISOTOPE THERMOELECTRIC GENERATORS (RTGS)

In 2015, the RTG decommissioning programme was completed. At year end, 994 RTGs were decommissioned; 870 RTGs were disposed of.

12 RTGs remain in operation in military units of the Russian Ministry of Defence in Kamchatka; 124 RTGs are stored in specialized organizations (FSUE RosRAO, FSUE Mayak, JSC Isotope).

6.2.7. PLANS FOR 2016 AND FOR THE MEDIUM TERM

Starting from 2016, the new Federal Target Programme on Nuclear and Radiation Safety for the period from 2016 through 2020 and until 2030 will be implemented.

Table. Expected key outcomes of the programme

	■ 100% of federal spent nuclear fuel from RBMK reactors is placed in safe long-term 'dry' storage;
	■ A new-generation SNF recycling plant is established;
	■ 100% of federal spent nuclear fuel subject to recycling is recycled;
SNF recycling exceeds SNF generation	■ Transition to recycling of nuclear materials in thermal and fast reactors is completed.
	■ Disposal facilities for radioactive waste are built: ■ 4 above-ground facilities; ■ 1 underground facility.
	■ 6 regional complexes for recycling radioactive waste are established;
SNF disposal exceeds SNF generation	■ Over half of federal solid radioactive waste is buried.
	■ 82 facilities posing nuclear and radiation hazards are decommissioned, including: ■ 7 IUGRs[48]; ■ 2 nuclear-powered icebreakers; ■ 16 nuclear maintenance ships.
The decommissioning pace helps minimize the risks and costs of eliminating the nuclear legacy:	■ 4.3 million m^2 of areas contaminated with radiation are remediated.

[48] *IUGR stands for an industrial uranium graphite reactor .*

6.3. ENVIRONMENTAL SAFETY

VLADIMIR GRACHEV,
ADVISER TO THE CEO

- Key results in 2015:
- Environmental protection costs totalled RUB 31.4 billion;
- Energy costs were reduced by 29% (compared to 2009 as the base year);
- Pollutant emissions into the atmosphere decreased by 8.5%;
- Generation of waste of hazard classes I and II decreased by a factor of 1.4;
- No fines for violations of environmental legislation were imposed on any of the 10 Russian NPPs currently in operation.

— What were the main achievements in the sphere of environmental safety in 2015?

In 2015, the Corporation implemented all environmental protection measures according to plan. Pollutant emissions were reduced by 8.5%, and the amount of waste of hazard classes 1 and 2 decreased by a factor of 1.4. Fines for violations of environmental legislation across the industry totalled RUB 1.58 million; however, no fines were imposed on NPPs. At the same time, ROSATOM's environmental protection costs and investments made up 6.0% of the total environmental protection costs in Russia. By contrast, ROSATOM accounts for only 0.3% of the total volume of emissions and 0.5% of the total waste generation in Russia.

— What organizational measures were taken to improve the environmental safety system?

— The main focus of organizational measures is to facilitate the consistent implementation of ROSATOM's environmental policy, whose key elements include planning, monitoring, the use of a systematic approach and reporting, including both internal reports in the industry and public reporting. In 2015, ROSATOM successfully completed the Comprehensive Plan for Environmental Policy Implementation for the period from 2012 through 2015 and prepared and approved the Comprehensive Plan for Environmental Policy Implementation for the period from 2016 through 2018.

— What are ROSATOM's objectives for 2016 in the sphere of environmental safety?

— The main objective is always the same: to make sure that all enterprises in the industry fully comply with environmental safety requirements.

2016 has been marked by the introduction of new environmental standards and regulations. On January 1, 2016, amendments pertaining to charges for the negative environmental impact came into force. All facilities that have a negative impact on the environment are required to be entered in the state register before January 1, 2017. In addition, we need to prepare for changes that will come into effect in 2018 and in subsequent years.

The Russian President has announced that the next year, 2017, will be the Year of the Environment. Thus, the Corporation needs to make the relevant preparations and cooperate closely with the Steering Committee, the Russian Ministry of Natural Resources and Environment, the Federal Service for Supervision of Natural Resources (Rosprirodnadzor) and the Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor). We will need to do a great deal of work to further improve environmental protection and ensure environmental safety.

6.3.1. ENVIRONMENTAL SAFETY AND ENVIRONMENTAL PROTECTION MANAGEMENT

ROSATOM attaches great importance to environmental safety and environmental protection. The Corporation and its enterprises give priority to minimizing the negative environmental impact of nuclear facilities. Since 2008, the Fundamental Principles of the Environmental Policy of ROSATOM and its Organizations[49] have been the main regulatory document on environmental safety and environmental protection.

In 2015, organizations in the nuclear industry operated in compliance with the legislative requirements for environmental safety and environmental protection. Through its systematic approach to environmental safety and environmental protection, as well as the implementation of its environmental policy, the Corporation achieved truly impressive results and improved its environmental performance.

Adoption of international standards

In 2015, organizations in the nuclear industry continued to implement environmental management systems and subsequently transitioned to an integrated management system.

JSC Rosenergoatom Concern

Environmental management systems at operating NPPs and in the headquarters of JSC Rosenergoatom Concern were audited for compliance with ISO 14001:2004 and recertification. The validity of environmental certificates was confirmed.

JSC TVEL

The integrated quality management, environmental management, occupational health and safety management and energy management system was successfully audited and acknowledged to be compliant with the international ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001 standards. TÜV International Certification (TIC), a German certification body, audited and confirmed the efficiency of the existing systems and the correctness of the approach of JSC TVEL's management to improving management efficiency and operational safety, and reducing the environmental impact of the Company's products.

JSC IRM

The environmental management system was certified as conforming to ISO 14001:2004.

FSUE SRI SIA Luch

Documents to certify compliance of the company's environmental management system with GOST R ISO 14001-2007 were prepared.

In 2015, ROSATOM approved the Comprehensive Plan for Environmental Policy Implementation for 2016 and for the period until 2018, which outlines key initiatives aimed at mitigating the environmental impact in the medium term.

[49] http://rosatom.ru/upload/iblock/ffe/ffe4bd24b37221abf6a48d3ab1f30ffe.pdf

6.3.2. IMPROVED ENERGY EFFICIENCY

Tasks for 2015 were as follows:

- To reduce power consumption in comparable units by 25% against 2009 as the base year;
- To complete the transition to full-time operation of the Automated Energy Efficiency Management System in nuclear organizations;
- To carry out scheduled energy audits in accordance with Federal Law No. 261 on Energy Saving and Increasing Energy Efficiency to develop energy saving and energy efficiency programmes;
- To develop energy efficiency targets for the state programme 'Development of the Nuclear Power Sector'.

Table. Energy consumption in 2015

	Electricity		*Heat*		*Water*	
Division/Complex/Organization	*thousand kWh*	*%*	*thousand Gcal*	*%*	*thousand m³*	*%*
Fuel Division	3,033,839.56	48.1	2,360.72	24.2	519,264.75	68.1
Power Engineering Division (operational needs)	894,129.06	14.2	3,535.69	36.2	153,677.32	20.1
Mechanical Engineering Division	185,393.87	2.9	82.92	0.8	2,905.23	0.4
Mining Division	579,317.10	9.2	875.60	9.0	10,812.40	1.4
Nuclear Weapons Division	992,968.76	15.7	2,163.69	22.2	28,318.54	3.7
JSC Federal Centre for Nuclear and Radiation Safety	376,240.94	6.0	435.30	4.5	40,092.14	5.3
Innovation Management Unit	203,732.68	3.2	266.86	2.7	7,491.34	1.0
Other	41,528.70	0.7	41.31	0.4	195.82	0.0
Total for ROSATOM	**6,307,150.66**	**100**	**9,762.09**	**100**	**762,757.54**	**100**

In 2015, ROSATOM spent RUB 11.78 billion on energy consumption (excluding costs of energy consumed for the Power Engineering Division's own needs), including RUB 6.76 billion on electricity, RUB 3.92 billion on heat, and RUB 1.1 billion on water. Expenditures were reduced by 29.03% on a comparable basis against 2009 as the base year.

Table. Energy savings and achieved energy cost reduction

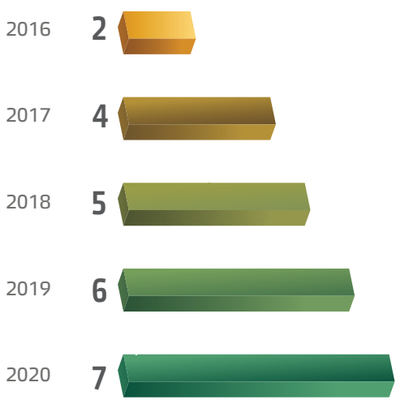
	2013		*2014*		*2015*	
	Target	*Actual*	*Target*	*Actual*	*Target*	*Actual*
Savings against 2009, %	20	22.2	22.5	26.3	25.0	29.0
Accumulated savings (since 2010), RUB billion	13.3	14.0	17.4	18.8	19.6	23.9

This result was achieved through investment initiatives, improved energy efficiency culture and higher efficiency of monitoring of energy consumption achieved through the introduction of technical metering systems and an automated reporting process. Moreover, ROSATOM focused on implementing zero-cost initiatives and projects with payback periods of up to 5 years to reduce its energy costs.

Table. Reduction in energy consumption in the nuclear industry (under comparable conditions) against 2009 (in monetary terms)

Division/Directorate/Complex	*Result achieved in 2015, %*
Operational Management Unit	28.37
JSC TVEL	30.86
JSC Rosenergoatom Concern	26.28
JSC Atomenergomash	27.16
JSC ARMZ	10.34
Innovation Management Unit	24.47
Nuclear Weapons Division	28.35
Federal Centre for Nuclear and Radiation Safety	39.91
Total for ROSATOM	**29.03**

Table. Energy cost reduction indicators stipulated by the Russian state programme 'Development of the Nuclear Power Sector', %



Reduction in energy costs across the nuclear industry (in comparable terms) against 2015 as the base year

Implementation of energy efficiency management and energy management systems across ROSATOM's organizations

JSC ARMZ implemented a pilot incentive system aimed at increasing employees' involvement in energy conservation and improving energy efficiency. The set of measures and tools developed by the company (KPIs, infrastructure, activities to improve the culture and efficiency of day-to-day operations) will help achieve the targets for reduction in energy consumption in the medium term.

Plans for 2016:

- To carry out energy audits of nuclear organizations in accordance with Federal Law No. 261 on Energy Saving and Increasing Energy Efficiency,
- To develop energy-saving programmes and individual targets for energy efficiency improvement for the new base period: 2015,
- To replicate the best practices incorporated in the incentive system adopted by JSC ARMZ to foster employees' involvement in energy conservation and improving energy efficiency.

6.3.3. FINANCING ENVIRONMENTAL ACTIVITIES

In 2015, environmental protection costs totalled RUB 31.44 billion, including operating costs of RUB 12.84 billion and investments in fixed capital of RUB 18.6 billion.

Table. Distribution of ROSATOM's environmental protection costs, RUB billion.

Name	*Amount, RUB billion*		
	2013	*2014*	*2015*
Operating costs	13.6	12.74	12.84
Investment in fixed assets	6.03	20.5	18.6
Total	**19.63**	**33.24**	**31.44**

The largest portion of operating expenses was associated with radiation safety (41.8%), collection and treatment of wastewater (23.7%), waste management (10.4%), protection of the atmosphere and climate change prevention (9.4%), protection and rehabilitation of land, surface water and groundwater (6.3%).

72.8% of environmental investments were spent on protecting the atmosphere, 23.3% on protection and efficient use of water resources, 0.9% on protection and efficient use of land, and 3.0% on other environmental activities. The investments decreased by RUB 1.9 billion YoY mainly due to lower investments in Leningrad NPP.

6.3.4. ENVIRONMENTAL CHARGES

In 2015, environmental charges for the negative environmental impact totalled RUB 124.3 million, including charges on allowable emissions and discharges of pollutants, disposal of production and consumption waste totalling RUB 49.8 million (40.1%) and charges on excess emissions of RUB 74.5 million (59.9%).

The total environmental charges increased by RUB 13.5 million YoY, which was primarily due to the indexation of limits for calculating environmental charges in accordance with the Decree of the Russian Government.

Table. Charges for the adverse impact on the environment (environmental charges) paid by ROSATOM

Indicator	*Actually paid, RUB million/year*		
	2013	*2014*	*2015*
Charge on allowable emissions (discharges) of pollutants (disposal of production and consumption waste), total	**55.3**	**57.7**	**49.8**
including:			
into water bodies	7.4	3.9	5.3
into the atmosphere	6.3	6.4	6.3
for disposal of production and consumption waste	41.6	45.3	34.9
aquifers	0.0	2.1	3.3
Charge on excess emissions (discharges) of pollutants (disposal of production and consumption waste), total	**48.9**	**53.1**	**74.5**
including:			
into water bodies	25.8	23.2	34.0
into the atmosphere	2.7	14.6	5.0
for disposal of production and consumption waste	20.3	15.2	35.5
aquifers	0.1	0.1	0.008
Charge on allowable and excess emissions (discharges) of pollutants (disposal of production and consumption waste), total	**104.2**	**110.8**	**124.3**

The charge on allowable emissions (discharges) of pollutants (disposal of production and consumption waste) decreased YoY due to a decrease in the organizations of JSC TVEL (by RUB 4.9 million), JSC Atomenergomash (by RUB 1.4 million), and JSC Rosenergoatom Concern (by RUB 1.2 million).

In 2015, charges on excess emissions and discharges increased significantly YoY across ROSATOM (by RUB 21.4 million), with the growth driven primarily by JSC Zheleznogorsk TPP, which was due to the lack of permits for placing 81,700 tonnes of production and consumption waste resulting from cleaning slurry pond No. 1 of the TPP and transported to the disposal facility of LLC Recycled Resources Krasnoyarsk.

Reducing excessive environmental impacts remains at the top of ROSATOM's agenda, as the relevant payments in 2015 accounted for 60.0% (RUB 74.5 million) of the total charges for the negative environmental impact.

Compensation (claims) and fines for damages caused by violation of environmental legislation

In 2015, fines imposed in compensation for the damage caused by violation of environmental legislation totalled RUB 1.85 million (1.5% of the total environmental charges paid by ROSATOM). In general, payments for breaching environmental legislation, standards for the use of natural resources and damage caused by the industry organizations are low.

	2013	*2014*	*2015*
Compensation (claims) and fines for damages caused by violation of environmental legislation, RUB million	0.66	1.50	1.85

6.3.5. WATER USE

The nuclear power industry is a large user of water. In 2015, ROSATOM accounted for 4.1% of the total fresh water withdrawal across Russia.

In the reporting year, water withdrawal by ROSATOM totalled 7,632.1 million m^3, up by 302.3 million m^3 YoY. That was due to an increase in seawater withdrawal by 500.2 million m^3, and an increase in groundwater withdrawal by 7.8 million m^3. At the same time, withdrawal of fresh surface water decreased by 229.5 million m^3.

Nuclear power plants and organizations of JSC TVEL and the Nuclear Weapons Division are the main users of water.

Table. Total water withdrawal

Source	*Volume, million m³*		
	2013	*2014*	*2015*
Sea water	3,619.1	4,737.4	5,237.6
Fresh surface water, including rivers, marshes, lakes	2,498.8	2,477.3	2,247.8
Groundwater	83.7	92.6	100.4
Rainwater	1.9	1.9	2.5
Wastewater from third-party organizations	21.4	20.6	43.8
Total	**6,224.9**	**7,329.8**	**7,632.1**

Table. Recycled and reused water

	Volume		
	2013	*2014*	*2015*
Total volume of water recycled and reused by ROSATOM, million m³	30,046.9	30,980.9	32,807.3
Water withdrawal, million m3 (% of water recycled and reused)	6,224.9 (20.7 %)	7,329.8 (23.7 %)	7,632.1 (23.2 %)
Total	**36,271.8**	**38,310.7**	**40,439.4**
Ratio of the volume of water recycled and reused water to water withdrawal, %	482.7	422.7	429.9

Table. Water consumed by ROSATOM for own needs, by type of use

Category name	*Volume, million m³*		
	2013	*2014*	*2015*
Drinking and sanitary purposes	48.3	48.9	39.5
Production	6,011.1	7,113.5	7,356.4
Other types	14.4	14.7	13.9
Total	**6,073.8**	**7,177.1**	**7,409.8**

In 2015, the nuclear industry used 7,409.8 million m³ of water for own needs, up by 232.7 million m³ (3.2%) YoY. The use of water for drinking and sanitary purposes decreased by 9.4 million m³ YoY.

Water discharge

In 2015, the nuclear industry discharged a total of 6,925.7 million m³ of wastewater. Discharge of wastewater into surface waters totalled 6,920.1 million m³, of which partially clean water accounts for 97.9%, contaminated water for 1.6%, and purified water for 0.5%. The share of contaminated wastewater discharge by ROSATOM in the total contaminated wastewater discharge in Russia was 0.8%.

Table. Total wastewater discharge into surface waters

Water category	*Volume, million m³*		
	2013	*2014*	*2015*
Partially clean water	5,454.1	6,523.8	6,775.7
Purified water	28.1	28.8	31.6
Contaminated water	92.8	89.4	112.8
Total	**5,575.0**	**6,642.0**	**6,920.1**

In the reporting year, purified water discharge totalled 31.6 million m³, of which 36.1% was purified biologically, 5.4% using physical and chemical processes, and 58.5% mechanically.

Table. Purified water discharge

Purification method	*Volume, million m³*		
	2013	*2014*	*2015*
Biological	11	11.5	11.4
Physical and chemical	0.1	0.5	1.7
Mechanical	17	16.8	18.5
Total	**28.1**	**28.8**	**31.6**

Measures to reduce the negative impact on water sources in 2015:

- *Leningrad NPP built local treatment facilities for drainage and stormwater runoff and upgraded local treatment facilities;*
- *Smolensk NPP upgraded the rinse water purification system from the deferrization and sludge treatment station.*

In 2015, contaminated wastewater discharge in the industry increased by 23.4 million m^3. That was due to the inclusion of LLC Teplovodokanal, an organization of the Fuel Division, in the list of organizations providing environmental information, with contaminated water discharge in this organization totalling 32.4 million m^3.

In 2015, wastewater discharge into drainage basins increased, primarily due to the discharge of wastewater into the Kama drainage basin by LLC Teplovodokanal.

Table. Discharge of contaminated wastewater into drainage basins

Drainage basin	*Volume, million m^3*		
	2013	*2014*	*2015*
Amur	2.1	1.4	0.7
Anadyro-Kolyma	0.4	0.4	0.4
Baltic district	40.7	44.7	46.7
Barents-Belomorsk	1.9	1.9	2
Upper Volga	8.4	6.9	0
Upper Ob	10.8	10.1	9.3
Dnepr	1.4	1.1	1.1
Don	2.2	1.5	1.4
Irtysh	15.5	12.2	12.5
Kama	1.3	1.4	32.4
Lower Volga	3.1	3.1	2.7
Oka	5	4.7	3.6
Total	**92.8**	**89.4**	**112.8**

6.3.6. POLLUTANT EMISSIONS INTO THE ATMOSPHERE

Emissions of atmospheric pollutants in 2015 totalled 46,400 tonnes, down by 4.3 tonnes YoY. The capture ratio stood at 84.43%. ROSATOM accounted for 0.15% of the total pollutant emissions across Russia.

Table. Pollutant emissions into the atmosphere[50]

Type of pollutants	*Emissions, thousand tonnes*		
	2013	*2014*	*2015*
Solid particles	17.4	17.1	15.7
Sulphur dioxide	12.5	13.7	12.6
Carbon oxide	4.7	4.5	4.6
Nitrogen oxides	12.8	12.8	11.1
Hydrocarbons	0.5	0.5	0.5
Volatile organic compounds (VOCs)	1.6	1.5	1.4
Others	0.7	0.6	0.5
Total	**50.2**	**50.7**	**46.4**

Emissions of atmospheric pollutants by ROSATOM in 2015 decreased due to a reduction of emissions by the following nuclear enterprises:

- JSC Siberian Chemical Combine (JSC SCC) reduced emissions by 3,200 tonnes of solid substances, sulphur dioxide, carbon monoxide and nitrogen oxides due to a decrease in coal burning at the TPP;
- Priargunsky Industrial Mining and Chemical Union (PJSC PIMCU) reduced emissions by 800 tonnes due to the repairs of electric filters of boilers in ash collection systems in 2014;
- JSC Chepetsky Mechanical Plant reduced emissions by 800 tonnes as no solid fuel was burnt at the coal-fired part of the TPP, which was mothballed.

In 2015, over 50 nuclear organizations reduced emissions of atmospheric pollutants.

Actual emissions of atmospheric pollutants by ROSATOM's organizations totalled 33.8% of the permitted volume.

Emissions of ozone-depleting substances into the atmosphere decreased by 1.05 tonnes (or 0.4%), including emissions of freon-22 (14.4%), mainly due to the reduction of emissions by JSC SCC (due to the modernization of the refrigeration unit at the isotope separation plant).

[50] Information on pollutant emissions is provided by ROSATOM's organizations using chemical methods of analysis or automated gas analysers.

Table. Emissions of main ozone-depleting substances

Substance name	*Emission, tonnes of CFC-11 equivalent*		
	2013	*2014*	*2015*
Dichlorodifluoromethane (freon-12)	87.58	83.75	83.40
Difluorochloromethane (freon-22)	1	0.98	0.85
1,1,2-Trifluoro-1,2,2-trichloroethane (freon-113)	4.62	3.95	3.38
Chlorotrifluoromethane (freon-13)	164.35	164.21	164.21
Total	**257.55**	**252.89**	**251.84**

6.3.7. PRODUCTION AND CONSUMPTION WASTE

In 2015, nuclear organizations generated 27.6 million tonnes of production and consumption waste[51]. Production and consumption waste generated by ROSATOM accounted for 0.5% of the total waste generation across Russia. Waste of hazard classes 4 and 5 accounts for 99.96% of the total waste. Most of the waste across the nuclear industry (95.3%) was generated by Priargunsky Industrial Mining and Chemical Union (PJSC PIMCU), an organization of the Mining Division; this includes 26.1 million tonnes (99.2%) of open-pit coal mining waste (hazard class 5).

In 2015, waste generation increased by 2.2 million tonnes primarily due to an increase in open-cast coal mining waste (hazard class 5) generated by PJSC PIMCU by 1.79 million tonnes because of an increase in the scope of works. At the same time, the volume of waste of hazard class 1 and 2 decreased by a factor of 3.3 YoY due to reduced production by LLC Uralpribor (an organization of JSC TVEL).

Initiatives to reduce production and consumption waste in 2015:

- *Mercury vapour lamps were replaced with LED lamps at Kalinin NPP, which reduced the amount of waste of hazard class 1 by 4.713 tonnes;*
- *JSC AECC reduced waste production by 2,589.539 tonnes by shutting down sublimate production facilities, carrying out preparations for decommissioning, restructuring and optimization;*
- *Troitsk Institute for Innovation and Fusion Research (TRINITI) decommissioned condensers using trichlorodiphenyl, which reduced waste generation by 440.538 tonnes.*

[51] *Information on the generation, use, disposal and placement of production and consumption waste is recorded by ROSATOM's organizations in accordance with the Russian legislation (hazard classes of waste are defined in accordance with the Federal Classification Catalogue of Waste, approved by Order No. 792 of Russia's Ministry of Natural Resources and Environment on Approving the Procedure for Keeping the State Waste Inventory dated September 30, 2011).*

Table. Production and consumption waste management by hazard class

Waste hazard class	*Amount of waste as of January 1, 2015, thousand tonnes*	*Waste generated and received during the reporting year, thousand tonnes*	*Use of waste generated and received in 2015*		*Treatment of waste generated and received in 2015*		*Waste transferred to third-party organizations, thousand tonnes*	*Storage of waste at sites operated during the reporting year, thousand tonnes*		*Amount of waste in enterprises, as of December 31, 2015, thousand tonnes*
			thousand tonnes	*%*	*thousand tonnes*	*%*		*Total*	*Including landfill*	
Hazard class 1	0.191	0.356	0.001	0.3	0.004	1.1	0.513	0.011	0.000	0.030
Hazard class 2	0.047	6.23	0.013	0.2	4.060	65.2	2.126	0.017	0.013	0.065
Hazard class 3	8.460	5.351	0.166	3.1	0.101	1.9	4.712	4.650	0.145	8.687
Hazard class 4	20.731	97.374	3.926	4.0	4.527	4.6	82.465	7.388	4.695	22.491
Hazard class 5	399,227.382	27,491.68	26,174.801	95.2	0.009	3.3	980.425	388.224	193.582	399,370.245
Total	**399,256.811**	**27,600.991**	**26,178.907**	**94.8**	**8.701**	**0.03**	**1,070.241**	**400.290**	**198.435**	**399,401.518**

94.88% of the total amount of waste generated by enterprises and received from third-party organizations was used or treated, of which 94.85% was used waste and 0.03% treated waste. 0.3% of the total amount of waste at the beginning of the reporting year was transferred to third-party organizations and 0.1% was stored at operating facilities.

Table. Production and consumption waste management

	At the beginning of the reporting year, thousand tonnes	*Waste generated and received during the year, thousand tonnes*	*Use and treatment of waste generated and received*		*Waste transferred to third-party organizations, thousand tonnes*	*Waste stored at enterprises, thousand tonnes*	*At the end of the reporting year, thousand tonnes*
			thousand tonnes	*%*			
2013	398,888.7	24,961.6	24,409.2	97.8	212.2	390.9	398,963.3
2014	398,917.9	25,439.0	24,439.4	96.1	552.3	416.2	399,086.4
2015	399,256.8	27,601.0	26,187.6	94.9	1,070.2	400.3	399,401.5

6.3.8. DISTURBED AND REMEDIATED AREAS

At year end, the area of land disturbed by ROSATOM's organizations totalled 5,470 hectares. This includes land disturbed during the following operations: mining: 3,220 ha; construction: 2,150 ha; survey work: 6.5 ha; disposal of production (including construction) waste and domestic solid waste: 1.42 ha; other works: 96.91 ha.

In 2015, ROSATOM's organizations implemented a set of measures to restore the productivity and economic value of disturbed lands, and improve the environmental conditions. The area of land remediated in the reporting year totalled 123.08 ha.

Disturbed lands were remediated to create water reservoirs and for other purposes (87.43 ha), for forest plantations (20.15 ha), and farmlands (15.5 ha).

Area of disturbed lands at the end of the reporting year, thousand ha

2013	*2014*	*2015*
5.2	5.1	5.5

Table. Area of remediated land in ROSATOM's organizations

Organization	*Ha/year*		
	2013	*2014*	*2015*
Priargunsky Industrial Mining and Chemical Union (PJSC PIMCU)	27.30	73.40	0.04
Siberian Chemical Combine (JSC SCC)	10.64	37.16	52.60
PJSC Novosibirsk Chemical Concentrates Plant (PJSC NCCP)	0.43	0.00	0.68
Rostov NPP	0.00	0.00	15.50
JSC State Scientific Centre – Research Institute of Atomic Reactors (JSC SSC RIAR)	0.00	0.13	0.00
JSC NIAEP	0.00	0.00	29.42
Saratov branch of FSUE RosRao	0.36	0.00	0.00
Siberian Territorial District, a branch of FSUE RosRao	0.00	0.00	20.15
Federal State Unitary Enterprise Elektrokhimpribor Plant	3.85	0.17	4.26
Zababakhin All-Russian Scientific Research Institute of Technical Physics	0.00	48.19	0.00
Mikhail Protsenko Federal Research and Development Centre Start Production Association	0.00	0.02	0.43
Total	**42.58**	**159.07**	**123.08**

To improve recording of gas and aerosol emissions and radioactive discharges into the environment, the Power Engineering Division uses the conservative method, which involves recording the presence of radioactive substances in emissions and discharges at the level of 0.5 of the lower measure limit, i.e. with a wide margin.

6.3.9. REHABILITATION OF CONTAMINATED TERRITORIES

At year end, 21 of ROSATOM's enterprises had territories contaminated with radiation. The area of contaminated territories totalled 114.97 km^2, including:

- 24.91 km^2 at industrial sites,
- 88.90 km^2 in sanitary protection zones,
- 1.16 km^2 in monitored areas.

Radioactive contamination is mostly caused by nuclides of cesium-137, strontium-90, and natural uranium and its decay products. About 7% (88.16 km^2) of the territories contaminated with radiation are located in the vicinity of FSUE Mayak (consequences of the accident in 1957).

Over the past five years, ROSATOM's organizations rehabilitated 24.4 km^2 of land.

6.3.10. EMISSIONS AND DISCHARGES OF RADIONUCLIDES

In 2015, there were no instances of unauthorized emissions of radionuclides into the environment. As in previous years, gas and aerosol emissions by NPPs and discharges of radioactive substances into water reservoirs were significantly below the established standards.

The total activity of radionuclides emitted into the atmosphere by ROSATOM's enterprises was 4.76×10^{-6} Bq. 98.8% of the activity was due to the emission of beta-emitting nuclides, with inert radioactive gases accounting for 96.18% and tritium for 3.3% of the total. Emissions of beta-emitting nuclides increased by 1.29% YoY.

96.6% of emissions of alpha-emitting radionuclides were attributable to radon-222 from uranium mining companies. Emissions of alpha-emitting nuclides increased by 2.3% YoY.

Emissions of alpha-emitting and beta-emitting nuclides across the industry totalled 32.6%, and 4.0% respectively of the permitted amount. Emissions of cobalt-60, strontium-90, zirconium-95, ruthenium-103 and ruthenium-106, iodine-131, caesium-134, and caesium-137 across the industry were below 1% of the permitted amount.

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Table. Ratio of actual radionuclide emissions to permitted levels in 2015, Bq

Type of radionuclides	*Permitted emissions*	*Actual emissions*
Alpha	1.46×10^{15}	4.76×10^{14}
Beta	1.16×10^{18}	4.71×10^{16}

280.85 million m^3 of wastewater with activity of 4.02×10^{13} Bq were discharged into surface waters. Wastewater discharge increased by 16.67% and total activity increased by 0.75% YoY. The increase in wastewater discharge was due to an increase in discharges by FSUE Mayak: increased water usage in the left-bank channel, and increased water runoff into the left-bank and right-bank drainage channels caused by high water levels in the reporting year.

65.06% of discharges of alpha-emitting radionuclides into the open drainage system were attributable to natural uranium. Tritium accounted for 99.14% of beta-emitting radionuclides discharged with wastewater into surface water reservoirs. The remaining radionuclides account for 0.86%, including strontium-90 (0.81%), and caesium-137 (0.02%).

The volume of radionuclides discharged with wastewater into the open drainage system totalled about 12.81% of the permissible amount for alpha-emitting nuclides, and 0.83% of the permissible amount for beta-emitting nuclides.

Table. Ratio of actual radionuclide discharges to permitted levels in 2015, Bq

Type of radionuclides	*Permitted discharge*	*Actual discharge*
Alpha	1.80×10^{11}	2.30×10^{10}
Beta	4.82×10^{15}	4.02×10^{13}

On-site analysis of the gamma dose rate indicates that the value ranges from 0.06 to 0.15 μSv/h in the vicinity of NPPs, within the natural radiation limits formed before the NPP start-up, and corresponds to the levels recorded at monitoring stations. This confirms that NPPs do not contaminate monitored areas with radiation.

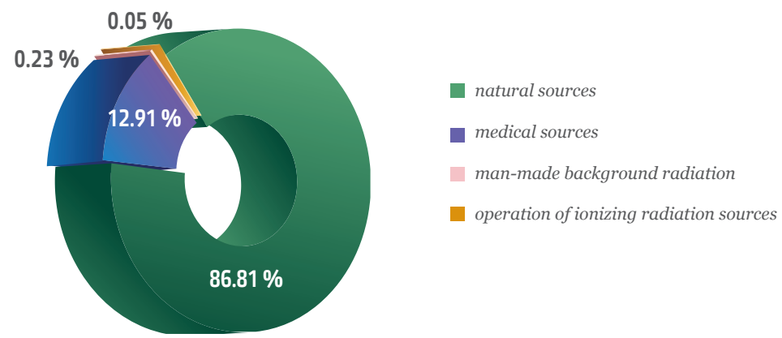
6.3.11. IMPACT ON THE POPULATION AND THE ENVIRONMENT

Dose burden for the population

According to the findings of the radiation and hygienic certification in Russia for 2014[52], additional exposure due to the day-to-day operation of nuclear enterprises averaged 0.003 mSv/year per capita for the population in the locations of the enterprises (2.8 million people). In some locations the annual doses slightly exceeded the average. Maximum values (0.05 mSv/year) were recorded for the population of the Fokino closed administrative and territorial formation (Primorsky Territory, population of around 100 people, a branch of FEC DalRAO and OJSC 30th SRZ (30th Ship Repair Yard)). The level is 20 times lower than the dose limit specified in the Radiation Safety Standards NRB-99/2009 for the population (1 mSv/year) and twice lower than the average annual doses received by inhabitants of the Primorsky Territory from medical exposure (0.1 mSv).

The average annual effective radiation dose of the country's population from all natural sources of ionizing radiation in 2014 totalled 3.47 mSv/year per capita[53]. Natural and medical sources of ionizing radiation are the main sources of exposure. Contribution of enterprises applying nuclear technologies is estimated in basis points (0.05%). This structure of population exposure is typical for all regions where major facilities posing nuclear and radiation hazards are located.

Fig. Sources of population exposure to radiation in Russia



Impact on the biota

The environmental impact of the nuclear industry and especially NPPs has always been the focus of attention of various environmental organizations, civil society, and the media.

At present, Russia has no regulatory criteria to assess radiation impact on the biota, and the impact is assessed based on the hygiene rating. Major facilities in the industry that pose nuclear and radiation hazards regularly perform radiation monitoring of randomly selected objects of ecological interest and local food products. Local offices of the Russian Federal Biomedical Agency independently monitor the radionuclide content in locally produced agricultural products, wild-growing foods (berries, mushrooms, etc.), in animal feed grown in the monitored area, and fish and other aquatic organisms living in cooler ponds (for NPPs); in food products, the specific activity of the main dose-forming radionuclides is monitored; abiotic components of ecosystems are monitored for radiation by the state observation network of the Federal Service for Hydrometeorology and Environmental Monitoring. The findings suggest that under normal conditions nuclear facilities do not have any negative impact on the environment, as evidenced by the absence of reported biological effects from radiation exposure.

[52] *According to the Federal State Institution A.I. Burnazyan Federal Medical and Biophysical Centre of the Russian Federal Biomedical Agency.*

[53] *On the status of sanitary and epidemiological safety of the population in Russia in 2014: State report. – M.: Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing, 2015. Results of radiation and hygienic certification of organizations and territories for 2015 will be published by the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing around September 2016.*

In some cases, facilities posing nuclear and radiation hazards play an important positive role in ensuring and maintaining favourable conditions for human life and the sustainability of natural eco-systems, natural and man-made objects, and in the preservation of biological diversity. For example, the results of scientific research by the Central Chernozem State Biosphere Reserve named after Professor Alekhin within the shoreline buffer zone of the cooling reservoir of stages 1 and 2 of Kursk NPP indicate that the man-made landscape comprised of industrial sites of large nuclear facilities provides a habitat for unique natural communities of flora and fauna whose existence and development is only possible under the current environmental safety regime of the enterprise. The current regime and favourable environmental conditions existing along the shoreline of the Kursk reservoir protect many objects of flora and fauna.

6.3.12. FORECAST FOR THE ENVIRONMENTAL IMPACT OF ROSATOM AND ITS ORGANIZATIONS AND PLANS FOR CHANGING THE IMPACT AND ENSURING ENVIRONMENTAL SAFETY IN 2016 AND IN THE MEDIUM TERM

To reduce the negative environmental impact, ROSATOM's enterprises annually conduct a wide range of environmental initiatives, including construction and commissioning of facilities and systems that prevent environmental pollution and reduce radiation exposure, such as installations for the capture and removal of harmful substances from waste gases, wastewater treatment plants and water recycling systems.

These initiatives will be funded in the medium term under the federal target programme on nuclear and radiation safety for 2016 and until 2020 *(see the section 'RAW and SNF Management and Decommissioning of Facilities Posing Nuclear and Radiation Hazards')*. Investments in fixed capital aimed at environmental protection and efficient use of natural resources are expected to be increased fivefold in the next 5 to 7 years. The biggest share of operating costs in the medium term is expected to be allocated for radiation safety, and the collection and treatment of wastewater.

Discharge of contaminated wastewater has remained relatively unchanged in recent years, with minor changes occurring mostly at Leningrad NPP due to changes in electricity generation. In 2015, the share of partially clean and purified water in the total wastewater discharge of ROSATOM totalled 98.4%. The discharge volume is expected to remain mostly unchanged in 2016.

Atmospheric emissions from stationary sources at nuclear enterprises will presumably decline due to the renovation and installation of new gas scrubbers.

Amounts of production and consumption waste depend on production cycles and processes, and are expected to be roughly the same, with minor fluctuations. Waste of hazard class 1 and 2 is expected to be gradually reduced in the medium term.

In 2015, the area of remediated lands remained within the annual average ranges for the industry. It is expected to increase in the future.

Smart implementation of all environmental measures as part of ROSATOM's Environmental Policy will help solve all pressing issues related to environmental protection and safety, and ensure high competitiveness of the nuclear enterprises amidst external instability and toughening competition.

7

RESPECT FOR STAKEHOLDERS

40 AWARDS:

16 AND 24 AWARDS WERE RECEIVED IN RUSSIAN AND INTERNATIONAL REPORT CONTESTS RESPECTIVELY

18

INTEGRATED ANNUAL REPORTS WERE PREPARED (AT YEAR-END 2014)

7.1. REPORT PROFILE AND THE PROCESS OF DETERMINING THE CONTENT OF THE REPORT AND MATERIALITY OF INFORMATION

The public annual report (the Report) of State Atomic Energy Corporation Rosatom for 2015 is the seventh report prepared by the Corporation on a voluntary basis. It is targeted at a wide range of stakeholders.

The Report is prepared in an integrated format and provides a comprehensive picture of the following:

- The implementation of ROSATOM's strategy, including contribution to the sustainability of the Corporation's business in the reporting year, as well as short-, medium- and long-term plans;
- Significant financial, economic and operating results of the Corporation's core businesses;
- Results achieved in nuclear and radiation safety, environmental safety, contribution to the development of the regions of operation, implementation of social policy and other aspects of sustainable development;
- The economic, ecological and social impact on the environment;
- The approach of ROSATOM's executives to managing various business aspects.

The report focuses on ROSATOM's contribution to the social and economic development of Russia; this topic was selected by the top management and key stakeholders. For the information on the selection of important aspects, see the chapters 'Process for determining the content for the Report' and 'Ranking map of material aspects (topics) to be disclosed in the Report'.

ROSATOM's internal regulations stipulate an annual reporting cycle; the previous annual report was published in 2015. This Report covers the Corporation's operations during the period from January 1, 2015, through December 31, 2015.

The report focuses on ROSATOM's contribution to the social and economic development of Russia; this topic was selected by the top management and key stakeholders. For the information on the selection of important aspects, see the chapters 'Process for determining the content for the Report' and 'Ranking map of material aspects (topics) to be disclosed in the Report'.

7.1.1. STANDARDS AND REGULATORY REQUIREMENTS

The Report was prepared in accordance with:

- The Public Reporting Policy of ROSATOM, and the Public Reporting Standard of ROSATOM and its organizations;
- The International Integrated Reporting Framework (The International <IR> Framework);
- Sustainability Reporting Guidelines of the Global Reporting Initiative (G4 version, the Core 'in accordance' option);
- The AA1000 Series of Standards;
- RSPP Recommendations for Use in the Governance Practice and Corporate Non-Financial Reporting (basic performance indicators).

7.1.2. STAKEHOLDER ENGAGEMENT

To improve transparency and accountability, and determine the materiality of information to be disclosed, the Report was prepared in cooperation with stakeholders in accordance with the AA1000SES international standard. A poll was carried out to determine material aspects to be disclosed in the Report, and two dialogues with stakeholders were held, including public consultations on the draft Report. The Report incorporates key recommendations and requests from stakeholders voiced during the dialogues *(for more details, see the section 'Incorporation of Stakeholders' Proposals').*

7.1.3. VERIFICATION OF REPORTING INFORMATION

The reporting information was certified as reliable by:

- The auditing commission of ROSATOM *(see Appendix 2).*
- An independent auditor which certified the annual IFRS financial statements as accurate;
- An independent auditing organization which certified the Report's compliance with the requirements of the GRI G4 Guidelines (the Core 'in accordance' option) and ROSATOM's adherence to the AA1000 APS principles *(see Appendix 4).*

The Internal Audit and Control Department of ROSATOM audited the public reporting processes and assessed their compliance with the requirements of ROSATOM's Public Reporting Policy and the Corporation's local regulations on public reporting *(see Appendix 3).*

Key stakeholders publicly verified the Report in accordance with the AA1000SES standard, which proved materiality and completeness of the disclosed information, and the Corporation's responsiveness to stakeholders' requests when preparing the Report *(for more details, see the section 'Statement of Public Assurance').*

7.1.4. REPORT BOUNDARIES

The Report covers operations of ROSATOM and its organizations in Russia and abroad. Information on operations of the Nuclear Weapons Division is not disclosed in full due to the special nature of ROSATOM's business and its obligation to keep the state secret.

The Report covers operations of ROSATOM and its organizations in Russia and abroad. Information on operations of the Nuclear Weapons Division is not disclosed in full due to the special nature of ROSATOM's business and its obligation to keep the state secret.

The Report covers several scopes of consolidation *(see the list of organizations within various scopes of consolidation in the online version of this Report)*. Integral performance indicators of the Corporation's organizations are disclosed within the boundaries of fiscal consolidation as of December 31, 2015 (161 organizations)[54]. Social GRI indicators are disclosed in regard to all significant Russian organizations within the boundaries of fiscal consolidation (155 organizations); environmental GRI indicators are disclosed for all significant organizations within ROSATOM which provide information on environmental protection in the statistical reporting forms (153 organizations). Financial and economic indicators in the section 'Financial and Economic Results', and information on revenue, net assets and intangible assets in the section 'Key Results' are disclosed within the boundaries of consolidated IFRS financial statements of ROSATOM (180 organizations).

Outside the Corporation, responsibility for product quality is a material aspect, with the relevant management approaches being disclosed in the section 'International Business'. In accordance with the international standards, some sections of the Report and related performance indicators (international cooperation, ROSATOM's activities in the operating regions, environmental protection, etc.) include information on the operations of ROSATOM's key partners, contractors and other stakeholders.

7.1.5 PROCESS FOR DETERMINING THE REPORT CONTENT

ROSATOM traditionally attaches great importance to determining the materiality of information to be disclosed in public reports. The 2015 Report was prepared in accordance with the international reporting standards: the GRI (G4) Guidelines and the International Integrated Reporting Framework. Both standards require that material aspects (topics) should be determined for disclosure.

The materiality of information was determined through the following process:

- A working group compiled a list of material aspects of ROSATOM's operations;
- Top management and the working group preparing the Report together with the representatives of major stakeholder groups ranked the material aspects (based on the materiality of each of the proposed aspects);
- Following the 'two-stage filtering', material aspects to be disclosed in the Report were listed.

As a result, a ranking map of material aspects (topics) to be disclosed in the Report was compiled. The decision to include various performance indicators of the GRI (G4) Guidelines and ROSATOM's Public Reporting Standard was based on the materiality of the aspects to which the indicators are related. The working group determined boundaries of disclosure on various aspects.

[54] *Here and hereinafter: not including ROSATOM.*

Table. Ranking map of material aspects (topics) to be disclosed in the Report

RANKING MAP OF MATERIAL ASPECTS TO BE DISCLOSED IN THE 2015 PUBLIC ANNUAL REPORT OF ROSATOM (based on the assessments by stakeholders and management)

Average scores by both management and stakeholders are greater than or equal to 2.5 (very high materiality)	*Average scores by both management and stakeholders are greater than or equal to 2 (high materiality)*	*Average scores by both management and stakeholders are greater than or equal to 1.5 (medium materiality)*	*Average scores by both management and stakeholders are greater than or equal to 1 (borderline materiality)*
Prospects for the development of nuclear energy in Russia and worldwide. Forecasts for the needs of the power system in Russia and foreign countries	Performance of state functions by ROSATOM ('Public Policy')	Performance of the Nuclear Weapons Division	Improvement of corporate governance mechanisms
ROSATOM's financial and economic performance ('Economic Performance')[55]	ROSATOM's position in nuclear technology and service markets (natural uranium, uranium conversion and enrichment, nuclear fuel, NPP construction, etc.) and prospects for the development of these markets	Performance of the nuclear-powered icebreaker fleet	Procurement management, including requirements for suppliers and contractors in terms of sustainable development and combating unfair competition ('Procurement Practices')
Financial management and implementation of ROSATOM's investment programme[56]	Performance of ROSATOM's main divisions	Establishment of an engineering division in ROSATOM	Informational security at ROSATOM
Diversification of ROSATOM's operations (nuclear medicine, environmental protection, inspection systems and irradiation centres; non-nuclear engineering; NPP maintenance services, etc.)[56]	Performance of ROSATOM's international business and international cooperation	Implementation of the 'ROSATOM's Production System' (RPS) project and its results	Mechanisms for submitting complaints on environmental, labour, social and other sustainable development issues ('Grievance Mechanisms')
	Ensuring nuclear and radiation safety at nuclear facilities, including international cooperation ('Customer Health and Safety')	Combating corruption and other violations of law ('Anti-Corruption')	Providing decent working conditions and respecting human rights ('Occupational Health and Safety')
	Emergency preparedness	Compliance of ROSATOM's organizations with national and international environmental and technical standards	Interaction with suppliers and contractors in the operating regions ('Procurement Practices')

[55] *Relevant sustainability aspects in the GRI G4 Guideline are highlighted in blue and enclosed in brackets.*

[56] *Marked topics were moved a level up based on the recommendations of ROSATOM's top management.*

	Radioactive waste and spent nuclear fuel management (including forming an integrated national system for radioactive waste management)	Responsibility for products, including quality and safety requirements ('Product Responsibility')	Industry media coverage
	ROSATOM's impact on local communities: social programmes, charity ('Local Communities')	Solving 'nuclear legacy' problems	
	Contribution to the economic development of the operating regions: contribution to economic value creation and distribution in the operating regions, contribution to the energy supply to the Russian regions, tax payments to the budgets of different levels, investments in infrastructure, etc. ('Indirect Economic Impacts')	Efficient use of natural resources: water, materials, energy, outcomes of the project to improve energy efficiency ('Energy', 'Water')	
	Implementation of the Innovative Development and Technological Modernization Programme	Environmental protection activities and costs, and their efficiency ('Overall', 'Compliance')	
	Performance of ROSATOM's enterprises in the sphere of import substitution[56]	Emissions and effluents ('Emissions' 'Effluents and Waste')	
	Results of the Nuclear Weapons Division[56]	Treatment of disrupted and contaminated areas	
		Reducing the environmental impact of products and services, including radioactive waste and spent nuclear fuel ('Products and Services')	
		Key employment indicators of ROSATOM's employees ('Employment')	
		Cooperation with universities	
		Employee career and performance management: equal opportunities, training, professional development, succession pool, evaluation systems ('Training and Education')	
			Relations between employees and the management, including employees' ability to influence managerial decisions, safeguarding the legal rights of employees, the collective agreement ('Labour/ Management Relations')
			Activities under the Presidential Commission for Modernization and Technological Development of the Russian Economy, implementation of projects related to creating a new technological platform (CNFC and fast nuclear reactors)
			Implementation of international research and innovative projects (ITER, INPRO, etc.)
			Operations of ROSATOM's Public Council
			Communication projects (nuclear energy information centres, online communication, the Forsazh forum, etc.)
			Historical or other materials dedicated to the 70th anniversary of the establishment of the nuclear industry

[56] *Marked topics were moved a level up based on the recommendations of ROSATOM's top management.*

7.1.6. DISCLAIMER

The Report covers ROSATOM's medium- and long-term objectives and initiatives. The objectives are forward-looking, and their actual achievement will depend on economic, political, and legal factors beyond ROSATOM's control (the global financial, economic, and political environment; changes in the key markets; amendments to the tax, customs, and environmental legislation, etc.). Therefore, actual performance of the future years may differ significantly from the forward-looking statements contained herein.

7.2. PUBLIC REPORTING SYSTEM

7.2.1. PUBLIC REPORTING BY ROSATOM AND ITS ORGANIZATIONS

ROSATOM has been voluntarily publishing integrated reports since 2010 to improve the transparency of its operations and facilitate a constructive dialogue with its stakeholders. These reports are designed to provide stakeholders with a comprehensive understanding of the Corporation's strategy, sustainability of its business, operating, financial and economic results of the reporting year, initiatives related to nuclear and radiation safety, environmental safety, contribution to the development of the operating regions and other socially important aspects. Moreover, the Corporation publishes an annual report to the Russian Government every year. Some of the organizations and enterprises prepare environmental reports[57].

An industry-wide public reporting system was introduced to improve the transparency of ROSATOM's organizations through the regular publication of reports complying with corporate requirements, Russian and international standards and best practices in the area.

Reports by the key organizations (for the purposes of public reporting) of ROSATOM were prepared in accordance with the GRI G4 Guidelines;

16 and 24 awards were received in Russian and international report contests respectively.

18 integrated annual reports were prepared (at year-end 2014).

7.2.2. RESULTS IN 2015

In 2015, 18 integrated annual reports were published across the industry. As part of report preparation, a comprehensive set of stakeholder engagement measures was taken (surveys, questionnaires, public dialogues and assurance procedures) to determine material aspects to be disclosed in the reports and improve the value of these reports to the users.

[57] http://www.rosatom.ru/partnership/environmentalmanagement/
Every year reports are produced for the previous reporting year.

Fig. Reporting structure of ROSATOM and its organizations

ROSATOM

Report to the Russian Government

Public report for a wide range of stakeholders

Reports of organizations and enterprises

Reports of JSCs (including key organizations)

Environmental reports

Fig. Public reporting system

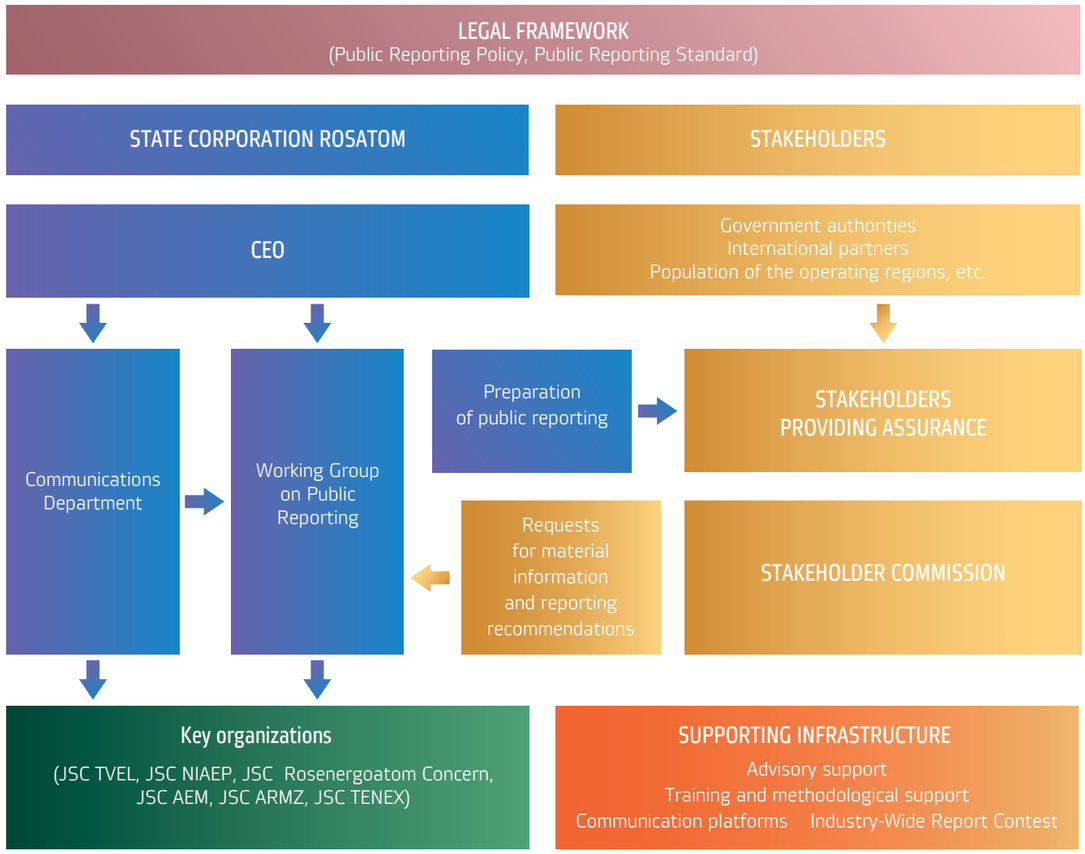


Table. Changes in the number of public reports issued by ROSATOM and its key organizations

	2013	*2014*	*2015*[58]
Number of integrated reports	21, 6 of which qualify for level A+ of GRI G 3.1, 7 for level B+, 2 for level B, 1 for level C+, 1 for level C	21, 5 of which were prepared in accordance with the Core option of GRI G4, 11 in accordance with GRI G 3.1, with 1 qualifying for level A+, 3 for level A, 1 for level B+, 5 for level B, 1 for level C	18, 3 of which were prepared in accordance with the Comprehensive option of GRI G4, 6 in accordance with the Core option of GRI G4, 8 in accordance with GRI G 3.1
Number of publicly assured reports	19	19	13
Number of reports in English	11	10	10
Number of face-to-face dialogues with stakeholders while preparing reports	75	37	27[59]
Number of online versions	13	6	6
Number of short versions	—	—	4

Awards in national and international competitions and rankings

At year end, reports of two nuclear industry companies (ROSATOM and JSC ARMZ) were included in the top 10 annual reports list by the Expert RA agency. Seven companies appeared on the top 10 list of the annual corporate transparency ranking prepared by the Russian Regional Integrated Reporting Network (ROSATOM, JSC NIAEP, JSC TVEL, JSC Rosenergoatom Concern, JSC Atomenergomash, JSC Afrikantov OKBM, and JSC State Scientific Centre – Research Institute of Atomic Reactors). Reports of the Corporation and its organizations received 16 and 24 awards in annual national and international report contests; JSC ARMZ and JSC Atomenergomash won in the category 'The Best Presentation of a Business Model in a Non-Public Company's Report', and reports by JSC Atomenergoprom and JSC SSC RIAR were shortlisted in the category 'The Best Annual Report of a Non-Public Company' in the annual competition held by the Moscow Exchange. A total of 92 awards have been received in various Russian and international reporting contests since the launch of the public reporting project.

[58] *Every year reports are produced for the previous reporting year.*

[59] *A reduction in the number of dialogues in 2014 and 2015 is due to the development of communication by correspondence and interactive communication with stakeholders.*

Table. Results of the national annual report competitions in 2014

Annual contest of annual reports held by the Expert RA international rating agency

JSC TVEL	Awardee in the additional category 'For the Best Disclosure of the Business Model in the Industry' Awardee in the additional category 'For High-Quality Disclosure of Information on Innovative Activities'
JSC Atomenergomash	Nominated in the category 'The Best Interactive Annual Report'
JSC Rosenergoatom Concern	Awardee in the additional category 'For High-Quality Disclosure of Information on Sustainable Development'
JSC ARMZ	Awardee in the additional category 'For High-Quality Disclosure of the Company's Strategy'

Annual contest of annual reports held by the Moscow Exchange and RCB Media Group

JSC Atomenergomash	Awardee in the category 'The Best Presentation of the Business Model in the Report of a Non-Public Company'
JSC ARMZ	Awardee in the category 'The Best Presentation of the Business Model in the Report of a Non-Public Company'
JSC SSC RIAR	Shortlisted in the category 'The Best Annual Report of a Non-Public Company'
JSC Atomenergoprom	Shortlisted in the category 'The Best Annual Report of a Non-Public Company'

The 12th contest of annual reports by JSCs (as part of the Sochi 2015 International Investment Forum)

JSC Atomenergomash	Ranked third in the category 'The Best Annual Report Design and Concept'
JSC SSC RIAR	Ranked second in the category 'The Best Annual Report in the Industry'
JSC NIAEP	Winner in the category 'The Best Debut'

St Petersburg contest of corporate websites and interactive annual reports

JSC Atomenergomash	Group of leaders in the category 'The Best 2014 Interactive Annual Report'

Interregional contest of corporate media resources 'Silver Threads - Volga and Ural Regions 2015'

JSC NIAEP	Certificate for professionalism in providing information

2015 corporate transparency ranking of the largest Russian companies

JSC NIAEP	Ranked first in the category 'The Leader in Corporate Transparency amongst State-Owned Companies' Winner in the special category 'For the Development of Information Disclosure Mechanisms'

2015 corporate transparency ranking of the largest Russian companies

JSC TVEL	Ranked second in the category 'The Leader in Corporate Transparency amongst State-Owned Companies'
JSC Rosenergoatom Concern	Ranked third in the category 'The Leader in Corporate Transparency amongst State-Owned Companies'
JSC Afrikantov OKBM	Winner in the special category 'For the Best Information Disclosure by Aspects'

Table. Results of the 2014 MarCom Awards International Competition for Marketing and Communication Professionals (US)

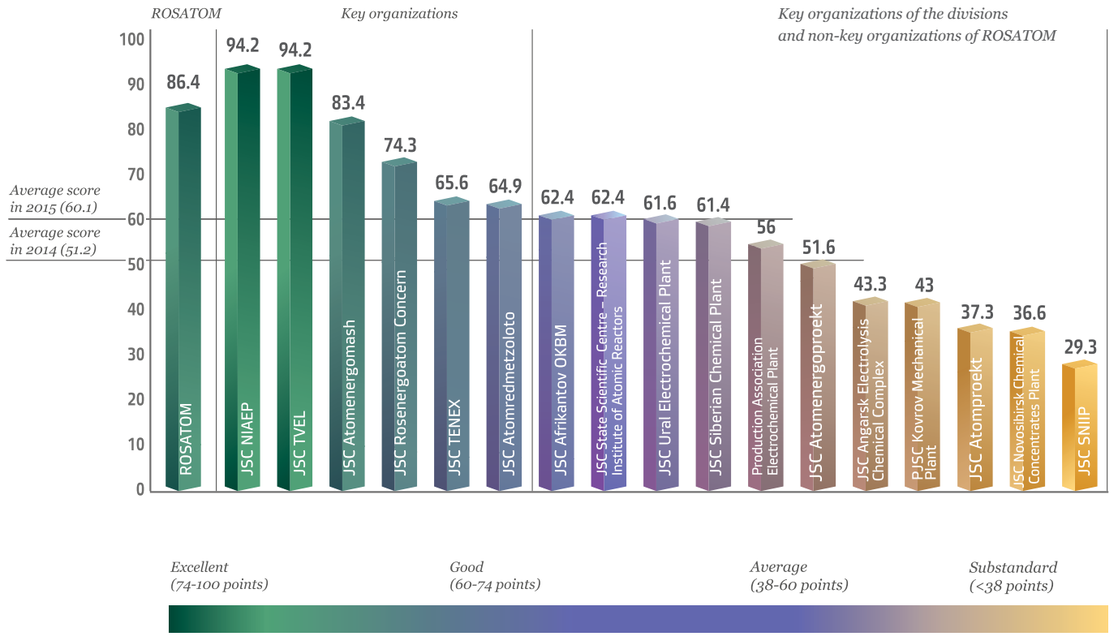
JSC Rosenergoatom Concern	Platinum Award in the categories: 'Annual Report: Corporation', 'Annual Report: Corporate Social Responsibility', 'Annual Report: Utility' Gold Award in the categories: 'Annual Report,' 'Writing: Annual Report'
JSC ARMZ	Gold Award in the category 'Annual Report: Corporation'
JSC Atomenergomash	Platinum Award in the categories: 'Annual Report: Corporation', 'Annual Report', 'E-Annual Report' Gold Award in the categories: 'Design: Annual Report Interior', 'Design: Annual Report Cover'
JSC TENEX	Platinum Award in the category 'Design: Annual Report Cover' Gold Award in the categories: 'Annual Report: Trading Company', 'Design: Annual Report'
JSC TVEL	Platinum Award in the categories 'Design: Annual Report', 'Annual Report: Corporate Social Responsibility', 'Annual Report: State-Owned Company', 'Integrated Annual Report: State-Owned Company'
JSC NIAEP	Platinum Award in the category 'Annual Report: Corporation'
ROSATOM	Gold Award in the category 'E-Annual Report'

Industry-wide public report contest of ROSATOM's organizations

The sixth industry-wide public report contest of ROSATOM's organizations took place in 2015. A significant change to the assessment method was introduced: reports were divided into several groups depending on the organization/company level. The contest winners were:

- JSC NIAEP and JSC TVEL in the category 'The Best Public Annual Report of ROSATOM's Division',
- JSC Afrikantov OKBM and JSC SSC RIAR in the category 'The Best Public Annual Report of an Organization of the Divisions and ROSATOM';
- JSC AtomEnergoSbyt and JSC Atomtrans in the category 'The Best Public Annual Report of ROSATOM's Enterprise'.

Fig. Annual report ranking for 2014



7.2.3. PLANS FOR IMPROVING THE PUBLIC REPORTING SYSTEM IN 2016 AND IN THE MEDIUM TERM

On the national and international scale:

- Participation in the International Integrated Reporting Council and the Russian Regional Integrated Reporting Network;
- Further implementation of the International Integrated Reporting Standard and the GRI G4 Guidelines (Core/Comprehensive option);
- Participation in national and international report contests.

On the industry scale:

- Updating the legal and methodological framework in line with new international standards;
- Overseeing report quality (expert assessment of report concepts and draft reports of the Corporation's organizations);
- Training and methodological support to the organizations (methodological materials, seminars);
- Regular communication with stakeholders, including through new communication and reporting channels (summary reports, website reports and e-platforms);
- Improving functional value of the reports to the users..

7.3. DIALOGUES WITH STAKEHOLDERS

To improve its transparency and accountability, ROSATOM engages key stakeholders in the preparation of its reports through their participation in the discussions on the most significant aspects of the Corporation's operations and incorporating these findings into the reports under preparation, as well as participation in public assurance. Interaction with stakeholders is an integral part of international standards: AA1000SES AccountAbility, Global Reporting Initiative (GRI, G4 version), International <IR> Standard (International IR Framework). While working on the previous report, ROSATOM assumed a number of commitments, which were later fulfilled in the 2015 report.

To improve its transparency and accountability and comply with the international AA1000 standards, ROSATOM conducted two dialogues with stakeholders (on March 3, 2016 in Moscow on the priority theme for the report, and on May 12, 2016 in Murmansk on the draft report), and a special survey to identify material aspects of the Corporation's operations to be included into the Report *(for more details, see the section 'Report Profile and the Process for Determining the Content of the Report and Materiality of Information').*

During the discussions, stakeholders voiced requests and provided specific recommendations as to what information to disclose in the annual report, and submitted proposals on how to develop the public reporting system *(minutes of the dialogues are available upon request from ROSATOM's Communications Department).*

7.4. INCORPORATION OF STAKEHOLDERS' PROPOSALS

Table. ROSATOM's fulfilment of the commitments assumed during preparation of the 2014 report

Stakeholders' proposals	*Corporation's commitments*
Describe activities aimed at searching for foreign investors in Eastern countries.	Partly disclosed in the sections *'International Business'* and *'Financial Management'.*
Provide more details on the Corporation's contribution to the economic development of its operating regions (apart from the cooperation with suppliers and contractors).	Disclosed in the section *'Contribution to the Development of the Operating Regions'.*
Explain what caused the reduction in intangible assets in 2014.	Partly disclosed: the information on the results of IP management is disclosed in the section *'Innovative Development'.*
Improve the performance of stakeholder commissions in the nuclear industry.	In 2015, stakeholder commissions participated on a full-scale basis in the preparation of annual reports by ROSATOM's organizations (discussing the report concepts, participating in the dialogues on priority aspects, discussing draft reports as part of public consultations, communication by by correspondence). All key proposals and recommendations were incorporated in the final versions of reports.
Publicly discuss draft reports in the closed administrative and territorial formations and regions of operation.	Public consultations on the 2015 draft report were held in Murmansk as part of the 9th Regional Dialogue Forum 'Nuclear Energy in the Arctic: Environmental Protection and Safety'.
Describe in more detail how the Corporation implements import substitution measures.	Disclosed in the sections *'Mining Division', 'Fuel Division', 'Mechanical Engineering Division', 'Engineering Division', 'Power Engineering Division', 'Innovative Development'*, etc.

Table. Incorporation of key proposals voiced by stakeholders in the preparation of the 2015 report

Stakeholders' requests and proposals	*Responding to stakeholders' requests and proposals*
Supplement ROSATOM's report with information on the shares of key nuclear companies in the global nuclear energy market.	Disclosed in the section *'Markets Served by ROSATOM'.*
Describe in the report the role of small and medium-sized enterprises in implementing ROSATOM's production programme.	Disclosed in the section *'Procurement Management'.*
Supplement the report with information on the factors enabling ROSATOM to increase its portfolio of overseas orders despite sanctions and the crisis.	Disclosed in the sections *'Business Strategy'* and *'International Business'.*
Supplement the report with information on key success factors, including organizational culture, enabling ROSATOM to achieve its strategic objectives.	Disclosed in the sections *'ROSATOM's Values', 'International Business', 'ROSATOM's Production System', 'Developing Human Capital'.*
Supplement the reports of ROSATOM's divisions with information on the decomposition of the Corporation's strategic objectives across the divisions.	Disclosed in the sections describing *operations of the divisions*, which contain information on KPIs set by ROSATOM.
Supplement the report with a section providing an overview of the nuclear industry and ROSATOM's strategy, information on the macroeconomic context of ROSATOM's operations.	Disclosed in the sections *'Business Strategy', 'Markets Served by ROSATOM'.*
Supplement the report with information on a breakdown of revenue and the portfolio of new orders by division to analyse the contribution of each division to the development of new businesses.	Disclosed in the section *'Business Diversification'.*
Describe in the report efforts of the Russian Trade Union of Nuclear Power and Industry Workers and the Interregional Social Movement of Veterans of Nuclear Energy and Industry aimed at preserving social stability in the operating regions.	Disclosed in the section '*Developing Human Capital'.*
Indicate in the report that no penalties were imposed on any operating Russian NPPs for violating environmental legislation in 2015.	Disclosed in the section *'Environmental Safety'.*

Table. ROSATOM's commitments to incorporate proposals made during the preparation of the 2015 report

Stakeholders' requests and proposals	*Responding to the stakeholders' requests and proposals*
Supplement the report with information on the activities of the working group of ROSATOM's Public Council on public control in the nuclear industry.	The working group of the Public Council was established in 2016. The proposal for incorporation will be considered during the preparation of the 2016 report.

7.5. STATEMENT OF PUBLIC ASSURANCE

BACKGROUND

ROSATOM suggested that we assess the report 'Performance of State Atomic Energy Corporation Rosatom in 2015' (the Report). To fulfil this mission, we and our representatives were offered the possibility to participate in the dialogue with stakeholders on a priority theme of the Report: 'ROSATOM's contribution to the social and economic development of Russia' (Moscow, March 3, 2016) and in public consultations on the draft report held in Murmansk on May 12, 2016 as part of the 9th Regional Dialogue Forum 'Nuclear Energy in the Arctic: Environmental Protection and Safety.' Moreover, we participated in the determination of material aspects/topics to be disclosed in the Report.

Our analysis and evaluation during the public assurance process focused on the materiality and completeness of information disclosed in the Report, and the Corporation's response to stakeholders' requests and proposals. Our conclusion is based on a comparative analysis of two versions of the Report (the draft Report for public consultations and the final version of the Report), materials provided to us following the dialogues (minutes, a table outlining stakeholders' proposals), and the opinions voiced by ROSATOM's management and staff during public assurance of the Report.

We received no remuneration from the Corporation for our participation in the public assurance procedure.

ASSESSMENTS, COMMENTS AND RECOMMENDATIONS

We are unanimous in the opinion that the Report is of high quality in terms of both its format and the scope of information provided. In our opinion, ROSATOM adheres to a consistent strategy for improving the transparency and accountability of its operations. In the preparation of the Report, the Corporation demonstrated strong commitment to ensuring public acceptance of nuclear technology development, and readiness to hold an open dialogue with stakeholders on various aspects of its operations.

In our view, the Report provides comprehensive information on all major aspects of the Corporation's operations, including those related to sustainable development. Through a more detailed examination of the Corporation's business model, the Report clearly depicts the complex value chain, the Corporation's management system, strategic objectives and managerial approaches, its social, environmental and economic impact, challenges and plans for the medium and long term. Thus, the Report users obtain a complete picture of ROSATOM's operations, including their socially important aspects.

Another indisputable advantage of the Report is compliance with the Russian and international corporate reporting standards (the International <IR> Framework, the Global Reporting Initiative Sustainability Reporting Guidelines (G4 version, Core 'in accordance' option), AA1000 AccountAbility series of standards, RSPP basic performance indicators), and ROSATOM's uniform industry-wide policy on public reporting.

MATERIALITY OF INFORMATION

To incorporate stakeholders' requests as fully as possible, ROSATOM conducted a survey to identify material aspects to be disclosed in the Report (the information received was compared with the results of a questionnaire survey and interviews with the top management). We highly appreciate this initiative and recommend continuing to actively collaborate with stakeholders on this matter in the future as they represent the target audience for the Corporation's public reports.

We believe that the priority theme for the Report 'ROSATOM's contribution to the social and economic development of Russia' was selected appropriately since this topic was of the greatest interest to stakeholders in the reporting year and its disclosure is an important indicator of achievement of the Corporation's strategic objectives.

COMPLETENESS OF INFORMATION

We believe that the reporting information adequately covers all material aspects and enables users to draw conclusions on the Corporation's performance in the reporting year.

RESPONDING TO STAKEHOLDERS' REQUESTS AND PROPOSALS

At the request of stakeholders' representatives, the final version of the Report was updated and supplemented with additional information (or sufficient explanations were provided on why the requested information could not be disclosed). Chapter 7 of the Report provides information on the incorporation of stakeholders' main proposals voiced during the preparation of the 2015 report. It is worth stressing that ROSATOM made considerable efforts to incorporate the proposals voiced during the preparation of the previous report (2014). Section 7.4 provides a table on the fulfilment of the relevant commitments.

To summarize, we would like to say that ROSATOM has made significant progress in public reporting over the last seven years, and continues to improve its transparency and, consequently, the confidence in its operations. We firmly believe that ROSATOM will continue to implement the responsible corporate behaviour principles in the future by developing the public reporting and stakeholder engagement system.

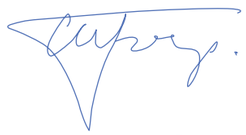
PERSONS WHO TOOK PART IN THE PUBLIC ASSURANCE OF THE 2015 REPORT

Alexander Ageev

CEO of the Institute for Economic Strategies of the Department of Social Sciences of RAS

Sergey Baranovsky

President of the Inter-Regional Environmental Non-Governmental Organization Green Cross



Alexander Makarenko

Executive Director of the Association of CATFs in the Nuclear Industry

Pavel Mitrofanov

Managing Director for Corporate Ratings of RAEX (Expert RA) rating agency

Vladimir Ognev

Chair of the Interregional Social Movement of Veterans of Nuclear Energy and Industry

Vladimir Potsyapun

Member of the State Duma Committee on Energy

Elena Feoktistova

Head of the RSPP Centre on Corporate Social Responsibility and Non-Financial Reporting

Igor Fomichev

Chair of the Russian Trade Union of Nuclear Power and Industry Workers

LIST OF ABBREVIATIONS

ARMS	automated radiation monitoring system
CATF	closed administrative and territorial formation
CIS	Commonwealth of Independent States
CNFC	closed nuclear fuel cycle
CRMS	corporate risk management system
EUP	enriched uranium product
EurAsEC	Eurasian Economic Community
FAIR	Facility for Antiproton and Ion Research (FAIR)
FMBA	Federal Biomedical Agency
FTP	federal target programme
FTS	Federal Tariff Service
GC	gas centrifuge
HEU	highly enriched uranium
HLW	high-level waste
HSC	harmful chemical substances
IAEA	International Atomic Energy Agency
IGA	intergovernmental agreement
ILW	intermediate level waste
INES	International Nuclear Event Scale (INES)
INPRO	International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)
INS RAW	Integrated National System for Radioactive Waste Management
INS SNF	Integrated National System for Spent Nuclear Fuel Management
IP	intellectual property
IRAW	individual risk assessment workstation
ISRS	Integrated Standardized Remuneration System
ITER	International Thermonuclear Experimental Reactor (ITER)
IUEC	International Uranium Enrichment Centre
JV	joint venture
KPI	key performance indicator
LC	life cycle
LCBE	life cycle back-end
LEU	low-enriched uranium

LLW	low-level waste
LRW	liquid radioactive waste
LTOP	Long-Term Operational Programme of ROSATOM
NF	nuclear facilities
NFA	nuclear fuel assembly
NFC	nuclear fuel cycle
NFE	nuclear fuel element
NPP	nuclear power plant
NRS	nuclear and radiation safety
NS	nuclear submarine
NWD	Nuclear Weapons Division
OECD NEA	Nuclear Energy Agency of the Organization for Economic Cooperation and Development
R&D	research and development
RAW	radioactive waste
RBMK	high-power channel-type reactor
ROSATOM, Corporation	State Atomic Energy Corporation Rosatom
Rostekhnadzor	Federal Service for Environmental, Technological and Nuclear Supervision
RR	research reactor
RSPP	Russian Union of Industrialists and Entrepreneurs
RTG	radioisotope thermoelectric generator
SNF	spent nuclear fuel
SRW	solid radioactive waste
SWU	separative work unit
UN	United Nations
WANO	World Association of Nuclear Operators

GLOSSARY

AA1000 Stakeholder Engagement Standard (AA1000SES)	a regulatory framework for designing, implementing, evaluating, communicating and assuring the quality of stakeholder engagement, including as part of reporting and accountability processes of organizations.
Becquerel (Bq)	a unit of nuclide activity in a radiation source equal to nuclide activity where one nucleus decays per second.
BOO (Build – Own – Operate) contract	a contract imposing obligations related to the construction, ownership and operation of a facility.
Capacity factor	the ratio of actual electricity output of a reactor unit during its operation to electricity output that would have been produced during its operation at full nameplate capacity without shutdowns.
Closed nuclear fuel cycle	a nuclear fuel cycle in which spent nuclear fuel is processed in order to extract uranium and plutonium for nuclear fuel refabrication.
Corporate business model	a model comprising key business processes used by the organization to create and maintain its value in the short, medium and long term.
Corporate social responsibility	a concept whereby an organization takes into account stakeholder requests. It is a set of obligations voluntarily assumed by the organization's executives to take into account the interests of employees, shareholders, local communities in the organization's operating regions, government bodies and municipal governments, and other stakeholders. These obligations are funded mainly from the organization's own funds and are aimed at implementing significant internal and external social (in a broad sense) programmes whose outcomes help develop the organization, improve its reputation and image, and enable constructive stakeholder engagement.
Depleted uranium	uranium with a lower content of the U-235 isotope than natural uranium (e.g. uranium in spent fuel from reactors fuelled with natural uranium).
Dialogue with stakeholders (as part of reporting processes)	an event held in accordance with the international AA1000 standards to facilitate communication between the organization and representatives of key stakeholders when preparing and promoting the organization's public reports.
Enrichment (isotopic)	a) the amount of atoms of a specific isotope in a mixture of isotopes of the same element if it exceeds the share of this isotope in a naturally occurring mixture (expressed as a percentage); b) a process resulting in an increase in the content of a specific isotope in a mixture of isotopes.
EPC (Engineering – Procurement – Construction) contract	a contract imposing obligations related to the turnkey construction of a facility, i.e. obligations related to the engineering, procurement and construction of a facility. Unlike a BOO contract, it does not provide for ownership of a facility to be built.
EPCM (Engineering – Procurement – Construction – Management) contract	a contract imposing obligations related to the turnkey construction (engineering, procurement and construction) and management of a facility. Unlike a BOO contract, it does not provide for ownership of a facility to be built.
Fast neutrons	neutrons whose kinetic energy exceeds a certain limit. This limit varies within a broad range and depends on the application (reactor physics, protection or radiation monitoring). In reactor physics, this limit is usually set at 0.1 MeV.

First criticality	a stage in the commissioning of an NPP which involves loading nuclear fuel into the reactor, achieving first criticality and required physical experiments at a power level at which heat is removed from the reactor through natural heat losses.
Global Reporting Initiative (GRI)	an international system for reporting on economic, environmental and social performance based on the Sustainability Reporting Guidelines.
Global Reporting Initiative (GRI) Sustainability Reporting Guidelines	Sustainability Reporting Guidelines determine the report content and the quality of reporting information, outline Standard Disclosures (performance indicators related to an organization's economic, environmental and social impacts), approaches to managing these impacts and other parameters.
HEU Agreement	the Agreement between the Government of the Russian Federation and the Government of the United States of America Concerning the Disposition of Highly Enriched Uranium Extracted from Nuclear Weapons, under which Russia undertook to supply the US over 20 years (until the end of 2013) with low-enriched uranium (LEU) produced from 500 tonnes of highly enriched uranium (HEU) extracted from nuclear warheads and deemed by Russia to be excessive for defence purposes.
IAEA safeguards	a verification system established as part of the international nuclear non-proliferation policy which is applied to the peaceful use of nuclear energy; the IAEA is responsible for the implementation of this policy.
IEPRS	a functional subsystem for emergency prevention and response in organizations within the jurisdiction of ROSATOM.
Integrated report	a report consolidating all material data on the organization's strategy, corporate governance, performance indicators and prospects to present a comprehensive picture of its economic, social and environmental status. The report gives a clear idea of value creation in the organization at present and in the future.
International Integrated Reporting Council (IIRC)	an international organization responsible for promoting and updating the International Integrated Reporting Framework. The objective of the IIRC is to develop universal approaches to providing corporate reports in order to promote sustainable development of the global economy.
ISAE 3000 standard (International Standard on Assurance Engagements)	an international standard for the audit of non-financial reports.
Key organizations (for the purpose of public reporting)	organizations whose operations have major social and political importance and/or considerable importance for the positioning of ROSATOM in the Russian or international markets.
Key performance indicators	key performance indicators consistent with the goals of the Corporation and reflecting the efficiency and performance of organizations, divisions and the individual performance of employees.
Natural background radiation	ionizing radiation including cosmic radiation and ionizing radiation from naturally distributed natural radionuclides (on the surface of the Earth, in the air, food, water, the human body, etc.).
Non-financial reporting	reports provided by an organization on its performance beyond its core operational and financial activities (and the management of this performance). Examples of non-financial reports include sustainability reports, corporate social responsibility reports, environmental reports, reports on philanthropy, etc.
NPP safety	an NPP characteristic that ensures radiation safety for personnel, the general public and the environment within required limits during normal operation and in the event of an accident.
Nuclear fuel	material containing fissionable nuclides which, after being placed in a nuclear reactor, enables a nuclear chain reaction.
Nuclear fuel assembly	a set of fuel elements (rods, bars, plates, etc.) held together with spacer grids and other structural elements that are transported and irradiated in the reactor in one piece. Fuel assemblies are loaded into the reactor core.
Nuclear fuel cycle	a sequence of manufacturing processes aimed at ensuring the operation of nuclear reactors, ranging from uranium production to radioactive waste disposal.
Nuclear fuel pellet	a pellet of compressed uranium dioxide contained inside fuel elements. It forms the basis of nuclear fuel.
Nuclear power	a branch of power engineering that uses nuclear energy for electricity and heat generation.
Nuclear safety	the ability of a nuclear facility to prevent nuclear accidents and radioactive leaks.
Operator	an organization that has obtained a permit from a regulator for the operation of a nuclear power plant or another nuclear facility.
Pilot operation	a stage in the commissioning of a nuclear power plant from the power start-up to acceptance of the power plant for commercial operation.
Power start-up	a stage in the commissioning of an NPP at which the NPP starts to generate energy, and the operation of the NPP is tested at various power levels, up to the level specified for commercial operation.
Radiation burden	a sum of individual doses of radiation received or planned in the course of operation, maintenance, repairs, replacement or dismantling of equipment at a nuclear facility.
Radiation monitoring	measures for obtaining information on radiation levels in the organization and in the environment and on human exposure to radiation (including dosimetry and radiometric monitoring).
Radiation safety	protection of the current and future generations and the environment against the harmful impact of ionizing radiation.
Radioactive discharge	controlled release of radionuclides into industrial reservoirs as a result of operation of a nuclear facility.
Radioactive release	controlled atmospheric emission of radionuclides as a result of operation of a nuclear facility.
Radioactive waste	materials and substances unsuitable for further use, as well as equipment and products with a radionuclide content above prescribed levels.
Radioactive waste disposal	safe disposition of radioactive waste in repositories or any places that rules out waste withdrawal or a possibility of radioactive releases into the environment.
Radioactive waste processing and conditioning	process operations aimed at ensuring that the physical form and condition of radioactive waste are appropriate for their disposal.

Recommendations of the Russian Union of Industrialists and Entrepreneurs (RSPP) for Use in the Governance Practice and Corporate Non-Financial Reporting (basic performance indicators)	a system of economic, social and environmental performance indicators for non-financial reports developed by the RSPP in order to facilitate the adoption of responsible business principles. It is based on a number of framework documents developed by UN organizations (including the UN Global Compact) and the Global Reporting Initiative, as well as methodological and procedural guidelines of the Federal State Statistics Service of the Russian Federation and guidelines developed by the RSPP (the Social Charter of the Russian Business, Recommendations on Preparation of Non-Financial Reports 'Five Steps Towards Social Sustainability of Companies', etc.).
Research reactor	a nuclear reactor designed for use as an object of research to obtain data on reactor physics and technology required in order to design and develop similar reactors or components thereof.
Separative work unit (SWU)	a measure of efforts expended on the separation of a given amount of material with a specific isotopic composition into two fractions with different isotopic compositions. Separative work is measured in kilograms, and enrichment and energy costs are calculated per kilogram of separative work performed.
Spent nuclear fuel processing	a set of chemical engineering processes for removing fission products from spent nuclear fuel and for regeneration of fissionable material for reuse.
Stakeholder assurance of the report	a procedure organized in accordance with the AA1000SES international standard whereby representatives of principal stakeholders provide assurance for the report by confirming the materiality and completeness of information disclosed in the report, and whereby the organization responds to requests and proposals from stakeholders. The outcome of stakeholder assurance is a Statement of Public Assurance signed by representatives of principal stakeholders and included in the report.
Stakeholders	individuals and/or legal entities and groups of individuals or entities that make an impact on the organization's operations through their actions and/or are affected by the organization. An organization may have different stakeholders (national and international regulatory (supervisory) authorities, shareholders, consumers of goods and services, business partners, suppliers and contractors, civil society organizations, local communities, trade unions, etc.) with differing and conflicting interests.
Sustainable development	development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Treaty on the Non-Proliferation of Nuclear Weapons	an international treaty aimed at limiting the arms race; its objective is to prevent the emergence of new states possessing nuclear weapons. The treaty imposes an obligation on states possessing nuclear weapons, requiring them not to transfer nuclear weapons or control over such weapons to any party, while non-nuclear weapon states are obliged not to manufacture or acquire nuclear weapons or other nuclear explosive devices.
Uranium conversion	a chemical engineering process involving the transformation of uranium-containing materials into uranium hexafluoride.
Uranium hexafluoride	a chemical compound of uranium and fluorine (UF_6), which is the only highly volatile uranium compound (when heated to 53ºC, uranium hexafluoride changes directly from the solid state into the gaseous state); it is used as feedstock for the separation of uranium-238 and uranium-235 isotopes using gaseous diffusion or the gas centrifuge method and for production of enriched uranium.
Uranium ore enrichment	a combination of processes for primary treatment of uranium-containing mineral resources in order to separate uranium from other minerals contained in the ore.
VVER	a water-cooled water-moderated energy reactor in which water is used as both a coolant and moderator. Russian NPPs typically use two versions of VVER reactors: VVER-440 and VVER-1000.

APPENDICES

APPENDIX 1.
TABLES OF GRI G4 STANDARD DISCLOSURES AND THE RSPP BASIC PERFORMANCE INDICATORS

Table. GRI G4 Standard Disclosures

General Standard Disclosures	*Page in the report*
1. STRATEGY AND ANALYSIS	
G4-1 Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	8, 10
G4-2 Provide a description of key impacts, risks, and opportunities. The organization should provide two concise narrative sections on key impacts, risks, and opportunities.	128–130
2. ORGANIZATIONAL PROFILE	
G4-3 Report the name of the organization.	6
G4-4 Report the primary brands, products, and services.	6, 25
G4-5 Report the location of the organization's headquarters.	*See the official website*
G4-6 Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	38–39
G4-7 Report the nature of ownership and legal form.	6
G4-8 Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	25
G4-9 Report the scale of the organization.	9, 160–161
G4-10 Report the total number of employees[60].	160–161
G4-11 Report the percentage of total employees covered by collective bargaining agreements.	167
G4-12 Describe the organization's supply chain.	148, 151–153
G4-13 Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	124
G4-14 Report whether and how the precautionary approach or principle is addressed by the organization[61].	198–199
G4-15 List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	122, 239
G4-16 List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization[62]: – Holds a position on the governance body; – Participates in projects or committees; – Provides substantive funding beyond routine membership dues; – Views membership as strategic.	*See the 2014 Report*
3. IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES	
G4-17 List all entities included in the organization's consolidated financial statements or equivalent documents. The organization can report on this Standard Disclosure by referencing the information in publicly available consolidated financial statements or equivalent documents.	*Interactive Annual Report*
G4-18 Explain the process for defining the report content and the Aspect Boundaries.	240–241
G4-19 List all the material Aspects identified in the process for defining report content.	241–243
G4-20 For each material Aspect, report the Aspect Boundary within the organization.	240
G4-21 For each material Aspect, report the Aspect Boundary outside the organization.	240
G4-22 Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements[63].	—
G4-23 Report significant changes from previous reporting periods in the Scope and Aspect Boundaries[64].	—
4. STAKEHOLDER ENGAGEMENT	
G4-24 Provide a list of stakeholder groups engaged by the organization.	186
G4-25 Report the basis for identification and selection of stakeholders with whom to engage[65].	185
G4-26 Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	187, 251

[60] *No breakdown by gender, employment contract, employment type or region is provided; no information is provided on supervised employees.*

[61] *Additional information on the use of the precautionary principle is provided on the website at: http://rosatom.ru/production/safety/.*

[62] *The information is provided in the 2014 report.*

[63] *There were no restatements.*

[64] *CSee the following sections of the report: section 6.3.4. 'Environmental charges' and section 6.3.5. 'Water use'.*

[65] *Additional information is provided in the 2014 report.*

General Standard Disclosures	*Page in the report*
G4-27 Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns[66].	252–253
5. REPORT PROFILE	
G4-28 Reporting period (such as fiscal or calendar year) for information provided.	238
G4-29 Date of most recent previous report (if any).	238
G4-30 Reporting cycle (such as annual, biennial).	238
G4-31 Provide the contact point for questions regarding the report or its contents.	281
G4-32 GRI Content Index.	238, 264
G4-33 Assurance[67].	239, 278
6. GOVERNANCE	
G4-34 Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	118–121
G4-39 Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement).	119
7. ETHICS AND INTEGRITY	
G4-56 Describe the organization's values, principles, standards and norms of behaviour such as codes of conduct and codes of ethics.	16, 166
G4-57 Report the internal and external mechanisms for seeking advice on ethical and lawful behaviour, and matters related to organizational integrity, such as helplines or advice lines[68].	—
G4-58 Report the internal and external mechanisms for reporting concerns about unethical or unlawful behaviour, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines[68].	—

[66] *Minutes of dialogues with stakeholders held as part of preparation of the 2015 report can be found on the Report website.*

[67] *External independent assurance of non-financial reports is provided by an organization selected through open competitive tendering.*

[68] *In the reporting year, we fulfilled the legislative requirements for restrictions, prohibitions and obligations imposed on employees holding positions in state-owned corporations. In accordance with the requirements of the effective legislation, 228 of ROSATOM's employees submitted information on their income, expenses, property and liabilities. That information was posted on ROSATOM's official website.*

In 2015, prevention of attempts to cause damage and its compensation by the perpetrators resulted in savings from anti-corruption measures totalling RUB 5.7 billion, including about RUB 1 billion due to reports of industry employees received via the hotline.

Table. Specific Standard GRI G4 Disclosures (Indicators) and their correspondence to the RSPP basic performance indicators[69]

Aspect	*Disclosures on Management Approach (DMA) and indicators*	*Page in the report*	*Omitted information*
Economic Performance	DMA	76–78, 137–144	
	G4-EC4[70]	—	
Indirect Economic Impacts	DMA	172–174	
	G4-EC7	182–183	
	G4-EC8	176–181	
Procurement Practices	DMA	148–154	
	G4-EC9	—	No centralized records of purchases from local suppliers are kept.
Energy	DMA	219, 221	
	G4-EN6	219, 220	Reduction of energy consumption in joules was not disclosed due to the lack of a centralized accounting system. Disclosure of information in absolute terms is considered inadvisable as it may provide an inadequate reflection of the actual level of efficiency achieved in energy consumption.
Water	DMA	216–218, 223, 225	
	G4-EN8	224	
	G4-EN10	224	
Emissions	DMA	216–218, 226–227	
	G4-EN20	228	
	G4-EN21	227	
Effluents and Waste	DMA	216–218, 228	
	G4-EN22	225–226	
	G4-EN23	229	
Products and Services	DMA	204–207, 215	
	G4-EN27	207–214	
Compliance	DMA	223	
	G4-EN29	223	
Overall	DMA	216–218, 221	
	G4-EN31	221–223	
Employment	DMA	158–160, 167–171	
	G4-LA2[71]	167	

[69] *GRI indicators listed in the table correspond to the following basic performance indicators of the RSPP: G4-EN8 – RSPP 2.3; G4-EN21 – RSPP 2.6; G4-EN22 – RSPP 2.7; G4-EN23 – RSPP 2.8; G4-EN31 – RSPP 2.12; G4-LA6 – RSPP 3.1.5.-3.1.8; G4-LA9 – RSPP 3.1.10.*

[70] *ROSATOM does not receive financial assistance from the government.*

[71] *Benefits specified in section 5.1.6. 'Social Policy' are not provided to part-time employees.*

Aspect	*Disclosures on Management Approach (DMA) and indicators*	*Page in the report*	*Omitted information*
Labour/Management Relations	DMA	165–167	
	G4-LA4[72]	*See the 2014 Report*	
Occupational Health and Safety	DMA		
	G4-LA6	202	The occupational diseases rate, the lost day rate and the absentee rate were not disclosed as it was difficult to collect consolidated information across the Corporation.
	G4-LA7	202–203	
Training and Education	DMA	202, 204	No breakdown by gender is provided due to the lack of an accounting system for the relevant information. Disclosure is planned in the medium term.
	G4-LA9	164–165	
	G4-LA10	164	
Local Communities	DMA	164–165	
	G4-SO1	176–179	
	G4-SO2	196–197	
Anti-corruption	DMA	155	
	G4-SO4[73]	155	
	G4-SO5		
Public Policy	DMA	102–108	
	G4-SO6[74]	—	
Customer Health and Safety	DMA	197–201	
	G4-PR2	196–198	

[72] *See also the 2014 report: http://ar2014.rosatom.ru/#/en*

[73] *All employees and partners of ROSATOM can obtain information on anti-corruption procedures (including the relevant regulations) on the official website.*

[74] *ROSATOM does not make political contributions.*

ПРИЛОЖЕНИЕ 2. ЗАКЛЮЧЕНИЕ РЕВИЗИОННОЙ КОМИССИИ О ФИНАНСОВО-ХОЗЯЙСТВЕННОЙ ДЕЯТЕЛЬНОСТИ ГОСКОРПОРАЦИИ «РОСАТОМ» И ЕЕ ОРГАНИЗАЦИЙ ЗА 2015 ГОД

Выписка из заключения
Ревизионной комиссии о финансово-хозяйственной деятельности
Государственной корпорации по атомной энергии «Росатом»
и ее организации за 2015 год

г. Москва « 29 » апреля 2016 г.

Ревизионная комиссия в составе: председателя комиссии Р.Е. Артюхина – руководителя Федерального казначейства, членов комиссии: Л.Ф. Бузиной – заместителя директора Департамента бюджетной политики в сфере государственной военной и правоохранительной службы и государственного оборонного заказа Министерства финансов Российской Федерации, В.С. Катренко – аудитора Счетной палаты Российской Федерации, А.В. Рожнова – заместителя начальника 12 Главного управления Министерства обороны Российской Федерации, В.К. Уткина – начальника отдела Департамента оборонной промышленности Правительства Российской Федерации осуществила контроль финансово-хозяйственной деятельности и достоверности сведений, содержащихся в годовом отчете Государственной корпорации по атомной энергии «Росатом» (далее также – Корпорация и ГК «Росатом») за период с 1 января по 31 декабря 2015 года.

Ревизионная комиссия при осуществлении контрольных мероприятий руководствовалась статьей 31 Федерального закона от 1 декабря 2007 г. № 317-ФЗ «О Государственной корпорации по атомной энергии «Росатом» (далее – Федеральный закон № 317-ФЗ) и Положением о ревизионной комиссии Государственной корпорации по атомной энергии «Росатом», утвержденным Наблюдательным советом Государственной корпорации по атомной энергии «Росатом» (протокол от 26 декабря 2007 г. № 1 (с изменениями от 27 мая 2010 г. № 18).

Ревизионная комиссия пришла к заключению:

1. Фактов нецелевого использования бюджетных средств, имущества Корпорации и ее организаций, средств специальных резервных фондов Корпорации по результатам проверки не установлено.

2. Фактов несоответствия решений по вопросам финансово-хозяйственной деятельности Корпорации, принимаемых Наблюдательным советом, Генеральным директором и Правлением Корпорации, Федеральному закону от 1 декабря 2007 г. № 317-ФЗ «О Государственной корпорации по атомной энергии «Росатом» и иным нормативным правовым актам Российской Федерации не установлено.

3. Рекомендации ревизионной комиссии, сформулированные в заключении от 30 апреля 2015 г., в целом учтены, однако имеют место отдельные недостатки, на необходимость устранения которых указывалось по результатам предыдущих проверок.

4. Ревизионная комиссия подтверждает достоверность сведений, представленных в Годовом отчете Госкорпорации «Росатом» за 2015 год.

Рекомендации Наблюдательному совету и Правлению Госкорпорации «Росатом»:

1. В целях повышения эффективности и рационального использования имущества, переданного ГК «Росатом» в качестве имущественного взноса Российской Федерации, обеспечить проведение независимой оценки такого имущества в интересах Корпорации с целью недопущения оплаты приобретаемых акций и долей участия в уставных (складочных) капиталах обществ по цене ниже балансовой стоимости передаваемого в их оплату имущества.

2. Обеспечить оформление в установленном законодательством порядке хозяйственных отношений Госкорпорации «Росатом» с Федеральным государственным учреждением «Федеральный медицинский биофизический центр имени А.И. Бурназяна» с целью оказания медицинских услуг сотрудникам Корпорации и решить вопрос о взыскании имеющейся дебиторской задолженности Корпорации с учетом пени за несвоевременную оплату либо о её списании в установленном порядке.

3. В соответствии с пунктом 27 приказа Минфина России от 29 июля 1998 г. № 34н «Об утверждении Положения по ведению бухгалтерского учета и бухгалтерской отчетности в Российской Федерации» и пунктом 1.5

Методических указаний по инвентаризации имущества и финансовых обязательств обеспечить обязательное проведение инвентаризации при передаче имущества в аренду, его выкупе или продаже подразделением Корпорации, ответственным за заключение договора по передаче имущества в аренду, его выкупе или продаже».

4. Решить вопрос о взыскании неустойки с исполнителей (поставщиков) по государственным контрактам, обязательства по которым выполняются не своевременно и/или ненадлежащим образом, в порядке установленном Правительством Российской Федерации, а также усилить контроль за своевременностью предъявления штрафных санкций и качественной организацией претензионно-исковой работы Корпорации.

5. Внести изменения в Положение о ревизионной комиссии Корпорации, определив возможность формирования рабочего органа (рабочей группы) Ревизионной комиссии, создаваемого в целях непосредственного проведения проверок финансово-хозяйственной деятельности Корпорации, решения иных организационных вопросов функционирования Ревизионной комиссии.

6. Ревизионной комиссии совместно с уполномоченным структурным подразделением Госкорпорации «Росатом» подготовить методические рекомендации по оценке эффективности системы внутреннего аудита Корпорации и осуществить в 2017 году оценку системы внутреннего аудита Корпорации на основании согласованных методических рекомендаций.

7. В рамках выполнения разрабатываемых требований законодательства о противодействии размыванию налоговой базы и выводу прибыли из под налогообложения, обеспечить подготовку пострановой отчета за 2016 год по организациям и филиалам организаций Корпорации, находящихся в иностранных юрисдикциях, при этом отчет должен отражать распределение прибыли, выручки, количества сотрудников, а также активов в разрезе каждой юрисдикции (государства), в которой осуществляет свою деятельность ГК «Росатом» и включать пояснения по выявленным диспропорциям между государствами в отношении показателей отчета.

Приложение: справка на 81 л. в 1 экз.

Председатель
Ревизионной комиссии — Р.Е. Артюхин

Члены ревизионной комиссии:

Л.Ф. Бузина

В.С. Катренко

А.В. Рожнов

В.К. Уткин

APPENDIX 2.

REPORT OF THE AUDITING COMMISSION ON FINANCIAL AND BUSINESS OPERATIONS OF STATE ATOMIC ENERGY CORPORATION ROSATOM AND ITS ORGANIZATIONS FOR 2015 (TRANSLATION)

Extract from the report of the Auditing Commission on financial and business operations of State Atomic Energy Corporation Rosatom and its organizations for 2015

Moscow — April 29, 2016

The Auditing Commission comprising the following persons: R.E. Artyukhin, Chairman of the Commission, Head of the Federal Treasury; members of the Commission: L.F. Buzina, Deputy Director of the Department for Budget Policy of the State Military and Law Enforcement Services and the Governmental Defence Order of the Ministry of Finance of the Russian Federation; V.S. Katrenko, Auditor of the Accounts Chamber of the Russian Federation; A.V. Rozhnov, Deputy Head of the 12th Main Department of the Ministry of Defence of the Russian Federation; V.K. Utkin, Office Head of the Department of Defence Industry of the Government of the Russian Federation, has audited financial and business operations and the accuracy of information contained in the Annual Report of State Atomic Energy Corporation Rosatom (hereinafter referred to as the Corporation and ROSATOM) for the period from January 1 through December 31, 2015.

In the course of the audit, the Auditing Commission was guided by article 31 of Federal Law No. 317-FZ on State Atomic Energy Corporation Rosatom dated December 1, 2007 (hereinafter referred to as Federal Law No. 317-FZ) and the Regulations on the Auditing Commission of State Atomic Energy Corporation Rosatom approved by the Supervisory Board of State Atomic Energy Corporation Rosatom (minutes No. 1 dated December 26, 2007 (as amended, minutes No. 18 dated May 27, 2010).

The Auditing Commission has come to the following conclusion:

1. No instances of misuse of budget funds, property of the Corporation or its organizations or funds from special reserve funds of the Corporation have been detected as a result of the audit.
2. No instances of non-compliance of resolutions on financial and business operations of the Corporation adopted by the Supervisory Board, the CEO and the Management Board of the Corporation with Federal Law No. 317-FZ on State Atomic Energy Corporation Rosatom dated December 1, 2007 or other laws and regulations of the Russian Federation have been detected.
3. On the whole, recommendations of the Auditing Commission made in the report dated April 30, 2015 have been taken into account, but there are certain shortcomings that need to be eliminated, as has been pointed out based on the findings of previous audits.
4. The Auditing Commission confirms the accuracy of information provided in the Annual Report of ROSATOM for 2015.

Recommendations to the Supervisory Board and the Management Board of ROSATOM:

1. In order to improve the performance and enable efficient use of assets transferred to ROSATOM as an asset contribution from the Russian Federation, independent valuation of such assets should be arranged in the interests of the Corporation in order to ensure that the amount paid for shares and shareholdings in the authorized share capital (contributed capital) of companies acquired by ROSATOM is not less than the book value of assets transferred in payment for them.

2. To formalize the business relations of ROSATOM with the Federal State Institution A.I. Burnazyan Federal Medical and Biophysical Centre under the procedure established by legislation in order to provide health care services to the Corporation's employees and to address the issue of collecting existing accounts receivable due to the Corporation, including penalties for the delay in payment, or writing them off under the established procedure.

3. Pursuant to paragraph 27 of order No. 34n of the Ministry of Finance of Russia dated July 29, 1998 on Approval of the Regulations on Accounting and Reporting in the Russian Federation and paragraph 1.5 of the Guidelines on Inventorying Assets and Financial Liabilities, the relevant inventories must be compiled when assets are leased out, bought back or sold by a division of the Corporation responsible for the conclusion of the relevant lease, repurchase or sale agreement.

4. To address the issue of imposing a penalty on contractors (suppliers) under government contracts in cases where contractual obligations are not fulfilled on time and/or properly, under the procedure established by the Government of the Russian Federation, and to maintain stricter control over timely imposition of fines and effective organization of claim administration in the Corporation.

5. To amend the Regulations on the Auditing Commission of the Corporation to enable the formation of a working group (a task force) under the Auditing Commission that will have direct responsibility for auditing the Corporation's financial and business operations and addressing other organizational issues related to the functioning of the Auditing Commission.

6. The Auditing Commission together with an authorized division of ROSATOM should prepare guidelines on performance evaluation of the Corporation's internal audit system and carry out performance evaluation of the Corporation's internal audit system in 2017 based on the approved guidelines.

7. As part of efforts to ensure compliance with legislative requirements for prevention of base erosion and profit shifting that are currently under development, a country-by-country report for 2016 should be prepared on the Corporation's organizations and their branches in foreign jurisdictions; the report should provide a breakdown of profit, earnings, workforce and assets by jurisdictions (states) where ROSATOM operates and should provide an explanation for identified disparities between states with regard to indicators presented in the report.

Attachment: one copy of a statement on 81 pages.

Chair of the Auditing Commission	/signature/	R.E. Artyukhin
Members of the Auditing Commission:	/signature/	L.F. Buzina
	/signature/	V.S. Katrenko
	/signature/	A.V. Rozhnov
	/signature/	V.K. Utkin

ПРИЛОЖЕНИЕ 3.
ЗАКЛЮЧЕНИЕ ДЕПАРТАМЕНТА ВНУТРЕННЕГО КОНТРОЛЯ И АУДИТА ГОСКОРПОРАЦИИ «РОСАТОМ»

ЗАКЛЮЧЕНИЕ
отдела внутреннего аудита Управления внутреннего аудита Госкорпорации «Росатом» по результатам внутреннего аудита бизнес-процесса «Порядок формирования публичной отчетности Госкорпорации «Росатом»»

Внутренний аудит бизнес-процесса «Порядок формирования публичной отчетности Госкорпорации «Росатом»» проведен на основании Сводного плана контрольных мероприятий специализированных органов внутреннего контроля Госкорпорации «Росатом» на первое полугодие 2016 года.

В ходе аудита:

- проведена оценка эффективности системы внутреннего контроля процесса формирования публичной отчетности;
- проведена оценка соответствия порядка формирования публичной отчетности действующему законодательству, международным стандартам и внутренним нормативным требованиям по формированию публичной отчетности;
- разработаны рекомендации по совершенствованию системы внутренних контролей при формировании публичной отчетности.

В целом, бизнес-процесс «Порядок формирования публичной отчетности Госкорпорации «Росатом» осуществляется в соответствии с действующим законодательством, международными стандартами и внутренними нормативными требованиями по формированию публичной отчетности. Вместе с тем, аудиторы отмечают необходимость актуализации локальных нормативных актов с учетом требований действующей Политики в области публичной отчетности Госкорпорации «Росатом», утвержденной приказом Госкорпорации «Росатом» от 11.11.15 № 1/1069-п.

Руководитель аудиторской группы — И.С. Савушкина

Член аудиторской группы — З.А. Жукова

APPENDIX 3.
OPINION OF THE INTERNAL CONTROL AND AUDIT DEPARTMENT OF STATE ATOMIC ENERGY CORPORATION ROSATOM (TRANSLATION)

REPORT
of the Internal Audit Office of the Internal Audit Department of ROSATOM on the findings of internal audit of the business process 'Public Reporting Procedure in ROSATOM'

Internal audit of the business process 'Public Reporting Procedure in ROSATOM' has been performed pursuant to the Consolidated Plan of Control Measures of Specialized Internal Control Bodies of ROSATOM for the First Half of 2016.

The audit has involved:

- an assessment of efficiency of internal controls of the public reporting process;
- an assessment of compliance of the public reporting procedure with applicable legislation, international standards and internal regulatory requirements for public reporting;
- producing recommendations for the improvement of internal controls in public reporting.

On the whole, the business process 'Public Reporting Procedure in ROSATOM' complies with applicable legislation, international standards and internal regulatory requirements for public reporting. At the same time, the auditors would like to highlight the necessity of updating local regulations taking into account the requirements of the current version of the Public Reporting Policy of ROSATOM approved by order No. 1/1069-p of ROSATOM dated November 11, 2015.

Head of the Auditors' Group /signature/ I.S. Savushkina

Member of the Auditors' Group /signature/ Z.A. Zhukova

APPENDIX 4.
INDEPENDENT AUDITOR'S REPORT ON NON-FINANCIAL REPORTING OF STATE ATOMIC ENERGY CORPORATION ROSATOM

ЭНПИ® КОНСАЛТ
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Report on results of independent assurance of the Public Annual Report of the State Atomic Energy Corporation Rosatom for 2015

Introduction

The subject of assurance is the Annual Public Report of the State Atomic Energy Corporation Rosatom (hereinafter referred to as the Report) for 2015. Our statement is addressed to the management of the State Atomic Energy Corporation Rosatom (hereinafter referred to as ROSATOM).

Responsibilities

The management of ROSATOM bears full responsibility for the preparation and accuracy of the Report. We are responsible for the results of independent assurance of the Report only to ROSATOM within the engagement and do not assume any responsibility to any third party.

Scope, criteria and level of assurance

The Report was evaluated considering the following criteria:

- Nature and level of ROSATOM compliance with the AA1000 Accountability Principle Standard 2008 – inclusivity, materiality, responsiveness principles;
- Compliance of the Report with the GRI Sustainability Reporting Guidelines G4 (Core option).

The engagement was planned and performed in accordance with AA1000 Assurance Standard 2008 (moderate level of assurance) and International Standard on Assurance Engagement ISAE 3000 "Assurance engagements other than audits or reviews of historical financial information" (limited level of assurance). The statement corresponds to type 2, as defined by AA1000AS 2008, in accordance with the limitations specified in section "Limitations of the engagement" of the present statement.

The selective verification of information in the Report performed under aforementioned levels of assurance does not claim to provide a high level of assurance. The work was based on the supporting materials provided by the management of the entity and its employees, publicly available information and analytical methods of confirmation. In relation to the quantitative information contained in the Report the work performed cannot be considered sufficient for identification of all possible deficiencies and misstatements. However, the collected evidence is sufficient for expressing our conclusion in accordance with the above levels of assurance.

Methodology of assurance

In our engagement, we have performed the following procedures:

- Study and selective testing of systems and processes implemented by ROSATOM to ensure and analyze the compliance of the activities with AA1000APS 2008 principles; collection of evidence confirming practical implementation of these principles.
- Interviewing the management and employees of ROSATOM and obtaining documentary confirmation.
- Participation in the Report public presentation, study of minutes of public dialogues.
- Study of information available on the website of ROSATOM related to its activities in the context of sustainable development.
- Study of public statements of third parties concerning economic, environmental and social aspects of the ROSATOM activities, in order to check validity of the declarations made in the Report.
- Analysis of non-financial reports of foreign companies working in the similar market segment for benchmarking purposes.
- Analysis of the current system of internal audit of non-financial reporting in ROSATOM.
- Selective review of documents and data on the efficiency of the management systems of economic, environmental and social aspects of sustainable development in ROSATOM.
- Study of the existing processes of collection, processing, documenting, verification, analysis and selection of data to be included into the Report.
- Analysis of information in the Report for compliance with the aforementioned criteria

Limitations of the engagement

The assurance is limited to the period from January 1, 2015 to December 31, 2015.

The evaluation of reliability of the information on performance in the Report was conducted in relation to compliance with the criteria to be applied to prepare sustainability report 'in accordance' with the G4 Guidelines (core option) and information referred toin GRI Content Index (Tables of GRI G4 standard disclosures and the RSPP basic Performance indicators). In respect to the quantitative performance indicators the conformity assessment to external and internal reporting documents provided to us is performed.

Assurance does not apply to forward-looking statements, as well as statements expressing the opinions, beliefs and intentions of ROSATOM to take any action relating to the future. The assurance on the statements which are based on expert opinion is not performed.

The statement refers only to the English version of the Report in the PDF format.

Conclusions

The following conclusions are based on the assurance work performed within the limitations of the engagement specified above.

Nature and extent of compliance with AA1000 APS 2008 principles

As a result and within the scope of our work, we did not identify material non-compliance with criteria of AA1000APS 2008 in respect to adherence to the principles (Inclusivity, Materiality, and Responsiveness).

Compliance of the Report with the GRI Sustainability Reporting Guidelines G4 (Core option)

In order to form an opinion on this issue, we have performed analysis implementation of GRI G4 Guidelines concerning principles and standard disclosures for the chosen option to prepare a report 'in accordance' with the Guidelines.

- General standard disclosures are reported mainly in compliance with the requirements of GRI G4 for the chosen 'in accordance' option. General standard disclosure G4-10 is reported with omissions (breakdown of total number of employees by gender, contract and employment type is not reported)
- The Report contains the disclosures on impacts that make the aspects material, the company's approach to managing the material aspects, as well as evaluation of the management approach for some material aspects.
- Indicators required for the Core option are reported in accordance with guidance contained in GRI G4. If it is not possible to disclose required information the Report identifies the information that has been omitted and explains the reasons for omissions.

As a result and within the scope of our work, we did not identify any material misstatements in the Report information referred to in the GRI Content Index.

Overall assessment of the Report

- As a result and within the scope of our work, we did not identify material non-compliance with requirements to the report prepared 'in accordance' with the Core option of the G4 Guidelines.

Recommendations

1. Increase the extent of disclosure of indicators in relation to which GRI guidance is not fully taken into account (disclosures with omissions).
2. It is advantageous to disclose GRI indicators in relation to target values.
3. Make changes in the reporting systems to make it possible to disclose information on personnel by gender in the following reporting periods
4. In case of disclosure with omissions due to absence of a recording system provide more specific information about plans to obtain data in future.
5. Take into account remarks in the foregoing sections of the statement.

Statement of competence and independence

JSC "NP Consult", an independent audit firm, professionally rendering assurance services, is a licensed provider of assurance services in accordance with AA1000AS. JSC "NP Consult" is a member of self-regulated organization Nonprofit Partnership "Institute of Professional Auditors" and acts in accordance with the IFAC Code of Ethics. The company employs a system of quality control of audit services, including control of compliance with ethical norms.

JSC "NP Consult" states that the present statement is an independent auditor's assessment. JSC "NP Consult" and its staff have no relations with ROSATOM, or its subsidiaries and affiliates that could result in the conflict of interest related to the independent assurance of the Report.

General Director
JSC "NP Consult"

V.Y. Skobarev

Moscow, December 29, 2016

FEEDBACK FORM

Dear reader,

You have read the public annual report of ROSATOM, which is intended for a wide range of stakeholders. We attach great importance to the opinion of the readers of our report. We would appreciate it if you helped improve the quality of the Corporation's reports by completing the questionnaire below.

Please return the completed form by mail to the Communications Department at 24 Bolshaya Ordynka Street, Moscow, 119017 and/or by email (EAMamy@rosatom.ru).

1. Please assess the report using the following criteria:

Accuracy and objectivity

☐ Excellent ☐ Good ☐ Satisfactory ☐ Poor

Was your opinion influenced by independent auditors' reports and the statement of public assurance included in the report?

☐ Yes ☐ No

Report structure, ease of reference, wording

☐ Excellent ☐ Good ☐ Satisfactory ☐ Poor

Completeness and relevance of information

☐ Excellent ☐ Good ☐ Satisfactory ☐ Poor

2. Please specify which sections of the report you have found to be relevant and useful.
3. Which topics do you think should be covered in the next report?
4. Your recommendations and additional comments:
5. Please specify which stakeholder group you represent:

☐ Employee of ROSATOM

☐ Employee of an organization forming part of ROSATOM

☐ Representative of the federal government

☐ Representative of a regional government

☐ Representative of a local government

☐ Representative of a contractor/supplier

☐ Representative of a customer/consumer of goods and services

☐ Representative of a business partner

☐ Representative of a non-governmental organization

☐ Representative of the media

☐ Representative of the expert community

☐ Other (please specify)

CONTACT DETAILS AND USEFUL LINKS

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OFFICIAL CORPORATE WEBSITE:

http://www.rosatom.ru

PUBLIC ANNUAL REPORTS:

http://www.rosatom.ru/about/publichnaya-otchetnost

OFFICIAL WEBSITE FOR PLACEMENT OF ORDERS FOR THE PROCUREMENT OF GOODS, WORKS AND SERVICES FOR ROSATOM:

http://zakupki.rosatom.ru

OFFICIAL GROUP ON VKONTAKTE:

http://vk.com/rosatom.ru

OFFICIAL BLOG ON TWITTER:

https://twitter.com/rosatom

OFFICIAL COMMUNITY PAGE ON FACEBOOK:

https://www.facebook.com/rosatom.ru

OFFICIAL CHANNEL ON YOUTUBE:

http://www.youtube.com/user/MirnyAtom

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