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JSC Atomenergoprom 2016 Annual Report

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JSC Atomenergoprom
2016
Annual Report



JSC ATOMENERGOPROM
ANNUAL REPORT

2016

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COMPANY OVERVIEW

Joint-Stock Company Atomic Energy Power Corporation (JSC Atomenergoprom)

Primary state registration number (OGRN): 1077758081664.

State registration date: July 19, 2007.

State registration authority: Inter-District Inspectorate No. 46 of the Federal Tax Service in Moscow.

Location: 24 Bolshaya Ordynka Street, Moscow.

Tel.: +7 (495) 969-29-39

Fax: +7 (495) 969-29-36

Official website: www.atomenergoprom.ru

1. Shareholders of JSC Atomenergoprom

HOLDERS OF RECORD OF JSC ATOMENERGOPROM AS OF DECEMBER 31, 2016:

1. State Atomic Energy Corporation Rosatom.

Location: 24 Bolshaya Ordynka Street, Moscow, 119017.

Status of the holder of record: shareholder.

Stake in the Company's authorized share capital: 94.43%.

Portion of voting shares held by the entity: 100%.

2. Russian Federation represented by the Russian Ministry of Finance.

Location: 9 Ilyinka Street, Moscow, 109097.

Status of the holder of record: shareholder.

Stake in the Company's authorized share capital: 5.57%.

Portion of voting shares held by the entity: 0%.

2. Auditor of JSC Atomenergoprom

• Full name: LLC Accountants and Business Advisors (LLC FBK).

Location: 44/1 Myasnitskaya Street, Moscow, 101990.

INN: 7701017140

OGRN: 1027700058286

Tel.: +7 (495) 737-53-53

Fax: +7 (495) 737-53-47

Email: fbk@fbk.ru

JSC KPMG is the auditor for the summary consolidated IFRS financial statements for 2016.

3. Registrar of JSC Atomenergoprom's shares

• The shareholder register of JSC Atomenergoprom is kept by Joint-Stock Company R.O.S.T. Registrar:

Abbreviated company name: JSC R.O.S.T. Registrar

Location: 18, Bldg. 13, Stromynka Street, Moscow, 107996.

INN: 7726030449

OGRN: 1027739216757

Licence: 045-13976-000001

Issue date: December 3, 2002.

Expiry date: perpetual licence.

Licensing authority: Russian Federal Commission for the Securities Market (Federal Financial Markets Service).

Date from which the registrar has kept the issuer's shareholder register: October 28, 2009.

JSC R.O.S.T. Registrar also maintains shareholder registers of the majority of JSC Atomenergoprom's subsidiaries, which enables more rapid and reliable transactions in their shares when restructuring the corporate group.

REPORT PROFILE

The Public Annual Report of JSC Atomenergoprom (hereinafter referred to as the Report) for 2016 is the fourth integrated report prepared by Joint-Stock Company Atomenergoprom (hereinafter referred to as JSC Atomenergoprom or the Company). The Report provides an integrated account of the Company's strategy and JSC Atomenergoprom's key financial, economic and operating results for 2016. The Report also outlines the Company's achievements in the sphere of nuclear and radiation safety and environmental protection, its contribution to the development of its regions of operation, implementation of social policy and other aspects of sustainable development.

JSC Atomenergoprom issues reports on a yearly basis. The previous annual report was published in 2016. This Report covers the operating results of the Company and its organizations during the period from January 1 through December 31, 2016. It also discloses some information on and results of the entire Russian nuclear industry. The Annual Report of JSC Atomenergoprom is approved by the Board of Directors.

Standards and regulatory requirements

THE REPORT HAS BEEN PREPARED IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS:

- The Public Reporting Policy of ROSATOM and the Public Reporting Standard of ROSATOM and its organizations;
- The International Integrated Reporting Framework of the International Integrated Reporting Council (The International <IR> Framework);
- The Global Reporting Initiative (GRI) Sustainability Reporting Standards: this report references to certain GRI 2016 Standards which are listed in the Appendix 1;
- The AA1000 AccountAbility Principles Standard;
- Federal Law No. 208-FZ on Joint-Stock Companies dated December 26, 1995;
- Regulations of the Central Bank of Russia No. 454-P on Disclosure of Information by Issuers of Issue-Grade Securities dated December 30, 2014.

1. Process for determining the materiality of disclosures

THE MATERIALITY OF INFORMATION WAS DETERMINED THROUGH THE FOLLOWING PROCESS:

- A working group compiled a list of material aspects of the Company's operations;
- The Company's management, members of the working group preparing the Report and representatives of major stakeholder groups prioritized material aspects (based on the assessment of materiality of each of the proposed aspects);
- Following the 'two-stage filtering', a list of material aspects to be disclosed in the Report was compiled.

As a result, a ranking map of material aspects (topics) to be disclosed in the Report was prepared. The decision to include various GRI performance indicators and performance indicators stipulated in ROSATOM's Public Reporting Standard was based on the materiality of the aspects to which the indicators are related. The boundaries of information disclosure on various aspects were determined by the working group.

Verification of reporting information. Reporting information was certified as accurate and reliable by an independent auditor which certifies the annual financial statements.

Disclaimer. The Report contains information about the Company's medium- and long-term objectives and initiatives. The objectives are forward-looking, and their actual achievement will depend, among other things, on a number of economic, political and legal factors beyond the Company's control (the global financial, economic and political environment; situation on the key markets; amendments to the tax, customs and environmental legislation, etc.) Therefore, actual performance in the future years may differ significantly from the forward-looking statements contained herein.

ADDRESS BY THE CHAIR OF THE BOARD OF DIRECTORS



Dear colleagues and partners,

In 2016, JSC Atomenergoprom continued to develop rapidly and work consistently towards implementing the Company's long-term strategy.

We have set ourselves three key goals to be achieved by 2030:

- To increase our share on international markets;
- To develop new products for the Russian and international markets;
- To reduce the cost of our products and the lead time.

In the reporting year, we made considerable progress towards achieving each of our strategic goals. We succeeded in further expanding our 10-year portfolio of overseas orders, thereby ensuring the utilization of production capacities at the Company's organizations and enterprises.

In Russia, the Company continued to build and commission standard NPP power units. This enables us to develop our expertise and obtain references for projects that we offer to foreign customers.

In the reporting year, the first criticality programme and the power start-up of power unit No. 1 of Novovoronezh NPP-2 were completed. It is the first ever generation 3+ NPP power unit; it marks the next stage in the evolution of VVER designs and complies with all post-Fukushima safety requirements.

The innovative power unit No. 4 of Beloyarsk NPP with a BN-800 fast neutron reactor began full-scale operation. This power unit has

become a research test facility for the development of 'fast' reactor technologies and new types of fuel.

Electricity output at 35 power units of 10 operating NPPs totalled 196.4 billion kWh, reaching a new all-time high in the history of Russian nuclear power generation. Nuclear power generation accounted for 18.3% of the total electricity output in Russia.

In addition to traditional businesses, JSC Atomenergoprom is actively developing new products and services and seeks to enter related markets. The reporting year saw a significant increase in the order portfolio and revenue from new products. Promising areas include nuclear medicine, wind power, supercomputers, additive manufacturing, automated process control systems, electrical engineering and the machine tool industry.

The Company continues to improve its performance. Divisions and organizations of JSC Atomenergoprom implement projects and programmes aimed at reducing the lead time, operating expenses and non-production costs. This has resulted in an increase in labour productivity and has made the Company more competitive.

Safety is a fundamental value that we are guided by in the course of our work. In 2016, all of our production facilities operated safely and reliably, without any major deviations.

I would like to express my gratitude to the Company's employees and partners for their cooperation. I wish you every success in working towards our common goals, and I am confident that in 2017 we will achieve great results!

Chair of the Board of Directors of JSC Atomenergoprom

Ekaterina Lyakhova

ADDRESS BY THE DIRECTOR



Dear colleagues and partners,

The results achieved by the Company have confirmed once again that JSC Atomenergoprom is a leader on the global market for nuclear technologies and services. In 2016, the volume of its long-term overseas orders reached USD 133.4 billion, while the overseas NPP construction project portfolio comprised 34 power units.

Key milestones in the Company's international business include the start-up of power unit No. 1 of Kudankulam NPP in India and the connection of power unit No. 2 to the country's power system. In addition, the EPC contract for the construction of El Dabaa NPP in Egypt with four 1,200 MW power units was finalized.

2016 saw a breakthrough on the market for nuclear fuel for foreign-design PWR reactors (which make up more than half of the total number of reactors currently in operation worldwide). The Fuel Division of the Company signed the first contract with a US NPP operator for the pilot use of Russian TVS-KVADRAT fuel and a contract with Vattenfall Nuclear Fuel AB (Sweden) for the commercial supply of TVS-KVADRAT nuclear fuel to Ringhals NPP.

At present, the Company is actively diversifying its business. The construction of nuclear research centres and irradiation centres forms an important part of the range of projects that we offer to our partners. In 2016, agreements on the construction of a Nuclear Research and Technology Centre were signed with Bolivia. This will be Latin America's cutting-edge nuclear research centre, which will make it possible to apply nuclear technologies in such areas as

scientific research, health care, geology and agriculture. Agreements on the establishment of similar centres were signed with Nigeria and Zambia. A memorandum of cooperation in the development of a network of irradiation centres was signed with the Indian Agricultural Association. The use of irradiation technologies will help to improve the performance of India's agricultural industry by extending the shelf life of food products.

2016 was a landmark year for the Company's projects in green energy. The Company won a competitive selection of renewable energy projects to construct wind power plants in Russia with a total capacity of at least 610 MW to be commissioned in 2018–2020. The pilot wind farm will be built in the Republic of Adygea. Investments in the project will total about RUB 83 billion. The Company signed a partnership agreement with a Dutch manufacturer of wind turbines, Lagerwey, providing for the transfer of 'critical technologies' to achieve a degree of production localization of no less than 65%.

The financial position of JSC Atomenergoprom remains stable. In the reporting year, the Company's revenue increased by 6.3% to RUB 699.7 billion.

I would like to thank our employees and partners for fruitful cooperation, and I am confident that 2017 will be equally successful!

Director of JSC Atomenergoprom

Kirill Komarov

JSC ATOMENERGOPROM TODAY

JSC Atomenergoprom is an integrated company that consolidates civilian assets of the Russian nuclear industry.

The organizations of JSC Atomenergoprom comprise a complete cycle of nuclear production ranging from uranium mining to construction of NPPs and electricity generation. The top priorities of the organizations are to improve product quality, introduce innovative technologies and ensure high-level environmental management.

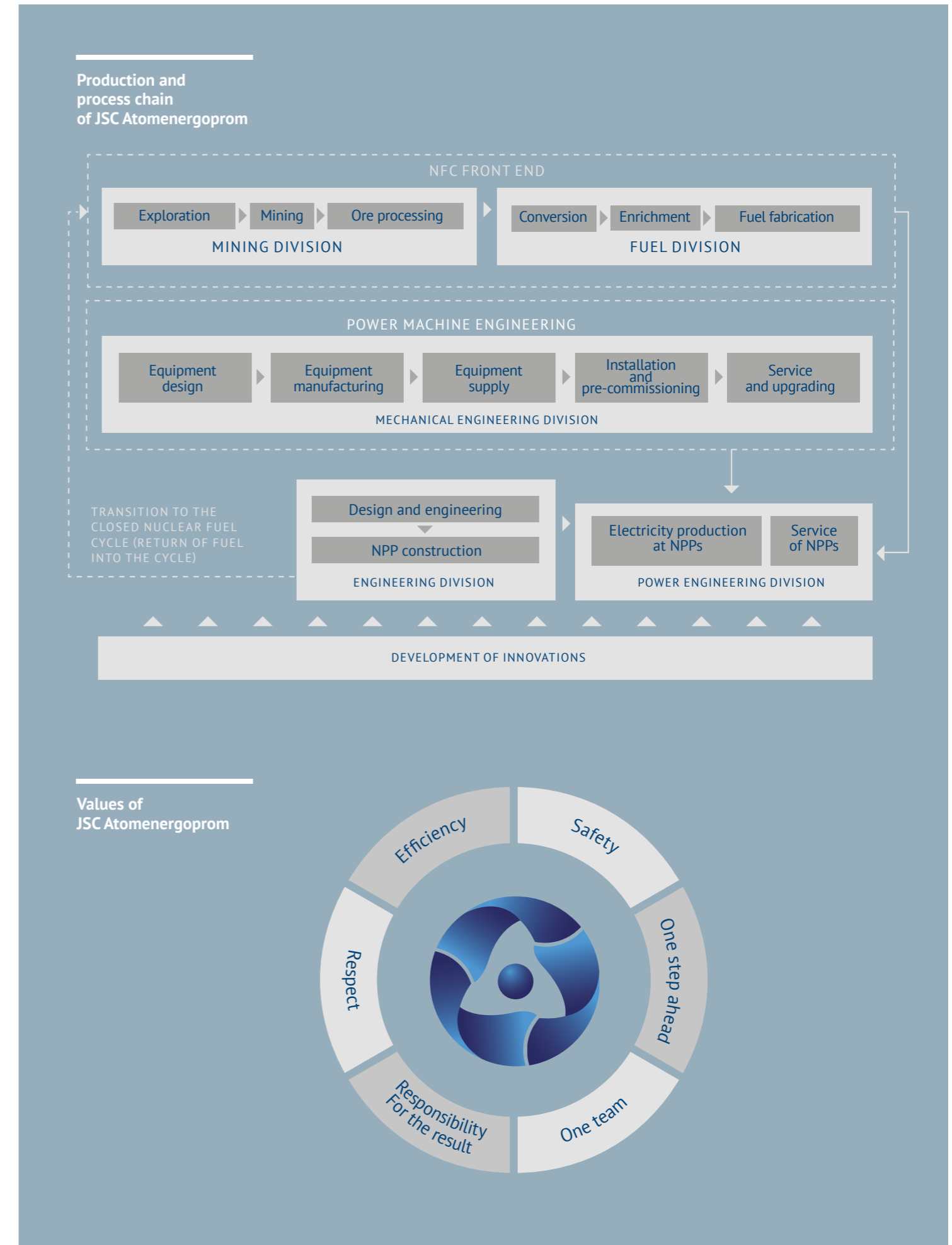


JSC Atomenergoprom is the largest power generation company in Russia and one of the leading players on the global market for nuclear services and technologies. The Company is capable of providing turnkey solutions for NPP design and construction, supplying fuel to NPPs throughout their entire life cycle, upgrading NPPs and rendering maintenance services, and providing employee training. JSC Atomenergoprom carries out numerous large-scale international projects and generates substantial overseas revenue (see the section 'International Business' for details).

The Company integrates many leading organizations and enterprises in the nuclear industry, whose development started 70 years ago, and possesses unique experience gained across the entire range of the nuclear fuel cycle and NPP construction technologies. Apart from traditional nuclear technologies and services, JSC Atomenergoprom actively offers new products and services in related industries (see the section 'Business Diversification' for details).

JSC Atomenergoprom is an organization of State Atomic Energy Corporation Rosatom (hereinafter referred to as ROSATOM). ROSATOM pursues the governmental policy and ensures unity of management of the nuclear industry and sustainability of the nuclear power generation complex; it develops Russia's innovative potential in the nuclear industry, oversees the nuclear-powered icebreaker fleet and ensures nuclear and radiation safety. ROSATOM is tasked with fulfilling Russia's international commitments related to the peaceful use of nuclear energy and maintaining the non-proliferation regime. ROSATOM aims to contribute to the federal target programmes promoting the development of the nuclear industry, fostering the development of nuclear power and strengthening Russia's competitive position on the global market for nuclear technologies.

No relation exists between the military and civilian operations of ROSATOM, including business operations of JSC Atomenergoprom. Therefore, JSC Atomenergoprom as a company consolidating civilian assets of the Russian nuclear industry is completely separate from military operations.



HISTORY OF JSC ATOMENERGOPROM

JSC Atomenergoprom was established in July 2007 as part of the Russian Nuclear Industry Development Programme approved by the Russian President Vladimir Putin on June 8, 2006, pursuant to Federal Law No. 13-FZ on Peculiarities of the Management and Disposal of the Property and Shares of Organizations Operating in the Nuclear Power Industry and on Introducing Amendments to Selected Russian Laws of February 5, 2007, Decree No. 556 of the Russian President on Restructuring the Russian Nuclear Power Generation Complex dated April 27, 2007 and Resolution No. 319 of the Russian Government on Measures for Establishing Joint-Stock Company Atomic Energy Power Corporation dated May 26, 2007.

Regulations on the establishment of JSC Atomenergoprom stipulated a merger of 89 enterprises in all nuclear power engineering and nuclear fuel cycle segments, and three federal educational establishments. The state contributed shares of 31 companies under federal ownership to the authorized share capital of JSC Atomenergoprom upon its establishment (including shares of JSC TVEL, JSC TENEX, JSC Atomredmetzoloto, etc.). Other companies had been incorporated as federal state unitary enterprises (FSUEs) and were subject to corporatization to be merged with the nuclear corporation. Between 2008 and 2011, 55 FSUEs were reorganized into joint-stock companies and merged with JSC Atomenergoprom. Thus, formation of the Company's authorized share capital was completed.

These measures enabled JSC Atomenergoprom to form a new structure of the civilian branch of the nuclear industry, introduce a uniform policy on finances, corporate governance, HR management and management of non-core assets in 2011.

As of December 31, 2016, JSC Atomenergoprom's scope of consolidation in accordance with IFRS comprised 133 companies of different legal forms.

As of December 31, 2016, the shareholders of JSC Atomenergoprom were ROSATOM (94.4271%) and the Russian Federation represented by the Russian Ministry of Finance (5.5729%).

KEY RESULTS IN 2016

Indicator	2014	2015	2016	2016/2015, %
Revenue, RUB billion	507.0	658.1	699.7	+6.3 %
EBITDA ¹ , RUB billion	221.0	271.3	250.5	-7.7 %
Assets, RUB billion	2,233.8	2,675.45	2,803.1	+4.8 %
Intangible assets, RUB billion	42.9	48.4	108.6	+124.4 %
Nuclear power generation, billion kWh	180.5	195.2	196.4	+1.0 %
NPP capacity factor, %	81.6	86.0	83.1	-
Number of NPP power units under construction in Russia	9	8	8	-
Uranium resources ² , kt	524.7 (+224.1)	521.2 (+213.1)	517.9 (+220.8)	-
Uranium production, kt	7.85	7.85	7.9	+1.0 %
10-year portfolio of overseas orders ³ , USD billion	101.4	110.3	133.4	+20.9 %
Overseas NPP construction projects, number of power units	29	36	34	-5.6 %
Average salary in JSC Atomenergoprom, RUB '000 per month	67.6	72.9	74.3	+1.9 %
Events rated level 2 and above on the INES scale, number	0	0	0	-

¹ EBITDA = Operating results + Impairment of receivables + Depreciation and amortization + Adjustments for non-cash items of other expenses and income. Data for 2015 have been recalculated.

² The lower line with a '+' sign shows the data on uranium resources of Uranium One; these data are shown separately due to the differences in the calculation methodology used for Russian and foreign assets.

³ Including the portfolio of overseas orders of JSC ASE, whose holding company is JSC ASE EC, an organization of JSC Atomenergoprom.

KEY EVENTS IN 2016

- The first criticality programme and the power **start-up** of power unit No. 1 of Novovoronezh NPP-2 equipped with a generation 3+ reactor **were completed.**
- The innovative power unit No. 4 of Beloyarsk NPP with a **BN-800** fast neutron reactor **started full-scale operation.** *POWER*, a prestigious US energy magazine, named power unit No. 4 of Beloyarsk NPP the top power plant of the year.
 - Electricity output at **35 power units** of 10 operating NPPs totalled **196.4 billion kWh**, reaching a new all-time high in the history of Russian nuclear power generation. The share of NPPs in Russia's energy mix totalled **18.3%.**
- **8 intergovernmental agreements and 20 interdepartmental agreements were concluded.** These include four framework intergovernmental agreements with Bolivia, Zambia, Tunisia and Cuba, which provide the foundation for bilateral cooperation with these countries in the sphere of nuclear technologies.
- **An official ceremony was held to mark the start-up** of power unit No. 1 of Kudankulam NPP in India and the connection of power unit No. 2 to the country's power system.
- **The first contract was signed** with a US NPP operator for the pilot use of Russian **TVS-KVADRAT** fuel for foreign-design reactors, and a contract was concluded with Vattenfall Nuclear Fuel AB (Sweden) for the commercial supply of TVS-KVADRAT nuclear fuel to Ringhals NPP.
 - Intergovernmental agreements on the construction of nuclear research and technology centres **were signed** with Bolivia and Nigeria.
- **The decision was made to establish Rusatom Healthcare**, which will promote nuclear medicine technology in Russia and abroad.
 - The Company won **a competitive selection** of renewable energy projects to construct wind power plants in Russia with a total capacity of at least **610 MW.** The pilot wind farm will be built in the Republic of Adygea.
- A **priority social and economic development area** was established in Krasnokamensk, Zabaykalsky Territory (the town is home to PJSC PIMCU, the key enterprise of ROSATOM's Mining Division).

FINANCIAL AND ECONOMIC RESULTS

Key financial results

Consolidated financial results of JSC Atomenergoprom under IFRS, RUB billion

	2014	2015 ⁴	2016	2016/2015, %
Revenue	507.0	658.1	699.7	106.3
Cost of sales	(290.4)	(389.5)	(461.4)	118.5
Gross profit	216.6	268.6	238.3	88.7
Selling and administrative expenses	(71.4)	(81.4)	(82.0)	100.7
Other income and expenses (net)	(22.0)	(27.9)	(17.1)	61.3
Financial income and expenses (net)	(45.1)	18.0	(52.0)	(288.9)
Share in the net profit of companies recorded using the equity method	0.7	8.8	4.7	53.4
Proceeds from business combination	–	–	26.0	–
Income tax expense	(20.7)	(44.2)	(25.0)	56.6
Profit for the year	58.1	141.9	92.9	65.5
Other comprehensive income/(expenses)	48.5	4.9	(33.2)	(677.6)
Total comprehensive income for the year	106.6	146.8	59.7	40.7
Net operating profit after tax (NOPAT)	102.5	115.1	114.2	99.2

REVENUE GROWTH AT JSC ATOMENERGOPROM (BY 6.3% OR RUB 41.6 BILLION YOY) WAS DRIVEN MAINLY BY THE FOLLOWING FACTORS:

- An increase in the revenue of the Electricity segment as a result of both an increase in electricity sales and the price factor;
- A reduction of revenue from sales of nuclear fuel, uranium products and enrichment services by the Sales and Trading, and Fuel operating segments, mainly as a result of lower prices on the nuclear fuel cycle markets (*see also the section 'International Business'*);
- An increase in the revenue of the Mechanical Engineering segment due to an increase in the supply of reactor units for various types of vessels.

⁴ Hereinafter in the section, the data for 2015 have been recalculated due to the fact that in July 2016, the interest in the authorized share capital of JSC SSC RIAR was increased from 44.11% to 52.78% and control over this organization was acquired. Given that JSC SSC RIAR had been controlled by ROSATOM, this transaction is recorded as a transaction under joint control and, accordingly, the comparative data of the profit and loss statement, the statement of comprehensive income, the statement of financial position and the cash flow statement for 2015 were retrospectively adjusted.

Structure of revenue from sales to external customers by operating segment

Operating segment	2014		2015		2016	
	RUB billion	% of the total	RUB billion	% of the total	RUB billion	% of the total
Electricity	255.0	50.3	271.6	41.3	314.6	44.9
Sales and Trading	98.0	19.3	169.3	25.7	121.5	17.4
Fuel	73.2	14.4	104.1	15.8	101.4	14.4
Mechanical Engineering	28.4	5.6	41.9	6.4	53.1	7.6
Uranium One Holding	8.3	1.6	13.5	2.0	25.7	3.7
Mining	4.5	0.9	4.0	0.6	3.9	0.6
Other operating segments	39.6	7.9	53.7	8.2	79.5	11.4
TOTAL	507.0	100.0	658.1	100.0	699.7	100.0

In 2016, profit totalled RUB 92.9 billion, down by RUB 49.0 billion (34.5%) compared to 2015. Changes in profit were driven primarily by a foreign exchange loss for 2016 amounting to RUB 42.6 billion as against a foreign exchange gain of RUB 27.8 billion for 2015 (this loss was recorded in the line 'Financial Income and Expenses'). The foreign exchange loss was due to the volatility of the rouble exchange rate. Since foreign exchange assets exceed foreign exchange liabilities, the strengthening of the rouble during the reporting year resulted in the foreign exchange loss (assets and liabilities are recalculated at the exchange rate as of the end of each reporting period). This impact was partially offset by an income of RUB 26.0 billion, which was recorded in connection with the affiliation of two uranium mining joint ventures in Kazakhstan.

The reduction of profit was also affected by changes in the sales structure and lower prices for products of the front end of the nuclear fuel cycle due to negative price developments on the foreign markets for natural uranium and enrichment services.

As a result of the above factors, as well as foreign exchange losses on the conversion of indicators of foreign organizations into Russian roubles (consolidated reporting currency), which amounted to RUB 27.3 billion (this loss is recorded in the line 'Other Comprehensive Income (Expenses)'), the total comprehensive income for 2016 decreased by 59.4% to RUB 59.7 billion.

Cost structure

IN 2016, COSTS INCREASED BY RUB 71.9 BILLION (18.5%). THE GROWTH WAS DRIVEN MAINLY BY THE FOLLOWING ITEMS:

- Depreciation and amortization increased by RUB 15.1 billion due to the affiliation of two uranium mining joint ventures in Kazakhstan as from January 1, 2016 and the launch of power unit No. 3 of Rostov NPP;
- Staff costs increased by RUB 6.5 billion. This was mainly due to salary indexation under the Industry-Wide Agreement on Nuclear Power, Industry and Science for 2015-2017 (*see also the section 'Personnel Management'*);
- The cost of electricity purchased for resale increased by RUB 21.9 billion, while the cost of electricity (power) transmission services for 2016 increased by RUB 13.9 billion. The growth is due to the inclusion of power supply companies in the scope of consolidation as from June 1, 2016;
- The loss from the impairment of inventories increased by RUB 11.7 billion. This was caused by a fall in market prices of uranium and the consequent accrual of loss from the decrease in the value of uranium inventories of Uranium One Holding and the Sales and Trading operating segment.

Cost structure	Cost of sales	2014	2015	2016	2016/2015, %
Raw and other materials and fuel		66.1	141.0	116.8	82.8
Staff costs		84.4	96.9	103.4	106.7
Costs of electricity purchased for resale and for own needs		24.3	24.8	42.7	172.2
Electricity transmission services		-	-	13.9	-
Depreciation and amortization		69.0	70.8	86.0	121.5
Production and services by third-party contractors		7.3	12.0	19.1	159.2
Property tax and other budgetary payments		12.1	13.3	15.1	113.5
Other expenses		32.9	39.6	49.9	126.0
Changes in inventories of finished products and work in progress		(5.7)	(8.9)	14.5	(162.9)
TOTAL		290.4	389.5	461.4	118.5

Structure of the statement of financial position

The goodwill of Uranium One Inc. decreased by RUB 8 billion because of a change in the US dollar exchange rate.

The write-up of fixed assets by RUB 70 billion was mainly due to the investment programme of NPP construction in Russia.

Intangible assets increased by RUB 61 billion, mainly as a result of the receipt of mineral rights following the affiliation of two uranium mining joint ventures in Kazakhstan.

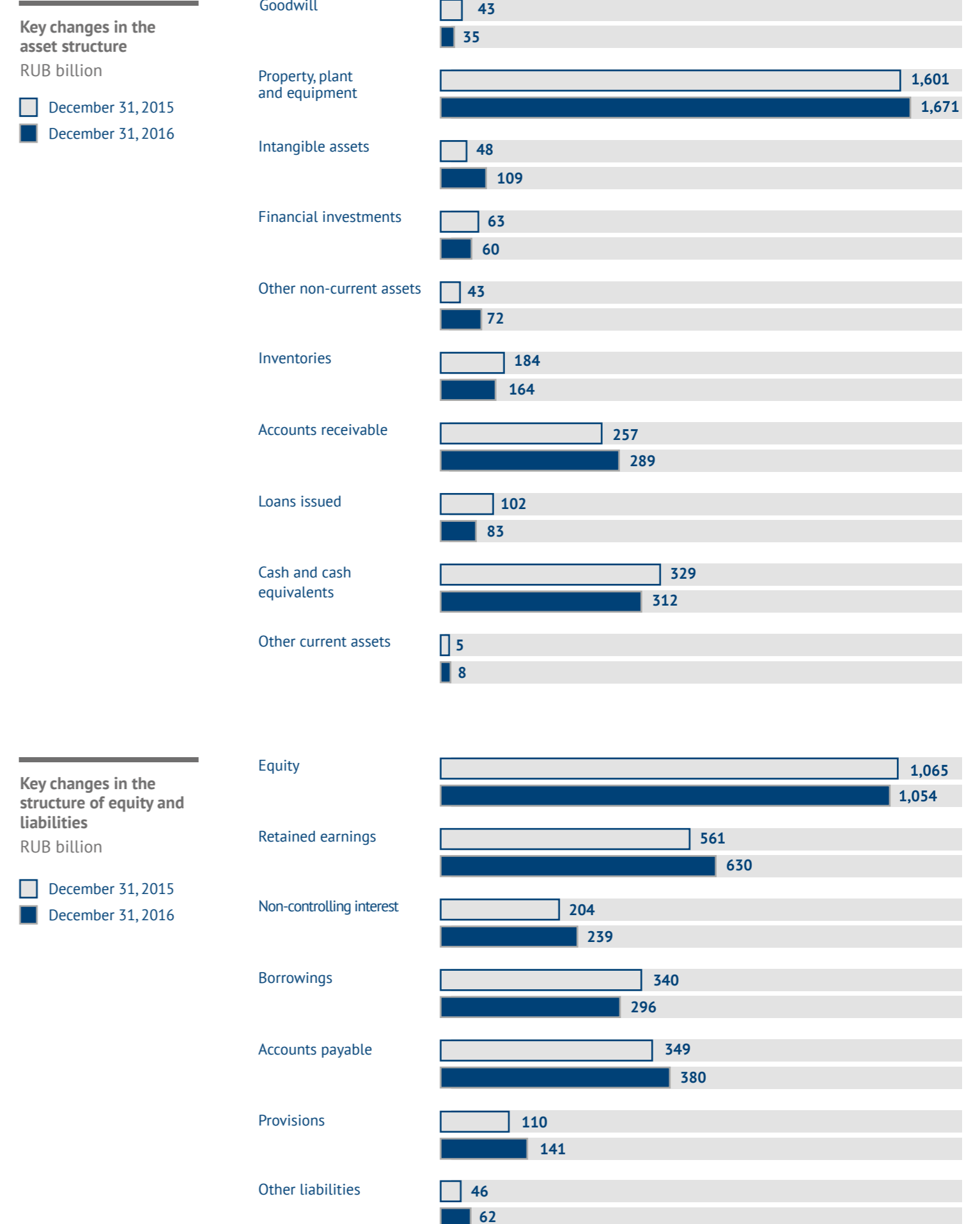
Other non-current assets increased by RUB 29 billion primarily due to an increase in JSC Rosenergoatom Concern's deferred expenses on the technical connection of power units to the grid.

Inventories decreased by RUB 20 billion primarily due to the recognition of impairment of uranium inventories as a result of the fall in market prices for uranium (by RUB 11.7 billion).

Accounts receivable increased by RUB 32 billion. The most significant changes were related to debt under long-term contracts for the construction of foreign NPPs (an increase of RUB 11 billion) and the inclusion of power supply companies in the scope of consolidation as from June 1, 2016 (RUB 18 billion).

The decrease in loans issued by RUB 19 billion was mainly due to the revaluation of the loan granted in euros to Fennovoima Oy for the construction of Hanhikivi 1 NPP in Finland.

There were no significant changes in the lines 'Financial Investments', 'Cash' and 'Other Current Assets' in 2016 compared to 2015.



The non-controlling interest increased by RUB 35 billion, mainly in connection with the affiliation of two uranium mining joint ventures in Kazakhstan.

Outstanding borrowings decreased by RUB 44 billion. This was primarily due to early redemption of Uranium One Investments Inc. bonds worth RUB 18 billion throughout 2016 and the repayment of loans from Deutsche Bank AG totalling RUB 22 billion.

The increase in accounts payable by RUB 31 billion was mainly related, on the one hand, to a decrease by RUB 14 billion in outstanding advance payments received as part of the construction of Hanhikivi 1 NPP (due to a change in the euro exchange rate). On the other hand, there was an increase in accounts payable by RUB 37 billion due to the technical connection of power units to the grid.

Provisions increased by RUB 31 billion mainly due to a reduction of the discount rate as of December 31, 2016 compared to December 31, 2015.

There were no significant changes in the lines 'Equity' and 'Other Liabilities' in 2016 compared to 2015.

Key financial and economic indicators

Financial sustainability indicator	2014	2015	2016
Debt-to-equity ratio ⁵	0.38	0.41	0.39
Liquidity ratios			
Quick ratio	1.36	1.55	1.57
Current ratio	2.09	2.05	2.01
Turnover indicators, days			
Inventory turnover ⁶	121	99	83
Accounts receivable turnover	54	55	63
Accounts payable turnover	73	60	48
Profitability ratios, %			
Return on sales (ROS)	11.5	21.6	13.3
Return on assets (ROA)	2.6	5.3	3.3
Return on equity (ROE)	3.8	7.8	4.8

Profitability ratios decreased in 2016, primarily due to a year-on-year decrease in profits in the reporting period by a factor of 1.5.

Cash flow

In 2016, cash totalling RUB 13 billion credited to the accounts of territorial treasury offices of the Russian Federation to finance individual investment projects was recorded as restricted cash and is therefore not included in the Capital Expenditures item of the Cash Flow Statement.

In 2016, payments for financing activities exceeded proceeds from financing activities by RUB 42.9 billion. This was mainly due to repayment of credits and loans.

In 2016, the Company financed its investing and financing activities with cash flow from operating activities.

⁵ Provisions and reserves are excluded from the calculation of the debt-to-equity ratio.

⁶ Inventory turnover has been calculated in relation to revenue.

Cash flow

	2014	2015	2016	2016/2015, %
Cash flow from operating activities before changes in working capital	202.6	278.3	271.7	97.6
Changes in working capital	5.0	24.0	7.9	32.9
Income tax paid	(21.4)	(52.2)	(31.6)	60.5
Interest paid	(18.1)	(25.6)	(25.3)	98.8
Net cash flow from operating activities	168.1	224.5	222.7	99.2
Capital expenditures	(242.1)	(249.4)	(180.1)	72.2
Other	22.6	28.0	21.9	78.2
Net cash flow used in investing activities	(219.5)	(221.4)	(158.2)	71.5
Net changes in total debt	5.5	(26.1)	(42.5)	162.8
Proceeds from share issue	79.8	57.6	9.0	15.6
Dividends paid	(10.2)	(15.2)	(9.4)	61.8
Proceeds from the sale of a non-controlling interest	10.8	98.5	-	-
Net cash (used in)/from financing activities	85.9	114.8	(42.9)	(37.4)
Net increase in cash and cash equivalents	34.5	117.9	21.6	18.3
Cash and cash equivalents at the beginning of the period	89.1	156.2	328.4	210.2
Effect of movements in foreign exchange rates on cash and cash equivalents	32.6	54.3	(38.0)	(70.0)
Cash and cash equivalents at the end of the period	156.2	328.4	312.0	95.0



BUSINESS STRATEGY

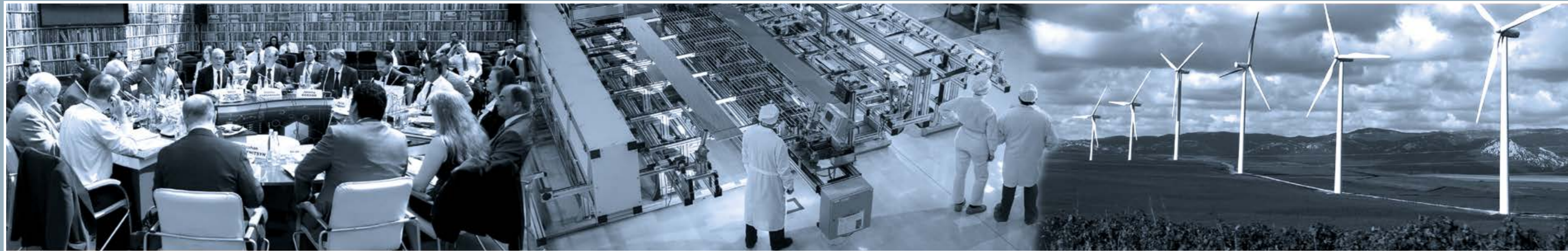
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2.1. BUSINESS STRATEGY UNTIL 2030

The development of JSC Atomenergoprom 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.).

Strategic goals:

- . To increase the international market share;
- . To reduce production costs and the lead time;
- . To develop new products for the Russian and international markets.



2.1.1. Context of the Company's business

Trends in the development of the nuclear industry

THE NUCLEAR INDUSTRY IS INFLUENCED BY A NUMBER OF FACTORS, INCLUDING⁷:

- Global population growth from 7 billion to 10 billion people in the next 50 years;
- Steady increase in global GDP by 2-3% per year;
- Growth of global electricity consumption. By 2030, global electricity consumption is expected to increase by 31% to 33 trillion kWh. China, India and developing countries in Southeast Asia will lead the growth, with electricity consumption increasing by 62% (from 8.7 trillion kWh to 14.1 trillion kWh). In Russia, electricity consumption is expected to grow by 1.3% per year until 2030.
- Increase in greenhouse gas accumulation. Global carbon dioxide emissions total about 32 billion tonnes per year and continue to grow. Carbon dioxide emissions are projected to exceed 34 billion tonnes per year by 2030. This creates the conditions for active development of carbon-neutral electricity generation, which includes the nuclear power industry.

These factors, as well as a reduction in fossil fuel reserves, contribute to the long-term demand for nuclear energy. Leading analytical agencies predict a significant increase in installed capacity in the nuclear power

⁷ Data from the World Bank, the IEA World Energy Outlook 2016, EIU and a draft of the programme 'Development of the Russian Electricity Industry until 2035' have been used.

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 520 GW, 501 GW and 495 GW respectively under the baseline scenario. The IAEA only predicts the floor and the cap for the global NPPs capacity, 390 GW and 598 GW respectively.

The global nuclear power industry will remain competitive in the long run compared to other energy sources. Thermal power generation will yield to nuclear energy primarily because of CO₂ emissions, which have a negative impact on the environment and drive up the cost of energy since many countries impose CO₂ emission fees. Unpredictable prices for raw hydrocarbons are yet another major disadvantage of thermal power generation.

Regarding renewable energy, even if energy generation technologies become significantly cheaper, additional traditional backup facilities or energy storage systems will need to be built to secure stable supplies of energy. This, in turn, will entail significantly higher capital expenditures for this type of generation.

Competitive position of the Company⁸

The competitiveness of services provided by JSC Atomenergoprom is based on unique facilities, technical capabilities and human resources, as well as the experience of coordinating R&D and design organizations. The Russian nuclear industry maintains global leadership in terms of research and development in reactor design, processing stages of the nuclear fuel cycle (NFC), NPP operation and the qualifications of NPP personnel. Russia

⁸ For information on the main competitors of JSC Atomenergoprom, see the section 'Markets Served by Atomenergoprom'.

has 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 success in international tenders for the supply of nuclear fuel and construction of NPPs in other countries. Currently, JSC Atomenergoprom is the largest global market player in terms of the number of NPP construction projects: its order portfolio comprises 34 power units *(for more details, see the section 'International Business')*.

Plummeting oil prices had mixed effects but in general impacted positively on the competitive position of JSC Atomenergoprom. On the one hand, falling 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 JSC Atomenergoprom's competitiveness.

Competitive advantages of JSC Atomenergoprom:

- Integrated offer for the entire NPP life cycle, which guarantees a competitive cost per kilowatt-hour (LCOE*);
- 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, community relations, etc.).

The current level of inflation in Russia has no significant impact on the financial position of JSC Atomenergoprom. According to inflation projections (less than 10%), it should not have a significant impact on the Company's solvency.

Low expected GDP growth rates in Russia (not exceeding 2%) constrain the growth of electricity consumption in the country and consequently limit the implementation of the Company's new projects in the Russian Federation.

Contribution of the Company to sustainable development

Nuclear generation holds a special place among power generation technologies that have a minimal impact on the environment. During one year of operation, one 1 GW nuclear power plant prevents emissions of 9 million tonnes of CO₂, which is equivalent to annual emissions from 2 million vehicles.

The 21st UN Climate Change Conference resulted in the signing of an agreement aimed at limiting the air temperature increase to no more than 1.5°C compared to the pre-industrial period (mid-18th century). In order to achieve this goal, greenhouse gas emissions will need to be reduced to zero by 2050. Thus, the signing of the agreement creates considerable opportunities for the development of the nuclear power industry, as it ensures base-load power generation, and a nuclear plant does not emit CO₂ during its operation.

Russia's Energy Strategy involves maximizing the efficiency of the use of natural resources and the potential of the energy sector in the long term to enable sustainable economic growth, improve the quality of life of the country's population and help to strengthen its position in the global economy.

Environmental impact of NPP operation

	during one year of operation	throughout the life cycle
Prevention of CO ₂ emissions	9 million tonnes	558 million tonnes
Equivalent of annual vehicle emissions	2 million vehicles	122 million vehicles

Calculated based on the data of the World Nuclear Association.

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

IN ORDER TO ACHIEVE THE OBJECTIVES OF RUSSIA'S ENERGY STRATEGY, THE FOLLOWING TASKS HAVE BEEN SET:

- To improve energy efficiency and environmental performance and to reduce the energy intensity of the Russian nuclear power industry;
- To develop a new generation of the nuclear power industry with a closed fuel cycle;
- To save valuable non-renewable fossil resources for non-energy use;
- To find a radical solution to the problem of greenhouse gas emissions;
- To develop distributed generation (including based on non-conventional energy resources) and smart energy systems, with improvements in electricity and heat markets; to promote electrification based on energy storage devices and fuel cells.

JSC Atomenergoprom contributes to global sustainable development. In the course of its operations, the Company strives to ensure a high level of nuclear and radiation safety, minimize the impact on the environment and use resources more efficiently.

The Company uses environmental stewardship practices in uranium mining. New uranium deposits are developed by drillhole in-situ leaching with sulphuric acid, which completely eliminates the need for uranium ore mining and, accordingly, preparation and processing of uranium ores. When uranium is mined in this way, no dumps or uranium ore tailings are formed. Employees of the enterprises are not exposed to uranium ore. The ground surface remains unchanged, and its subsidence is prevented. The main source of radioactivity associated with the uranium decay product (radium-226) remains in the uranium ore deposit, because radium and sulphuric acid form a sulphate, a compound that is almost insoluble *(for more details, see the report of JSC Atomredmetzoloto for 2016)*.

In addition, JSC Atomenergoprom is diversifying the use of nuclear technology and is transferring industry know-how to related areas. Technologies for the efficient use of energy are being developed, including superwire and high-temperature superconductor technologies. Electrical equipment and propulsion systems based on the superconductivity effect will improve the performance of rail and maritime transport, in the power industry, the oil and gas industry, manufacturing and other industries.

2.1.2. Long-term strategic goals

JSC Atomenergoprom's strategy is based on the long-term strategy of ROSATOM.

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.

JSC Atomenergoprom's mission is to provide the world with clean, safe, affordable energy and innovations based on nuclear technology.

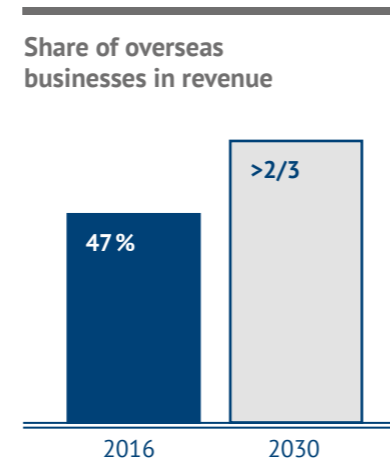
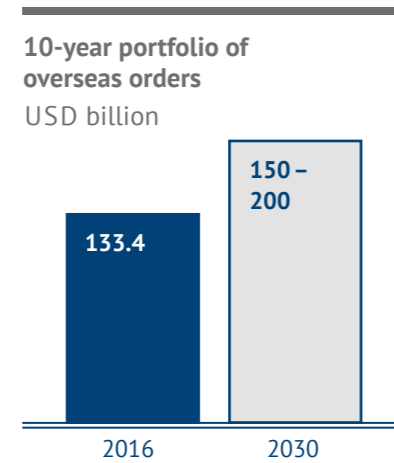
The development of ROSATOM and JSC Atomenergoprom is based on the long-term technological policy, which involves mastering new generation nuclear technologies, including fast neutron reactors and the closed nuclear fuel cycle, as well as strengthening the export potential of Russia's nuclear technologies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

ROSATOM and JSC Atomenergoprom have set themselves three long-term strategic goals to be achieved by 2030.

To increase the international market share

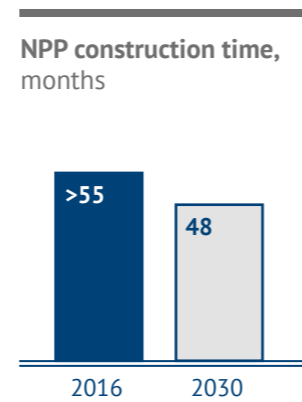
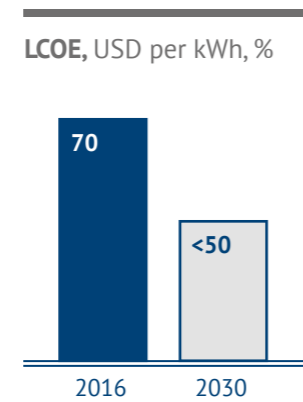
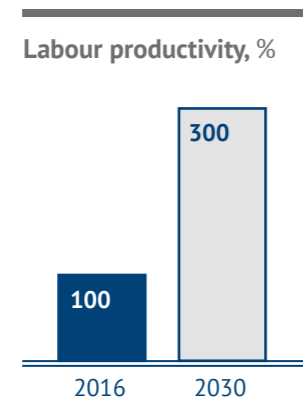
To assert its leadership in the global nuclear power market, the Company is currently expanding its footprint in over 40 countries around the world, and the 10-year portfolio of overseas orders exceeds USD 133 billion⁹. JSC Atomenergoprom plans to increase the share of foreign businesses from 47% in 2016 to more than 2/3 in 2030. *For more details, see the sections 'International Business' and 'International Cooperation'*.

⁹ Including the portfolio of overseas orders of JSC ASE, whose holding company is JSC ASE EC, an organization of JSC Atomenergoprom.



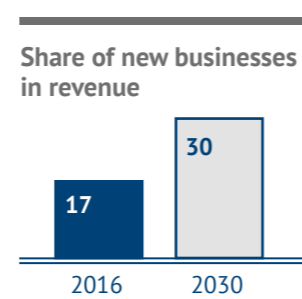
To reduce production costs and the lead time

In order to produce the most competitive products, ROSATOM plans to boost labour productivity more than threefold by 2030 and to reduce the duration of NPP construction and the levelized cost of electricity (LCOE¹⁰). For details, see the sections on the performance of the Divisions.



To develop new products for the Russian and international markets

Given the accumulated knowledge and technologies of the 'nuclear project' in civilian sectors, the Company plans to increase the share of new businesses in revenue from 17% in 2016 to 30% in 2030. For details, see the section 'Business Diversification' and the sections on the performance of the Divisions.



¹⁰ LCOE stands for levelized cost of electricity over the NPP life cycle.

$$LCOE = \frac{\sum [(Capital_t + O\&M_t + Fuel_t + Carbon_t + D_t) * (1 + r)^t]}{\sum MWh_t (1 + r)^t}$$

where **Capital_t** is the total cost of capital construction in year t, **O&M_t** is operating and maintenance costs in year t, **Fuel_t** is the cost of fuel in year t, **Carbon_t** is carbon dioxide emission charges in year t, **D_t** is the cost of decommissioning and waste management in year t, **MWh_t** is the total electricity generation at the facility, MWh, **(1+r)^t** is the discount rate in year t.

Source: Projected Costs of Generating Electricity/ International Energy Agency & Nuclear Energy Agency, 2015.

TO ACHIEVE THE STRATEGIC GOALS, THE FOLLOWING OBJECTIVES MUST BE MET:

- Ensuring safe use of nuclear energy;
- Non-proliferation of nuclear technologies and materials;
- Reducing the negative environmental impact to zero;
- Ensuring that the development of nuclear power is socially acceptable;
- Developing the Company's innovative potential;
- Shaping a corporate culture focused on results and performance improvement;
- Ensuring full compliance with Russian legislation.

Key strategy implementation risks

KEY RISKS THAT CAN INFLUENCE THE ACHIEVEMENT OF STRATEGIC OBJECTIVES INCLUDE:

- Nuclear and radiation risks,
- Financial risks (including currency, interest rate and credit risks, risk of financing shortfalls),
- Commodity risks,
- Operational risks,
- Reputational risk,
- Political risk,
- Project risks,
- Technological risk (risk of shortcomings in technology),
- Risk of incorrect assessment of market needs and trends when promoting the product offering on the strategic time horizon,
- Risk of losing critical knowledge of existing and newly created products.

For details, see the section 'Risk Management'.

2.1.3. Contribution of the 2016 results to the achievement of strategic objectives and plans for 2017

Strategic objective	Results and key events of 2016	Targets for 2017
<p>Increase of the international market share</p> <p><i>For more details, see the sections 'International Business' and 'International Cooperation'.</i></p>	<p>The 10-year portfolio of overseas orders totalled USD 133.4 billion¹¹. The contract for the construction of EL Dabaa NPP, the first NPP in Egypt, was finalized. We entered the market of nuclear fuel for foreign-design PWR reactors (which make up more than half of the total number of reactors currently in operation worldwide): the Fuel Division signed the first contract with a US NPP operator for the pilot use of Russian TVS-KVADRAT fuel and a contract with Vattenfall Nuclear Fuel AB (Sweden) for the commercial supply of TVS-KVADRAT nuclear fuel to Ringhals NPP.</p>	<p>10-year portfolio of overseas orders totalling USD 137.3 billion.</p>
<p>Reduction of production costs and the lead time</p> <p><i>For details, see the sections on the performance of the Divisions.</i></p>	<p>Performance against the targets of the investment programme for the construction of nuclear power plants in Russia (the investment programme of JSC Rosenergoatom Concern) totalled 99%. The cost of uranium production in Russian and foreign enterprises was reduced. A new-generation gas centrifuge to be used for uranium enrichment was successfully tested: its introduction will reduce the cost per separative work unit and will have a significant economic impact.</p>	<p>Performance against the targets of the investment programme for the construction of nuclear power plants in Russia totalling 100%.</p>
<p>New products for the Russian and international markets ¹²</p> <p><i>For details, see the section 'Business Diversification' and the sections on the performance of the Divisions.</i></p>	<p>The 10-year portfolio of orders for new products (outside the scope of the nuclear industry) totalled RUB 692.9 billion. Revenue from new products (outside the scope of the nuclear industry) totalled RUB 149.0 billion. We won a tender for the construction of wind power plants in Russia with a total capacity of 610 MW.</p>	<p>10-year portfolio of orders for new products (outside the scope of the nuclear industry) totalling RUB 714.2 billion. Revenue from new products (outside the scope of the nuclear industry) totalling RUB 161.8 billion.</p>

¹¹ Including the portfolio of overseas orders of JSC ASE, whose holding company is JSC ASE EC, an organization of JSC Atomenergoprom.

¹² The data are provided on the Russian nuclear industry as a whole.

2.2. RISK MANAGEMENT

The Company has established a risk management system (RMS), which is integrated into strategic, investment and business planning processes. The RMS is based on a continuous cyclical process of identifying, assessing and managing the risks that can affect the Company's short- and long-term performance and the implementation of its strategy.

Comprehensive risk management measures

largely **offset the impact of external negative factors** on the implementation of the Company's strategy in 2016.



2.2.1. Risk management system

IN 2016:

- An external diagnostic assessment of the maturity of the RMS was carried out; key development areas were identified, and an approach to the development of the RMS at the level of the Company and its organizations was formulated;
- The investment and construction project risk management methodology was supplemented;
- The quality of risk analysis in the course of business planning was improved through the use of probabilistic modelling methods during quantitative assessment;
- The time frame and procedure for monitoring risks affecting the implementation of the State Programme 'Development of the Nuclear Power and Industry Complex' were established; this will enable timely detection of risks and management decision-making in order to minimize their impact.

In line with international best practice, the Company's risk management system as a whole and its individual components are assessed by the internal audit service.

Organizational model of the risk management system

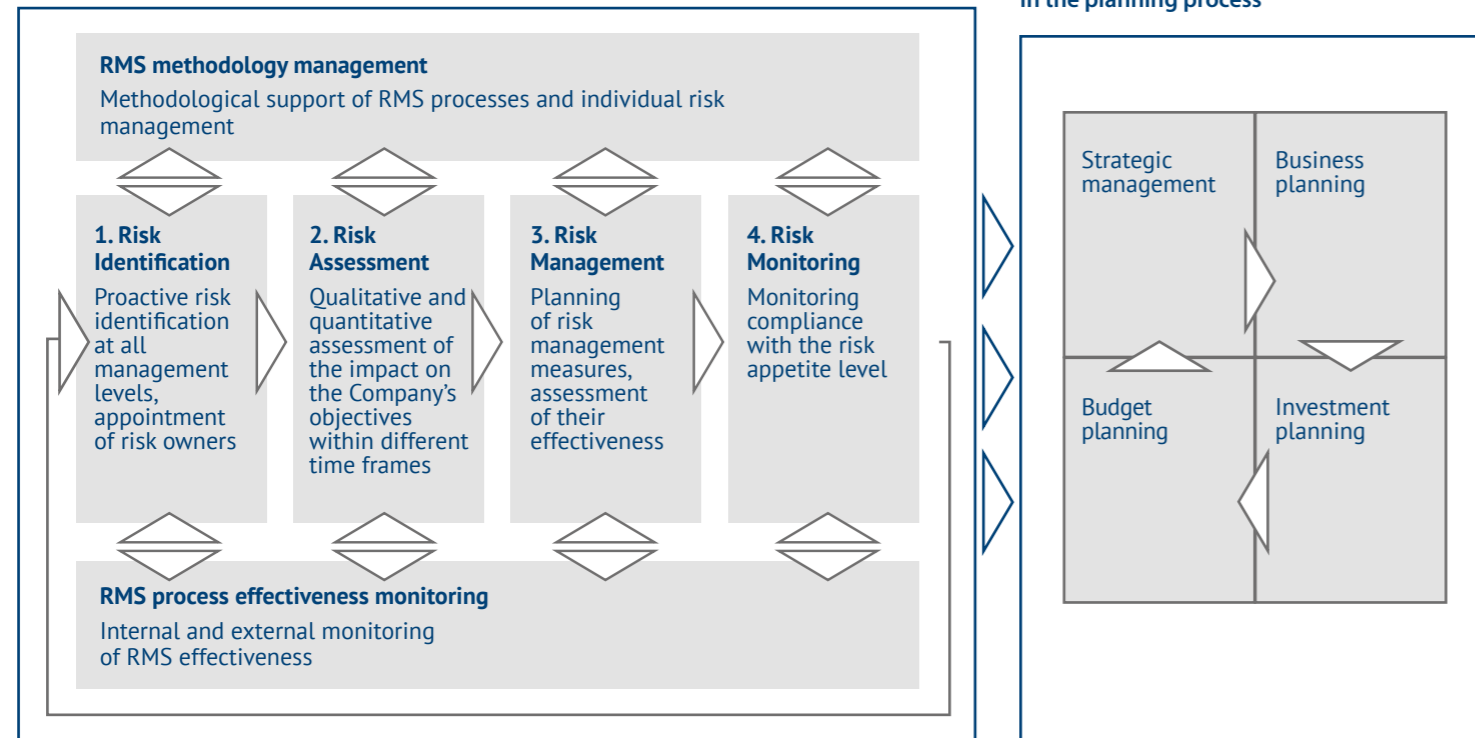


Specialized internal control bodies (independent assessment of RMS performance)

Risk management process in JSC Atomenergoprom

RMS processes

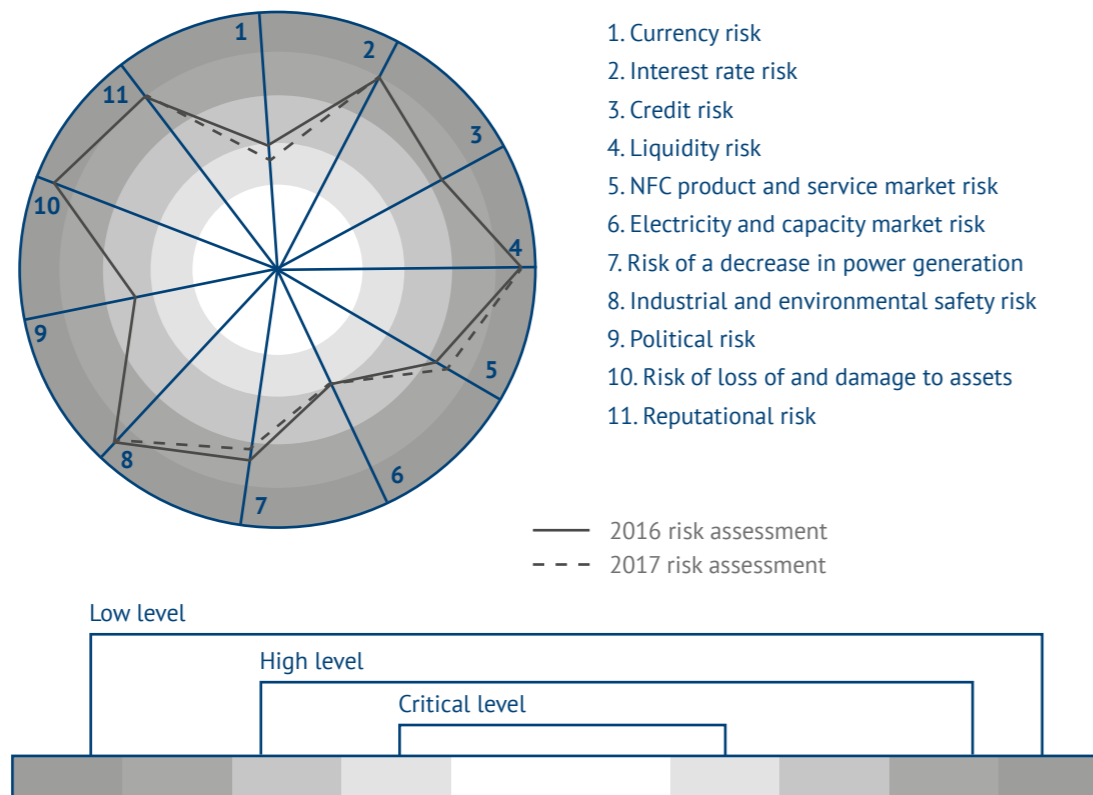
Reporting on risks in the planning process



2.2.2. Key business risks ¹³

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

Risk radar



¹³ This section covers the most significant risks.

2.2.3. Risk management outcomes in 2016




The impact of critical risks on strategic goals is shown in the table below.




Risk management outcomes

- 1 – To increase the international market share
 - 2 – To reduce production costs and the lead time
 - 3 – To develop new products for the Russian and international markets
- ↑ – increase
↓ – decrease
○ – no significant changes

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Financial risks 1. Currency risk (Heads of Divisions) ↑	Adverse changes in exchange rates	Management approaches <ul style="list-style-type: none"> • Maintaining a balance of claims and liabilities denominated in foreign currencies (natural hedging); • Use of financial hedging instruments. Results An optimal ratio of assets and liabilities denominated in the same currency was maintained.	1 2 3
2. Interest rate risk (Treasury Department) ○	Adverse changes in interest rates, different timing of interest income and interest expenses	Management approaches <ul style="list-style-type: none"> • Maintaining a balance of interest income and interest expenses in terms of timing and amounts; • Reasonable selection of interest rates (fixed or floating) for the expected maturity period; • Use of a free liquidity pool for the repayment of loans on which interest rates may be increased Results JSC Atomenergoprom successfully placed 10-year exchange-traded bonds with a total par value of RUB 30 billion, which helped maintain a stable long-term credit portfolio. The Company managed to keep the average interest rate on the total debt portfolio denominated in Russian roubles below 10%, partly because it is comprised mainly of long-term loans raised between 2012 and 2014 at pre-crisis interest rates.	1 2 3


For details, see the sections 'Financial Management' and 'Investment Management'.

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Financial risks			
3. Credit risk (Treasury Department for banks / Heads of the Company's organizations for other counterparties) 	Failure by counterparties to fulfil their obligations in full and on time	Management approaches <ul style="list-style-type: none"> • Setting limits for counterparty banks; • Use of suretyship, guarantees, restrictions on advance payments in favour of external counterparties; • Participation in working groups on 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 and the financial position of counterparties; • Internal counterparty solvency rating system. Results There were no significant losses through the fault of counterparties. Major events in the reporting year included the repayment of debt totalling EUR 601.6 million by the National Electricity Company of Bulgaria in accordance with the ruling of the International Court of Arbitration under the International Chamber of Commerce in Geneva with regard to the Belene NPP project. <i>For details, see the section 'International Business'.</i>	1 2
4. Liquidity risk (Treasury Department / Heads of Divisions) 	Lack of funds for the fulfilment of obligations by the Company and its organizations	Management approaches <ul style="list-style-type: none"> • Centralized cash management (cash pooling); • Rolling liquidity forecasts and cash flow budget; • Maintaining required amounts of open lines of credit with banks; • Reducing 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 Russian federal executive authorities. Results The Company maintained sufficient liquidity to repay liabilities on time, preventing unacceptable losses and managing reputational risk. <i>For details, see the section 'Financial Management'.</i>	1 3
Commodity risks			
5. Nuclear fuel cycle product and service market risk (Heads of the relevant Divisions) 	Adverse change in the pricing environment and demand on markets for natural uranium and uranium conversion and enrichment services	Key risk factors in the reporting year <ul style="list-style-type: none"> • Supply growth on the uranium market outpaced demand growth; • A considerable amount of inventories was accumulated, putting pressure on market prices; • An NPP decommissioning programme (Energiewende) is being implemented in Germany. Management approaches <ul style="list-style-type: none"> • 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 a price fall on the NFC product and service markets, in 2016, the	1 2

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Commodity risks			
6. Electricity and capacity market risks (CEO of JSC Rosenergoatom Concern) 	Adverse changes in electricity and capacity prices	10-year portfolio of overseas orders on these markets reached USD 35 billion. Changes The fact that natural uranium prices and separate work unit prices are currently low limits their further reduction and at the same time creates growth opportunities if the market environment is favourable (e.g. if reactors are restarted in Japan). <i>For details, see the section 'International Business' and annual reports of JSC TENEX and JSC TVEL for 2016.</i>	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 <ul style="list-style-type: none"> • 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 the balance target set by the Russian government (the minimum annual power output) totalled 100.6%. Actual power output totalled 196.4 billion kWh, up by 0.6% compared to 2015. Changes An increase in the risk level was caused by a planned increase in nuclear power generation, including power generation by power units using new technologies, where the main goal is to demonstrate their steady operation in all modes rather than to achieve power generation targets. <i>For details, see the section 'Power Engineering Division' and the 2016 annual report of JSC Rosenergoatom Concern.</i>	1
8. Industrial and environmental safety risk (Heads of Divisions) 	Major accidents/incidents at nuclear enterprises	Management approaches <ul style="list-style-type: none"> • Provision of an up-to-date legal framework; • Engineering measures to ensure the safety of nuclear facilities; • Maintaining a high level of professionalism and safety culture among employees. Results Safe operation of nuclear facilities and hazardous industrial facilities. No events rated at level 2 or higher on the international INES scale. No accidents at hazardous industrial facilities. In 2016, 98.8% of employees were in the negligible and acceptable occupational risk areas. <i>For details, see the section 'Nuclear and Radiation Safety; Occupational Safety and Health'.</i>	1 3

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Operational risks			
<p>9. Political risk</p> <p>(International Cooperation Department)</p> 	<p>Changes in the regulatory and political climate in foreign countries imposing restrictions on the operations of the Company and its organizations</p>	<p>Management approaches</p> <ul style="list-style-type: none"> • 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. <p>Results</p> <p>As of December 31, 2016, the 10-year portfolio of overseas orders totalled USD 133.4 billion¹⁴, up by 20.9% compared to 2015. The growth was driven primarily by the overseas NPP construction project portfolio due to the conclusion of new contracts. At year end, the project portfolio comprised 34 power units. 8 intergovernmental agreements and 20 interdepartmental agreements were concluded, which is a positive trend. <i>For details, see the sections 'International Cooperation' and 'International Business'.</i></p>	<p>1 2 3</p>
<p>10. Risk of loss of and damage to assets</p> <p>(Asset Protection Department)</p> 	<p>Corruption and other offences leading to the damage to/loss of assets</p>	<p>Management approaches</p> <p>An integrated industry-wide system for the prevention of corruption and other offences is in place in the nuclear industry. Key tools for reducing the risk of corruption and other offences include the development of an industry-wide anti-corruption training system (persons undergoing training include executives holding positions involving a risk of corruption and employees responsible for anti-corruption measures).</p> <p>Results. <i>See the 2016 annual reports of JSC Atomredmetzoloto, JSC TVEL, JSC TENEX, JSC ASE EC, JSC Atomenergomash and JSC Rosenergoatom Concern.</i></p>	<p>1 2</p>
<p>11. Reputational risk</p> <p>(Communications Department and Heads of Divisions)</p> 	<p>Changes in stakeholder perception of the trustworthiness and appeal of the Company and its organizations</p>	<p>Management approaches</p> <p>Measures are taken to shape a positive public opinion on the development of nuclear technologies through improved informational transparency and open stakeholder engagement. The Company published a public strategy until 2030 outlining long-term strategic goals; this was the main event of the year in the sphere of stakeholder relations. The Company continuously monitors public opinion on NPP construction and information on the decisions of government and regulatory bodies on curtailment of the nuclear industry in countries where the Company is implementing projects. The Company continuously monitors and analyses news reports in the national media, information obtained during business meetings, industry conferences and workshops. If it is reasonable to make changes to the schedule of NPP construction projects in Russia and abroad, the relevant decisions are agreed with all parties involved in the projects and are reflected transparently in communications with partners and other stakeholders (including the general public and local communities).</p>	<p>1 3</p>

¹⁴ Including the portfolio of overseas orders of JSC ASE, whose holding company is JSC ASE EC, an organization of JSC Atomenergoprom.

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Operational risks			
<p>11. Reputational risk</p> <p>(Communications Department and Heads of Divisions)</p> 	<p>Changes in stakeholder perception of the trustworthiness and appeal of the Company and its organizations</p>	<p>Results</p> <p>According to a survey by Levada-Centre, 71% of the Russian population supported the use of nuclear power in early 2017 (over the past five years, this figure ranged between 66.5% and 75.5%). Projects implemented abroad are supported by government bodies. The main Russian nuclear industry exhibition, Atomexpo 2016, titled 'Nuclear Power as a Basis for Zero Carbon Energy Balance' was attended by over 5,000 specialists and experts from 55 countries worldwide. <i>For details, see the sections 'International Business' and 'Stakeholder Engagement'.</i></p>	

2.2.4. Risk insurance

Risk insurance is one of the main risk management approaches used by JSC Atomenergoprom. To improve the reliability of insurance coverage, in 2016, a significant share of liability of Russian NPPs for potential nuclear damage was transferred for reinsurance to the international pooling system. This proves that the international nuclear insurance community acknowledges the safety and reliability of Russian NPPs to be adequate. In addition, in-house insurance audits were conducted with assistance from experts of the Russian Nuclear Insurance Pool.

Key enterprises of the industry will continue to be audited for insurance purposes in 2017.

2.2.5. Objectives for 2017 and for the medium term

TO FURTHER DEVELOP THE RMS, THE COMPANY PLANS TO:

- Support the development of the RMS in the Company's divisions (taking into account the findings of external diagnostic assessment);
- Roll out a single risk management approach for NPP construction projects;
- Monitor risks affecting the implementation of the State Programme 'Development of the Nuclear Power and Industry Complex' on a regular basis and develop measures to minimize their impact.



CONTRIBUTION TO STRATEGY IMPLEMENTATION: INTERNATIONAL BUSINESS PERFORMANCE

3.1. Markets Served by Atomenergoprom	42
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3.1. MARKETS SERVED BY ATOMENERGOPROM

JSC Atomenergoprom is the largest power generation company in Russia and one of the leading players on the global market for nuclear services and technologies. The Company is capable of providing turnkey solutions for NPP design and construction, supplying fuel to NPPs throughout their entire life cycle, upgrading NPPs and rendering maintenance services, and providing employee training.

In 2016, Atomenergoprom:

- ranked **first in the world** in terms of the number of NPP power units in the portfolio of foreign projects (34 power units);
- accounted for **36%** of the global uranium enrichment market;
- accounted for **17%** of the nuclear fuel market;
- accounted for **13%** of the world's uranium production.



3.1.1. Natural uranium market

FORECAST FOR CHANGES IN URANIUM DEMAND BY 2030

The Fukushima accident in Japan in 2011 led to a significant drop in prices on the nuclear fuel cycle front-end markets, including a decline in quotations for natural uranium. However, the accident did not affect the fundamental drivers of demand for uranium, and natural uranium prices are expected to recover in the medium and long term. Global demand for uranium for reactors totalled 65,000 tonnes in 2016, according to the baseline scenario of the World Nuclear Association (WNA). At the same time, the world demand, taking into account commercial and strategic stockpiling not intended for current consumption, is estimated at 71,000 to 74,000 tonnes. Under this scenario, global demand for uranium will increase to 91,000 tonnes by 2030.

NATURAL URANIUM MARKET OVERVIEW

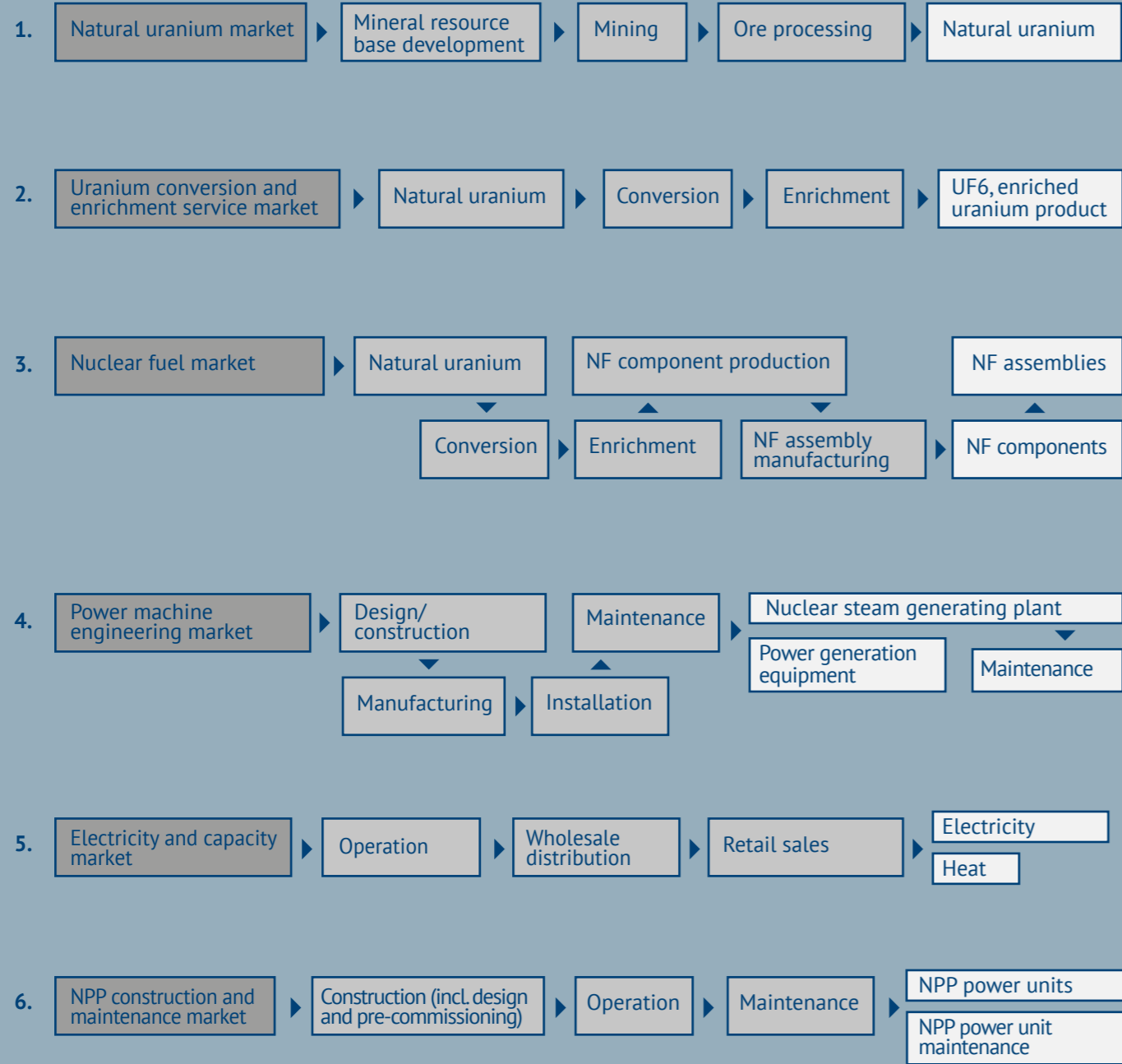
In 2016, global production of natural uranium remained virtually unchanged compared to 2015 and totalled 62,000 tonnes. Supplies from secondary sources (inventories of energy companies and some states, reparation of depleted uranium hexafluoride, reprocessed uranium, etc.) are estimated at 18,000 tonnes of uranium equivalent.

Natural uranium production is expected to increase by 2030 in line with the growing demand for it. In 2030, supply from secondary sources will total about 11,000 tonnes of uranium equivalent.

A settled group of leaders has now formed on the natural uranium market. At year-end 2016, the group comprised JSC Atomenergoprom (13% of the global output), NAC Kazatomprom (Kazakhstan, 21%), Cameco (Canada, 17%), AREVA (France, 14%), BHP Billiton (Australia-United Kingdom, 5%), Rio Tinto (Australia-United Kingdom, 4%), an alliance of CNNC and CGN (China, 4%), and Navoi Mining and Metallurgical Plant (Uzbekistan, 4%). The eight largest players account for about 82% of the total uranium output.

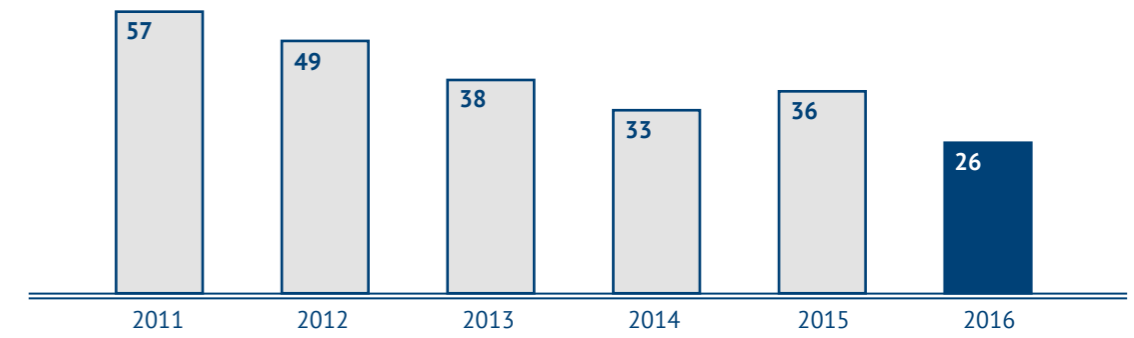
In 2016, the pace of development of most existing projects remained low. The Cigar Lake mine in Canada (the main owners are Cameco and AREVA) was an exception, as uranium production at this mine grew by a factor of 1.5 compared to 2015, to 6,700 tonnes. At the end of the year, pilot operation started at the Husab mine in Namibia controlled by the Chinese CGN (its commencement had been repeatedly postponed).

Markets served by JSC Atomenergoprom

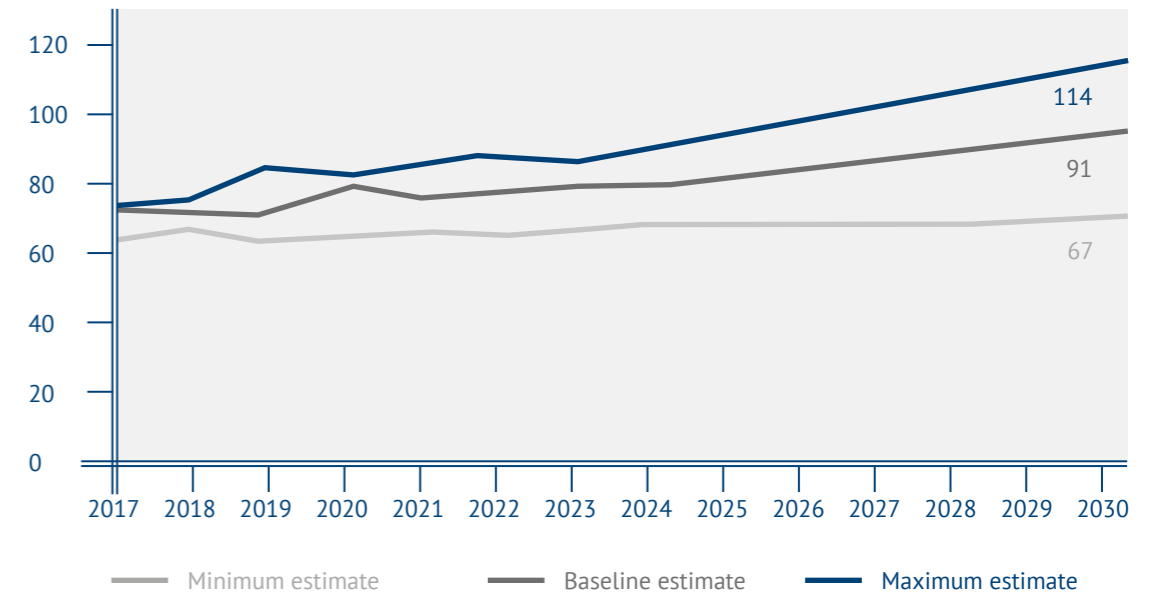


■ – Markets □ – Value chain □ – Products/services

Average annual spot market quotations for natural uranium, USD/lb of U3O8

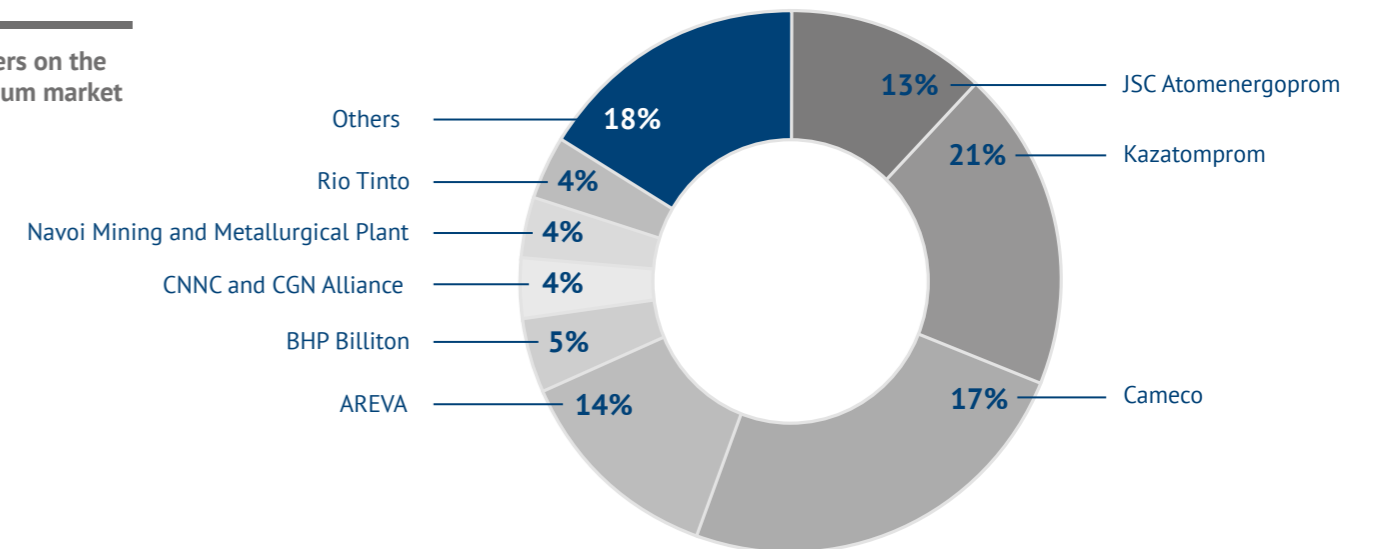


Forecast of changes in uranium demand, kt



Source: World Nuclear Association, The Nuclear Fuel Report 2015

Largest players on the natural uranium market



As the market environment remained unfavourable, key uranium producers continued to optimize costs and investments in the development of existing enterprises and review plans for prospective projects. In April 2016, Cameco announced the mothballing of the Eagle Point mine in Canada (uranium production ceased in August) and the suspension of drilling at underground leaching plants in the United States. NAC Kazatomprom, Rio Tinto, Paladin Energy and other companies announced additional measures to improve asset performance.

Junior companies focused on optimizing key projects (in Canada, the US, Australia and some other countries) with a view to commissioning them in the long term. Progress on most of these projects remained slow due to difficulties with raising funds and confirming sales.

See also the section 'International Business' and the report of JSC Atomredmetzoloto for 2016.

3.1.2. 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

According to the World Nuclear Association's baseline scenario, the world demand for enrichment in 2016 totalled 50 million SWU. Given the current significant oversupply on the uranium enrichment market, spot market quotations declined by 21% in 2016. Moreover, since the Fukushima nuclear power plant accident in 2011, spot market quotations for enrichment have dropped by 63%.

The development of the nuclear industry until 2030 will have a positive impact on the market for natural uranium enrichment services. Global demand for enrichment will grow to 57 million SWU and 71 million SWU by 2020 and 2030 respectively, according to the baseline scenario of the WNA. Given the expected growth of demand in the future, the market is likely to become more balanced.

URANIUM CONVERSION AND ENRICHMENT MARKET OVERVIEW

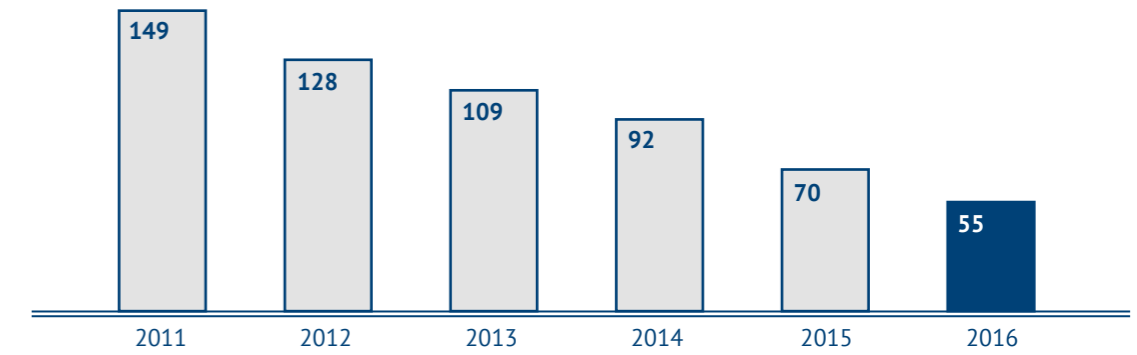
The main players on the global market for uranium enrichment services include JSC Atomenergoprom (36% of the global enrichment market), URENCO (UK, Germany, Netherlands; 28%), AREVA (France; 11%) and Chinese companies (8%). Together, they control over 80% of the market. At present, all players use modern gas centrifuge technology for uranium enrichment.

Although the market for uranium enrichment services is depressed, in 2016, URENCO in the United States and AREVA in France continued to expand the capacity of new gas centrifuge plants, albeit at a slower pace than before.

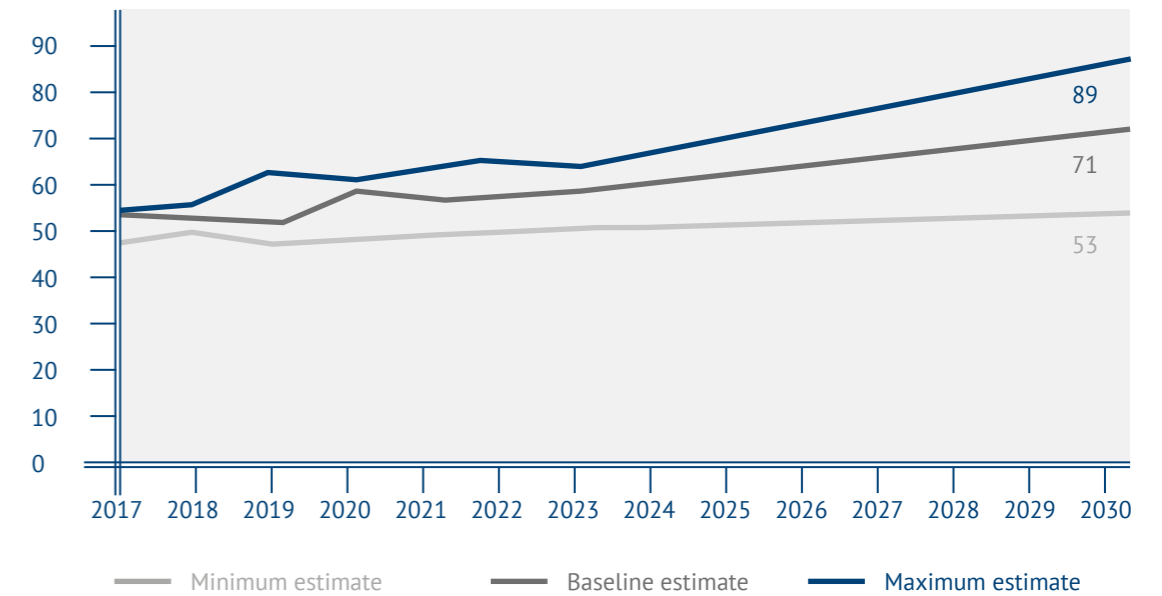
In the reporting year, a laser uranium enrichment project was given renewed impetus as an agreement on enrichment of tailings was signed by the US Department of Energy and Global Laser Enrichment. However, this event will not affect the uranium enrichment market because of the small amount of reprocessing.

See also the section 'International Business' and the reports of JSC TVEL and JSC TENEX for 2016.

Average annual spot market quotations for enrichment, USD/SWU



Forecast for changes in demand for uranium enrichment, million SWU



Source: World Nuclear Association, The Nuclear Fuel Report 2015

3.1.3. Nuclear fuel fabrication market

ACCORDING TO THE COMPANY, IN 2016, THE GLOBAL MARKET CAPACITY FOR NUCLEAR FUEL FABRICATION TOTALLED ABOUT 12,000 TONNES OF HEAVY METAL (THM). THIS INCLUDES:

- fuel requiring uranium enrichment accounting for 8,000 tHM (including over 1,000 tHM of fuel for VVER reactors);
- fuel for heavy-water reactors accounting for 4,000 tHM.

As the reactor fleet will be expanding, the demand for fabrication services may increase to 14,000 tonnes by 2030.

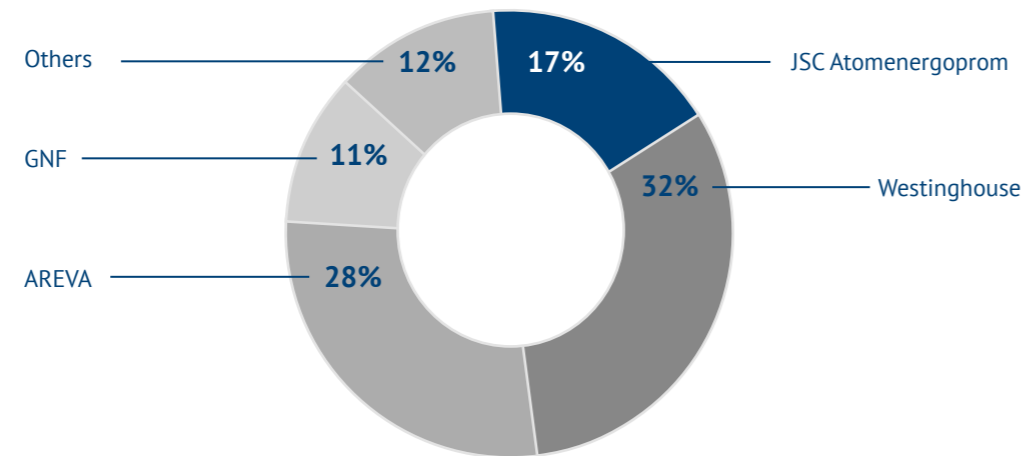
GLOBAL SUPPLIERS ON THE FABRICATION MARKET ARE WESTINGHOUSE/TOSHIBA, AREVA, GLOBAL NUCLEAR FUEL AND JSC ATOMENERGOPROM.

Westinghouse Electric Company fabricates nuclear fuel for nearly all types of light-water reactors (LWR). Its 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 32% of the market.

AREVA produces fuel for PWR and BWR reactors and holds 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. 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 and holds 11% of the market.

Shares of players on the nuclear fuel fabrication market



In 2016, Russian nuclear fuel fully met the demand of Russia, the Czech Republic, Slovakia, Hungary, Bulgaria and Armenia for reactor fuel. JSC Atomenergoprom also partially met the demand of Ukraine (85%), Finland (36%), India (31%) and China (3%) for reactor fuel. The company in cooperation with AREVA also supplies fuel and components to Western European nuclear power plants. In the reporting year, the Company's share on the nuclear fuel fabrication market totalled 17%.

Entering new nuclear fuel markets

In the reporting year, a number of important events occurred in the area of fabrication of TVS-KVADRAT fuel for foreign-design light-water reactors. In July, a contract was signed with a US NPP operator for the pilot use of TVS-Kvadrat. In December, a contract with the Swedish company Vattenfall Nuclear Fuel AB for the commercial supply of TVS-Kvadrat to Ringhals NPP came into force. In addition, in 2016, contracts were signed for the supply of nuclear fuel for research reactors in the Czech Republic and for the supply of uranium components of nuclear fuel for research reactors in Argentina.

In the future, the development of a new technological platform for the nuclear power industry based on fast-neutron reactors will result in the formation of a market for MOX fuel used in reactors of this type. Only two high-capacity fast-neutron power reactors are currently in operation in the entire world, both of which are located in Russia: BN-600 and BN-800. The former runs on uranium fuel, while the latter will use only MOX fuel. In 2016, a programme was approved to switch over to fully loading the reactor core with MOX fuel, and the first batch of MOX fuel pellets was manufactured.

See also the sections 'International Business' and 'Research and Innovations' and the report of JSC TVEL for 2016.

3.1.4. Power machine engineering market

In 2016, the global power machine engineering market showed little growth and totalled ~ USD 110 billion. The structure of the market remained virtually unchanged, and most investments in equipment were made in the thermal power sector (about 60%). Equipment for the gas and petrochemical industry accounted for about 25%, while nuclear power generation equipment accounted for 15%. Until 2030, no radical change is expected in the structure of investment in power machine engineering, and equipment for thermal power generation will continue to dominate.

The situation on the Russian market for power machine engineering is largely consistent with the global one, with equipment in the thermal power industry accounting for 60% of the total investment, equipment in the gas and petrochemical industry for 29% and equipment in the nuclear power industry for 11%. At present, the Russian power machine engineering market is estimated at RUB 350 billion per year. The three largest players on the Russian power machine engineering market account for 68% of the market, with the Mechanical Engineering Division of JSC Atomenergoprom holding 27%. In the future, until 2030, the average annual growth rate on the domestic market will range between 1% and 2%, and the main trends will include growing competition among domestic manufacturers and a reduction in the import of power generation equipment and its components.

See also the section 'Mechanical Engineering Division' and the report of JSC Atomenergomash for 2016.

3.1.5. NPP construction and operation market

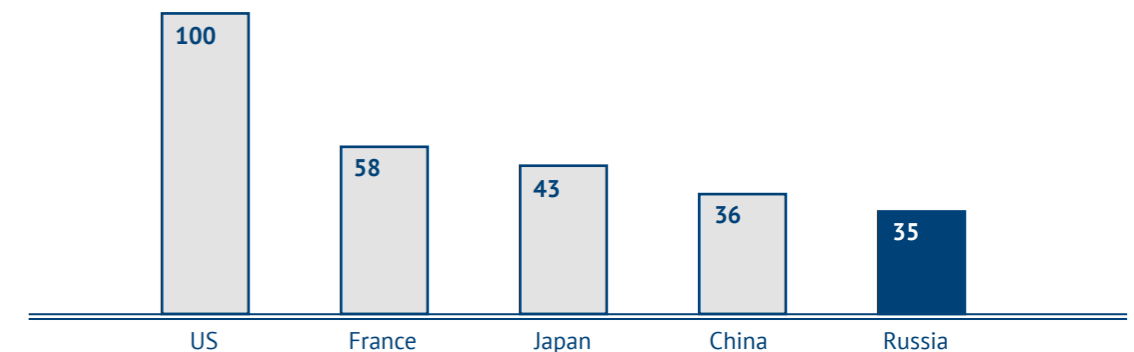
In 2016, the nuclear power industry accounted for about 11% of the global electricity supply. The share of nuclear generation in the energy mix of many countries remains high. According to the IAEA, in 13 states, more than a quarter of the electricity demand is met by nuclear power generation. Countries with the largest share of NPPs in electricity generation include France (76.3%), Slovakia (55.9%), Hungary (52.7%), Ukraine (56.5%) and Belgium (37.5%).

According to the IAEA, as of December 31, 2016, 450 power reactors were in operation with a total capacity of 392 GW (including the suspended Japanese reactors). Another 61 reactors were under construction. JSC Atomenergoprom ranked second among global generating companies in terms of installed NPP capacity (27.13 GW¹⁵), surpassed only by the French EDF (73 GW). For details, see the 2016 annual reports of JSC Rosenergoatom Concern and JSC ASE EC.

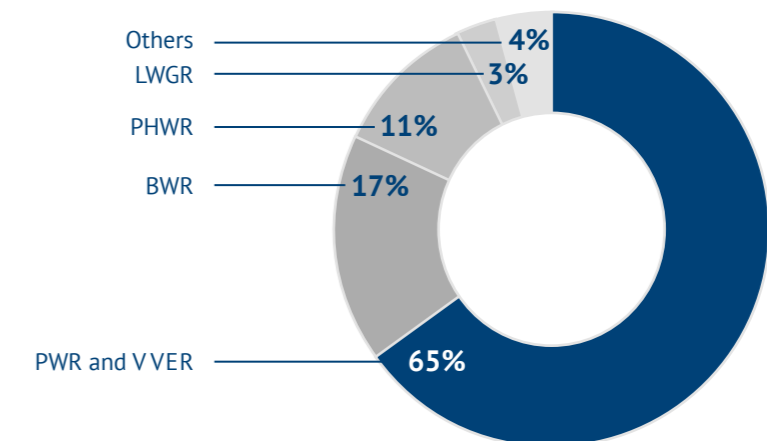
Light-water reactors (VVER, PWR, BWR, LWGR) are the main type of operating reactors used around the globe; they account for 85% of the global market, while PHWR (CANDU) heavy-water reactors account for 11%.

Currently, demand for NPP construction comes primarily from Asian countries, which is due to rapidly growing demand for electricity in this region. JSC Atomenergoprom is actively expanding its global footprint: it is currently the largest global player in terms of the number of NPP construction projects in its portfolio of overseas orders. AREVA will remain JSC Atomenergoprom's main competitor on the foreign NPP construction and operation markets until 2030, with more intense competition coming from Chinese and South Korean companies. For details, see the section 'International Business'.

Leading countries by the number of operating NPP power units



Operating reactors in the world % of the total number of operating power units



¹⁵ Excluding power unit No. 1 of Novovoronezh NPP-2, which was at the stage of pilot operation as of December 31, 2016.

3.2. INTERNATIONAL BUSINESS

JSC Atomenergoprom carries out numerous large-scale international projects and generates substantial overseas revenue.

Key results in 2016:

- The 10-year portfolio of overseas orders totalled **USD 133.4 billion**, up by 20.9% compared to 2015;
- **34** power units in the portfolio of overseas projects;
- International projects **in 42 countries.**



3.2.1. Global technological leadership of JSC Atomenergoprom

JSC Atomenergoprom 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 country at all stages and provides the customer with access to the entire range of products and services from one supplier throughout the NPP life.

Today, the Company is actively promoting Russian nuclear power technologies both in countries that are beginning to develop nuclear power and in countries with a well-developed national nuclear power industry (including those based on Russian technology).

Regional centres

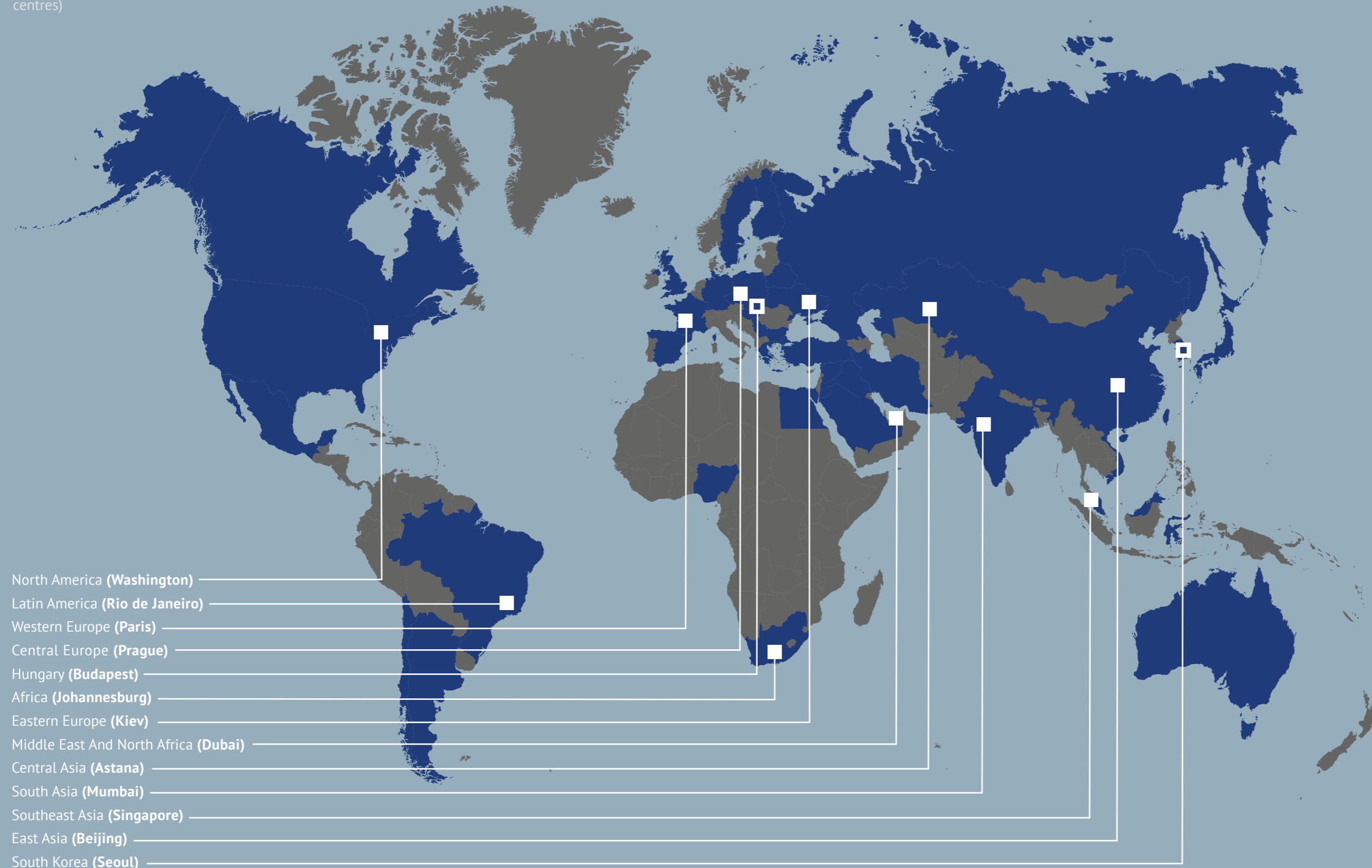
A foreign regional network managed by Rosatom International Network has been established in order to increase international sales and promote the products of the Russian nuclear power industry. As of December 31, 2016, the foreign regional network comprised 11 regional centres that operated in more than 60 countries around the world.

The 8th International Forum ATOMEXPO 2016 (Moscow) has become a major event for the international nuclear business community. The Forum focused on the role of the nuclear power industry in the low-carbon energy balance of the future. The event was attended by over 5,000 people from 55 countries and about 100 companies. The total value of the documents signed at ATOMEXPO 2016 totalled about USD 10 billion.

The Regional Centre in Western Europe coordinated two meetings of ROSATOM's International Advisory Council established in order to examine international best practices and develop practical recommendations for the development of the Russian nuclear industry.

In 2016, 15 targeted workshops and round-table conferences were conducted, involving the demonstration of the entire range of JSC Atomenergoprom's products. The events were attended by about 2,200 foreign participants. With the support of the regional centres, Russian nuclear enterprises participated in 13 large foreign exhibitions, including the 2nd World Nuclear Exhibition (Paris), the 41st Annual World Nuclear Association Symposium (London), and the 60th session of the IAEA General Conference (Vienna).

Global footprint of JSC Atomenergoprom (including regional centres)



- North America (Washington)
- Latin America (Rio de Janeiro)
- Western Europe (Paris)
- Central Europe (Prague)
- Hungary (Budapest)
- Africa (Johannesburg)
- Eastern Europe (Kiev)
- Middle East And North Africa (Dubai)
- Central Asia (Astana)
- South Asia (Mumbai)
- Southeast Asia (Singapore)
- East Asia (Beijing)
- South Korea (Seoul)

■ – Countries where the Company is implementing its projects □ – Regional offices ■ – Country offices

GEOLOGICAL EXPLORATION AND URANIUM MINING

No. **2** in the world
13 % of global production

NPP CONSTRUCTION

34 power units in the overseas project portfolio

POWER GENERATION

No. **2** in the world among nuclear companies in terms of installed capacity
 27.1 GW

URANIUM ENRICHMENT SERVICES

No. **1** in the world
36 % of the market

NUCLEAR FUEL SUPPLIES

17 % of the market

NEW BUSINESSES:

- NPP servicing and modernization
- Construction of research reactors
- Nuclear fuel cycle back-end
- Products and services based on radiation technologies

Rusatom International Network (RIN) manages the network of foreign regional offices and performs a number of functions for the benefit of all organizations in the industry on a targeted basis:

 <p>Marketing</p> <ul style="list-style-type: none"> – Industry-wide market reviews – Timely provision of information – Marketing research and support 	 <p>Foreign communications</p> <ul style="list-style-type: none"> – Mass communications – Promotion of products and services of subsidiaries and affiliates – Web communications – Brand management
 <p>Business development</p> <ul style="list-style-type: none"> – Search for and provision of information on new business opportunities – Assistance in establishing and developing contacts with potential customers and partners 	 <p>Government relations</p> <ul style="list-style-type: none"> – Analysis of key stakeholders, identification of 'decision-makers' – Building a working relationship with key stakeholders
 <p>Search for investors</p> <ul style="list-style-type: none"> – Infrastructure support to find funding for foreign projects of the Company 	 <p>COORDINATION OF ACTIVITIES</p> <ul style="list-style-type: none"> – Industry-wide coordination of operations of the Divisions on overseas markets at the request of the Company

3.2.2. Growth of the portfolio of overseas orders

In the reporting year, the Company continued to build up its portfolio of overseas orders, which reached USD 133.4 billion¹⁶ (USD 110.3 billion in 2015).

Changes in the portfolio of overseas orders
USD billion

	2014	2015	2016
10-year portfolio of overseas orders, including:	101.4	110.3	133.4
Construction of NPPs abroad	66.0	75.9	97.6
Uranium products	21.8	21.1	19.9
Nuclear fuel assemblies and other activities	13.6	13.3	15.9

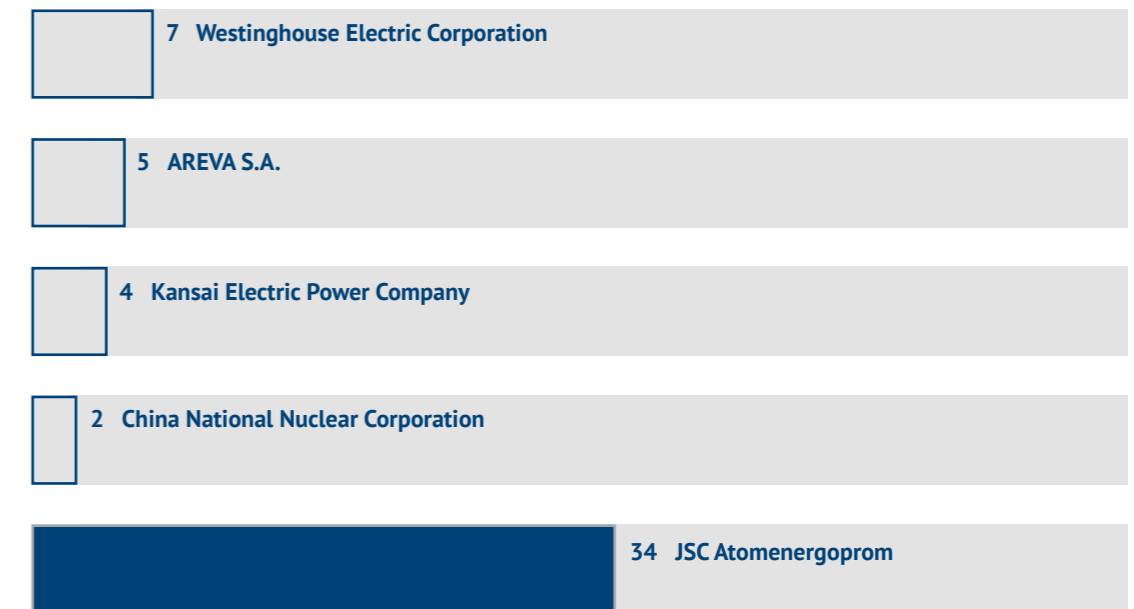
3.2.3. Construction of NPPs abroad

The NPP construction project portfolio includes 34 NPP power units around the world (projects are implemented in 12 countries).

¹⁶ Including the portfolio of overseas orders of JSC ASE, whose holding company is JSC ASE EC, an organization of JSC Atomenergoprom

Portfolio of overseas orders for NPP construction by player
(Source: World Nuclear Association, International Atomic Energy Agency, analysis by ROSATOM)

Power units



3.2.4. Construction of research centres

In 2016, agreements were signed with Bolivia and Zambia on the establishment of research centres.

LLC UIC (an organization of JSC Atomenergoprom) and the Indian Agricultural Association signed a Memorandum on cooperation in the development of a network of irradiation centres. The use of irradiation technologies will help to improve the performance of India's agricultural industry by extending the shelf life of food products.

3.2.5. Integrated servicing of Russian-design NPPs

In 2016, the Company serviced 32 power units of Russian-design NPPs abroad (out of 38 power units outside the Russian Federation).

A comprehensive inspection of power unit No. 2 of the Armenian NPP was completed as part of a project to extend its life.

The Company finalized the rationale for the extension of the life of power unit No. 5 at Kozloduy NPP (Bulgaria). A contract was signed for the provision of a rationale for the extension of the life of power unit No. 6.

A contract was signed for technical support for the installation of the primary circuit systems and pre-commissioning works during the construction of power units No. 3 and 4 at Mochovce NPP.

Contracts for the maintenance of Tianwan NPP (China) were concluded.

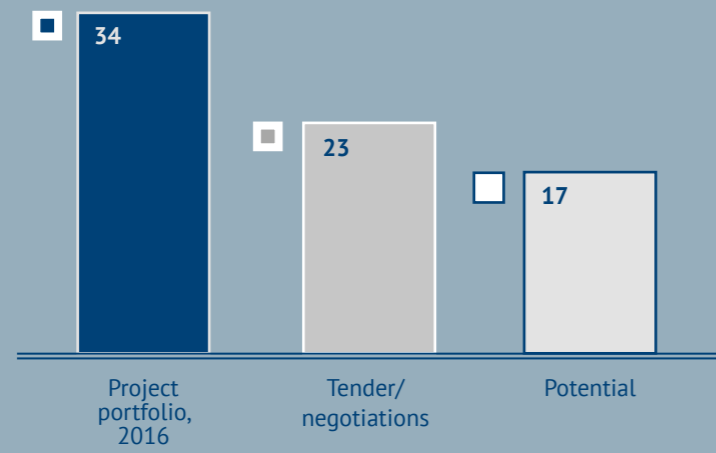
A platform for remote technical support for foreign nuclear power plants (Nuclear Assistant) was developed, and an agreement on pilot testing was reached with the first potential customers.

As part of the development of the Nuclear Research and Technology Centre in Bolivia, a contract for the assessment of the condition of the Bolivian national nuclear infrastructure was signed and successfully carried out.

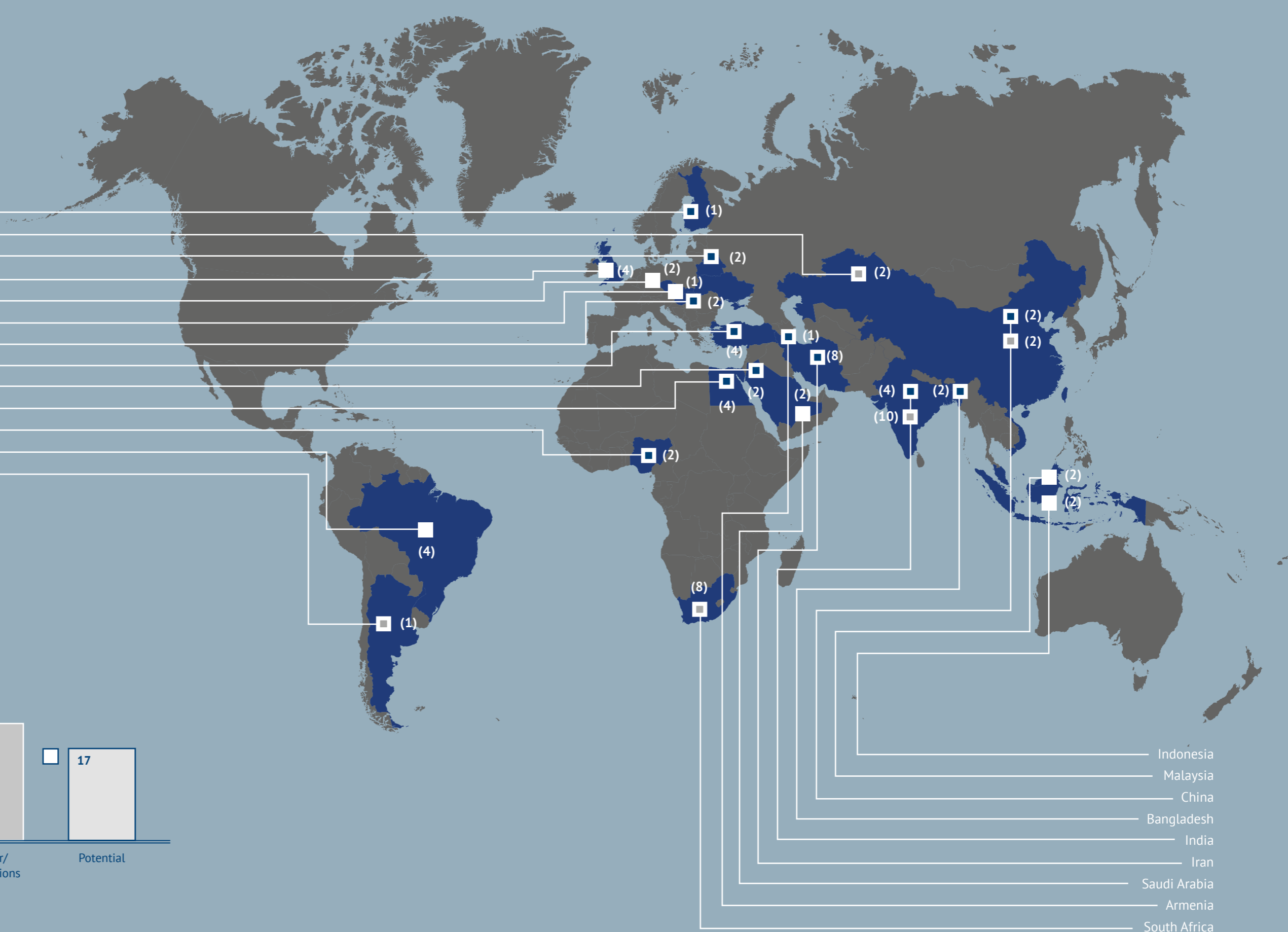
Positions of JSC Atomenergoprom on the international market for NPP construction

- Finland
- Kazakhstan
- Belarus
- United Kingdom
- Czech Republic
- Slovakia
- Hungary
- Turkey
- Jordan
- Egypt
- Nigeria
- Brazil
- Argentina

Project portfolio
(Power units, pcs.)



(1) – number of power units



3.2.6. Uranium mining abroad

In 2016, Uranium One (a subsidiary of JSC Atomenergoprom that mines uranium abroad) implemented the annual production programme in full as it produced 4,919 tonnes of uranium (taking into account mining as part of the pilot development of deposits).

The uranium mining enterprises of Uranium One retained the leading position in terms of production costs on the global market for natural uranium. JSC Atomenergoprom managed to lower the production cost by 5% to USD 11 per pound and to make a profit in 2016, unlike its main competitors.

The estimated mineral resource base of the Uranium One enterprises under international reporting standards totals 220,800 tonnes of natural uranium.

Uranium mining by Uranium One enterprises, t
Including the 100% share in Mantra Resources Pty Limited.

	2014	2015	2016
Uranium production including:	4,857	4,794	4,919
Kazakhstan	4,640	4,749	4,896
US	217	45	23

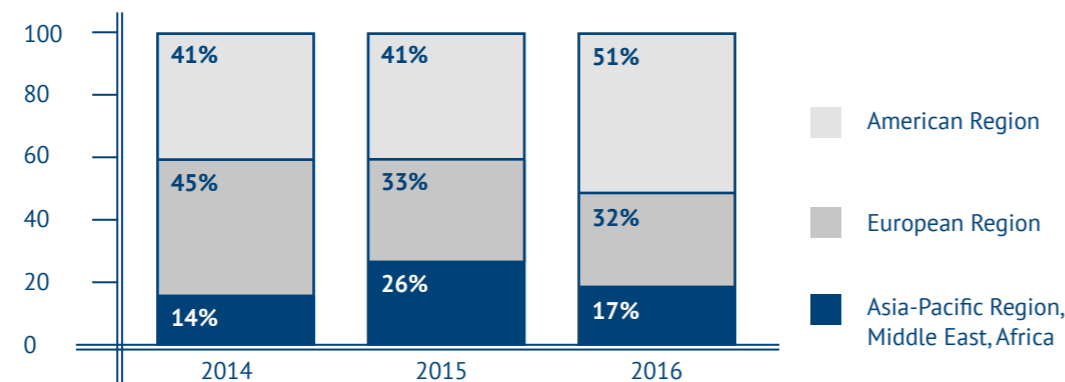
Mineral resource base of Uranium One enterprises, kt
Including the 100% share in Mantra Resources Pty Limited.

	2014	2015	2016
	224.1	213.1	220.8

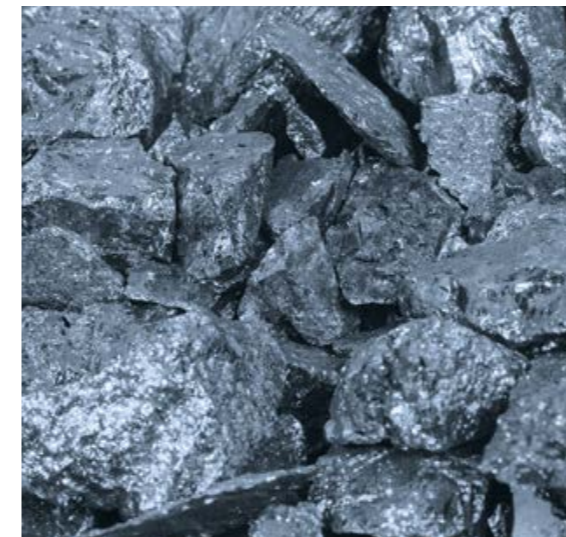
3.2.7. Export of uranium products and natural uranium enrichment services

In the reporting year, JSC TENEX, a subsidiary of Atomenergoprom, concluded 17 agreements on the export of uranium products and natural uranium enrichment services, including supplements to the existing contracts increasing the delivery volume. The 10-year portfolio of overseas orders totalled about USD 20 billion¹⁷, while sales totalled about USD 2.1 billion. *See also the report of JSC TENEX for 2016.*

Changes in the sales structure of JSC TENEX by region



¹⁷ Excluding the portfolio of JSC Atomenergopromsby (managed by the Company as from 2016) totalling USD 2.6 billion.



IN 2016, THE COMPANY CONCLUDED **17** AGREEMENTS on the export of uranium products and natural uranium enrichment services

SALES VOLUME **~2.1** USD BILLION

3.2.8. Export of nuclear fuel

In the reporting year, the Fuel Division's 10-year portfolio of overseas orders totalled about USD 10.1 billion, while export revenue reached USD 1.4 billion.

2016 saw a breakthrough on the market for nuclear fuel for foreign-design PWR reactors (which make up more than half of the total number of reactors currently in operation worldwide). The Fuel Division signed the first contract with a US NPP operator for the pilot use of Russian TVS-KVADRAT fuel and a contract with Vattenfall Nuclear Fuel AB (Sweden) for the commercial supply of TVS-KVADRAT nuclear fuel to Ringhals NPP.

Contracts were signed with AREVA NP for the supply of additional nuclear fuel components for the Sizewell B NPP in the United Kingdom.

A contract was signed and fuel was delivered to a Czech research reactor.

A contract was signed with the China Institute of Atomic Energy for the production and supply of fuel for the China Experimental Fast Reactor (CEFR).

A number of contracts were signed for the supply of uranium components of nuclear fuel for research reactors in Argentina.

See also the section 'Fuel Division' and the report of JSC TVEL for 2016.

3.2.9. Foreign operations in the nuclear fuel cycle back end

The most important achievement of 2016 was winning the tender for the construction of a radioactive waste storage facility and for the development of a project to dismantle power units No. 1-4 at Kozloduy NPP.

The Company continued to implement projects under existing contracts at Ignalina NPP in Lithuania and at the nuclear power plants under construction (the Belarusian nuclear power plant, Paks NPP in Hungary).

3.3. INTERNATIONAL COOPERATION

On a global scale, JSC Atomenergoprom aims to set favourable international legal and political conditions to promote Russian technologies across the global nuclear market, strengthen the nuclear safety and non-proliferation regimes and actively cooperate with international organizations and forums.

Key results in 2016:

8 intergovernmental **agreements** and **20** interdepartmental **arrangements** were signed (including **4 framework** intergovernmental agreements with Bolivia, Zambia, Tunisia and Cuba, which form the basis for Russia's bilateral cooperation with these countries in the nuclear sphere)



- A legal framework was established at intergovernmental level for the construction of Nuclear Research and Technology Centres in Bolivia and Nigeria;
- An interdepartmental memorandum with Japan on cooperation in the peaceful use of nuclear energy was signed;
- A programme was launched to train Russian personnel for international organizations in accordance with the IAEA standards.

3.3.1. Strengthening the international legal framework for cooperation

In 2016, expansion of the international legal framework continued in order to promote Russian nuclear technologies in the world. 8 intergovernmental agreements (IGAs) and 20 interdepartmental arrangements were signed (8 and 16 in 2015, 11 and 18 in 2014 respectively).

Cooperation with key partners in strengthening the international legal framework

Bolivia, Zambia, Tunisia, Cuba

Framework IGAs have been signed to establish the legal framework for cooperation in the field of nuclear technologies with Bolivia, Cuba, Tunisia and Zambia. Thus, conditions have been created for the promotion of Russian nuclear technologies in these countries and for the implementation of specific projects in the nuclear sphere.

Bolivia, Nigeria

IGAs on cooperation in the construction of research centres have been signed:

- An IGA on cooperation in the construction of a Nuclear Research and Technology Centre in Bolivia;
- An IGA on cooperation in the construction of a Centre based on a multipurpose research reactor in Nigeria.

The centres will enable the training of national research and technical personnel and the development of the necessary competences for the implementation of practical projects in the nuclear sphere. The operation of the centres will enable a wide use of radiation technologies in agriculture, health care and industry.

Japan

During the visit of Russia's President to Japan, an interdepartmental memorandum on cooperation in the peaceful use of nuclear energy was signed in December 2016. The Memorandum provides for cooperation in dealing with the consequences of the Fukushima Daiichi nuclear disaster, cooperation in the field of innovative nuclear technologies and facilitating the establishment of contacts between Russian and Japanese companies.

People's Republic of China

A Joint Statement by the Heads of Government of the Russian Federation and the People's Republic of China on the development of strategic cooperation in the peaceful use of nuclear power was issued in Saint Petersburg in November 2016 as part of the 21st regular meeting of the heads of the Russian and Chinese governments. It is an integrated document that reflects the balance of interests of the parties. More specifically, it provides for cooperation in the construction of new power units at Tianwan NPP and other sites in China, the construction of a nuclear power plant in China with fast-neutron reactor units, cooperation on floating thermal nuclear power plants, etc.

Algeria, Bolivia, Zambia, Jordan, Cambodia, Kenya, Laos, Paraguay

Interdepartmental memoranda have been signed:

- Memoranda on education and training of personnel in the nuclear power industry and other related fields with Jordan, Bolivia and Zambia;
- Memoranda on cooperation in the peaceful use of nuclear energy with Laos, Algeria, Bolivia, Zambia, Kenya and Paraguay;
- Memoranda on the establishment of a nuclear energy information centre in Cambodia and the establishment of a joint Russian-Cambodian working group on cooperation in the peaceful use of nuclear energy.

The signing of the documents enables the development of nuclear power infrastructure in these countries, as well as the practical implementation of specific cooperation projects.

Finland

A Protocol has been signed on the implementation of practical measures to fulfil the obligations under the Russian-Finnish IGA on early notification of a nuclear accident and for the exchange of information on nuclear facilities dated January 19, 1995. The Protocol establishes specific measures for accident notification and rapid exchange of information in case of nuclear accidents; it also establishes procedures for joint action in the conduct of emergency exercises and consultations with the competent authorities.

Germany

Administrative arrangements have been signed between ROSATOM and the German Federal Ministry for Economic Affairs and Energy under the IGA on cooperation in the operation of research reactors dated September 1, 2014.

3.3.2. Objectives for 2017 and for the medium term

In 2017, the international legal framework for cooperation for the benefit of industry organizations and enterprises will be expanded. A new important area is the establishment of cooperation with a number of major partner countries on the management of spent nuclear fuel and the decommissioning of nuclear facilities.

It is planned to start cooperation within the IAEA on the development of nuclear infrastructure in new countries where the Company is implementing its projects. The personnel training programme for the IAEA launched in 2016 will continue to be implemented

In 2017, Russia will host the International IAEA Conference on Fast Reactors and Related Fuel Cycles (June 26-29, 2017, Ekaterinburg).

OBJECTIVES FOR THE MEDIUM TERM:

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



CONTRIBUTION TO STRATEGY IMPLEMENTATION: OPERATING RESULTS OF DIVISIONS

4.1. Mining Division	66
4.2. Fuel Division	70
4.3. Mechanical Engineering Division	74
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4.1. MINING DIVISION¹⁸

The Mining Division (the holding company is JSC Atomredmetzoloto) consolidates uranium mining enterprises in Russia¹⁹ at different stages of the life cycle, from geological exploration to intensive commercial development of deposits. The Division's strategic goal is to meet the demand of JSC Atomenergoprom for Russian uranium at a competitive price and free from any geopolitical risks.

Key results in 2016:

- Uranium resources totalled **517,900 tonnes**;
- **3,005 tonnes of uranium** were produced (the production programme was 100% completed);
- For the first time in several years, the key enterprise, PJSC PIMCU, reached **break-even point.**



Link between the Division's goals and the strategic goals of JSC Atomenergoprom

Strategic goals of JSC Atomenergoprom



Reflection in the strategy of JSC Atomredmetzoloto

- Implemented indirectly (by making ROSATOM's offer on the NFC market more competitive):
 - Guaranteeing that the demand for Russian uranium will be met
 - Maintaining a competitive cost of uranium production
- Implemented directly:
 - Ensuring sustainable profitability, including through business diversification
- Implemented directly:
 - Maintaining a competitive cost of uranium production
 - Ensuring sustainable profitability, including through business diversification

4.1.1. Results in 2016

In 2016, the Division produced 3,005 tonnes of uranium. The Division's uranium mining enterprises completely fulfilled the production plan.

PJSC PIMCU reached break-even point; this was one of the most significant achievements of the year. For the first time in six years, the enterprise recorded a profit, and the cost of finished products was 8% below the budgeted target. In addition, a positive opinion was obtained for the design documentation on Mine No. 6. The start of its development will enable further stable growth of PJSC PIMCU.

The main facilities of the production site and associated infrastructure required for the plant to achieve the rated capacity of 1,000 tonnes of uranium per year in 2019 were put into operation at JSC Khiagda. The physical start-up of the local sorption unit forming part of the mining complex and auxiliary infrastructure facilities at the Istochnoye deposit was completed.

¹⁸ For more information about the Division's results, see the report of JSC Atomredmetzoloto for 2016.

¹⁹ For details on uranium mining abroad, see the section 'International Business'.

Mineral resource base and uranium production	2014	2015	2016
Mineral resource base, kt	524.7	521.2	517.9
Uranium production, t, including:	2,991	3,055	3,005
PJSC PIMCU	1,970	1,977	1,873
JSC Dalur	578	590	592
JSC Khiagda	443	488	540

Achievement of key performance indicator targets	2015	2016 target value	2016 actual value
Labour productivity, RUB million per person	2.61	3.1	3.1
Full cost, RUB billion	Not set	16.4	15.3
Revenue of the Division from new products within and outside ROSATOM's scope on a competitive basis, RUB million	626.5	570	1,310
LTIFR ²⁰	0.23	0.6	0.44
Number of events rated at level 2 or higher on the INES scale	0	0	0

4.1.2. Development of new products and new businesses

THE DIVISION'S NEW BUSINESSES ARE BEING DEVELOPED IN THREE AREAS:

- Improving the processing depth of the mineral resource base and industrial waste (Pyrite Cinder Processing and Scandium projects);
- Development of territories with a special regional status (Pavlovskoye project);
- Business initiatives to promote the production of strategic metals and innovative products based on them (pending).

In 2016, a new product, sized coal, was launched at the Urtuysky open-pit coal mine of PJSC PIMCU. The coal has improved characteristics and is sold at a premium to the price of ordinary brown coal.

As part of the Scandium project, in 2016, we completed the development of scandium mining technology, and the construction of a pilot plant was started. The scandium reserves of the Dalmatovskoye deposit were recognized on the balance sheet, which grants the Company the right to commercial sales of mined scandium.

An economic assessment of the technology for the treatment of industrial waste from sulphuric acid production accumulated at the site of PJSC PIMCU was conducted for the Pyrite Cinder Processing project. The profitability of zero-waste cinder processing (with recovery of gold, non-ferrous metals and leaching cakes used in the cement industry) was confirmed.

²⁰ Hereinafter, the Lost Time Injury Frequency Rate (LTIFR) is the number of lost time injuries against the total hours worked in the reporting year normalized to 1 million man-hours.

In 2016, preparations continued for the construction of the northernmost Russian mining and processing plant at the Pavlovskoye lead and zinc deposit (on the Novaya Zemlya archipelago). Following a geological survey, balance reserves of lead and zinc ores at the deposit increased by 28.7%. The first phase of the field engineering and geological survey for the design and construction of the mining enterprise was completed.

In 2016, a priority social and economic development area was established in Krasnokamensk (with PJSC PIMCU as the core local enterprise of the town). This is the first successful experience in all regions of operation of nuclear enterprises. A cooperation agreement was signed for the construction of a special cement plant with a capacity of more than 1 million tonnes per year, which will contribute to unlocking the region's social and economic potential, maximizing the use of human resources, infrastructural and transport capabilities of the existing production sites in the Zabaykalsky Territory.

4.1.3. Performance improvement (reduction of the cost of products and the lead time)

OVERALL SAVINGS FROM OPERATIONAL EFFICIENCY IMPROVEMENT MEASURES IN THE DIVISION FOR THE YEAR EXCEEDED RUB 850 MILLION. MORE SPECIFICALLY:

- The cost of backfilling operations, drilling operations and materials was reduced by 19.4%, 16.4% and 6.4% respectively through the introduction of technological solutions and optimization of longwall mining at PJSC PIMCU;
- JSC Khiagda and JSC Dalur reduced the amount of time required for well penetration and preparation of uranium reserves at new deposits.

4.1.4. Plans for 2017

IN 2017 AND SUBSEQUENT YEARS, THE COMPANY PLANS TO MAINTAIN URANIUM PRODUCTION AT A LEVEL OF ~3,000 TONNES PER YEAR. AS PART OF THE DEVELOPMENT OF NEW BUSINESSES, IN 2017, THE COMPANY PLANS TO START:

- Production of high-purity scandium oxides, to be followed by the start of production of aluminium-scandium alloys;
- The design and subsequent construction of a pyrite cinder processing plant (its start-up is scheduled for 2019).

Key performance indicators for 2017

Indicator	Target value
Full cost, RUB billion	15.9
Labour productivity, RUB million per person	3.1
LTIFR/reduction in the number of injuries at production sites of enterprises, including contractors (vs the 2016 baseline), %	0.54/30
Number of events rated at level 2 or higher on the INES scale	0

4.2. FUEL DIVISION²¹

The Fuel Division is responsible for uranium enrichment, development and manufacture of gas centrifuges and associated equipment, fabrication and sale (including export) of nuclear fuel and related non-nuclear products. The Division's holding company is JSC TVEL.

The Division produces fuel assemblies for all types of existing Russian power reactors, research and marine reactors, for PWR and BWR reactors in Western Europe in cooperation with AREVA. It also produces TVS-KVADRAT fuel developed by the Division for Western-design PWR reactors. Today, 75 reactors (one in every six reactors in the world) use nuclear fuel produced by the Division.

Key results in 2016:

- A number of contracts were concluded for the supply of Russian **TVS-KVADRAT** nuclear fuel for Western-design reactors;
- Long-term contracts were signed with European and American companies for **the supply of titanium products** and lithium metal;
- **Production of hafnium** was organized for the needs of the Russian economy as part of import substitution efforts.



Link between the Division's goals and the strategic goals of JSC Atomenergoprom

Strategic goals of JSC Atomenergoprom	Strategic goals of the Fuel Division			
	Growth on NFC markets	Development of the second business core	Performance improvement	Social and environmental acceptability
Increasing the share on international markets	✓			
Reduction of the cost of products and the lead time			✓	
Development of new products for the Russian and international markets	✓	✓		
Business environment				✓

²¹ For more information about the Division's results, see the report of JSC TVEL for 2016.

4.2.1. Results in 2016

In 2016, the Division met all contractual obligations to supply nuclear fuel to Russian and foreign customers.

AS PART OF THE WORK TO CREATE A NEW NUCLEAR FUEL FOR RUSSIAN NUCLEAR POWER PLANTS:

- A batch of third-generation fuel assemblies for Kola NPP was manufactured and delivered;
- Acceptance testing of REMIX fuel pellets²² intended for pilot operation at Balakovo NPP was completed. Combined pilot nuclear fuel assemblies started to be used in the core of one of the reactors;

²² In order to facilitate the processing of spent nuclear fuel from thermal-neutron reactors and reduce the risk of plutonium proliferation during spent nuclear fuel processing, it is proposed that uranium and plutonium be released together. As a result, the uranium-plutonium product recovered from spent nuclear fuel, from which other actinides and fission products have been removed, can be returned to the fuel cycle of thermal-neutron reactors after the addition of enriched natural uranium, taking into account compensation for uranium-236 and even plutonium isotopes. This new fuel was called REMIX.

- As part of the Proryv ('Breakthrough') Project aimed at closing the nuclear fuel cycle, acceptance tests of pilot nuclear fuel assemblies with mixed nitride uranium-plutonium (MNUP²³) fuel for the BN-600 reactor were completed (see also the section 'Research and Innovations').

IN THE REPORTING YEAR, A NUMBER OF CONTRACTS WERE CONCLUDED FOR THE SUPPLY OF RUSSIAN NUCLEAR FUEL FOR WESTERN-DESIGN PWR REACTORS (WHICH MAKE UP MORE THAN HALF OF THE TOTAL NUMBER OF OPERATING REACTORS WORLDWIDE):

- An agreement was signed between JSC TVEL and Global Nuclear Fuel-Americas (GNF-A) on the formation of a strategic alliance to organize joint licensing, marketing and fabrication of fuel for PWR reactor operators in the United States. In addition, the first contract for the pilot use of Russian TVS-KVADRAT fuel was signed between JSC TVEL and a US NPP operator;
- A contract was signed between JSC TVEL and Vattenfall Nuclear Fuel AB (Sweden) for the commercial supply of TVS-KVADRAT nuclear fuel for Ringhals NPP in Sweden.

In 2016, a new-generation gas centrifuge for uranium enrichment was successfully tested. Its introduction will reduce the cost per separative work unit and will have a significant economic impact. The start of serial production is scheduled for 2017.

Achievement of key performance indicator targets	Indicator	2015	2016 target value	2016 actual value
	Semi-fixed costs, RUB billion	35.9	40.2	36.9
	Labour productivity, RUB million per person	8.4	8.1	8.25
	10-year portfolio of overseas orders, USD billion	10.3	9.8	10.1
	Overseas revenue, USD million	1,608.9	1,383.0	1,415.0
	Revenue of the Division from new products within and outside ROSATOM's scope on a competitive basis, RUB billion	4.2	6.8	7.17
	LTIFR	0.14	0.34	0.09
	Number of events rated at level 2 or higher on the INES scale	0	0	0

4.2.2. Development of new products and new businesses

DURING THE REPORTING YEAR, THE FUEL DIVISION MADE SIGNIFICANT PROGRESS IN PRODUCING AND SELLING HIGH-TECH METAL PRODUCTS:

- JSC Chepetsky Mechanical Plant, a company within the Division, signed a five-year contract worth RUB 2 billion with a large European metal trader (Hermitz GmbH) for the supply of titanium products;
- PJSC Novosibirsk Chemical Concentrates Plant (NCCP), a company within the Division, signed a five-year contract with the European company Rockwood Lithium (a subsidiary of Albermarle Company) for the annual supply of lithium metal;
- The first Russian high-tech hafnium production facilities were established. Hafnium is used in the metals, nuclear power, defence and electronics industries. Thus, the objective of fully substituting imported hafnium and meeting the needs of the Russian economy has been achieved.

²³ This fuel is denser than oxide fuel and will significantly improve the efficiency of the use of natural uranium in the nuclear power industry. MNUP fuel is regarded as a promising fuel for BREST-OD-300, BN-1200 and BR-1200 fast-neutron reactor units, which are currently being designed.

4.2.3. Performance improvement (reduction of the cost of products and the lead time)

In 2016, more than 142,000 proposals for improvements were submitted in the Fuel Division. Implementation of these proposals resulted in savings of RUB 378 million. Over 1,300 RPS projects were introduced to reduce the lead time and increase operational efficiency. Overall savings from these projects exceeded RUB 1.5 billion.

Best RPS projects of the Fuel Division in 2016

Company within the Division	Project	Results
PJSC NCCP	Optimization of VVER-1000 NFA production management	– The lead time has been reduced by 34%, – Work in process has been reduced by 30%
JSC PA ECP	Improving the performance of a gas centrifuge cascade	– The lead time has been reduced by 20%, – The downtime of main equipment has been reduced by 15%, – The cost of products was reduced by RUB 12 million (in the reporting year).
JSC SCC	Reduction of inventories	Inventories have been reduced by RUB 729 million.

4.2.4. Plans for 2017

- To develop the TVS-2006 design with improved thermomechanical properties for Russian nuclear power plants;
- To complete the pilot operation of third-generation fuel assemblies in power unit No. 4 of Kola NPP;
- To introduce a vibration resistant assembly with fuel produced from regenerated uranium in power unit No. 4 of Novovoronezh NPP and power unit No. 1 of Kola NPP.

Key performance indicators for 2017

Indicator	Target value
Semi-fixed costs, RUB billion	38.5
Labour productivity, RUB million per person	8.5
LTIFR	0.3
Number of events rated at level 2 or higher on the INES scale	0

4.3. MECHANICAL ENGINEERING DIVISION ²⁴

The Mechanical Engineering Division (its holding company is JSC Atomenergomash) is one of Russia's largest groups of mechanical engineering enterprises (27% of the market) offering a full range of solutions for the design, manufacture and supply of equipment for the nuclear and thermal power industry, the gas and petrochemical industry, shipbuilding and the special steel market.

Key results in 2016:

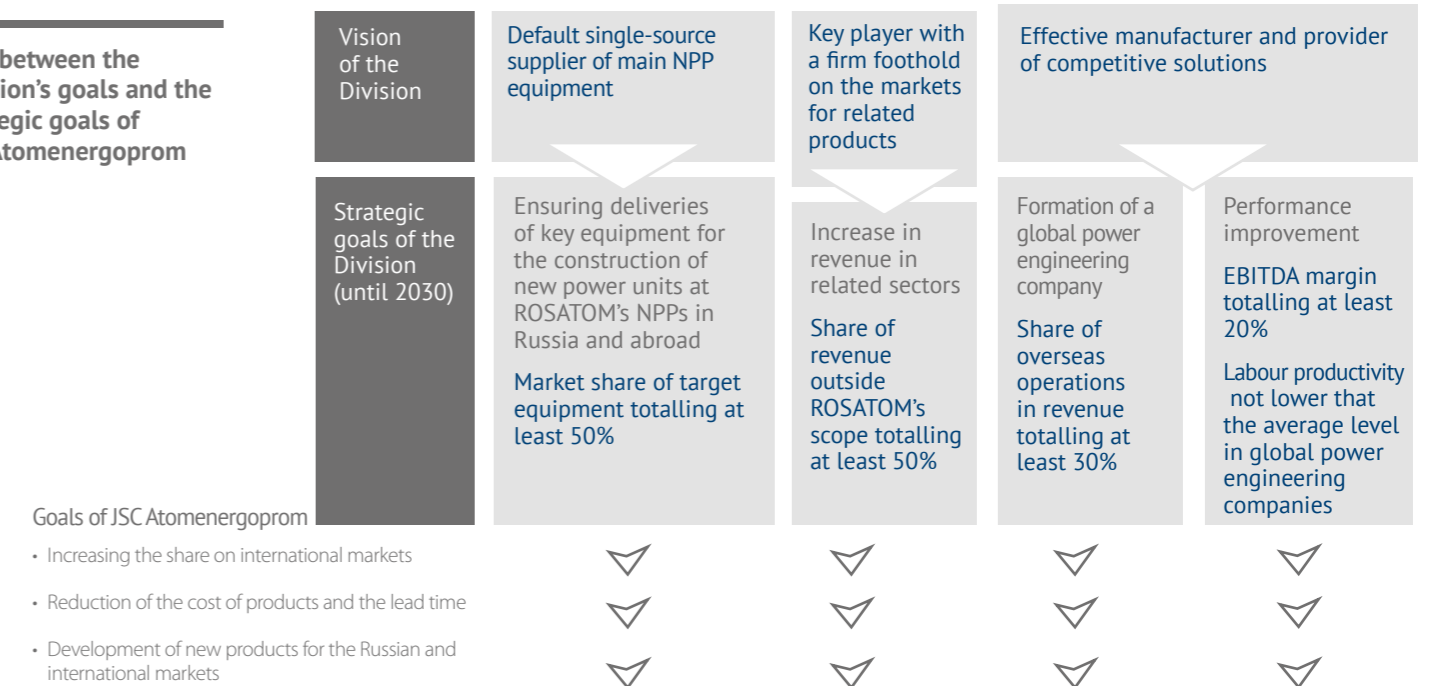
- EBITDA **increased threefold** (compared to 2015) to RUB 6.7 billion;
- The order portfolio reached **RUB 420.3 billion** (with new products accounting for 47% of the portfolio);
- Labour productivity increased by **25%.**



The Division controls the entire production chain of key equipment for the nuclear island and the turbine hall, from R&D and the release of detailed engineering designs to process engineering and manufacture of equipment.

The Division comprises more than 20 power machine engineering enterprises, including manufacturing, research, service and engineering organizations located in Russia, Ukraine, the Czech Republic and Hungary.

Link between the Division's goals and the strategic goals of JSC Atomenergoprom



²⁴ For more information about the Division's results, see the report of JSC Atomenergomash for 2016.

4.3.1. Results in 2016

In 2016, a reactor vessel for the Belarusian nuclear power plant, which is currently under construction, was built ahead of schedule by the Division's enterprises.

The innovative generation 3+ power unit No. 1 was put into operation at Novovoronezh NPP-2. Key equipment for the power unit was supplied by the Mechanical Engineering Division (*see the section 'Engineering Division'*).

IMPORTANT INTERNATIONAL AGREEMENTS WERE SIGNED WITH THE FOLLOWING COMPANIES:

- An agreement on cooperation in the energy and oil and gas industries with JSC National Company Kazakhstan Engineering;
- A supplement to the licensing agreement with the European company NEM Energy b.v. on cooperation in the field of engineering of waste heat boilers.

In 2016, a new business, Clean Water, was formed within the Mechanical Engineering Division. It will implement projects involving water treatment, water purification and desalination for industry and the housing and utilities sector.

In addition, in 2016, it was decided to choose JSC Atomenergomash as an integrator for a new business area, Optimized Floating Power Units, and to form a project office.

Achievement of key performance indicator targets	Indicator	2015	2016 target value	2016 actual value
	Semi-fixed costs, RUB billion	23.45	22.7	19.98
	Labour productivity, RUB million per person	2.9	4.1	3.7 ²⁵
	10-year portfolio of overseas orders, USD million	129	77	149
	Overseas revenue, USD million	122	128	121 ²⁶
	Revenue of the Division from new products within and outside ROSATOM's scope on a competitive basis, RUB billion	17.1	25.9	27.7
	LTIFR	0.42	0.54	0.25
	Number of events rated at level 2 or higher on the INES scale	0	0	0

4.3.2. Development of new products and new businesses

In 2016, the Division won a tender for the installation of a unit for the distillation of salt-containing effluents for PJSC SIBUR Holding. The technology presented by the Division was chosen as the best option in terms of

²⁵ The target for the indicator was not achieved due to rescheduling and a shortfall in revenue from long-lead equipment in a number of nuclear power projects.

²⁶ The shortfall in revenue under foreign contracts was due to the postponement and/or failure to conclude certain unplanned contracts with foreign customers.

the set of technical parameters and cost over the entire life cycle. It will be used at the petrochemical plant that is currently under construction in Tobolsk for hydrocarbon processing.

The Volgodonsk branch of the Division continued to manufacture columns for three refineries.

The first contract was signed for the supply of a container type mini HPP for International Energy Company (Georgia). Under the contract, the power plant will be delivered in the first half of 2017.

The Mechanical Engineering Division built the first Russian industrial 3D printer using metal powder as feedstock. 3D printing of metal products will enable a transition to a new stage: 'digital' manufacturing covering the entire cycle, from engineering design to the finished product. It will also help to reduce costs and improve product reliability. Experts predict that over the next few years the volume of the global additive manufacturing market will exceed USD 12 billion.

4.3.3. Performance improvement (reduction of the cost of products and the lead time)

During the reporting year, the Division continued to work to reduce the lead time for key NPP equipment and inventories.

The lead time for a steam generator for NPPs was reduced from 877 to 488 days. One of the key organizations of the Division, JSC Afrikantov OKBM, reduced the inventory and work-in-process turnover period from 250 to 95 days.

4.3.4. Plans for 2017

STRATEGIC PRIORITIES OF THE DIVISION IN 2017:

- To improve production efficiency, including through further implementation of ROSATOM's Production System;
- To ensure timely fulfilment of all contractual obligations;
- To boost revenue across all business areas;
- To implement the import substitution programme and develop new types of equipment for the nuclear industry and for the state defence order

Key performance indicators for 2017

Indicator	Target value
Semi-fixed costs, RUB billion	34.8
Labour productivity, RUB million per person	4.4
LTIFR /decrease in the severity of injuries at production sites of enterprises, including contractors (vs the 2016 baseline), %	0.42/25
Number of events rated at level 2 or higher on the INES scale	0

4.4. ENGINEERING DIVISION ²⁷

In 2016, the formation of the Engineering Division was completed. Now it is one of the leaders of the global nuclear engineering business. The Division comprises 22 organizations, including major design institutes in Moscow, Saint Petersburg and Nizhny Novgorod. Its holding company is JSC ASE EC (the Division operates on the international market under the ASE brand name).

Key results in 2016:

- The first criticality programme and the power start-up of power unit No. 1 of Novovoronezh NPP-2 equipped with the world's first generation **3+** reactor were completed;
- As of December 31, 2016, **8 power units of NPPs*** were under construction in Russia;
- A contract for the creation of an information resource to monitor the implementation of the **Moscow-Kazan** High-Speed Railway project was signed with a strategic customer, JSC High-Speed Rail Lines, a subsidiary of OJSC Russian Railways.



THE DIVISION PROVIDES SERVICES RELATED TO THE MANAGEMENT OF PROJECTS INVOLVING THE CONSTRUCTION AND MODERNIZATION OF COMPLEX ENGINEERING FACILITIES, INCLUDING THE DESIGN AND CONSTRUCTION OF:

- nuclear power plants;
- research reactors;
- facilities for radioactive waste and spent nuclear fuel management.

Link between the Division's goals and the strategic goals of JSC Atomenergoprom



²⁷ For more information about the Division's results, see the report of JSC ASE EC for 2016.

4.4.1. Results in 2016

NPP CONSTRUCTION IN RUSSIA

- **Rostov NPP, power unit No. 4**
 - Installation of the main circulation pipe was completed;
 - Installation of pressurizer piping was completed.
- **Novovoronezh NPP-2**
 - *Power unit No. 1.* In May 2016, as part of the first criticality programme, power unit No. 1 of Novovoronezh NPP-2 reached the minimal controllable power level. In August 2016, the power unit was connected to the grid and started electricity generation for Russia's power system. This is the first generation 3+ leading power unit at the NPP which marks the next stage in the evolution of VVER designs and complies with all post-Fukushima safety requirements. Due to an unscheduled shutdown following the failure of a generator (and its subsequent replacement), the start of commercial operation of the power unit was postponed from the end of 2016 to the first quarter of 2017²⁸.

²⁸ The power unit was put into commercial operation on February 27, 2017.
 * Excluding power units No. 3 and 4 of Leningrad NPP-2, for which there was no building permit.

— *Power unit No. 2.* The welding of the main circulation pipe was completed in record time (72 days, compared to 96 days at Rostov NPP);
The concreting of the containment building dome was completed.

- **Kursk NPP-2**

- The Russian Federal Service for Environmental, Technological and Nuclear Supervision (Rostekhnadzor) issued a licence for the construction of power units No. 1 and 2 and a permit for the NPP construction;
- Excavation of a pit for power units No. 1 and 2, the laying of utility lines and construction of an electrical substation were underway.

For information on the Division's results in the sphere of NPP construction abroad, see the section 'International Business'.

Achievement of key performance indicator targets

Indicator	2015	2016 target value	2016 actual value
Labour productivity (based on the Division's own revenue), RUB million per person	3.05	3.29	3.30
10-year portfolio of overseas orders, USD billion	70.05	92.7	92.3
The Division's 10-year portfolio of orders for new products within and outside ROSATOM's scope, RUB billion	90.6	79.6	115.9
Number of events rated at level 2 or higher on the INES scale	0	0	0

4.4.2. Development of new products and new businesses

BY 2030, THE SHARE OF NEW BUSINESSES IN THE DIVISION'S REVENUE SHOULD REACH 30%. THE DIVISION CONTINUES TO GIVE PRIORITY TO GROWTH OPPORTUNITIES IN MARKET SEGMENTS RELEVANT TO THE CORE BUSINESS:

- Construction of research reactors (project to build a research centre in Bolivia, *see also the section 'International Business'*);
- RAW, SNF and hazardous industrial waste management facilities (in 2016, a contract was concluded for the delivery of equipment to a hazardous industrial waste treatment plant in the UAE, *see also the section 'International Business'*);
- Project management (PMC) services (a contract for the creation of an information resource to monitor the implementation of the Moscow-Kazan High-Speed Railway project was signed with a strategic customer, JSC High-Speed Rail Lines, a subsidiary of OJSC Russian Railways);
- Life extension services (work is underway at Balakovo, Kursk, Novovoronezh and Smolensk NPPs).

4.4.3. Performance improvement (reduction of the cost of products and the lead time)

In order to ensure the efficiency of construction of NPPs and other large permanent structures, the Division uses an information platform for project management based on Multi-D technology. Multi-D is an automated system for generating and issuing statements of work, managing and providing information on the progress of construction in terms of logistics, human resources, the timing of project execution, planning, monitoring and visualization of work on the construction site.



SINCE THE INTRODUCTION OF MULTI-D

- THE LEAD TIME AT POWER UNITS NO. 3 AND 4 OF ROSTOV NPP HAS BEEN REDUCED BY 100 DAYS;
- THE AMOUNT OF TIME REQUIRED FOR OBTAINING CUSTOMER APPROVAL OF DOCUMENTS AS PART OF THE PROJECT TO BUILD THE BELARUSIAN NUCLEAR POWER PLANT HAS BEEN REDUCED THREEFOLD.

4.4.4. Plans for 2017

The priority of the Engineering Division is to ensure that its NPP construction projects in Russia and abroad are implemented on time and on budget and fully comply with safety requirements.

As part of the development of new businesses, in 2017, the Division plans to actively promote PMC services related to managing the life cycle of permanent structures by scaling up project management tools based on Multi-D technology beyond the NPP construction segment.

Key performance indicators for 2017

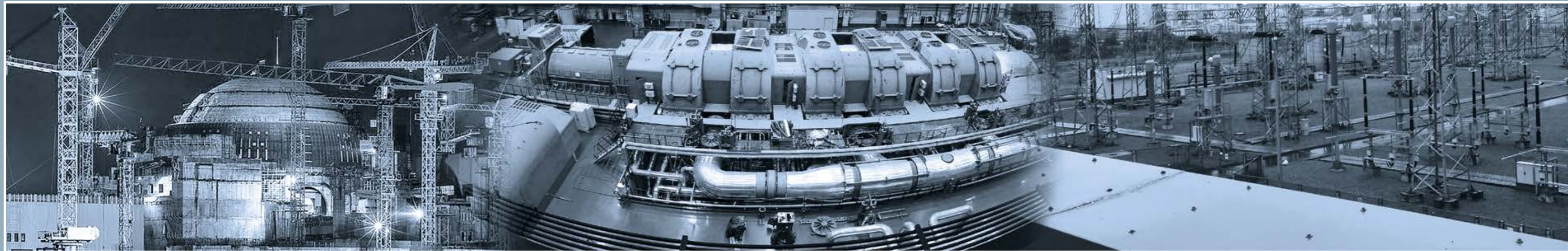
Indicator	Target value
Labour productivity, RUB million per person	3.7
Number of events rated at level 2 or higher on the INES scale	0

4.5. POWER ENGINEERING DIVISION²⁹

The Power Engineering Division generates electricity and heat at nuclear power plants and acts as the operator of all Russian nuclear power plants. JSC Rosenergoatom Concern, the Division's holding company, is the largest company in Russia in terms of the volume of generation and ranks second in the world in terms of installed capacity.

Key results in 2016:

- Power generation by Russian nuclear power plants reached a new all-time high and totalled **196.4 billion kWh** (this is comparable to electricity consumption in Moscow and the Moscow Region over two years);
- Installed capacity of **10** Russian nuclear power plants (35 power units) totalled 27.1 GW* ;
- The NPP capacity factor stood at **83.1%**.



4.5.1. Results in 2016

Electricity output at 35 power units of 10 operating NPPs totalled 196.4 billion kWh, reaching a new all-time high in the history of Russian nuclear power generation (in 2015, electricity output totalled 195.2 billion kWh).

The NPPs' capacity factor amounted to 83.1%. Nuclear power generation accounted for 18.3% of the total electricity output in Russia.

COMMISSIONING OF NEW POWER UNITS IN RUSSIA

In October 2016, the innovative power unit No. 4 of Beloyarsk NPP with a BN-800 reactor started full-scale operation. This power unit has become a research test facility for the development of 'fast' reactor technologies and new types of fuel. The BN-800 project has received wide acclaim at an international level: the US energy magazine *POWER* named power unit No. 4 of Beloyarsk NPP the top power plant of the year.

Link between the Division's goals and the strategic goals of JSC Atomenergoprom

CORE BUSINESSES OF JSC ROSENERGOATOM CONCERN IN RELATION TO THE STRATEGIC GOALS OF JSC ATOMENERGOPROM

New products for the Russian and international markets

Maintenance services for different types of generating facilities

Manufacture of isotope products

Development of data centres

Sales of electricity

Decommissioning of NPP power units and radioactive waste management

Reduction of the cost of products and the lead time

Improvement of the efficiency of NPP construction

Modernization of equipment

Operational improvements: maintenance, repairs, personnel, procurement

Increasing the share on international markets

Decommissioning of NPP power units

Services for the establishment and development of nuclear infrastructure

Maintenance services throughout the entire life cycle of nuclear power plants

²⁹ For more information about the Division's results, see the report of JSC Rosenergoatom Concern for 2016.

* Excluding power unit No. 1 of Novovoronezh NPP-2, which was at the stage of pilot operation as of December 31, 2016

FLOATING NUCLEAR POWER PLANT

The Division continued to build a floating thermal nuclear power plant with an installed capacity of 70 MW to be subsequently placed in the town of Pevek, Chukotka Autonomous District. By December 31, 2016, the floating power unit had been prepared for the loading of nuclear fuel. The floating power unit is scheduled to be delivered, secured at the place of normal operation in the town of Pevek and connected to external power grids in 2019.

Achievement of key performance indicator targets

Indicator	2015	2016 target value	2016 actual value
Nuclear power generation, billion kWh	195.2	196.7	196.4
Unit semi-fixed costs, RUB '000/MW	1,955	1,743	1,670
Index of implementation of the Division's investment programme, %	99.75	100	98.6
Labour productivity, RUB million per person	6.35	6.88	7.04
Revenue of the Division from new products within and outside ROSATOM's scope on a competitive basis, RUB billion	57.9	51.9 ³⁰	56.1
LTIFR	0.02	0.15	0.065
Number of events rated at level 2 or higher on the INES scale	0	0	0

4.5.2. Development of new products and new businesses

In 2016, the Division continued to cooperate with the Moscow Regional Centre of the World Association of Nuclear Operators (WANO MC):

- 15 representatives of ROSATOM participated in WANO peer reviews (PRs), with 3 representatives of ROSATOM participating in PRs of WANO's regional centres (Tokyo and Atlanta Centres of WANO);
- 18 Technical Support Missions were carried out in the Corporation's organizations;
- 279 representatives of ROSATOM participated in activities forming part of the Professional and Technical Development Programme.

DURING THE REPORTING YEAR, THE DIVISION ACTIVELY DEVELOPED NEW BUSINESS AREAS:

- NPP servicing abroad (*for details, see the section 'International Business'*);
- Isotope products for nuclear medicine and industry (*for more details, see the section 'Business Diversification'*);
- Repair and maintenance of major industrial facilities (in 2016, contracts were concluded with JSC Kola Mining and Metallurgical Company (Kola MMC), JSC Kovdor Mining and Processing Plant (Kovdor GOK) and FSUE Atomflot);
- Sales of electricity in the capacity of the 'supplier of last resort' in the Kursk, Tver, Smolensk and Murmansk Regions;
- The project to build a data centre at Kalinin NPP (a long-term contract with PJSC Rostelecom for most of the Centre's racks has been concluded).

³⁰ The target value was adjusted for a change in the scope of consolidation (JSC Atomenergopromsbyt and the business area focusing on automated technology process management systems have been transferred to another division of ROSATOM).

4.5.3. Performance improvement (reduction of the cost of products and the lead time)

In the reporting year, the duration of the repair of NPP power units was reduced by 107 days, which enabled additional generation of 1 billion kWh of electricity.

Work was done to restore the long-term performance of graphite stacks of RBMK-1000 reactors using improved technology at the power units of Leningrad and Kursk NPPs, which will significantly extend their life.

The Russian Federal Service for Environmental, Technological and Nuclear Supervision (Rostekhnadzor) granted permission for an increase in the heat generation capacity of reactors to 104% of the rated capacity in pilot operation mode for power unit No. 3 of Rostov NPP and in commercial operation mode for power unit No. 3 of Balakovo NPP. Thus, by December 31, 2016, all 11 of the VVER-1000 power units participating in the installed capacity expansion programme had been authorized to operate at 104% of the rated capacity.

4.5.4. Plans for 2017

COMMISSIONING OF NEW POWER UNITS IN RUSSIA:

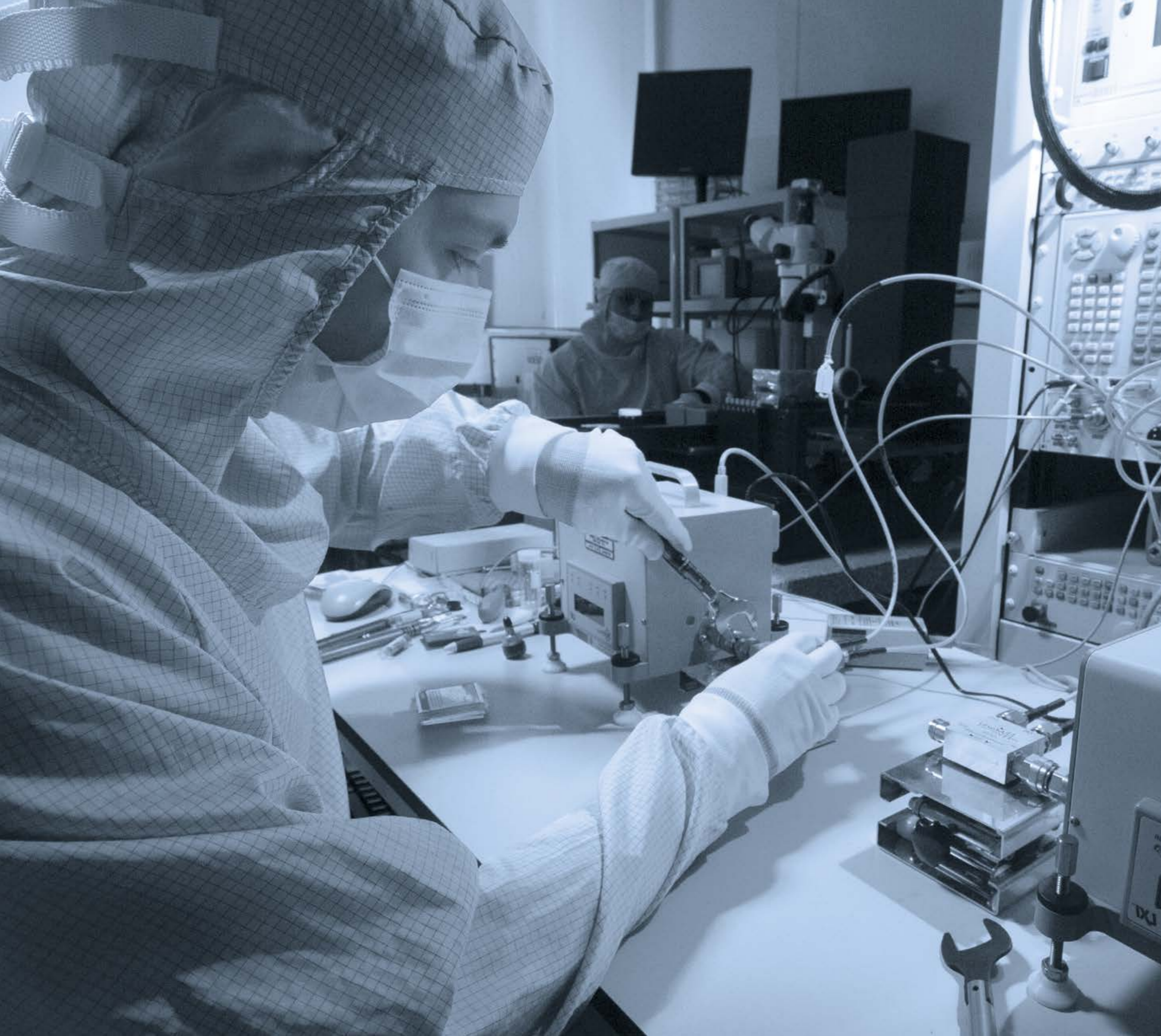
- Start of commercial operation of power unit No. 1 of Novovoronezh NPP-2;
- First criticality programme at power unit No. 1 of Leningrad NPP-2 and at power unit No. 4 of Rostov NPP.

As part of performance improvement efforts, in 2017, the Division will launch an optimization programme for facilities that have not been used for over two years and construction in progress/equipment inventories (construction in progress needs to be reduced by RUB 19.5 billion).

Key performance indicators for 2017

Indicator	Target value
Nuclear power generation, billion kWh	201.1
Unit semi-fixed costs, RUB '000/MW	1,776 ³¹
Index of implementation of the Division's investment programme, %	100
Labour productivity, RUB million per person	8.5
LTIFR	0.15
Number of events rated at level 2 or higher on the INES scale	0

³¹ The target value for 2017 is greater than the target for 2016 due to the additional cost of implementing and maintaining corporate information systems across all branches of the Division and an increase in the scope of repairs of power units.



CONTRIBUTION TO STRATEGY IMPLEMENTATION: INNOVATIONS AND NEW PRODUCTS

5.1. Research and Innovations

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5.2. Business Diversification

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5.1. RESEARCH AND INNOVATIONS

JSC Atomenergoprom is a global leader in the development of innovative technologies for nuclear power and related industries.

Key results in 2016:

A new Innovative Development Programme was launched;

- Production of microspheres for brachytherapy was organized with a **capacity of 50,000 sources per year**



5.1.1. New Innovative Development Programme

IN 2016, A NEW INNOVATIVE DEVELOPMENT AND TECHNOLOGICAL MODERNIZATION PROGRAMME WAS LAUNCHED IN THE RUSSIAN NUCLEAR INDUSTRY. THE PROGRAMME IS AIMED AT ACHIEVING THE FOLLOWING THREE STRATEGIC GOALS (for details, see the section 'Business Strategy until 2030'):

- An increase of the Company's share on international markets;
- Development of new products for the Russian and international markets;
- Reduction of the cost of products and the lead time.

In 2016, over 80 technological projects were implemented as part of the Programme; their aim was to upgrade existing technologies and develop new technologies for both energy and non-energy markets.

Over 200 organizations, including 35 universities, 14 academic institutes and 50 third-party research organizations, were engaged in the implementation of the Programme, including R&D and implementation of project deliverables.

5.1.2. Proryv (Breakthrough) Project aimed at closing the nuclear fuel cycle

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

In 2016, an engineering design of the sodium-cooled BN-1200 reactor, which is intended for large-scale commercial use, was developed.

Reactor tests of mixed nitride uranium-plutonium (MNUP) fuel in a BOR-60 research reactor and a BN-600 power reactor were continued successfully.

In 2017, the Company plans to complete the development of conceptual designs of industrial energy facilities using BREST-1200 and BN-1200 reactors and to continue to conduct R&D to validate technologies under development.

In the sphere of capital construction, in 2016, the Company continued to build the MNUP fuel fabrication and refabrication module (FRM) at JSC SCC and manufacture equipment for the FRM. In 2017, the Company plans to make adjustments to engineering designs for the FRM and BREST-OD-300 reactors.

5.1.3. Nuclear medicine

2016 was a breakthrough year for the development of projects in the sphere of nuclear medicine. The decision was made to establish Rusatom Healthcare, which will promote nuclear medicine technology and radiation technology for irradiation and sterilization centres in Russia and abroad.

Production of microspheres was launched with a capacity of 50,000 microspheres per year. At the same time, specialists at JSC SSC RF-IPPE were developing approaches to adjusting the range of microspheres to be produced for brachytherapy of other organs in the future.

Brachytherapy is a form of radiotherapy for prostate cancer. During the treatment, the maximum radiation dose is delivered directly to the tumour without damaging adjacent tissues or organs. Brachytherapy is usually performed on an outpatient basis or during a short hospital stay lasting a few days. Most patients who have undergone brachytherapy do not suffer a relapse for 10 years on average.

A long-term contract was signed for the supply of the cobalt-60 isotope to a Canadian company Nordion. Highly radioactive cobalt is in demand on the global market and is used for cancer treatment and stereotactic surgery. To carry out the contract, the Company has developed and is implementing a project to produce cobalt-60 in RBMK reactors at Smolensk and Kursk NPPs, in addition to existing production at Leningrad NPP.

Sales of molybdenum-99 (Mo-99), the most popular radioisotope for the diagnosis and treatment of cancer, increased by 68% year on year. As a result, the share of JSC Atomenergoprom on the international Mo-99 market reached almost 5%.

5.1.4. Carbon fibre

One of the Company's organizations, JSC RPC Khimpromengineering (forming part of UMATEX Group), is Russia's largest producer of carbon fibre and composite materials based on it. The company has been established in order to develop the Russian market of composite materials, enable full-scale import substitution and develop high-technology products that are competitive on the global market. In Russia, the company runs an R&D centre and three factories producing carbon fibre and composite products in the Republic of Tatarstan and the Saratov and Chelyabinsk Regions. The largest factory is situated in the Alabuga special economic zone (Tatarstan); its production capacity exceeds 1,400 tonnes of carbon fibre per year. The R&D centre comprises capabilities in the sphere of research, development and improvement of technologies for the production of polyacrylonitrile (PAN) precursor and carbon fibre based on it.

In 2016, exports of Russian-manufactured carbon fibre exceeded 300 tonnes. Distribution channels were established in 11 countries, including trading houses in the Czech Republic and China. The company started commercial production of a number of new products that can compete against industry leaders in terms of quality and price. In addition, a project was approved to build a PAN production plant with a capacity of 5,000 tonnes per year.

Carbon fibre is a high-technology material that is widely used in the nuclear industry, aerospace engineering, shipbuilding, wind power, construction, health care and the manufacture of consumer goods (ranging from furniture to golf clubs). PAN precursor is used as feedstock for carbon fibre production. This is the most valuable and carefully protected technology in the production chain.

5.2. BUSINESS DIVERSIFICATION³²

The development of new businesses and new products makes it possible to use the expertise and technologies of the 'nuclear project' in civilian industries, ensure production capacity utilization, employ a greater number of highly qualified specialists and increase labour productivity and return on assets. The Company works consistently towards expanding its areas of business using its intellectual and production capabilities, opportunities for import substitution and innovative development as a foundation for high-quality growth.

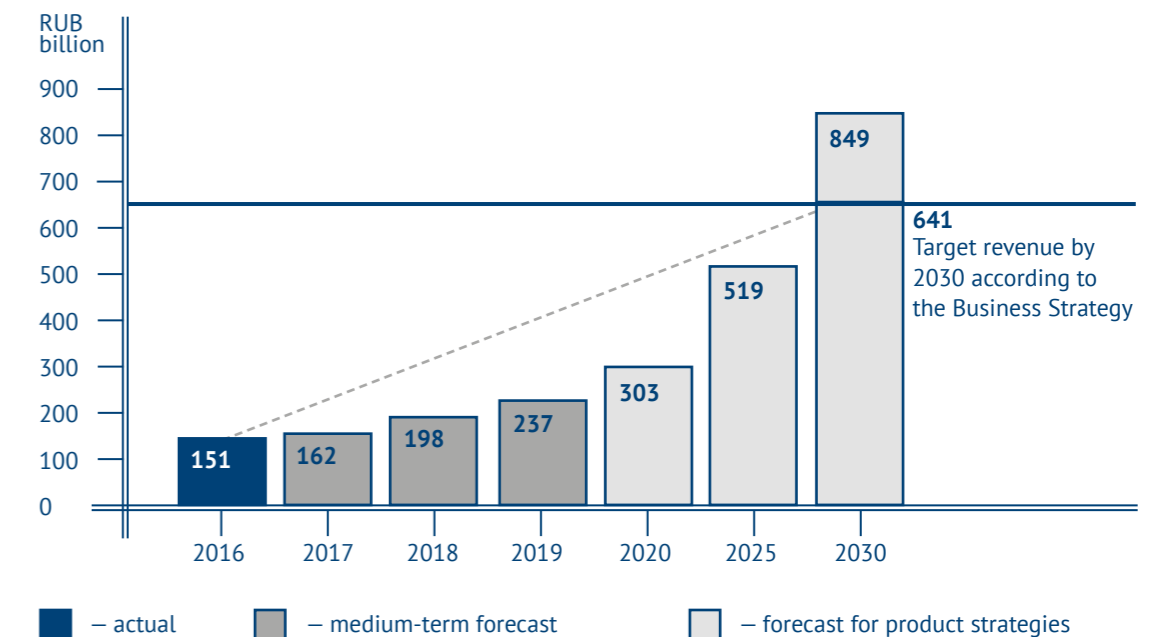
Key results in 2016:

- Revenue from new products within and outside the scope of the industry totalled **RUB 190.8 billion** (as against RUB 125 billion in 2015), making up 17.2% of the total revenue;
- The 10-year order portfolio for new products within and outside the scope of the industry reached **RUB 1,018.8 billion** (as against RUB 583.5 billion in 2015).

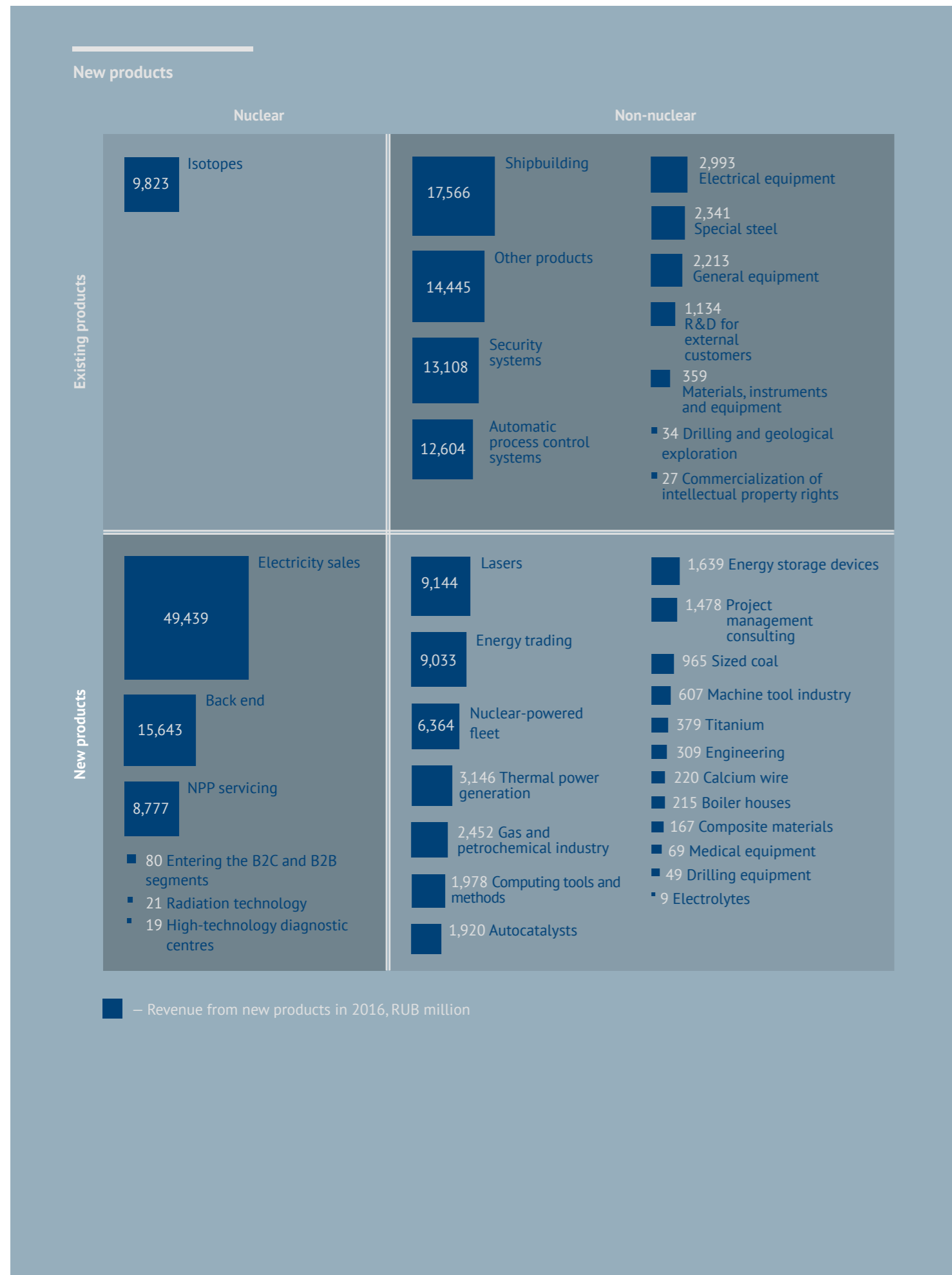


According to the strategic goal, by 2030 revenue from new products should make up at least 30% of the total revenue. Accordingly, key performance indicators of new businesses include an increase in revenue from the sales of new products and maintaining the size of the 10-year order portfolio in order to achieve the strategic goal.

Revenue from new products outside the scope



³² The section provides information on the Russian nuclear industry as a whole.



5.2.1. Results in 2016

In the reporting year, revenue from new products (including intra-group turnover) totalled RUB 190.8 billion, which is 28% above the target (RUB 149 billion) and 53% higher than in 2015 (RUB 125.0 billion). The 10-year order portfolio (including intra-group turnover) reached RUB 1,018.8 billion, which is 69% above the target (RUB 603.8 billion) and 75% more than in 2015 (RUB 583.5 billion).

In 2016, new products accounted for 17.2% of the total revenue of ROSATOM ³⁵.

5.2.2. Plans for 2017

In 2017, the key objective in the sphere of development of new businesses is to generate revenue and secure new orders outside the nuclear industry. The Company plans to earn revenue totalling RUB 161.8 billion (excluding intra-group turnover), while the 10-year order portfolio should reach RUB 714.2 billion (excluding intra-group turnover).

AN IMPORTANT OBJECTIVE IN 2017 IS TO CONSOLIDATE ALL INDUSTRY RESOURCES IN THE MOST PROMISING BREAKTHROUGH BUSINESSES. PROMISING BUSINESSES ARE BUSINESSES THAT MEET THE FOLLOWING CRITERIA OVER THE STRATEGIC TIME HORIZON (BY 2030):

- The market will become globally significant and noticeable;
- At present, the market does not exist or it does not have generally accepted, established technological standards;
- The market is focused primarily on the needs of people as end users (priority of B2C over B2B);
- The market is important for the Russian Federation in terms of meeting basic needs and ensuring security;
- There are opportunities for gaining competitive advantages and capturing a considerable market share;
- Revenue is comparable to that of conventional businesses.

Promising areas in nuclear power include the Proryv project. It is aimed at closing the nuclear fuel cycle using fast neutron reactors, which will help to unlock the power generation potential of uranium materials. The project will enable the Corporation to assert its leadership on the market for nuclear technologies and services during the next 30 years (see also the section 'Research and Innovations').

APART FROM THE PRORYV PROJECT, NEW PROMISING BUSINESSES ALSO INCLUDE THE FOLLOWING:

- Low-power NPPs;
- Nuclear fuel cycle back-end and decommissioning technologies;
- Alternative power generation methods;
- Additive manufacturing;
- Radiation technologies for health care and industry;
- Artificial intelligence and robotics;
- Energy storage devices;
- Clean water (desalination, water treatment and purification);
- Superconductors, etc

The Company finances the projects of new businesses using its own funds available for investment and raises loans from the country's leading financial institutions.

³⁵ Excluding intra-group turnover.



CONTRIBUTION TO STRATEGY IMPLEMENTATION: EFFICIENT CORPORATE PROCESS MANAGEMENT

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6.1 CORPORATE GOVERNANCE

JSC Atomenergoprom exercises its shareholder powers with regard to organizations in the nuclear industry in accordance with the applicable Russian corporate legislation. Since it holds 100% of JSC Atomenergoprom's voting shares, ROSATOM influences all of the shareholder's decisions. Thus, JSC Atomenergoprom's main goal with regard to organizations in the nuclear industry is to improve their performance in order to help to achieve the strategic objectives of ROSATOM.

Board of Directors of JSC Atomenergoprom

Members of JSC Atomenergoprom's Board of Directors during the period from January 1, 2016 through December 31, 2016 (elected on June 29, 2015 and re-elected on June 28, 2016):

1. Kirill Komarov;
2. Ekaterina Lyakhova, Chair of the Board of Directors;
3. Andrey Popov;
4. Ilya Rebrov;
5. Vladislav Korogodin.



6.1.1. Objectives, principles and mechanisms of corporate governance

PRINCIPLES AND MECHANISMS OF CORPORATE GOVERNANCE:

- Standardization of governance in the organizations in the Russian nuclear power sector, organizations of various legal forms specializing in nuclear and radiation safety, nuclear science and technology and personnel training, with due regard to the special characteristics of each enterprise and organization;
- Removal of non-operating and inactive companies from the nuclear industry and elimination of redundant corporate ownership levels;
- Avoidance of overloading corporate governance bodies of these organizations with excessive tasks; transferring 'optional' issues to the horizontal level based on regulatory documents adopted in the industry with regard to various business processes;
- A division-based management model within the civilian part of the nuclear industry, which involves having core business divisions (Mining, Fuel, Mechanical Engineering, Power Engineering, Engineering, etc.) and a number of business incubators and industrial complexes whose holding companies own/manage various organizations of the nuclear industry depending on the nature of their business.

6.1.2. Governing bodies

INFORMATION ON MEMBERS OF THE BOARD OF DIRECTORS

Kirill Komarov
Date of birth: December 29, 1973
Place of birth: Leningrad
Education: university degree

Graduated with honours from the Legal Lyceum under the Ural State Law Academy in 1992. Graduated with honours from the Faculty of Judicial Activity and Prosecution of the Ural State Law Academy in 1997. Holds a PhD degree in Law.

Positions held over the last five years:

2010 – present – Executive Director of the Directorate for the Nuclear Power Complex, ROSATOM; Deputy CEO, Director of the Development and International Business Unit; First Deputy CEO, Director of the Development and International Business Unit, ROSATOM, simultaneously holding the position of Director of JSC Atomenergoprom.

He does not own the Company's shares.

Ekaterina Lyakhova**Date of birth:** June 7, 1975**Place of birth:** Sverdlovsk**Education:** university degree

Graduated from the Ural State Law Academy; holds an EMBA degree from the Universitet Antwerpen Management School.

Positions held over the last five years:

2010–2011 – Vice President of JSC TVEL.

2011 – present – Deputy Director of JSC Atomenergoprom, Director for Investment Management and Operational Efficiency at ROSATOM.

She does not own the Company's shares.

Andrey Popov**Date of birth:** March 3, 1971**Place of birth:** Leningrad**Education:** university degree

Graduated from Saint Petersburg State University.

Positions held over the last five years:

2009 – present – Director of the Department for Legal Issues and Corporate Governance, Director for Legal Issues, Corporate Governance and Property Management; Director of the Department for Legal Issues and Corporate Governance of ROSATOM.

He does not own the Company's shares.

Ilya Rebrov**Date of birth:** October 10, 1976**Place of birth:** Leningrad**Education:** university degree

Graduated from Saint Petersburg State Technical University.

Positions held over the last five years:

2010 – present – Director of the Economics and Financial Controlling Department, Economics and Finance Director, ROSATOM.

He does not own the Company's shares.

Vladislav Korogodin**Date of birth:** October 25, 1969**Place of birth:** Moscow**Education:** university degree

Graduated from Moscow Institute of Physics and Technology.

Positions held over the last five years:

2010 – present – Deputy Director of the Directorate for the Nuclear Power Complex, Director of NFC and NPP Life Cycle Management, ROSATOM.

He does not own the Company's shares.

DIRECTOR OF JSC ATOMENERGOPROM

Kirill Komarov was appointed Director of JSC Atomenergoprom as from April 14, 2015 (Minutes of the Meeting of JSC Atomenergoprom's Board of Directors No. 272 dated March 26, 2015).

6.1.3. Report of the Board of Directors

IN 2016, THE BOARD OF DIRECTORS HELD 35 MEETINGS BY ABSENTEE VOTING. DURING THE BOARD MEETINGS, DECISIONS WERE MADE ON KEY ASPECTS OF JSC ATOMENERGOPROM'S BUSINESS, INCLUDING THE FOLLOWING:

- A meeting of the Board of Directors was held under the established procedure prior to the Annual General Meeting of Shareholders of JSC Atomenergoprom;
- JSC Atomenergoprom's budget for 2016 was approved;
- Amendments to the resolution on the issuance/additional issuance of book-entry registered ordinary shares and book-entry registered preferred shares of JSC Atomenergoprom and the accompanying Prospectus were approved; the amendments provide for an extension of the offering period;
- A number of decisions were taken to improve the structure of JSC Atomenergoprom's group of companies (*see the section 'Key Changes in the Corporate Structure in 2016'*).

6.1.4. Key resolutions of the sole shareholder

FOUR RESOLUTIONS OF THE SOLE SHAREHOLDER WERE PASSED IN 2016:

- Approval of the annual report and annual financial statements of JSC Atomenergoprom;
- Profit distribution for 2015;
- Election of the Board of Directors and the Auditing Commission, approval of the auditor for 2016;
- Payment of dividends for 2015, for the six months of 2016 and for the nine months of 2016.

6.1.5. Auditing Commission

Members of JSC Atomenergoprom's Auditing Commission elected under the resolution of the sole shareholder dated June 29, 2015 and re-elected under the resolution of the sole shareholder dated June 28, 2016 until January 9, 2017

Members of JSC Atomenergoprom's Auditing Commission

Member of the Auditing Commission	Position (at the time of election)
Tatyana Blazhnova	Head of the Consolidated Reporting Division, Accounting Department, ROSATOM; Chair of the Auditing Commission
Vyacheslav Ostrous	Head of the Accounting Methodology Division, Accounting Department, ROSATOM
Pavel Maslov	Chief Specialist in the Tax Planning Division, Accounting Department, ROSATOM

On January 9, 2017, the Extraordinary General Meeting of Shareholders of JSC Atomenergoprom approved a new version of the Charter that does not provide for an Auditing Commission. The Auditing Commission that functioned throughout 2016 audited the Company's operations for 2015 (the relevant report is provided in the Annual Report of JSC Atomenergoprom for 2015).

6.1.6. Payment of declared (accrued) dividends on JSC Atomenergoprom's shares

On June 28, 2016, the Annual General Meeting of Shareholders of JSC Atomenergoprom resolved to pay RUB 3,178,007,000 in dividends to shareholders.

IN ADDITION, THE GENERAL MEETING OF SHAREHOLDERS RESOLVED TO PAY INTERIM DIVIDENDS:

- RUB 3,972,509,000 for the six months of 2016;
- RUB 4,258,910,000 for the nine months of 2016.
The dividends were paid out in full.

6.1.7. Major transactions and non-arm's length transactions

MAJOR TRANSACTIONS

In 2016, JSC Atomenergoprom did not conclude any transactions recognized as major transactions under the Russian legislation and subject to approval by the Company's authorized governing body.

NON-ARM'S LENGTH TRANSACTIONS

In 2016, JSC Atomenergoprom did not conclude any transactions recognized as non-arm's length transactions under the Russian legislation and subject to approval by the issuer's authorized governing body.

6.1.8. Key changes in the corporate structure in 2016

- As part of the development of the Mechanical Engineering Division, a 99.88% shareholding in JSC Experimental Design Bureau GIDROPRESS, a 69.35% shareholding in JSC Afrikantov OKBM and a 74.84% shareholding in JSC VNIAM previously owned by JSC Atomenergoprom were transferred to the authorized share capital of JSC Atomenergomash;
- To establish a single industry-wide integrator and agent to promote the large NPP construction offering, a 100% shareholding in LLC Energomashkompleks was transferred from JSC Atomenergomash to JSC Atomenergoprom; JSC Rusatom Overseas Inc. was merged with LLC Energomashkompleks;
- To establish a responsibility centre (a project office) to run the solution reactor business, JSC Atomenergoprom established a wholly owned subsidiary, JSC Rusatom Solution Reactors;
- To implement the Berkut Monitoring Systems project, JSC Atomenergoprom established a wholly owned subsidiary, LLC SMB;
- As part of the development of a network of specialized irradiation centres in the Central Federal District of Russia in order to meet the demand of manufacturers of medical products for sterilization services, LLC UIC (26.85%) and LLC Steriza (73.15%) established JSC Sterion;
- To optimize the corporate structure, Rosatom Securities Limited, a wholly-owned subsidiary of JSC Atomenergoprom, was dissolved;
- To create an industrial park based on the assets of JSC NIITFA, a wholly-owned subsidiary of JSC NIITFA, JSC Nizhnie Kotly Industrial Park Management Company, was established;
- To integrate the foreign NPP servicing business, JSC Rosenergoatom Concern contributed a 51% shareholding in JSC Atomtekhexport to the authorized share capital of JSC Rusatom Service;
- To separate regulated and competitive electricity sales and develop a trading presence on the Russian and foreign energy markets, a 100% shareholding in JSC Atomenergopromsbyt was transferred from JSC AtomEnergSbyt to JSC TENEX;
- To optimize the corporate structure, CJSC Nuclearcontrol was dissolved;
- To establish a single integrator in the sphere of radiation processing technologies:
 - LLC UIC bought a 67% stake in the authorized share capital of LLC AtomMedTechnology-Far East from JSC REIN; as a result, the shareholding of LLC UIC in LLC AtomMedTechnology-Far East reached 100%;
 - LLC UIC increased its stake in the authorized share capital of LLC Snezhinsk NMT to 76%, with the remaining 24% held by FSUE Russian Federal Nuclear Centre – E. I. Zababakhin Russian Research Institute for Technical Physics.
- The decision was made to establish (incorporate) Rusatom Healthcare, a joint-stock company wholly owned by JSC Atomenergoprom (the company will promote Russian nuclear medicine technology and radiation technology for irradiation and sterilization centres in Russia and abroad).

6.1.9. JSC Atomenergoprom's compliance with the principles and recommendations of the Corporate Governance Code recommended by the Bank of Russia

JSC Atomenergoprom adheres 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 the business and the legal status of JSC Atomenergoprom and its organizations (restricted civil circulation of shares of joint-stock companies appearing on the lists approved by the Russian President and comprising legal entities that may be holding nuclear materials or nuclear facilities).

6.1.10. Key provisions of JSC Atomenergoprom's policy on remuneration and/or reimbursement of expenses; information on remuneration and/or reimbursement of expenses

No decisions were taken in 2016 to pay out remuneration and/or reimburse expenses incurred by the members of JSC Atomenergoprom's Board of Directors; no remuneration or reimbursement for expenses were paid out.

Board members who are full-time employees of the Company/ROSATOM are remunerated for their work in accordance with the Standardized Industry-Wide Remuneration System instituted by ROSATOM. Remuneration, including salary, is paid to Board members who are full-time employees in accordance with employment contracts and applicable local regulations of the Company/ROSATOM on remuneration³⁴.

³⁴ Details on income, expenses, assets and liabilities of JSC Atomenergoprom's Board members who are the Company's full-time employees are available on the website at: <http://www.rosatom.ru/about/protivodeystvie-korrupsii/svedeniya-o-doxodax-rabotnicov>.

6.2. FINANCIAL AND INVESTMENT MANAGEMENT

Key results in 2016:

- A total of about **RUB 25.7 billion** was saved through intra-group financing within the industry between 2010 and 2016;
- JSC Atomenergoprom raised funds from the Pension Fund of the Russian Federation by placing 10-year **exchange-traded bonds** with a total par value of RUB 30 billion, which helped maintain a stable long-term credit portfolio.



6.2.1. Financial management

6.2.1.1. Implementation of the financial strategy

Given the scale of JSC Atomenergoprom's business in Russia and abroad, the Company's management attaches great importance to the financial sustainability of nuclear organizations in a changing environment. The financial strategy is an integral part of the Company's overall business strategy. The main goal of the financial strategy is to ensure the financial sustainability of JSC Atomenergoprom and its organizations in a changing environment and to maximize the efficiency of financing and financial risk management.

One of the key objectives in 2016 was to tackle the issue of underinvestment and secure adequate liquidity at a reasonable price in a turbulent financial environment.

IF THE COST OF BORROWING INCREASES, THE MOST FAVOURABLE CONDITIONS CAN BE ACHIEVED IF BORROWING IS CENTRALIZED. THEREFORE, IN 2016, THE COMPANY CONTINUED TO MAKE EFFORTS TO:

- Centralize the treasury functions;
- Optimize the Group's debt portfolio.


6.2.1.2. Improving the efficiency of treasury transactions

THE DECISION TO CENTRALIZE PRINCIPAL FINANCIAL TRANSACTIONS WAS MADE IN 2010 AS PART OF THE APPROVAL OF AN INDUSTRY-WIDE FINANCIAL POLICY. CASH FLOW MANAGEMENT IS CENTRALIZED THROUGH:

- An established single industry-wide legal framework regulating financial management (first and foremost the Financial Policy, which has been adopted by all organizations within the scope of consolidation);
- Vertical integration of treasury departments in subsidiaries, which are functionally accountable to the Treasury Department (this treasury structure enables 100% control of funds in the industry);
- Concentration of principal treasury functions of nuclear organizations in the Treasury Department of ROSATOM, which communicates with nuclear organizations and is essentially a liquidity management centre;
- An industry-wide automated system for recording treasury transactions, which enables the recording of all treasury transactions across the scope of consolidation of the Corporation on a daily basis.

IN 2016, THE COMPANY CONTINUED TO WORK TOWARDS:

- Accumulating spare cash on the accounts of pool leaders³⁵;
- Improving the accuracy of payment scheduling (a rolling liquidity forecast);
- Ensuring competitiveness of the cost of servicing of the consolidated debt portfolio.



The Company managed to keep the average interest rate on the total debt portfolio denominated in Russian roubles below 10%, partly because the Group's portfolio is comprised mainly of long-term loans raised between 2012 and 2014 at pre-crisis interest rates.

6.2.1.3. Bond placement; maintaining credit ratings

In the reporting year, JSC Atomenergoprom raised funds from the Pension Fund of the Russian Federation by placing 10-year exchange-traded bonds with a total par value of RUB 30 billion (the coupon rate was set at 9.33%; the terms and conditions of the placement provide for a two-year call option and a six-year call option). This helped maintain a stable long-term credit portfolio.

JSC Atomenergoprom continued to make efforts to maintain its credit ratings assigned by international rating agencies. Each Big Three rating agency (S&P, Moody's Investors Service, Fitch Ratings) rated JSC Atomenergoprom at the level of Russia's sovereign credit ratings: BB+/Ba1/BBB-. Moreover, two of the three international rating agencies (S&P and Fitch Ratings) upgraded the standalone credit rating of JSC Atomenergoprom to the level of the Company's final rating.

To reduce the cost of documentary transactions and borrowings, the Company continued to use suretyship as security for repayment of advance payments and fulfilment of contractual obligations in the course of procurement using the Company's own funds and non-budgetary funds and as a means for reducing the cost of financing.

³⁵ A pool leader is an organization on whose accounts spare cash is accumulated and subsequently redistributed between organizations in the nuclear industry through loan agreements. A pool leader is appointed under the resolution of ROSATOM's executive bodies

JSC AtomCapital (a wholly-owned subsidiary of ROSATOM acting as a pool leader in intra-group financing of FSUEs) enabled an optimal debt burden distribution between JSC Atomenergoprom and organizations and enterprises outside its scope.

6.2.1.4. Plans for 2017 and for the medium term

GIVEN THE RISK OF INCREASING DEBT BURDEN AS A RESULT OF EXTERNAL INFLUENCES, THE COMPANY NEEDS TO:

- Ensure a consistent payment discipline for intra-group 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 and rating agencies;
- Discuss project financing arrangements to reduce recourse on ROSATOM and minimize the use of consolidated investment resources (including the use of project financing instruments).

The Company also plans to expand the range of its financing instruments (provided it is economically feasible to do so) in order to reduce the cost of debt service and ensure timely and full financing of the investment programme of organizations in the industry on acceptable terms.

6.2.2. Investment management

6.2.2.1. Key approaches to investment management

To take into account the interests of all value chain participants, a large number of decision-makers and experts grouped into collective or advisory bodies are engaged in investment management. The final decision-making authority (top management or division level) is determined by the strategic importance of a project. Decisions on key milestones of projects vital for the Company are made and the projects are monitored at the top level.

An independent verification procedure (in relation to the project initiator) has been established to improve the efficiency of investment decisions.

A project portfolio made up of projects of all the organizations within the industry is built for a year and for the medium term based on available investment resources. The resources are calculated based on the financial stability requirements for the Holding Company and the required rate of return on investment.

Progress on projects in the organizations in the industry is monitored on a quarterly basis.

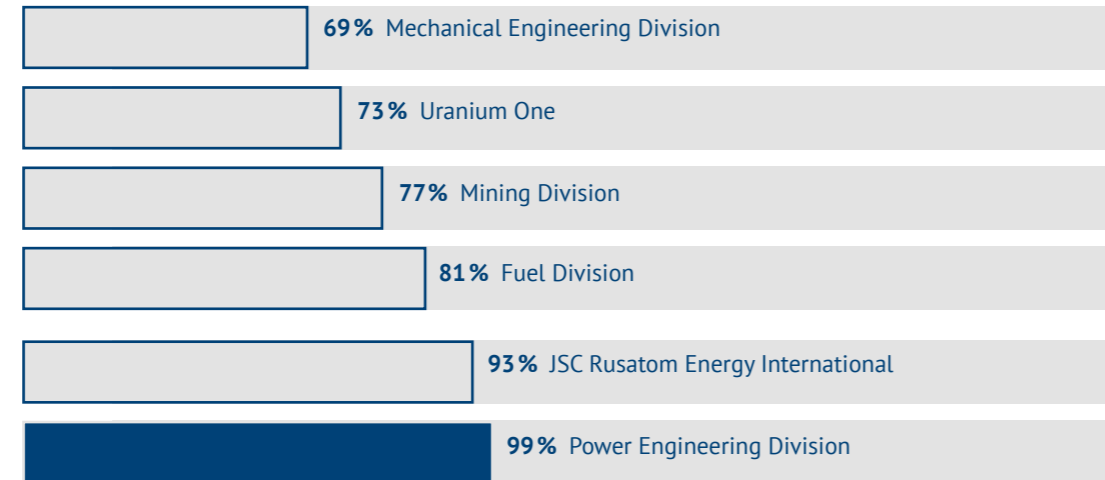
A phase-gate approach is applied to project implementation.

A comprehensive audit is conducted, which helps formulate recommendations on how to improve planning and implementation of investment projects.

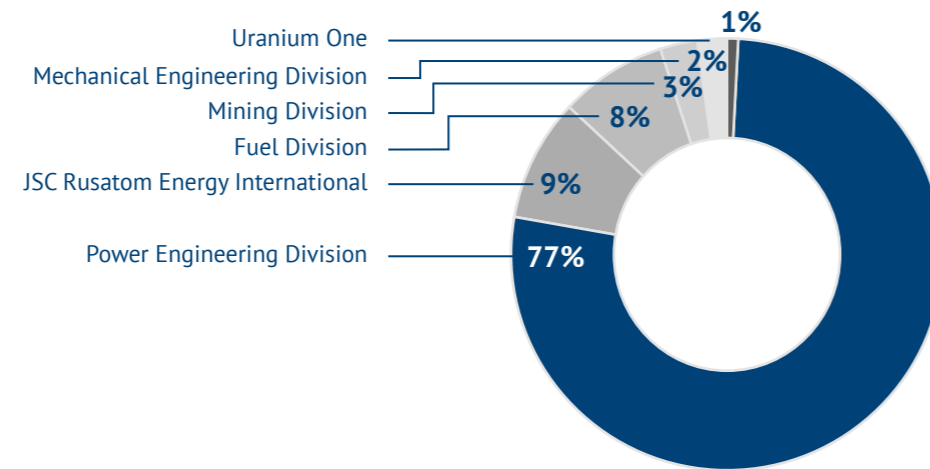
Measures to raise external financing, including project financing, are being developed.

6.2.2.2. Results in 2016

Performance of core divisions against the investment programme targets



Investments by core division/complex in 2016



6.2.2.3. Measures to improve investment efficiency

- The Company continued to adjust the system of incentives for participants of investment activities and projects (to ensure that managers and members of project teams reach project milestones and that project owners obtain benefits from the project that were stated earlier);
- A project is underway to establish a Project Management School, which will serve as a single industry-wide platform for project talent management;
- A system was developed for project risk management based on the assessment of the likelihood of events or scenario conditions by industry experts;
- The first project to develop an industry-wide automated project portfolio management system (the Sirius information system) was completed; this will help to improve the accuracy of project milestone planning and the strictness of budget accounting and to assign personal responsibility to key members of the project team.

6.2.2.4. Challenges of the reporting period and mitigation measures

Challenge	Mitigation measures
Underinvestment (higher cost of credit resources, restrictions on raising funds on the global market), which limits the Company's ability to build an investment project portfolio	<ul style="list-style-type: none"> • Securing external funding; • Making timely decisions to abandon or suspend a number of projects; • Optimizing project budgets using technological and price analysis.
Inadequate rationale for investments	<ul style="list-style-type: none"> • Standardization of requirements for project management, supporting materials, material quality control procedures; • Improvement of the project review institution; • Improvement of the industry-wide knowledge base on investment activities and projects; • Development of competences of project team members.
Major changes in the external environment (macro parameters)	<ul style="list-style-type: none"> • Search for new projects, technological and design solutions for ongoing projects to optimize investment expenditures; • Improvement of accuracy in investment and project planning; • Stricter control over the intended use of funds; • Abandoning ineffective projects; • Improvement of the risk management system.
Lack of manoeuvrability of the project portfolio	<ul style="list-style-type: none"> • Giving priority to projects with the shortest payback period (DPP); • Linking projects through shared deliverables to track their mutual influence.
Lack of professional project managers	<ul style="list-style-type: none"> • Creating centralized tools for assessment, training and formulation of individual development plans; • Development of a system of financial and non-financial incentives for the project manager and the project team; • Developing career path options for project team members and project managers.

6.2.2.5. Plans for 2017 and for the medium term

- To develop the competences of participants of projects and investment activities;
- To improve the system of incentives for participants of projects and investment activities;
- To increase the level of process automation and minimize manual data input through the integration of the Sirius information system with other corporate IT systems;
- To improve the accuracy of medium-term investment forecasts.

6.3. INTERNAL CONTROL SYSTEM

The internal control system is based on:

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

Key results in 2016:

– During rapid monitoring of financial management quality by the Russian Ministry of Finance for 2016, the industry-wide internal control system

scored **100 points** on all dimensions of the control and audit assessment, which is the highest possible score;

– During an integrated assessment of the in-house financial audit by the Accounts Chamber of the Russian Federation, the Company scored

6.72 points out of a possible 7;



6.3.1. Results in 2016

Development of the internal control system

IN THE COURSE OF PREPARATION OF A CONSOLIDATED MONITORING PLAN FOR SPECIALIZED INTERNAL CONTROL BODIES (SICB) IN THE REPORTING YEAR, FOCUS AREAS INCLUDED MONITORING OF ACHIEVEMENT OF STRATEGIC GOALS AND PRIORITIES. IN 2016:

- Compliance with consolidated schedules of initiatives aimed at achieving strategic goals was monitored;
- Performance against KPI targets of 30 key executives in the industry was audited;
- Implementation of plans to reduce the amount of unused facilities under construction and equipment to be installed (in order to achieve the target reduction in production cost and the lead time) by organizations in the industry was monitored;
- Heads of SICB in divisions were assigned personal responsibility for independent monitoring of the achievement of strategic goals and priorities.

- Major deviations in the course of operations of the Company and its organizations were detected on time and in full, which was confirmed by an independent performance assessment of the internal control and audit service by top management;
- Certification in accordance with the Internal Controller professional standard was conducted for the first time in Russia.

To develop stakeholder control and reduce the risk of default on contractual obligations, the Business Reputation Rating information system was introduced. The system contains information on suppliers' default on obligations under contracts with organizations in the nuclear industry. The system makes it possible to calculate the business reputation score of a supplier, which is used as one of the qualitative criteria for the selection of suppliers in the course of procurement procedures.

In addition, in 2016, a risk map was approved for the Hanhikivi 1 NPP investment and construction project; it will help to improve the monitoring of investment and construction activities.



INTEGRATED TEAM OF JSC ATOMENERGOPROM

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7.1. PERSONNEL MANAGEMENT

In 2016, JSC Atomenergoprom and its organizations employed 90,800 people. 50,500 employees have a university degree. 1,235 employees are Candidates and Doctors of Sciences. The age of employees averaged 43 years. The share of employees aged under 35 stood at 32.7%.

In 2016, the average monthly salary in JSC Atomenergoprom totalled RUB 74,300, up by 2% year on year.

Key results in 2016:

- The average monthly salary totalled **RUB 74,300 per month;**
- **32.7%** of employees were aged under 35.



7.1.1 Staff costs

In 2016, staff costs totalled RUB 107.3 billion.

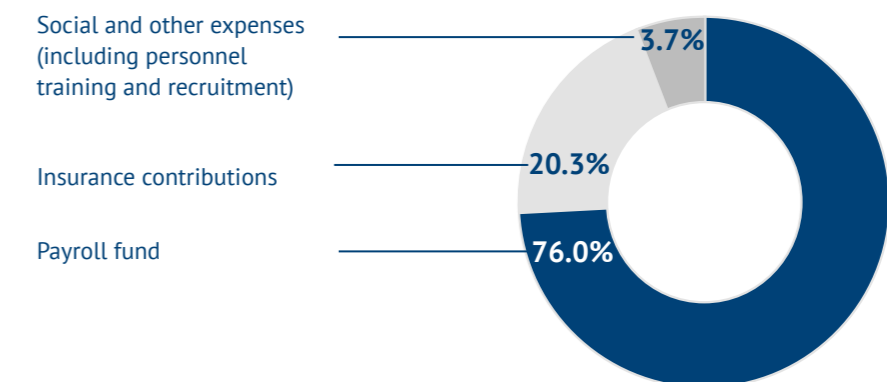
THE CURRENT REMUNERATION SYSTEM:

- Is result-based: strengthening the link between employees' compensation and their efficiency and achievement of key performance indicator (KPI) targets. Managerial KPIs are linked to the strategic goals and KPIs established for ROSATOM by the Supervisory Board; strategic objectives set for the organizations and enterprises are converted into KPI maps of specific managers and cascaded down to business units and employees;
- Provides adequate remuneration matching the compensation in the best Russian companies.

7.1.2. 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 the Russian nuclear industry. ESP members are included in the executive succession pool through the career and succession planning process. The level that they occupy in the ESP is determined by the target position of a candidate within the ESP.

Staff cost structure in 2016



In 2016, the Company's ESP comprised 656 people. A year-on-year decrease in the number of ESP members was due to strict selection criteria, which include a requirement that the next career move should be defined and approved. This helps to determine what position an ESP member is preparing to occupy and to track his or her subsequent progress towards the target position.

In 2016, ESP members completed a module-based training program aimed at developing managerial knowledge and skills. During their participation in the training programme, ESP members implemented over

900 individual projects contributing to the achievement of the Company's strategic goals. The share of ESP members appointed to top-level, senior and junior executive positions reached the target and totalled 54%.

Number of executive succession pool (ESP) members (by employee category)

ESP levels	ESP Development Programme	Number of participants		
		2014	2015	2016
Senior executives	ROSATOM's Assets	56	101	55
Middle-level executives	ROSATOM's Capital	169	326	218
Junior executives	ROSATOM's Talents	267	390	383
Total		492	817	656

7.1.3. Personnel assessment

The Company uses an industry-wide competence model based on 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. Thus, all employees in the industry are not only expected to be aware of and abide by the corporate values but can also benefit from them by receiving further training and building their careers in the nuclear industry. In 2016, 21,551 employees (23.7% of the average headcount) underwent a RECORD-based assessment (including a performance assessment based on KPI maps, an assessment of professional and technical knowledge and skills and an assessment based on corporate values).

7.1.4. Personnel training

Annual average training hours per employee by employee category

Training, professional development and improvement of employees' competences are integral to developing, fostering competitiveness and improving the quality of the internal labour market in the nuclear industry. In 2016, 48,284 employees of JSC Atomenergoprom underwent training and retraining and completed professional development programmes.

Employee category	Average number of hours per employee		
	2014	2015	2016
Executives	39	36	34.4
Specialists and office workers	20	15	14.9
Workers	24	36	23.5

7.1.5. Social policy

JSC ATOMENERGOPROM'S SOCIAL POLICY IS DESIGNED TO:

- Make the Company more attractive as an employer;
- Engage and integrate young professionals and highly skilled specialists;
- Improve employee loyalty;
- Improve the efficiency of social expenses.

JSC Atomenergoprom adheres to the Industry-Wide Agreement on Nuclear Power, Industry and Science for 2015–2017. The Agreement is based on the established practice of social partnership in the nuclear industry and is aimed at implementing the Integrated Standardized Remuneration System, the Uniform Industry-Wide Social Policy and the Occupational Safety Management System. The Agreement gives priority to the protection of employees' life and health (the sections 'Occupational Safety' and 'Social Policy'). Jointly with the Russian

Employment benefits provided to employees and retirees comply with the Uniform Industry-Wide Social Policy (UISP), which is based on standardized corporate social programmes (CSP).

Key corporate social programmes of JSC Atomenergoprom, RUB million

Trade Union of Nuclear Power and Industry Workers, employers maintain records of and analyse morbidity among employees, including based on records of periodic medical examinations and sick leave, and build an integrated health care programme titled Health, which may be appended to the collective agreement of an organization. The Agreement incorporates the opportunities provided by the new legislation on the special inspection of working conditions (SIWC) and stipulates an additional mechanism for cooperating with the trade union in conducting an SIWC and analysing inspection findings.

Collective agreements in all of the Company's organizations provide for a minimum notice period of two months for significant operational changes, and three months for situations that may lead to mass dismissal. Collective agreements cover 81.8% of employees working for the organizations of JSC Atomenergoprom.

	2014	2015	2016
Voluntary health insurance	640.5	900.3	782.4
Accident and illness insurance	41.8	46.4	31.4
Health resort treatment and recreation for employees and their children, including:			
• Health resort and rehabilitation treatment for employees	229.5	382.1	180.2
• Health resort treatment and recreation for children	65.0	25.3	79.1
Provision of housing for employees	212.6	486.8	198.6
Private pension plans	329.6	480.7	248.7
Support for retirees	867.4	887.2	841.8
Catering arrangements	22.0	28.4	11.6
Sporting and cultural events	356.2	933.1	361.0
Assistance to employees	314.6	552.9	319.0
Other	341.6	805.6	198.7
Total:	3,420.8	5,528.8	3,252.5

7.1.6. Recruitment of young professionals

JSC Atomenergoprom gives special focus to working with young professionals and recruiting talented young people into the nuclear industry. In 2016, a total of 2,576 students attended universities under arrangements with Russian nuclear enterprises. In 2016, the organizations of JSC Atomenergoprom hired 400 people.

7.1.7. Plans for 2017

- To encourage employees to achieve high-priority business objectives;
- To develop leaders at all levels of management;
- To develop employees' competences at a pace required for the development of businesses;
- To build a result-oriented culture in the industry;
- To improve the level of satisfaction of the Company's businesses with the performance of the HR function.

7.2. DEVELOPING THE REGIONS OF OPERATION

JSC Atomenergoprom contributes to the social and economic development of its regions of operation in many ways. The Company contributes significantly to the energy security of a number of regions. JSC Atomenergoprom is a large taxpayer paying taxes to the budgets of all levels.

The Company makes

a substantial economic impact

on the regions of its operation by providing considerable employment opportunities to skilled professionals in the nuclear industry and related industries, thus improving overall employment in the regions and providing decent working conditions and remuneration.



Share of nuclear power generation in the total power generation in Russia in 2016 by region (integrated power system [IPS])

Indicator	Russia	European Russia*	IPS of the Centre	IPS of the Middle Volga	IPS of the North-West	IPS of the South**	IPS of the Urals	IPS of the East**
Nuclear power generation, billion kWh	196.4	196.15	92.0	33.6	38.1	24.0	8.4	0.22
Power generation in Russia, billion kWh ***	1,071.7	807.6	236.6	106.3	107.3	99.0	258.4	48.9
Share of nuclear power generation, %	18.3	24.3	38.9	31.6	35.5	24.2	3.3	0.45

7.2.1. Ensuring the energy security of Russian regions

In 2016, NPPs accounted for 18.3% of the total electricity output in Russia (18.6% in 2015). Nuclear power generation contributes significantly to Russia's regional power systems.

* European Russia: IPS of the Centre + IPS of the Middle Volga + IPS of the North-West + IPS of the South + IPS of the Urals.
 ** Including isolated systems.
 *** Data on power generation in Russia in 2016 according to the press release of the System Operator of the Unified Power System dated January 11, 2017 (www.so-ups.ru).

7.3. STAKEHOLDER ENGAGEMENT

Key results in 2016:

- **71%** of the population in Russia supports the use of nuclear energy;
- Over **400,000 people** visited Nuclear Energy Information Centres;
- Viewership of channels broadcasting the Strana ROSATOM TV programme in various regions of Russia totals **7.2 million people.**



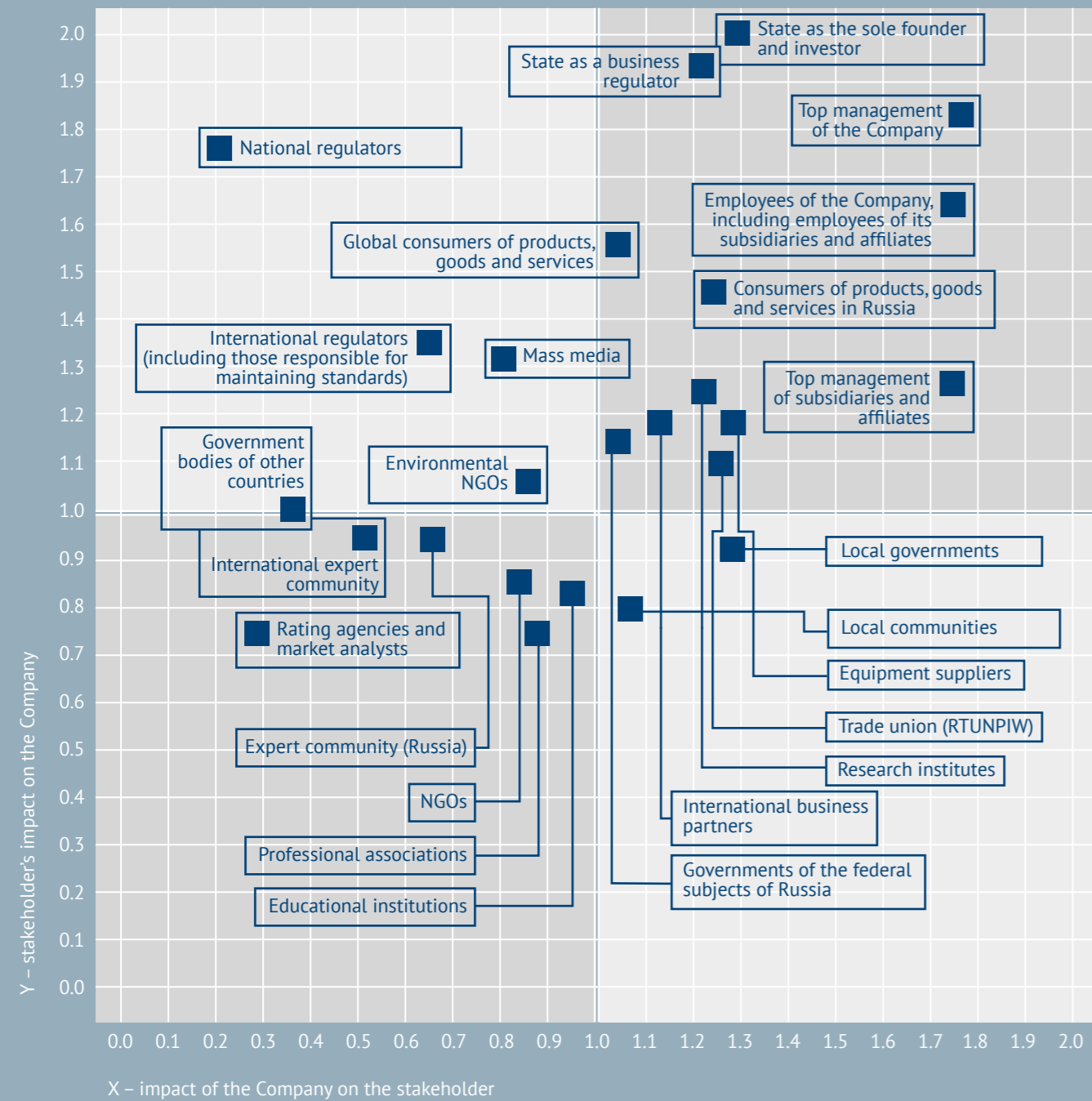
7.3.1. Approaches to stakeholder engagement

Due to its scale and special characteristics of its business, JSC Atomenergoprom 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 Company 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 the Company's activities;
- Striving to provide specific benefits to all participants;
- Fulfilment of obligations.

Stakeholder map



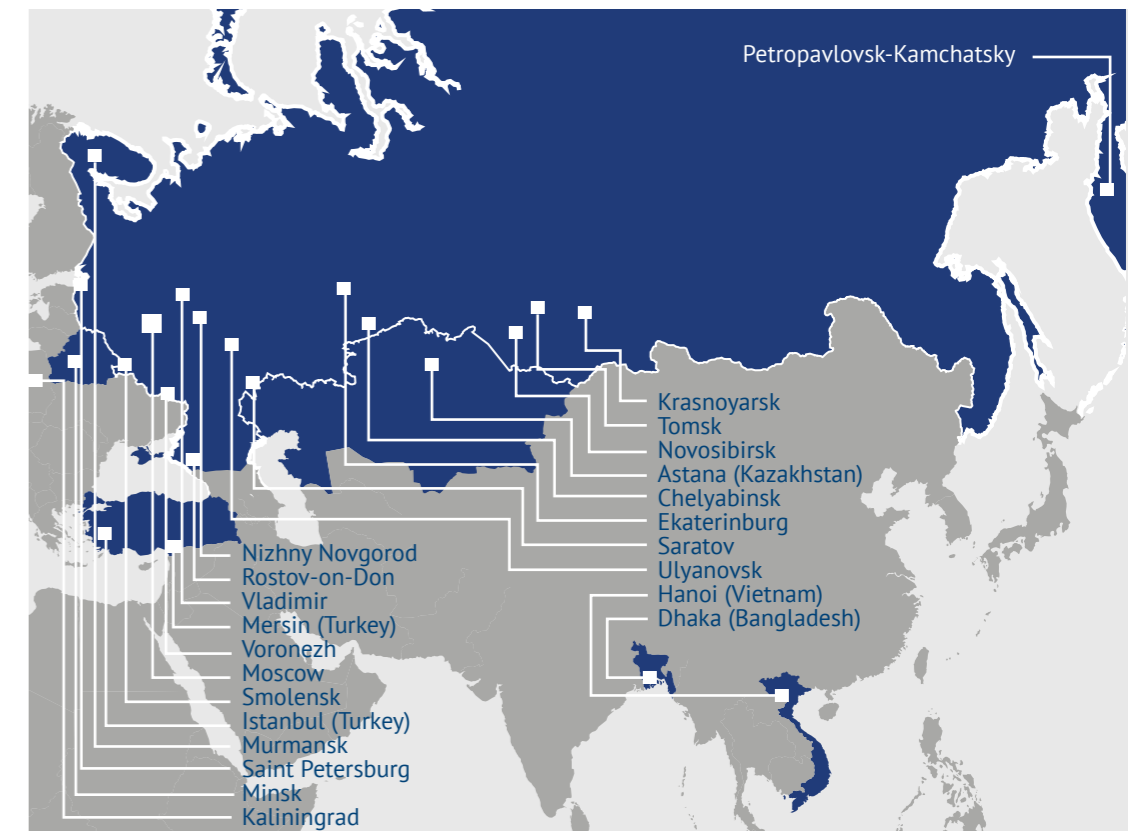
7.3.2. Nuclear energy information centres ³⁶

Since 2008, a project has been underway to build a network of nuclear energy information centres (NEIC) in the Company's operating regions. The first centre was opened in 2008. As of December 31, 2016, the NEIC network comprised 17 centres in Russia and 6 centres abroad. During eight years, over 2.4 million people visited the centres, including over 400,000 people in 2016.

IN ADDITION TO DAILY DEMONSTRATIONS OF SPECIAL VIDEO PROGRAMMES, THE NEIC NETWORK CONDUCTS EDUCATIONAL EVENTS IN VARIOUS FORMATS:

- Lecture tours by scientists; contests, adventure games, talk shows, guided tours, etc. as part of the Kstati ('By the Way') Festival of Science International Project. During the reporting period, the festivals were held in Minsk, Murmansk, Saratov, Novosibirsk and Voronezh; they were attended by more than 20,000 people;
- Science shows: *Down to Atoms*, *Scientific Battles*, *The Trial of Superheroes*, *Fairy-Tale Science*, which provide a vivid illustration of the basic laws of physics, chemistry and mathematics. An event titled '*Scientific Battles: U-ROUND*' was held in Chelyabinsk and Nizhny Novgorod. During the event, atomic workers presented their research studies to a wide audience;
- The Energy of Science project, which introduces a wide audience to the latest scientific discoveries and ideas. In 2016, sessions were held in 11 NEICs and at the main educational venues of the regions;
- The Formula of Intelligence intellectual games championship. In 2016, 393 teams from 14 regions of Russia took part in the championship;
- The Nationwide School Week of High Technology and Technopreneurship. In 2016, this event was traditionally held with the support of ROSATOM, the Fund for Infrastructure and Educational Programmes of RUSNANO and State Space Corporation ROSCOSMOS. Events conducted by the NEIC network were attended by more than 11,000 people.

Nuclear Energy Information Centres



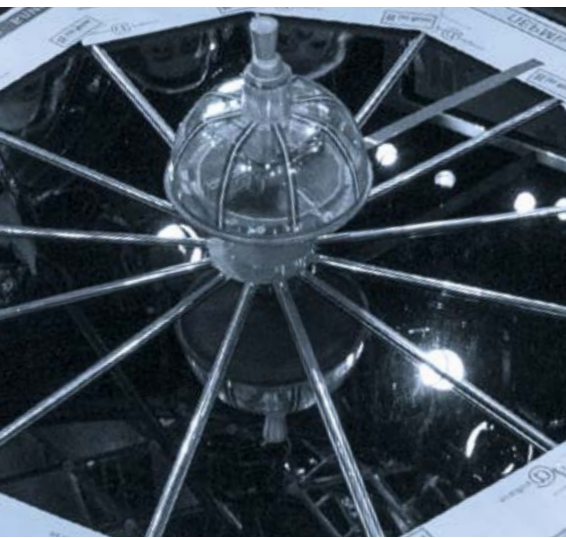
³⁶ <http://www.myatom.ru>

7.3.3 Projects on federal TV channels

What? Where? When? game show

In 2016, the Company continued its cooperation with the *What? Where? When?* TV game show on Channel One, which promotes ROSATOM (and JSC Atomenergoprom) among 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 41st season of *What? Where? When?*, demonstrating the human and intellectual potential of the nuclear industry to the Russian TV audience.



THE ROSATOM TEAM
DEMONSTRATED THE HUMAN AND
INTELLECTUAL POTENTIAL OF THE
NUCLEAR INDUSTRY TO THE
RUSSIAN TV AUDIENCE.

We and Science. Science and Us science TV show ³⁷

In 2016, a science TV show titled 'We and Science. Science and Us' was launched on the NTV channel with the support of ROSATOM. The hosts and guests of the show discuss innovative discoveries and their impact on people's daily lives. During the year, 10 issues were broadcast. They examined 'atomic' batteries, controlled thermonuclear reactions, cancer treatment, gravity management and other subjects related to innovative developments in the nuclear industry.

Horizons of the Atom ³⁸

The Russia 24 channel continued to broadcast the *Horizons of the Atom* programme, which examines various aspects of operations and innovative developments of enterprises in the nuclear industry. In the reporting year, the programme celebrated the five-year anniversary of its launch, with more than 130 shows broadcast during this time (including 26 regular shows and five special broadcasts to celebrate the Nuclear Worker's Day in 2016).

7.3.4. Industry media

TO INFORM EMPLOYEES AND OTHER STAKEHOLDERS OF THE NEWS AND KEY EVENTS AT ROSATOM AND IN ITS ORGANIZATIONS, A RANGE OF CORPORATE MEDIA OUTLETS UNDER THE COMMON BRAND NAME *STRANA ROSATOM* ('THE COUNTRY OF ROSATOM') IS USED IN THE INDUSTRY:

- A newspaper (published weekly in 61 organizations, as well as in the Central Office of the Corporation, members of the Consortium of Core Universities of ROSATOM and the branches of NRNU MEPhI, with a circulation of 59,000 copies and a readership of over 250,000 people);

³⁷ http://www.ntv.ru/peredacha/Mi_i_nauka/issues/56446

³⁸ https://www.youtube.com/playlist?list=PLANOjrh__B3UKozlFXu54uAka4nn6Qjmo

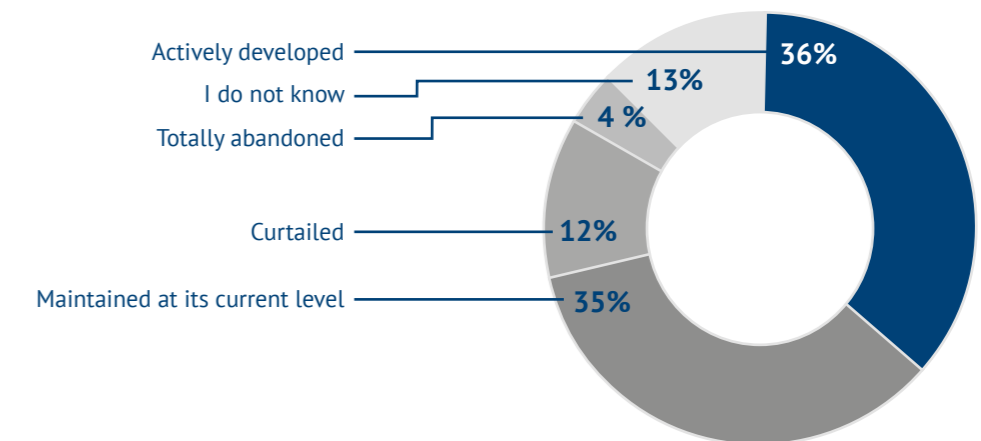
- A radio programme (it is broadcast three times a week in 30 of the Corporation's organizations and has an audience of 50,000 people);
- A television programme (it is aired weekly in 20 cities where ROSATOM operates; the viewership of the channels that broadcast the programme totals 7.2 million people).

7.4.5. Opinion polls

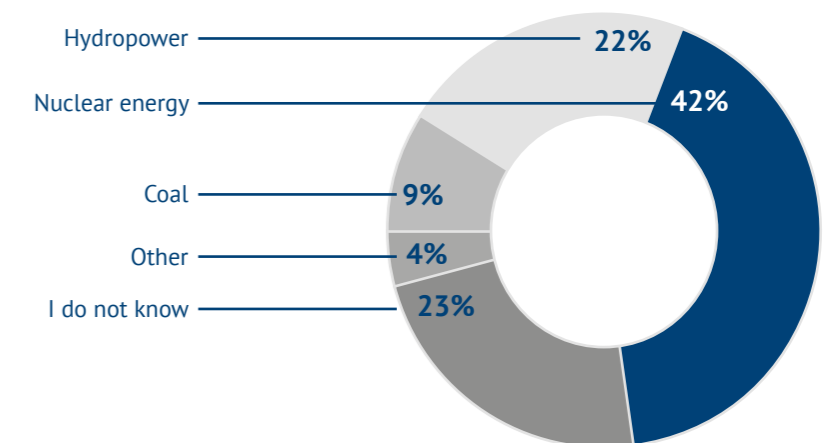
JSC Atomenergoprom analyses the public perception of the development of nuclear power in Russia on a yearly basis and adjusts its communication with stakeholders accordingly.

According to an independent opinion survey by Levada-Centre³⁹, 71% of the Russian population supported the use of nuclear power (over the past five years, this figure ranged between 66.5% and 75.5%). Thus, the result of 2016 is consistent with the general trend seen in recent years and confirms that the level of the Russian population's support for nuclear energy development programmes is consistently high.

– Do you think that the nuclear power industry should be actively developed, maintained at its current level, curtailed or totally abandoned?



– 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?



³⁹ The survey was conducted from February 3 through February 6, 2017 across a representative sample of Russian citizens consisting of 602 people aged 18 and above.



GUARANTEE OF SAFE OPERATION

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8.1. NUCLEAR AND RADIATION SAFETY; OCCUPATIONAL SAFETY AND HEALTH

Safe operation of nuclear facilities is a fundamental priority of JSC Atomenergoprom.

Key results in 2016:

. No events rated at level 2

or higher on the INES scale were detected;

• The injury frequency rate and the **lost time injury frequency rate (LTIFR)** stood at 0.38 and **0.19** respectively;

• Individual radiation risk was calculated for **64,611 people** using the IRAW system.



8.1.1. Nuclear and radiation safety at nuclear facilities

In 2016, JSC Atomenergoprom ensured safe and steady operation of enterprises in the nuclear industry. In 2016, there were no incidents involving radiation leaks. Limits on employee radiation exposure were not exceeded.

As in recent years, in 2016, no events rated at level 2 or higher on the international INES scale were detected at Russian nuclear power plants (level 1 and 0 deviations do not pose a risk to employees operating the facilities, local residents or the environment).

8.1.2. Industry-wide automated radiation monitoring system (IARMS)

The IARMS is a functional subsystem of the Integrated State Automated Radiation Monitoring System (ISARMS). Its main function is to monitor the radiation level in the areas where facilities posing nuclear and radiation hazards are located. The IARMS is one of the tools for alarm notification and providing information for decisions on accident response.

As of December 31, 2016, on-site ARMSs integrated into the IARMS operated in the locations of 31 facilities posing nuclear and radiation hazards, including all 10 NPPs. The total number of fixed monitoring stations amounted to 440 (with 304 stations located outside industrial sites and 136 ARMS stations located at industrial sites of ROSATOM's organizations).

Real-time data from radiation monitoring stations operated by organizations in the industry are available on the website at www.russianatom.ru

8.1.3. Physical protection of nuclear facilities

The security and physical protection of facilities posing nuclear and radiation hazards and nuclear and radioactive materials used and stored by the Company (including during their transportation) complies with the Russian legislation. Furthermore, Russian regulatory requirements are fully consistent with the IAEA recommendations on physical protection and in some respects even exceed them.

8.1.4. Occupational safety and health

One of the fundamental priorities for JSC Atomenergoprom is to protect the life and health of the Company's employees. In 2016, organizations in the industry continued to work systematically towards increasing the level of safety, including efforts to reduce the number of occupational injuries and employee exposure to occupational hazards, as well as to ensure the safety of employees in contractor organizations.

In 2016, the injury frequency rate across the industry remained relatively low compared to major Russian and international companies. A total of 98 people were injured in workplace accidents. The injury frequency rate (FR) stood at 0.38 (as against the national average of 1.8).

8.1.5. Radiation exposure of employees

The criteria of employee radiation safety are laid down in the Radiation Safety Standards (NRB-99/2009), the Basic Sanitary Rules of Radiation Safety (OSPORB-99/2010) and other regulations. Most enterprises in the industry provide workplace conditions that fully comply with the requirements set out in these documents.

In 2016, the average annual effective radiation dose of the Company's personnel totalled 1.65 mSv. Over the past eight years, average effective employee radiation exposure and the number of people exposed to radiation have been varying insignificantly and remain low. In 2016, employee radiation exposure did not exceed regulatory limits. The total effective dose for any employee did not exceed 100 mSv over five consecutive years. The annual dose limit of 50 mSv was not exceeded.

Over the last three years, the industry average individual radiation risk did not exceed 8% of the regulatory limit, while the maximum individual risk has been decreasing steadily.

8.2. ENVIRONMENTAL SAFETY

JSC Atomenergoprom attaches great importance to environmental safety and environmental protection. Since 2008, the Fundamental Principles of the Environmental Policy of ROSATOM and Its Organizations⁴⁰ have been the main regulatory document on environmental safety and environmental protection.

Reduction in energy consumption in the Company's divisions against 2015 as the base year (in monetary terms), %

- JSC TVEL — **5.8%**
- JSC Rosenergoatom Concern — **6.3%**
- JSC Atomenergomash — **4.7%**
- JSC Atomredmetzoloto — **12.7%**



8.2.1. Environmental safety and environmental protection management

To improve environmental safety and the efficiency of environmental protection measures, organizations in the industry that make a considerable impact on the environment introduce environmental management, quality management, occupational health and safety management and energy management systems.

IN 2016, INTEGRATED MANAGEMENT SYSTEMS WERE IN PLACE IN NINE ENTERPRISES IN THE INDUSTRY. THEY COMPRISE:

- Environmental management systems compliant with the ISO 14001 standard;
- Quality management systems compliant with the ISO 9001 standard;
- Occupational health and safety management systems compliant with the OHSAS 18001 standard, and energy management systems compliant with the ISO 50001 standard.

19 organizations were issued with certificates of compliance with the requirements of the ISO 14001 standard for environmental management systems, and 37 enterprises were issued with certificates of compliance with the requirements of the ISO 9001 standard for quality management systems.

⁴⁰ <http://rosatom.ru/upload/iblock/ffe/ffe4bd24b37221abf6a48d3ab1f30ffe.pdf>

21 organizations in the nuclear industry continued to implement environmental management systems and subsequently transitioned to an integrated management system. In addition, as new versions of the ISO 9001 and ISO 14001 standards were published in 2016, organizations in the nuclear industry developed plans for a switchover to the new versions of the standards.

8.2.2. Improved energy efficiency

In the reporting year, energy costs across the industry were reduced by 6.6% against 2015 as the new base year. The reduction exceeded the target (3%) by more than twofold.

THE SAVINGS WERE ACHIEVED THROUGH:

- Implementation of investment initiatives;
- Improved culture of managing a reduction in energy costs;
- Higher efficiency of monitoring of energy consumption achieved through the introduction of technical metering systems and an automated reporting process.

To improve the efficiency of its cost-cutting efforts, in 2016, the Company focused on implementing zero-cost initiatives and projects with payback periods of up to five years. Between 2010 and 2015, reduction in energy consumption across the industry against 2009 as the base year exceeded 29%, or RUB 23.9 billion in monetary terms.

GLOSSARY

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 and resources (types of capital) used by the organization to create and maintain its value in the 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 preparation of the annual report)	an event held in accordance with the international AA1000 standards to facilitate communication between the organization and representatives of key stakeholders when preparing its annual report in order to improve the organization's transparency and accountability
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 performing required physical experiments at a power level at which heat is removed from the reactor through natural heat losses
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
Global Reporting Initiative (GRI)	an international system for reporting on economic, environmental and social performance based on the Sustainability Reporting Guidelines, Technical Protocols and Sector Supplements
Global Reporting Initiative (GRI) Sustainability Reporting Guidelines	The Sustainability Reporting Guidelines determine 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, and recommendations regarding specific technical aspects of reporting
Integrated report	a report consolidating all material data on the organization's strategy, corporate governance, performance indicators and prospects to provide a comprehensive picture of its economic, social and environmental status. The report gives a clear and precise idea of stewardship and value creation in the organization at present and in the future
International Integrated Reporting Council (IIRC)	an international organization responsible for the development of global integrated reporting standards that make it possible to present managerial, financial, social, environmental and other information in a clear, concise, consistent and comparable report. The objective of the IIRC is to develop universal approaches to providing corporate reports in order to promote sustainable development of the global economy
Key performance indicators (KPIs)	key performance indicators consistent with the goals of JSC Atomenergoprom and reflecting the efficiency and performance of organizations (and operations of divisions) and the individual performance of employees
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 cycle	a sequence of manufacturing processes aimed at ensuring the operation of nuclear reactors, ranging from uranium production to radioactive waste disposal
Nuclear power	a branch of power engineering that uses nuclear energy for electricity and heat generation

Nuclear safety	the ability of nuclear facilities (including NPPs) to prevent nuclear accidents and radioactive leaks
Operator	an organization that has obtained a permit from a regulator for the operation of an NPP or another nuclear facility
Phase Gate approach	an approach to planning and carrying out investment activities which involves breaking down investment projects into phases, each of which is preceded by a Gate Review of achieved results as well as plans and risks related to further project implementation, and the decision is made to proceed to the next phase of project implementation
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, e.g. an NPP
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 the operation of a nuclear facility (e.g. an NPP)
Radioactive release	controlled atmospheric emission of radionuclides by a nuclear facility (e.g. an NPP)
Radioactive waste	materials and substances unsuitable for further use, as well as equipment and products with a radionuclide content above prescribed levels
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 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 Russian Business, Recommendations on the 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; it does not depend on the separation process being used. Separative work is measured in kilograms, and enrichment and energy costs are calculated per kilogram of separative work performed

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 meeting the needs of the present without compromising the ability of future generations to meet their own needs. Accordingly, an organization's transparency and accountability with regard to its economic, environmental and social impacts are fundamental requirements for every business entity
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 53°C, 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. The composition of minerals does not change in the process; they are only separated mechanically, with ore concentrate being produced
VVER	a water-cooled water-moderated power 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

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
FTP	federal target programme
FTS	Federal Tariff Service
HEU	highly enriched uranium
HLW	high-level waste
IAEA	International Atomic Energy Agency
IEPRS	functional subsystem for emergency prevention and response in organizations within the jurisdiction of JSC Atomenergoprom
IGA	intergovernmental agreement
IIDMS	integrated industry-wide document management system
INES	International Nuclear Event Scale (INES)
IP	intellectual property
IRAW	individual risk assessment workstation
IRG	inert radioactive gases
ISRS	Integrated Standardized Remuneration System
ISS	inspection and search system
ITER	International Thermonuclear Experimental Reactor (ITER)
IUEC	International Uranium Enrichment Centre
JSC	joint-stock company
JV	joint venture
KPI	key performance indicator
LC	life cycle

LEU	low-enriched uranium
LLC	limited liability company
LRW	liquid radioactive waste
MSSC	multipurpose shared services centre
NF	nuclear facilities
NFA	nuclear fuel assembly
NFC	nuclear fuel cycle
NFE	nuclear fuel element
NPP	nuclear power plant
NRS	nuclear and radiation safety
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
SNF	spent nuclear fuel
SWU	separative work unit
UN	United Nations

APPENDICES

Appendix 1. Use of the GRI Sustainability Reporting Standards

GRI Standard (2016) used by the Company	Section of the Report where the Standard is used / comment
Disclosures from Standard GRI 102: General Disclosures	
102-1 Name of the organization	Company Overview
102-2 Activities, brands, products, and services	JSC Atomenergoprom Today
102-3 Location of headquarters	Company Overview
102-4 Location of operations	3.2. International Business 3.3. International Cooperation
102-5 Ownership and legal form	Company Overview
102-6 Markets served	3.1. Markets Served by Atomenergoprom 3.2. International Business
102-7 Scale of the organization	JSC Atomenergoprom Today Financial and Economic Results
102-8 Information on employees and other workers	7.1. Personnel Management
102-10 Significant changes to the organization and its supply chain	6.1. Corporate Governance
102-11 Precautionary Principle or approach	8.1. Nuclear and Radiation Safety; Occupational Safety and Health
102-14 Statement from senior decision-maker	Address by the Chair of the Board of Directors Address by the Director
102-15 Key impacts, risks, and opportunities	2.1. Business Strategy until 2030 2.2. Risk Management 3.1. Markets Served by Atomenergoprom
102-16 Values, principles, standards, and norms of behaviour	Values of JSC Atomenergoprom
102-19 Delegating authority	6.1. Corporate Governance
102-22 Composition of the highest governance body and its committees	6.1. Corporate Governance
102-23 Chair of the highest governance body	6.1. Corporate Governance
102-35 Remuneration policies	6.1. Corporate Governance 7.1. Personnel Management

GRI Standard (2016) used by the Company	Section of the Report where the Standard is used / comment
Disclosures from Standard GRI 102: General Disclosures	
102-40 List of stakeholder groups	7.3. Stakeholder Engagement
102-42 Identifying and selecting stakeholders	7.3. Stakeholder Engagement
102-43 Approach to stakeholder engagement	7.3. Stakeholder Engagement
102-45 Entities included in the consolidated financial statements	History of JSC Atomenergoprom
102-48 Restatements of information	There were no restatements in the 2016 report
102-49 Changes in reporting	In the reporting year, no significant changes were introduced compared to the previous reporting periods
102-50 Reporting period	Report Profile
102-51 Date of most recent report	Report Profile
102-52 Reporting cycle	Report Profile
102-53 Contact point for questions regarding the report	Contact Details
102-55 GRI content index	Appendix 1. Use of the GRI Sustainability Reporting Standards
Disclosures from Standard GRI 103: Management Approach	
103-1 Explanation of the material topic and its Boundary	Report Profile
103-2 The management approach and its components	See sections of the Report corresponding to disclosures from topic-specific Standards
103-3 Evaluation of the management approach	See sections of the Report corresponding to disclosures from topic-specific Standards
Disclosures from topic-specific GRI Standards	
Disclosure 203-2 from Standard 203: Indirect economic impacts	7.2. Developing the Regions of Operation
Disclosure 401-2 from Standard 401: Employment	7.1. Personnel Management ⁴¹

⁴¹ Benefits specified in section 7.1.5: 'Social Policy' are not provided to part-time employees

GRI Standard (2016) used by the Company	Section of the Report where the Standard is used / comment
Disclosures from topic-specific GRI Standards	
Disclosure 402-1 from Standard 402: Labour/ Management Relations	7.1. Personnel Management
Disclosure 403-2 from Standard 403: Occupational Health and Safety	8.1. Nuclear and Radiation Safety; Occupational Safety and Health
Disclosure 403-4 from Standard 403: Occupational Health and Safety	7.1. Personnel Management
Disclosure 404-1 from Standard 404: Training and Education	7.1. Personnel Management
Disclosure 404-2 from Standard 404: Training and Education	7.1. Personnel Management
Disclosure 404-3 from Standard 404: Training and Education	7.1. Personnel Management
Disclosure 416-1 from Standard 416: Customer Health and Safety	2.2. Risk Management 8.1. Nuclear and Radiation Safety; Occupational Safety and Health
Disclosure 302-4 from Standard 302: Energy	8.2. Environmental Safety

Appendix 2.

Summary consolidated financial statements of JSC Atomenergoprom based on consolidated financial statements for the year ended December 31, 2016, and the independent auditors' report



Joint Stock Company Atomic Energy Power Corporation

**Summarised consolidated financial statements
for the year ended 31 December 2016
and Independent Auditors' Report**



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10 Presnenskaya Naberezhnaya
Moscow, Russia 123112
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Fax +7 (495) 937 4400/99
Internet www.kpmg.ru

Independent Auditors' Report on the Summarised Consolidated Financial Statements

To the Shareholders and the Board of Directors
JSC «Atomenergoprom»

Opinion

The summarised consolidated financial statements, which comprise the summarised consolidated statement of financial position as at 31 December 2016, the summarised consolidated statements of profit and loss, other comprehensive income, changes in equity and cash flows for the year then ended, and a related note, are derived from the audited consolidated financial statements of JSC «Atomenergoprom» ("the Company") and its subsidiaries (the "Group") for the year ended 31 December 2016.

In our opinion, the accompanying summarised consolidated financial statements are consistent, in all material respects, with the audited consolidated financial statements, on the basis described in Note 1.

Summarised Consolidated Financial Statements

The summarised consolidated financial statements do not contain all the disclosures required by International Financial Reporting Standards. Reading the summarised consolidated financial statements and our report thereon, therefore, is not a substitute for reading the audited consolidated financial statements and our report thereon.

The Audited Consolidated Financial Statements and Our Report Thereon

We expressed an unmodified audit opinion on the audited consolidated financial statements in our report dated 11 April 2017. That report also includes the communication of key audit matters.

Management's Responsibility for the Summarised Consolidated Financial Statements

Management is responsible for the preparation of the summarised consolidated financial statements on the basis described in Note 1.

Audited entity: JSC Atomic Energy Power Corporation (JSC «Atomenergoprom»)

Registered by the Moscow Inter-Regional Tax Inspectorate No.46 on 19 July 2007. Certificate series 77 No. 008571073.

Entered in the Unified State Register of Legal Entities on 19 July 2007. Registration No. 1077750001664.

24, Bolshaya Ordynka street, Moscow, 119017.

Independent auditor: JSC "KPMG", a company incorporated under the Laws of the Russian Federation, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.

Registered by the Moscow Registration Chamber on 25 May 1992. Registration No. 011.585.

Entered in the Unified State Register of Legal Entities on 13 August 2002 by the Moscow Inter-Regional Tax Inspectorate No.39 of the Ministry for Taxes and Duties of the Russian Federation. Registration No. 1027700125628. Certificate series 77 No. 005721432.

Member of the Self-regulated organization of auditors "Russian Union of Auditors" (RUA). The Principal Registration Number of the Entry in the State Register of Auditors and Audit Organisations: No. 11603053203.



JSC "Atomenergoprom"

Independent Auditors' Report on the Summarised Consolidated Financial Statements

Page 2

Auditors' Responsibility

Our responsibility is to express an opinion on whether the summarised consolidated financial statements are consistent, in all material respects, with the audited consolidated financial statements based on our procedures, which were conducted in accordance with International Standard on Auditing (ISA) 810 (Revised) "Engagements to Report on Summary Financial Statements".


Altukhov K.V.
JSC "KPMG"
Moscow, Russia
11 April 2017



Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of financial position as at 31 December 2016
(in millions of Russian roubles)

	31 December 2016	31 December 2015 (restated*)
Assets		
Non-current assets		
Goodwill	35 481	42 630
Property, plant and equipment	1 670 631	1 601 242
Intangible assets	108 569	48 391
Investments in equity accounted investees	37 003	62 488
Available-for-sale financial assets	22 537	785
Trade and other receivables	19 915	25 299
Non-current loans given	63 695	84 288
Deferred tax assets	8 016	7 917
Other non-current assets	64 879	34 954
Total non-current assets	2 030 726	1 907 994
Current assets		
Inventories	163 887	184 274
Income tax receivable	4 434	2 181
Other taxes receivable	500	467
Bank deposits	1 805	275
Trade and other receivables	268 594	231 850
Current loans given	19 272	18 005
Cash and cash equivalents	312 221	328 537
Other current assets	1 639	1 871
Total current assets	772 352	767 460
Total assets	2 803 078	2 675 454

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of financial position as at 31 December 2016
(in millions of Russian roubles)

	31 December 2016	31 December 2015 (restated*)
EQUITY AND LIABILITIES		
Equity		
Share capital	1 031 787	1 017 569
Share premium	361	361
Reserves	21 361	46 654
Retained earnings	630 408	560 988
Total equity attributable to owners of the Company	1 683 917	1 625 572
Non-controlling interests	239 372	204 226
Total equity	1 923 289	1 829 798
Non-current liabilities		
Loans and borrowings	195 260	244 634
Trade and other payables	104 815	78 319
Grants and other financing	8 636	7 575
Employee benefits	13 582	12 696
Provisions	141 041	110 149
Deferred tax liabilities	31 292	17 219
Other non-current liabilities	1 214	869
Total non-current liabilities	495 840	471 461
Current liabilities		
Loans and borrowings	100 538	95 290
Income tax payable	1 734	5 786
Other taxes payable	22 452	19 971
Trade and other payables	250 738	245 264
Other current liabilities	8 487	7 884
Total current liabilities	383 949	374 195
Total liabilities	879 789	845 656
Total equity and liabilities	2 803 078	2 675 454

Director

Chief Accountant

«11» апреля 2017



K.B. Komarov

V.A. Andrienko

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of profit and loss for the year ended 31 December 2016
(in millions of Russian roubles)

	2016	2015 (restated*)
Revenue	699 707	658 133
Cost of sales	(461 410)	(389 486)
Gross profit	238 297	268 647
Distribution expenses	(16 670)	(18 410)
Administrative expenses	(65 372)	(62 983)
Other income	14 421	19 155
Other expenses	(31 499)	(47 113)
Results from operating activities	139 177	159 296
Finance income	26 710	52 182
Finance costs	(78 690)	(34 147)
Share of net profit of equity accounted investees	4 702	8 800
Income from business combination	25 956	-
Profit before income tax	117 855	186 131
Income tax expense	(24 995)	(44 260)
Profit for the period	92 860	141 871
Profit/(loss) for the period attributable to:		
Owners of the Company	89 281	143 921
Non-controlling interests	3 579	(2 050)

Director

Chief Accountant

«11» anpeul 2017



K.B. Komarov

V.A. Andrienko

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of comprehensive income for the year ended 31 December 2016
(in millions of Russian roubles)

	2016	2015 (restated*)
Profit for the period	92 860	141 871
Other comprehensive income		
Items that will never be reclassified to profit or loss		
Remeasurements of defined benefit liability	(515)	(1 897)
Income tax on other comprehensive income	103	379
Total	(412)	(1 518)
Items that may be reclassified subsequently to profit or loss		
Net change in fair value of available-for-sale financial assets	28	6 013
Hedging reserve	(3 451)	343
Foreign currency translation differences	(27 298)	1 257
Reclassification of foreign currency translation differences to statement of profit and loss	(2 070)	-
Income tax on other comprehensive income	(6)	(1 203)
Total	(32 797)	6 410
Total other comprehensive (loss)/income	(33 209)	4 892
Total comprehensive income for the period	59 651	146 763
Total comprehensive income/(loss) for the period attributable to:		
Owners of the Company	63 988	135 922
Non-controlling interests	(4 337)	10 841

Director

Chief Accountant

«11» anpeul 2017



K.B. Komarov

V.A. Andrienko

7

*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of changes in equity for the year ended 31 December 2016
(in millions of Russian roubles)

	Equity								
	Attributable to equity holders of the Company								
	Share capital	Share premium	Fair value reserve for available-for-sale financial assets	Foreign currency translation reserve	Other reserves	Retained earnings	Total	Non-controlling interests	Total equity
Balance at 1 January 2015	960 019	361	(4 810)	53 518	4 519	470 903	1 484 510	63 051	1 547 561
Effect of the transaction under common control	-	-	-	824	872	(9 575)	(7 879)	(324)	(8 203)
Balance at 1 January 2015 (restated*)	960 019	361	(4 810)	54 342	5 391	461 328	1 476 631	62 727	1 539 358
Total comprehensive income for the period	-	-	-	-	-	143 921	143 921	(2 050)	141 871
Profit for the period	-	-	-	-	-	-	-	-	-
Other comprehensive income	-	-	-	(11 634)	-	(11 634)	(11 634)	12 891	1 257
Foreign currency translation differences	-	-	-	(11 634)	-	-	(11 634)	12 891	1 257
Net change in fair value of available-for-sale financial assets	-	-	6 013	-	-	-	6 013	-	6 013
Remeasurements of defined benefit liability	-	-	-	-	(1 897)	-	(1 897)	-	(1 897)
Hedging reserve	-	-	-	-	343	-	343	-	343
Income tax on other comprehensive income	-	-	(1 203)	-	379	-	(824)	-	(824)
Effect of discontinued operations	-	-	-	-	-	-	-	-	-
Other comprehensive income	-	-	4 810	(11 634)	(1 175)	-	(7 999)	12 891	4 892
Total comprehensive income for the period	-	-	4 810	(11 634)	(1 175)	143 921	135 922	10 841	146 763

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of changes in equity for the year ended 31 December 2016
(in millions of Russian roubles)

	Equity								
	Attributable to equity holders of the Company								
	Share capital	Share premium	Fair value reserve for available-for-sale financial assets	Foreign currency translation reserve	Other reserves	Retained earnings	Total	Non-controlling interests	Total equity
Balance at 31 December 2015 (restated*)	1 017 569	361	-	42 708	3 946	560 988	1 625 572	204 226	1 829 798
Contributions by and distributions to owners	-	-	-	-	-	-	-	-	-
Dividends	-	-	-	-	-	(15 208)	(15 208)	(39)	(15 247)
Shares issued	57 550	-	-	-	-	-	57 550	-	57 550
Total contributions by and distributions to owners	57 550	-	-	-	-	(15 208)	42 342	(39)	42 303
Cancellation of equity component of convertible debentures	-	-	-	-	(270)	270	-	-	-
Changes in non-controlling interests in subsidiaries	-	-	-	-	-	(29 587)	(29 587)	130 697	101 110
Effect of the transaction under common control	-	-	-	-	-	264	264	-	264
Total transactions with owners	57 550	-	-	-	(270)	(44 261)	13 019	130 658	143 677
Balance at 31 December 2015 (restated*)	1 017 569	361	-	42 708	3 946	560 988	1 625 572	204 226	1 829 798

*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

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Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of changes in equity for the year ended 31 December 2016
(in millions of Russian roubles)

	Equity							
	Attributable to equity holders of the Company							
	Share capital	Share premium	Fair value reserve for available-for-sale financial assets	Foreign currency translation reserve	Other reserves	Retained earnings	Non-controlling interests	
Balance at 1 January 2016	1 017 569	361	-	42 708	3 946	560 988	204 226	1 829 798
Total comprehensive income for the period								
Profit for the period	-	-	-	-	-	89 281	3 579	92 860
Other comprehensive income								
Foreign currency translation differences	-	-	-	(21 452)	-	(21 452)	(7 916)	(29 368)
Net change in fair value of available-for-sale financial assets	-	-	28	-	-	-	-	28
Remeasurements of defined benefit liability	-	-	-	-	(515)	-	-	(515)
Hedging reserve	-	-	-	-	(3 451)	-	-	(3 451)
Income tax recognized in other comprehensive income	-	-	(6)	-	103	-	-	97
Other comprehensive income/(loss)	-	-	22	(21 452)	(3 863)	-	(7 916)	(33 209)
Total comprehensive income for the period	-	-	22	(21 452)	(3 863)	89 281	(4 337)	59 651

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of changes in equity for the year ended 31 December 2016
(in millions of Russian roubles)

	Equity							
	Attributable to equity holders of the Company							
	Share capital	Share premium	Fair value reserve for available-for-sale financial assets	Foreign currency translation reserve	Other reserves	Retained earnings	Non-controlling interests	
Balance at 31 December 2016	1 031 787	361	22	21 256	83	630 408	239 372	1 923 289
Contributions by and distributions to owners								
Dividends	-	-	-	-	-	(11 388)	(2 538)	(13 926)
Shares issued	14 218	-	-	-	-	14 218	-	14 218
Total contributions by and distributions to owners	14 218	-	-	-	-	(11 388)	(2 538)	292
Changes in non-controlling interests in subsidiaries	-	-	-	-	-	(13 374)	23 011	9 637
Effect of the transaction under common control	-	-	-	-	-	4 901	(1 364)	3 537
Effect of business combination	-	-	-	-	-	-	20 374	20 374
Total transactions with owners	14 218	-	-	-	-	(19 861)	39 483	33 840
Balance at 31 December 2016	1 031 787	361	22	21 256	83	630 408	239 372	1 923 289

Director

Chief Accountant

«11» *Ampev* 2017

K.B. Komarov

V.A. Andrienko

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of cash flows for the year ended 31 December 2016
(in millions of Russian roubles)

	2016	2015 (restated*)
CASH FLOWS FROM OPERATING ACTIVITIES		
Profit before income tax	117 855	186 131
<i>Adjustments for:</i>		
Depreciation and amortisation	94 129	78 774
Impairment losses on property, plant and equipment	6 903	2 155
Loss on disposal of property, plant and equipment, intangible assets and other assets	5 070	2 724
Share of net profit of equity accounted investees	(4 702)	(8 801)
Income from business combination	(25 956)	-
Net finance costs/(income)	51 980	(18 035)
Trade receivables impairment allowance	6 498	8 157
Inventories impairment allowance	12 765	1 087
Change and accrual of provisions	6 517	27 340
Other	599	(1 259)
Cash from operating activities before changes in working capital	271 658	278 273
Change in inventories	12 767	(10 295)
Change in trade and other receivables	(7 440)	(58 918)
Change in other taxes receivable	(33)	(39)
Change in trade and other payables	170	91 663
Change in other taxes payable	2 481	1 604
Cash flows from operations before income tax and interest paid	279 603	302 288
Income tax paid	(31 572)	(52 210)
Interest paid	(25 314)	(25 574)
Net cash from operating activities	222 717	224 504
CASH FLOWS FROM INVESTING ACTIVITIES		
Interest received	18 965	20 456
Dividends received from equity accounted investees	4 093	5 480
Acquisition of property, plant and equipment	(174 198)	(245 228)
Acquisition of intangible assets	(5 937)	(4 141)
Purchase of investments	(20 763)	(500)
Proceeds from sale of investments	-	41 383
New deposits	(1 933)	(6 518)
Redemption of deposits	399	9 428
Investments in joint arrangement	(2 464)	(2 718)
Proceeds from business combination	2 205	122
Disposal of subsidiaries	1 781	-
Loans given to other entities	(12 977)	(78 594)
Proceeds from loans given to other entities	21 467	24 680
Proceeds from disposal of property, plant and equipment and intangible assets	7 995	11 486
Proceeds from grants and other financing	3 178	3 225
Net cash used in investing activities	(158 189)	(221 439)

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of cash flows for the year ended 31 December 2016
(in millions of Russian roubles)

	2016	2015 (restated*)
CASH FLOWS FROM FINANCING ACTIVITIES		
Proceeds from issue of share capital	8 993	57 550
Settlement of swap on expiration date	(7 053)	-
Proceeds from borrowings and issued debentures	234 709	283 377
Repayment of borrowings and redemption of debentures	(270 088)	(309 417)
Dividends paid	(9 423)	(15 247)
Proceeds from sale of non-controlling interest	-	98 506
Net cash (used in)/from financing activities	(42 862)	114 769
Net increase in cash and cash equivalents	21 666	117 834
Cash and cash equivalents at the beginning of the period	328 360	156 168
Effect of movements in foreign exchange rates on cash and cash equivalents	(37 983)	54 358
Cash and cash equivalents at the end of the period	312 043	328 360

Director

Chief Accountant

«11» апреля 2017



K.B. Komarov

V.A. Andrienko

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*Restatement due to retrospective inclusion of a transaction under common control in the consolidated financial statements (see Note 1).

Joint Stock Company Atomic Energy Power Corporation
 Note to the summarised consolidated financial statements for the year ended 31 December 2016
 (in millions of Russian roubles)

1 The criteria for the preparation of summarised consolidated financial Statements

These summarised consolidated financial statements, which comprise the summarised consolidated statement of financial position as at 31 December 2016, the summarised consolidated statement of profit and loss, the summarised consolidated statements of comprehensive income, the summarized consolidated statement of changes in equity and the summarised consolidated statement of cash flows for 2016 have been prepared by extraction, without any modification, the relevant statements from included in the consolidated financial statements of Joint Stock Company Atomic Energy Power Corporation and its subsidiaries prepared in accordance with International Financial Reporting Standards for the year ended 31 December 2016 (hereinafter "consolidated financial statements"). Comparative data in the consolidated financial statements was restated due to retrospective inclusion of a transaction under common control. All notes to the consolidated financial statements were not included in these summarised consolidated financial statements.

Accordingly, these summarised consolidated financial statements are consistent with those consolidated financial statements, which are available on the official website of Joint Stock Company Atomic Energy Power Corporation.



FEEDBACK FORM

Dear readers,

You have read the public annual report of JSC Atomenergoprom, 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 Company's reports by completing the questionnaire below.

Please return the completed form by mail to the Communications Department or to the Treasury Department at 24 Bolshaya Ordynka Street, Moscow, 119017 or by email (EAMamy@rosatom.ru).

1. Please assess the Report using the following criteria:

Accuracy and objectivity			
<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Poor
Completeness and relevance of information			
<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Poor
Report structure, ease of reference, wording			
<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> 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 JSC Atomenergoprom or ROSATOM
- Employee of an organization forming part of JSC Atomenergoprom or 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)

