

JSC Atomenergoprom

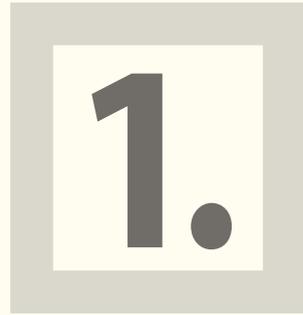


Annual Report

2017

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JSC Atomenergoprom Today

No. 1

in the world in terms of the number of NPP power units in the portfolio of foreign projects (33 power units) (including the project portfolio of ROSATOM)

No. 1

in the world in terms of uranium enrichment (36% of the global market)

No. 2

in the world in terms of uranium reserves and 14% of global production

292.3

EBITDA, RUB billion

970

number of wind farms to be commissioned in Russia by 2022

202.9

electricity output at 35 operating power units of Russian NPPs in 2017, billion kWh

~17%

share of the global nuclear fuel market

18.9%

share of electricity generation in Russia

747.1

revenue in 2017, RUB billion

43%

of the Russian wind power market

33

power units in 12 countries around the world

814.1

portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion

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, 2017:

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: 94.45%.

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: 5.55%.

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 2017.

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 (hereinafter referred
to as the Report) of JSC Atomenergoprom
(hereinafter referred to as JSC Atomenergoprom
or the Company) for 2017 has been prepared in
the integrated format.
The Report provides an integrated account of the
Company's strategy and JSC Atomenergoprom's
key financial, economic and operating results for
2017. 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 2017. This Report covers the operating results
of the Company and its organizations during

the period from January 1 through December
31, 2017. 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 has been prepared in accordance with
individual GRI Standards listed in 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.

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
topics related to the Company's operations;

■ The Company's management, members of
the working group preparing the Report and
representatives of major stakeholder groups

prioritized material topics (based on the assessment
of materiality of each of the proposed topics);

■ Following the 'two-stage filtering', a list of
material topics to be disclosed in the Report was
compiled.

As a result, a ranking map of material 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 topics to which the indicators are
related. The boundaries of information disclosure
on various topics 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,



2017 was a successful year for JSC Atomenergoprom. The Company achieved all objectives that it had set as part of the long-term strategy for the development of the Russian nuclear industry.

All of its key financial indicators increased, which provides evidence of the stable position and operational efficiency of JSC Atomenergoprom. Revenue reached RUB 747.1 billion (up by 6.7% year on year); EBITDA totalled RUB 292.3 billion (up by 16.7% year on year), while profit increased to RUB 116.2 billion (up by 25.2% compared to 2016).

The Company continued mass production and commissioning of power units at nuclear power plants in Russia and abroad. In February 2017, the innovative power unit No. 1 of Novovoronezh NPP-2 with a generation 3+ VVER-1200 reactor started full-scale operation. In December, the first criticality programme was launched at power unit No. 4 of Rostov NPP and power unit No. 1 of Leningrad NPP-2. As part of NPP construction projects abroad, the power start-up of power unit No. 3 was completed at Tianwan NPP in China.

Nuclear power generation is a source of clean energy that contributes

significantly to sustainable economic development in Russia. In 2017, electricity output at 35 power units of 10 operating NPPs totalled 202.9 billion kWh, or 18.9% of the total electricity output in Russia.

JSC Atomenergoprom creates breakthrough technologies and innovative infrastructure to facilitate long-term development and meet the energy needs of mankind. In 2017, the Company continued to implement the Proryv (Breakthrough) project to develop fast neutron reactors and close the nuclear fuel cycle. A digital transformation programme was launched. Promising

projects are underway in such areas as supercomputers, additive manufacturing and life cycle management of complex engineering facilities.

In the course of its operations, JSC Atomenergoprom gives special focus to minimizing its environmental footprint and using resources sustainably and efficiently. As in recent years, in 2017, no events rated at level 2 or higher on the international INES scale were detected at nuclear facilities (level 1 and 0 deviations do not pose a risk to employees operating the facilities, local residents or the environment). Russian nuclear enterprises are implementing

a programme to improve their energy efficiency and introducing energy management systems complying with international standards.

I would like to thank the Company's employees and partners for their efficient work throughout the year. We will continue to work together towards new achievements!

Chair of the Board of Directors of JSC Atomenergoprom

Ekaterina Lyakhova

Address by the Director

Dear colleagues and partners,



2017 was an eventful and successful year for JSC Atomenergoprom and the Russian nuclear industry as a whole.

The Company maintained a sizable portfolio of overseas orders. A major part of the portfolio is comprised of NPP construction projects, which include 33 power units in 12 countries around the world. In the reporting year, a package of contracts for the construction of El Dabaa NPP with four power units in Egypt came into force. Russia and India signed a master framework agreement on the construction of power units No. 5 and 6 of Kudankulam NPP.

NPP construction is an important driver of economic growth. The construction

and operation of NPPs with two power units provides employment in the sphere of nuclear infrastructure for over 10,000 people and creates over 3,000 new jobs related to NPP operation. National companies are guaranteed capacity utilization for more than 70 years. Various sectors of industry are involved in NPP construction. This creates positive synergies and produces a multiplier effect. NPP construction has a positive impact on the budget by boosting tax revenue both in the customer country and in the supplier country.

In addition to nuclear power plants, JSC Atomenergoprom is also actively developing other sources of clean energy. In 2017, the portfolio of the Company's

wind farms to be commissioned in Russia by 2022 increased to 970 MW (43% of the Russian wind power market). The Company will build wind farms in the Krasnodar Territory, the Republic of Adygea, the Stavropol Territory and the Rostov Region. The first power generation capacities and a plant manufacturing wind turbines are scheduled to be commissioned in 2018.

The Company is successfully developing a new area of business: construction of Nuclear Research and Technology Centres abroad. In 2017, the first contract for the construction of a Nuclear Research and Technology Centre was signed with Bolivia. In addition, agreements on the

implementation of similar projects were signed with Zambia and Nigeria.

Nuclear medicine is one of the key areas of JSC Atomenergoprom's business in the long term. The Company offers nuclear medicine technologies and services that enable timely diagnosis and effective treatment of certain types of cancer. In 2017, the Company started to provide services to local residents at regional healthcare institutions in the Chelyabinsk Region. It also started to develop a Russian radiotherapy facility based on a linear electron accelerator. The Company has won an international tender for the supply of a cyclotron complex with radiochemical laboratories to Thailand.

The facility will be used for the production of radiopharmaceuticals.

I would like to thank the Company's employees and partners and wish them every success in the achievement of our shared goals in 2018!

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 for related industries.

[\(see the section 'Business Diversification' for details\)](#)

JSC Atomenergoprom is an organization of State Atomic Energy Corporation Rosatom

NO. 1
in the world

in terms of the number of NPP power units in the portfolio of foreign projects (33 power units)

(including the project portfolio of ROSATOM)

NO. 1
in the world

in terms of uranium enrichment (36% of the global market)

NO. 2
in the world

in terms of uranium reserves and 14% of global production

~17% share

of the global nuclear fuel market

18.9% share

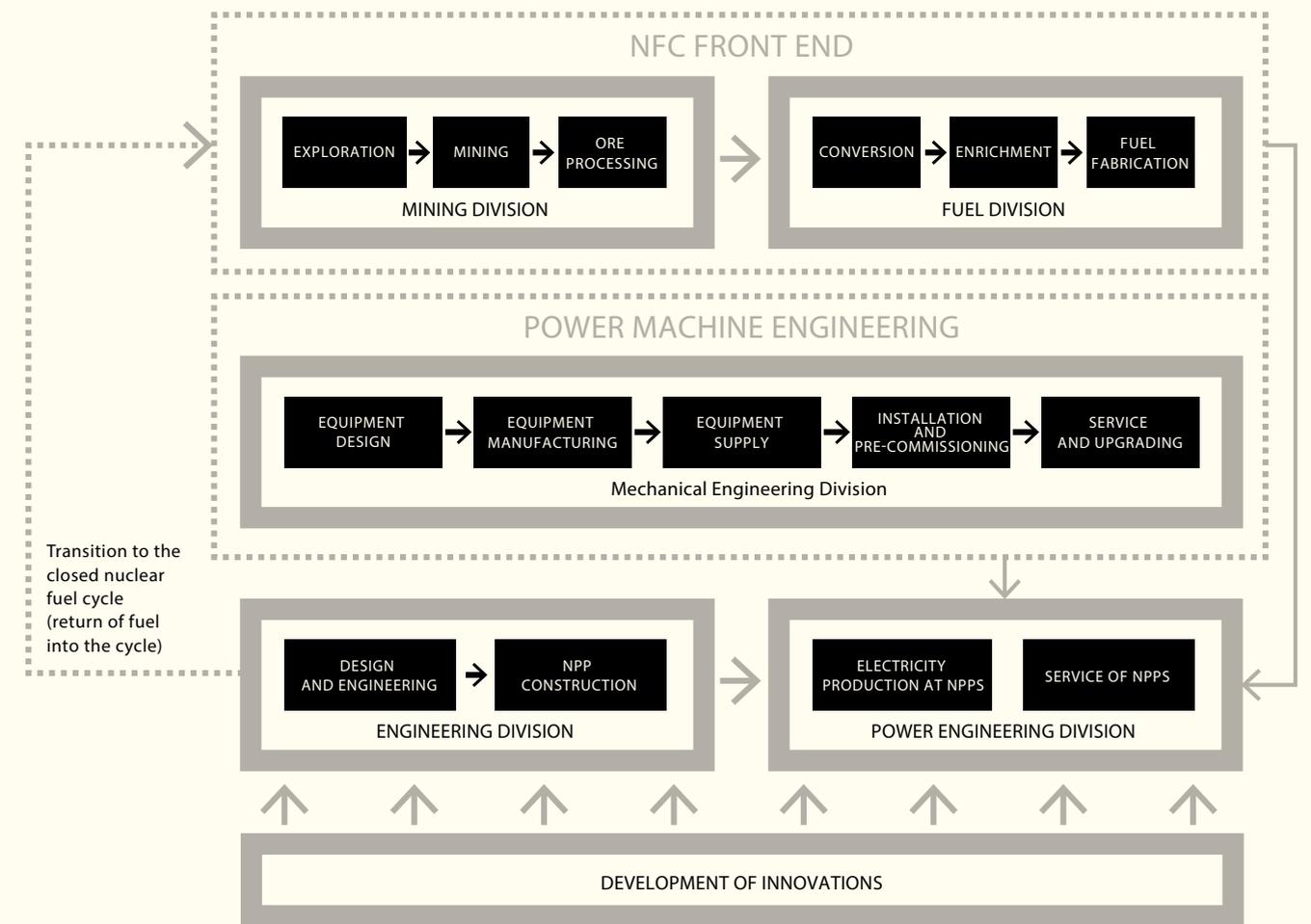
of electricity generation in Russia

(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

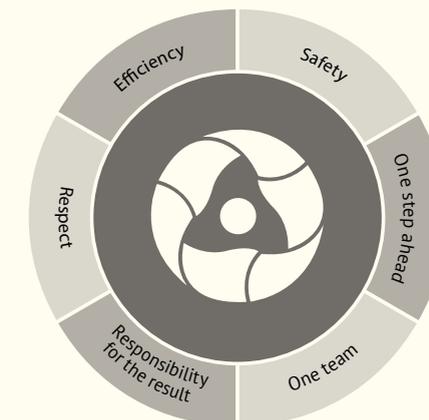
development of nuclear power and strengthening Russia's competitive position on the global market for nuclear technologies.

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.

Production and process chain of JSC Atomenergoprom



Values of JSC Atomenergoprom



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,

the 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, 2017, JSC Atomenergoprom's scope of consolidation in accordance with IFRS comprised 146 companies of different legal forms.

As of December 31, 2017, the shareholders of JSC Atomenergoprom were ROSATOM (94.4491%)¹ and the Russian Federation represented by the Russian Ministry of Finance (5.5509%).



¹ ROSATOM holds 100% of voting shares in JSC Atomenergoprom.

Key Events in 2017



- Power unit No. 1 of Novovoronezh NPP-2 with a VVER-1200 reactor started full-scale operation. *Power*, a prestigious US energy magazine, ranked this power unit in the top three power plants of the world in 2017.

- The first criticality programme was completed at power unit No. 4 of Rostov NPP equipped with a VVER-1000 reactor and the innovative power unit No. 1 of Leningrad NPP-2 equipped with a generation 3+ VVER-1200 reactor.

- The power start-up of power unit No. 3 at Tianwan NPP in China was completed.

- Electricity output at 35 power units of 10 operating NPPs totalled 202.9 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 18.9%.

- 11 intergovernmental agreements and 16 major interdepartmental agreements were concluded. These include 5 framework intergovernmental agreements concluded with Cambodia, Paraguay, Sudan, Tajikistan and Uzbekistan, which provide the foundation for bilateral cooperation between Russia and

these countries in the sphere of nuclear technologies.

- A package of contracts for the construction of El Dabaa NPP with four power units in Egypt came into force.

- Russia and India signed a master framework agreement on the construction of power units No. 5 and 6 of Kudankulam NPP.

- The portfolio of the Company's wind farms to be commissioned in Russia by 2022 increased to 970 MW (43% of the Russian wind power market). Wind farms will be built in the Krasnodar Territory, the Republic of Adygea, the Stavropol Territory and the Rostov Region.

- The Company started to provide nuclear medicine services to local residents at regional healthcare institutions in the Chelyabinsk Region.

- Priority social and economic development areas were established in Sarov and Dimitrovgrad.

- No events rated at level 2 or higher on the international INES scale were detected at nuclear facilities (level 1 and 0 deviations do not pose a risk to employees operating the facilities, local residents or the environment).

Key Results in 2017

Indicator	2015	2016 ²	2017	2016/2017
Revenue, RUB billion	658.1	699.9	747.1	+6.7%
EBITDA ³ , RUB billion	271.3	250.5	292.3	+16.7%
Profit, RUB billion	141.9	92.8	116.2	+25.2%
Assets, RUB billion	2,675.45	2,809.0	2,891.7	+2.9%
Intangible assets, RUB billion	48.4	108.6	92.4	-14.9%
Nuclear power generation, billion kWh	195.2	196.4	202.9	+3.3%
NPP capacity factor, %	86.0	83.1	83.3	-
Number of NPP power units under construction in Russia	8	8	8	-
Uranium resources ⁴ , kt	521.2 (+213.1)	517.9 (+220.8)	523.9 (+216.2)	-
Uranium production, t	7,849	7,924	8,019	+12.0%
Overseas NPP construction projects, number of power units	36	34	33	-2.9%
Portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion	403.3	692.8	814.1	+17.5%
Average salary in JSC Atomenergoprom, RUB '000 per month	72.9	74.3	78.2	+5.25%
Events rated level 2 and above on the INES scale, number	0	0	0	-

² Data on revenue, assets and intangible assets for 2016 has been recalculated due to the fact that in September 2017, ROSATOM paid for an additional issue of shares of JSC Atomenergoprom by transferring a 100% shareholding in JSC Federal Property Management Centre. Given that JSC Federal Property Management Centre had been controlled by ROSATOM, this transaction has been recorded as a transaction under joint control and, accordingly, the comparative data of the statement of profit and loss and other comprehensive income for 2016 has been retrospectively adjusted.

³ EBITDA = Operating results + Impairment of receivables + Depreciation and amortization + Adjustments for non-cash items of other expenses and income.

⁴ The lower line with a '+' sign shows the data on uranium resources of Uranium One; this data is shown separately due to the differences in the calculation methodology used for Russian and foreign assets.

Financial and Economic Results

Key financial results

Consolidated financial results of JSC Atomenergoprom under IFRS, RUB billion

	2015	2016 ⁵	2017	2017/2016, %
Revenue	658.1	699.9	747.1	106.7
Cost of sales	(389.5)	(461.6)	(478.0)	103.6
Gross profit	268.6	238.3	269.1	112.9
Distribution and administration expenses	(81.4)	(81.8)	(79.4)	97.1
Other income and expenses (net)	(27.9)	(17.1)	(26.5)	155.0
Financial income and expenses (net)	18.0	(52.3)	(12.1)	23.1
Share of net profit of equity accounted investees	8.8	4.7	2.9	61.7
Income from business combination	-	26.0	-	-
Income tax expense	(44.2)	(25.0)	(37.8)	151.2
Profit for the year	141.9	92.8	116.2	125.2
Other comprehensive income/(expenses)	4.9	(33.2)	(4.0)	12.0
Total comprehensive income for the year	146.8	59.6	112.2	188.3
Net operating profit after tax (NOPAT)	115.1	114.4	125.4	109.6

Revenue growth (by 6.7% or RUB 47.2 billion YoY) was driven mainly by the following factors:

■ An increase in the revenue of the Electricity segment as a result of an increase in sales volumes;

■ A reduction of revenue from sales of nuclear fuel, uranium products and enrichment services by the Sales and Trading, and Fuel operating segments in 2017, mainly as a result of lower prices

on the nuclear fuel cycle markets and a fall in annual average exchange rates of major currencies during the reporting period;

■ A reduction in revenue from other operating segments due to the exclusion of JSC ASE EC, JSC Atomproekt and PJSC Energospetsmontazh from the scope of consolidation in December 2016.

⁵ Hereinafter in this section, data for 2016 has been recalculated due to the fact that in September 2017, ROSATOM paid for an additional issue of shares of JSC Atomenergoprom by transferring a 100% shareholding in JSC Federal Property Management Centre. Given that JSC Federal Property Management Centre had been controlled by ROSATOM, this transaction has been recorded as a transaction under joint control and, accordingly, the comparative data of the statement of profit and loss and other comprehensive income for 2016 has been retrospectively adjusted.

Structure of revenue from sales to external customers by operating segment

Operating segment	2015		2016		2017	
	RUB billion	% of the total	RUB billion	% of the total	RUB billion	% of the total
Electricity Generation	271.6	41.3	314.6	44.9	417.3	55.8
Trading	169.3	25.7	121.5	17.4	106.8	14.3
Fuel Company	104.1	15.8	101.4	14.4	85.8	11.5
Machinery	41.9	6.4	53.1	7.6	55.1	7.4
Uranium One Holding	13.5	2.0	25.7	3.7	21.6	2.9
Mining	4.0	0.6	3.9	0.6	4.2	0.6
Other operating segments	53.7	8.2	79.7	11.4	56.3	7.5
Total	658.1	100.0	699.9	100.0	747.1	100.0

In 2017, profit totalled RUB 116.2 billion, up by RUB 23.4 billion (25.2%) compared to 2016. Changes in profit were driven primarily by the stabilization of exchange rates and,

consequently, the absence of significant foreign exchange losses in the reporting period. As a result of the above factors, as well as a reduction in foreign exchange losses on the

conversion of indicators of foreign organizations into the Russian rouble (consolidated reporting currency), the total comprehensive income for 2017 increased by 88.3% to RUB 112.2 billion.

Cost structure, RUB billion

Cost of sales	2015	2016	2017	2017/ 2016, %
Material and fuel	141.0	116.8	105.7	90.5
Personnel Costs	96.9	103.4	105.3	101.8
Purchased electricity for resale and for own use	24.8	42.7	54.2	126.9
Electricity energy transfer services	–	13.9	26.2	188.5
Depreciation and amortization expense	70.8	86.1	93.6	108.7
Production services of third party contractors	12.0	18.3	19.1	104.4
Property tax and other taxes and payments into budget	13.3	15.2	20.6	135.5
Other expenses	39.6	50.7	42.1	83.0
Changes in finished goods and work in progress	(8.9)	14.5	11.2	77.2
Total	389.5	461.6	478.0	103.6

In 2017, production cost increased by RUB 16.4 billion (3.6%). This growth was driven mainly by:

■ An increase in depreciation and amortization by RUB 7.5 billion (due to the commissioning of power unit No. 4 of Beloyarsk NPP and power unit No. 1 of Novovoronezh NPP-2);

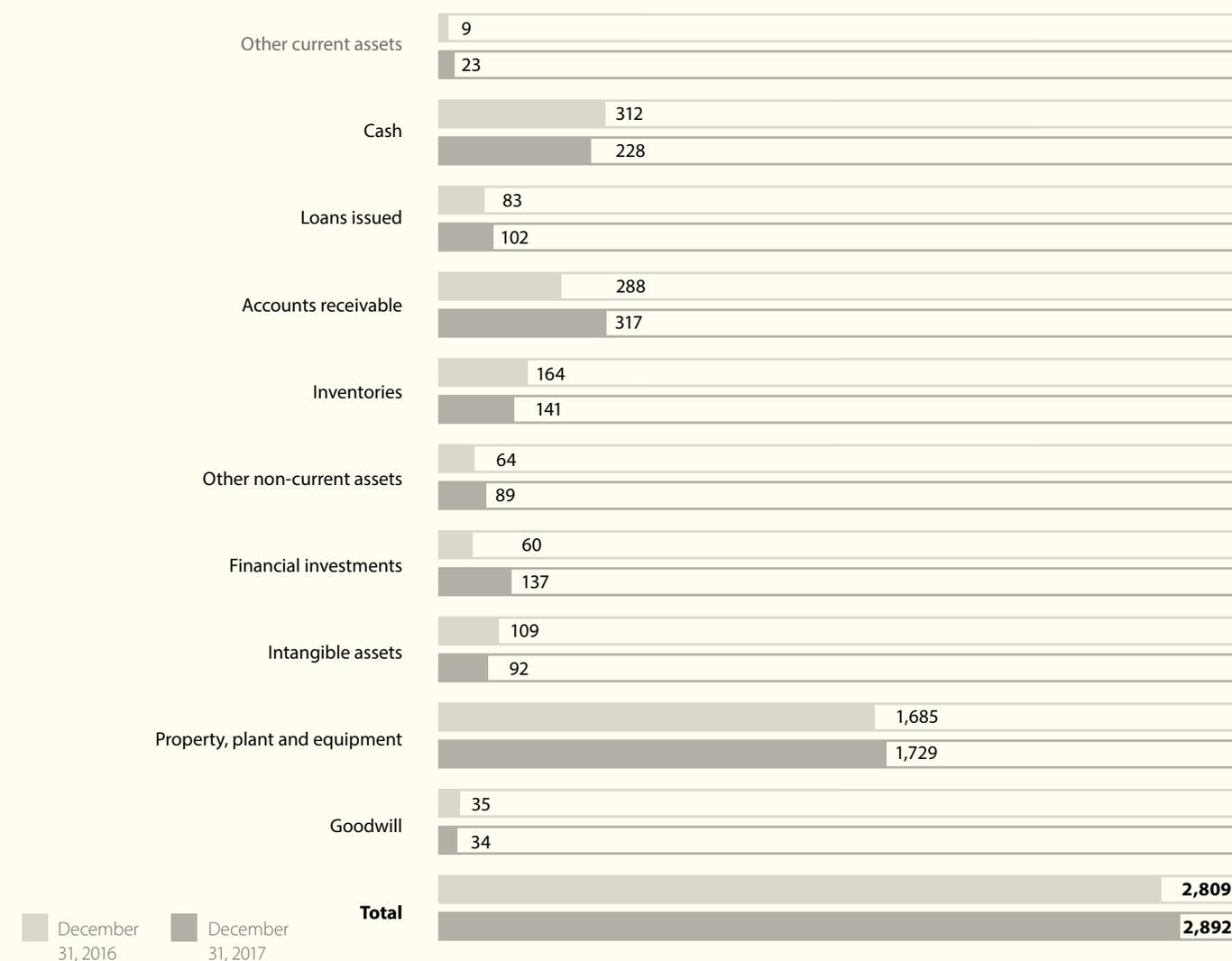
■ An increase in the cost of electricity purchased for resale by RUB 9.2 billion and an increase in the cost of electricity transmission services for 2017 by RUB 12.3 billion (the growth was due to the inclusion of power supply companies in the scope of consolidation as from June 1, 2016);

■ A rise in property tax by RUB 5.0 billion, mainly due to the start of commercial operation of new power units at NPPs.

At the same time, 2017 saw a reduction in losses from the impairment of inventories (by RUB 11.8 billion) and expenditure on raw and other materials (by RUB 11.6 billion).

Structure of the statement of financial position

Key changes in the asset structure, RUB billion



The write-up of fixed assets by RUB 44 billion was mainly due to the implementation of the investment programme of NPP construction in Russia and in Turkey.

Intangible assets decreased by RUB 17 billion, mainly due to the impairment of assets of Mantra Resources Limited.

Financial investments grew by RUB 77 billion, mainly as a result of purchase of long-term bank bills.

Other non-current assets increased by

RUB 25 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 23 billion. Cash decreased by RUB 84 billion.

Accounts receivable increased by RUB 29 billion. The most significant changes were related to debt under long-term contracts for the construction of foreign NPPs.

An increase 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 and the loan granted to JSC Concern Titan-2 in December 2017 for the financing of working capital.

There were no significant changes in the lines 'Goodwill' and 'Other Current Assets' in 2017 compared to 2016.

The non-controlling interest increased by RUB 44 billion as a result of issuance of additional shares to ROSATOM and the Russian Federation.

Outstanding borrowings decreased by RUB 111 billion as a result of a reduction in the credit portfolio ahead of the launch of major investment projects.

The increase in accounts payable by RUB 46 billion was driven mainly by:

- An increase in outstanding advance payments received as part of the

construction of Hanhikivi 1 NPP by RUB 6 billion due to a change in the euro exchange rate and accrual of interest;

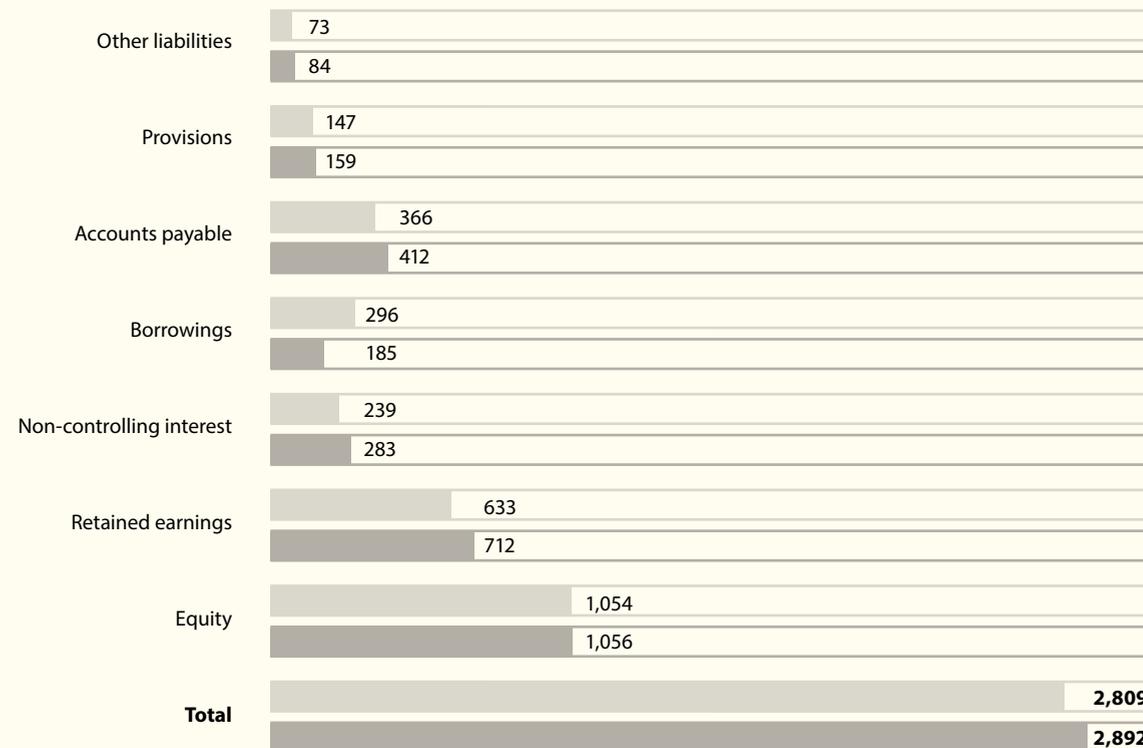
- An increase in outstanding advance payments for the manufacture of equipment received from JSC Atomstroyexport as part of construction of foreign NPPs by RUB 11 billion;

- An increase in accounts payable related to the technical connection of power units to the grid by RUB 14 billion;

- An increase in outstanding payments under commission contracts for the selection of suppliers by RUB 18 billion and the conclusion of contracts for the manufacture and supply of NPP equipment with JSC ASE EC and JSC Atomstroyexport.

There were no significant changes in the lines 'Equity', 'Other Liabilities' and 'Provisions' in 2017 compared to 2016.

Key changes in the structure of equity and liabilities, RUB billion



December 31, 2016 December 31, 2017

Key financial and economic indicators

Financial sustainability indicator	2015	2016	2017
Debt-to-equity ratio	0.41	0.39	0.33
Liquidity ratios			
Quick ratio	1.55	1.57	1.67
Current ratio	2.05	2.01	2.14
Turnover indicators, days			
Inventory turnover	99	91	75
Accounts receivable turnover	55	63	68
Accounts payable turnover	60	48	47
Profitability ratios, %			
Return on sales (ROS)	21.6	13.3	15.6
Return on assets (ROA)	5.3	3.3	4.0
Return on equity (ROE)	7.8	4.8	5.7

Profitability ratios increased in 2017, primarily due to a year-on-year increase in profits in the reporting period.

Cash flow

	2015	2016	2017	2017/ 2016, %
Cash flow from operating activities before changes in working capital	278.3	271.7	293.6	108.1
Changes in working capital	24.0	7.9	3.3	41.8
Income tax paid	(52.2)	(31.6)	(35.0)	110.8
Interest paid	(25.6)	(25.3)	(21.0)	83.0
Net cash flow from operating activities	224.5	222.7	240.9	108.2
Capital expenditures	(249.4)	(180.1)	(158.9)	88.2
Other	28.0	21.9	(60.0)	(274.0)
Net cash flow used in investing activities	(221.4)	(158.2)	(218.9)	138.4
Net changes in total debt	(26.1)	(42.4)	(100.7)	237.5
Proceeds from issue of share capital	57.6	9.0	1.8	20.0
Dividends paid	(15.2)	(9.4)	(10.3)	109.6
Proceeds from the sale of a non-controlling interest	98.5	–	–	–
Net cash (used in)/from financing activities	114.8	(42.8)	(109.2)	255.1
Net (decrease)/increase in cash and cash equivalents	117.9	21.7	(87.2)	(401.8)
Cash and cash equivalents at the beginning of the reporting period	156.2	328.4	312.1	95.0
Effect of movements in foreign exchange rates on cash and cash equivalents	54.3	(38.0)	2.7	(7.1)
Cash and cash equivalents at the end of the reporting period	328.4	312.1	227.6	72.9

In 2017, cash totalling RUB 25 billion (RUB 13 billion in 2016) recorded on the accounts of territorial treasury offices of the Russian Federation and raised to finance individual projects was recorded in other non-current assets as restricted cash and is therefore

not included in the Capital Expenditures item of the cash flow statement. In 2017, payments for financing activities exceeded proceeds from financing activities by RUB 109.2 billion. This was mainly due to repayment of borrowings.

In 2017, the Company financed its investing and financing activities with cash flow from operating activities. At year-end 2017, the Company recorded a positive free cash flow.



2. Business Strategy

30%

target share of new products in revenue in 2030

x3

target increase in labour productivity between 2017 and 2030

98.7%

performance against the targets of the investment programme of JSC Rosenergoatom Concern in 2017

27.9%

share of JSC Atomenergoprom on the global market for NSSS equipment

448

power reactors with a total capacity of 391.7 GW was in operation globally as of December 31, 2017

27.9

installed capacity of JSC Atomenergoprom, GW

65

global demand for uranium for reactors in 2017, kt

50

global demand for uranium enrichment in 2017, million SWU

12,000

global nuclear fuel market capacity in 2017, tonnes of heavy metal

8.7

volume of the market for radioactive waste management, processing and disposal in 2017, USD billion

2.5

volume of the global NPP decommissioning market in 2017, USD billion

3.1

volume of the global carbon composite market in 2017, USD billion

2.1. Business Strategy until 2030

2.1.1. Context of JSC Atomenergoprom's business

Trends in the development of the nuclear industry

The nuclear industry is influenced by a number of factors, including⁶:

- Global population growth from 7 billion to 10 billion people in the next 50 years.
- Steady increase in global GDP by about 3% per year.
- Growth of global electricity consumption. By 2030, global electricity consumption is expected to increase by 33% compared to 2016 and reach 32.9 trillion kWh. Asian countries will lead the growth, with electricity consumption increasing by a factor of 1.5 (from 10.8 trillion kWh to 16.4 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 limited fossil fuel reserves, contribute to the long-term demand for nuclear energy. The International Energy Agency, UxC consulting company and the World Nuclear Association expect to see an increase in the capacity of operating NPPs



Competitive advantages of the Company:

- 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.).

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

⁶ Data from the World Bank, the IEA World Energy Outlook 2017 (New Policy Scenario), EIU, the IAEA and McKinsey and the draft programme 'Development of the Russian Power Industry until 2035' have been used.

from 392 GWh in 2017 to 468 GW, 446 GW and 445 GW respectively in 2030 under the base case scenario.

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 have imposed CO₂ emission fees. Unpredictable prices for raw hydrocarbons are yet another major disadvantage of thermal power generation.

Regarding renewable energy, even if energy generation becomes significantly cheaper, further traditional backup facilities or energy storage systems will need to be built to secure stable supplies of energy. This, in turn, will entail an increase in capital expenditure on the power grid.



Competitive position of the Company⁷

The competitiveness of services provided by the Company 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 has the most advanced enrichment technologies; nuclear power plants with water-cooled water-moderated power reactors (VVERs) 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 approved NPP construction projects.

[\(for more details, see the section 'International Business'\)](#)

The current level of inflation in Russia has no significant impact on the financial position of JSC Atomenergoprom. According to inflation projections (about 4% per year), it should not have a significant impact on the Company's solvency.

Expected GDP growth rates in Russia constrain the growth of electricity consumption in the country and, consequently, limit the implementation of new NPP construction projects in the Russian Federation. Therefore, the Company gives priority to expanding its footprint on international markets and launching new business products outside of the core value chain.

⁷ For information on the main competitors of JSC Atomenergoprom, see the section 'Markets Served by Atomenergoprom'.

2.1.2. Long-term strategic goals

JSC Atomenergoprom's business 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 in 2014. The development of the Corporation 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 on the global nuclear power market, the Company is currently expanding its footprint in over 50 countries around the world and the long-term portfolio of overseas orders and increasing the corresponding revenue.

[For details, see the section 'International Business'.](#)

- **To reduce production costs and the lead time.** In order to develop the most competitive products, the Company plans to boost labour productivity more than threefold between 2017 and 2030 and to reduce the duration of NPP construction and the levelized cost of electricity (LCOE⁸).

[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 to 30% in 2030.

[For details, see the section 'Business Diversification'.](#)

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

- Ensuring safe use of nuclear energy;
- Non-proliferation of nuclear technologies and materials;
- Reducing the negative environmental impact to zero;
- Ensuring that the development of nuclear power is socially acceptable;
- Developing the Corporation'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);

⁸ LCOE stands for levelized cost of electricity over the NPP life cycle.

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

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;

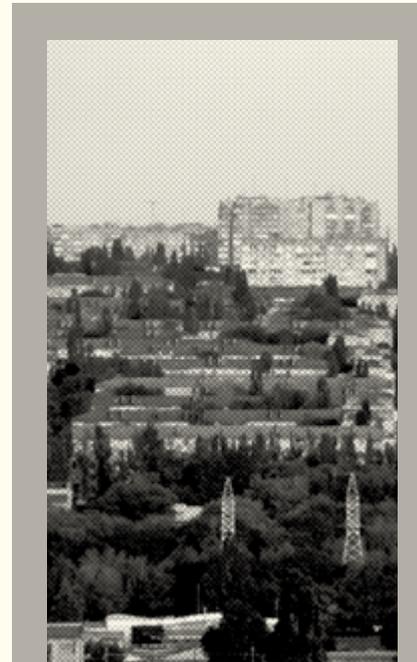
Carbon_t is carbon dioxide emission charges in year t;

D_t is the cost of decommissioning and waste management in year t;

MWh 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.



Mission

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

- 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.

[A detailed description and assessment of key risks for 2018 is provided in the section 'Risk Management'.](#)

2.1.3. Contribution of the 2017 results to the achievement of strategic objectives and plans for 2018

Strategic goal	Results and key events of 2017	Targets and key events planned for 2018
Increase of the international market share	<p>The power start-up of power unit No. 3 at Tianwan NPP in China was completed.</p> <p>On June 29, 2017, first concrete was laid at power unit No. 3 of Kudankulam NPP in India. In October 2017, an official ceremony was held to mark the start of concreting of the foundation slab of the reactor building at power unit No. 4 of Kudankulam NPP.</p> <p>On November 30, 2017, the concreting of the construction site started at power unit No. 1 of Rooppur NPP in Bangladesh.</p> <p>Contracts for NPP life cycle services (fuel supply, servicing and spent nuclear fuel management) were signed for El Dabaa NPP in Egypt.</p> <p>11 intergovernmental agreements and 16 major interdepartmental agreements were signed; they will drive the future growth of the portfolio of overseas orders and revenue.</p> <p>For details, see the sections 'International Business' and 'International Cooperation'.</p>	<p>Plans:</p> <ul style="list-style-type: none"> ■ Start of the first criticality programme at power unit No. 4 of Tianwan NPP in China; ■ Start of concreting at two power units (power unit No. 1 at Akkuyu NPP in Turkey and power unit No. 2 at Rooppur NPP in Bangladesh).

Strategic goal	Results and key events of 2017	Targets and key events planned for 2018
Reduction of production costs and the lead time	<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 98.7%.</p> <p>The full cost of uranium production in Russian enterprises was reduced by 10% against the target.</p>	<p>Performance against the targets of the investment programme for the construction of nuclear power plants in Russia is expected to total 100%.</p>
New products for the Russian and international markets	<p>The 10-year portfolio of orders for new products (outside the scope of the nuclear industry) reached RUB 814.1 billion. Revenue from new products (outside the scope of the nuclear industry) totalled RUB 170.9 billion.</p> <p>The road map for the launch of a new strategic technological area, Applied Superconductivity, was approved.</p> <p>The Company won a tender for the construction of wind power plants in Russia with a total capacity of 360 MW.</p> <p>The development and assembly of a unique pilot multi-powder metal 3D printer was completed.</p> <p>A contract was concluded with the Ministry of Education and Science for the launch of digitized production of high-precision healthcare products using additive manufacturing technologies (endoprostheses, implants and augments).</p> <p><i>For details, see the section 'Business Diversification'</i></p>	<p>The 10-year portfolio of orders for new products (outside the scope of the nuclear industry) should reach RUB 880.0 billion.</p> <p>The target for revenue from new products (outside the scope of the nuclear industry) has been set at RUB 197.9 billion.</p> <p>Plans:</p> <ul style="list-style-type: none"> ■ Start of operation of first wind power plants in the south of Russia; ■ Start of commercial production of 3D printers at the site in Novouralsk (organizations forming part of the Fuel Division: JSC UECP and LLC RME Centrotech); ■ Start of construction of modern nuclear medicine centres comprising diagnostic and radiotherapy modules in Russian regions.

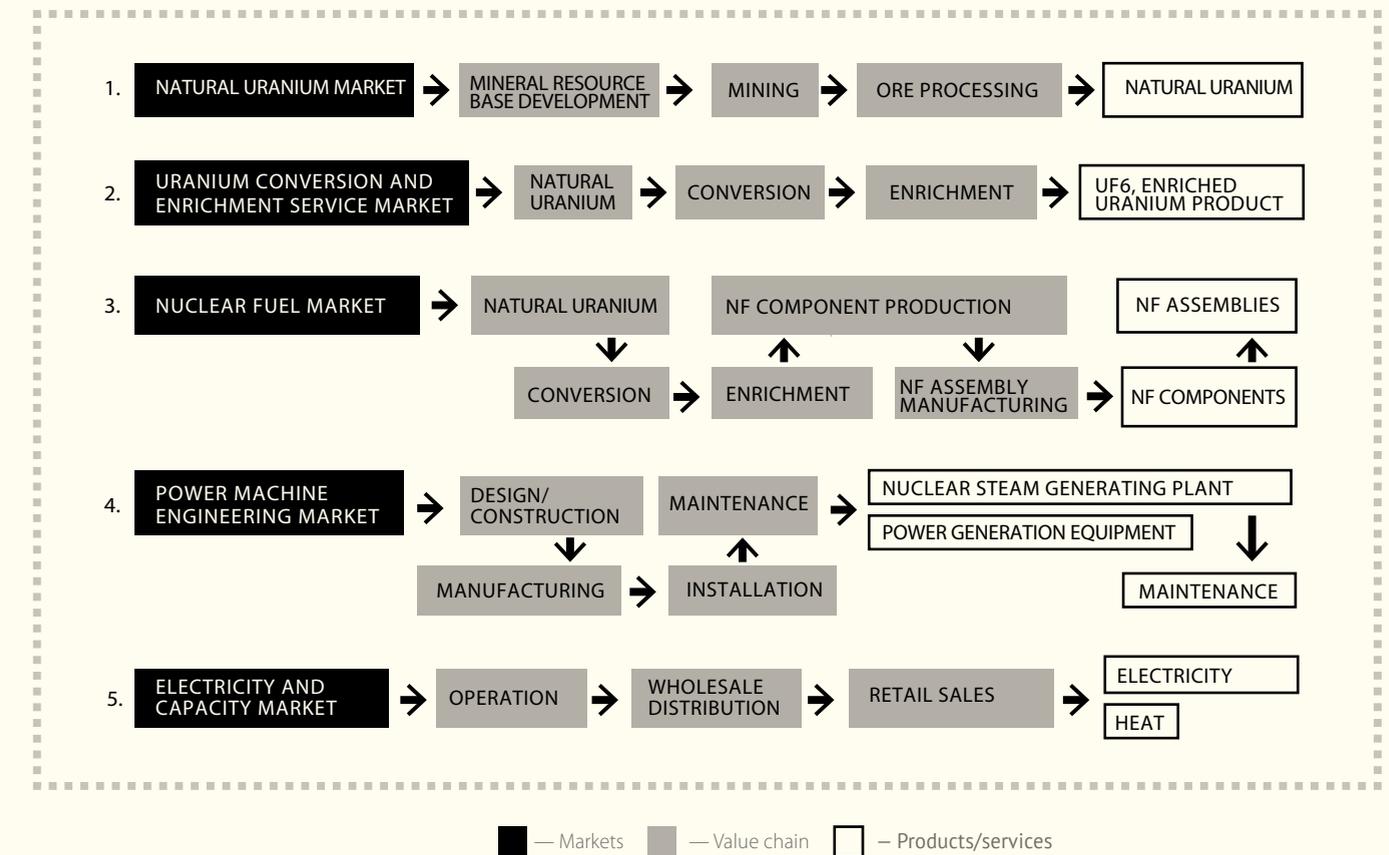
2.2. Markets Served by Atomenergoprom

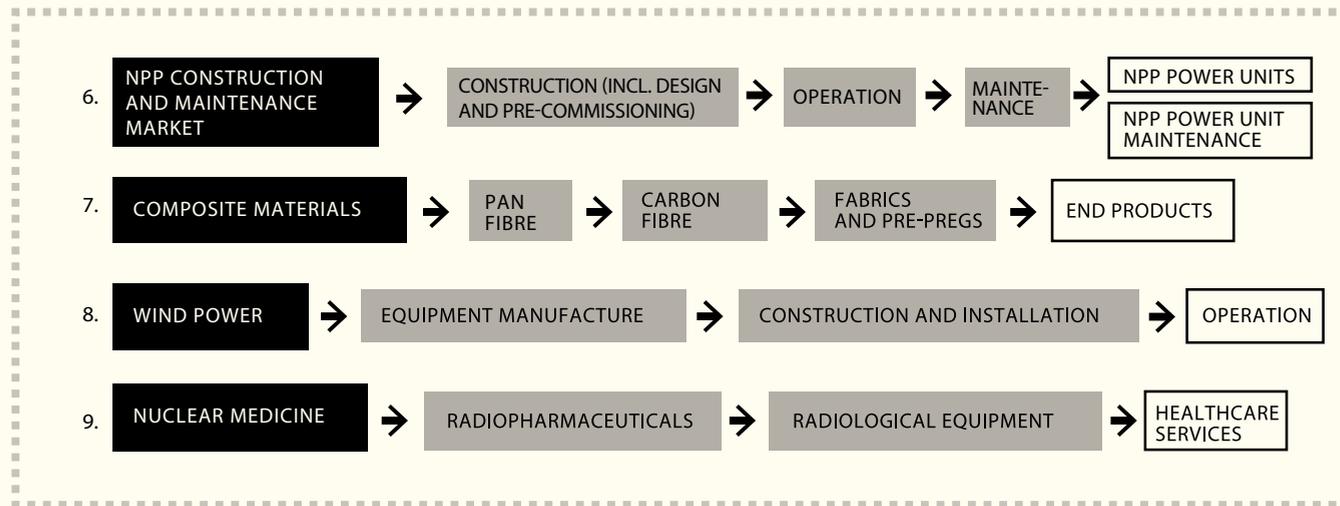
In 2017, JSC Atomenergoprom:

- ranked first in the world in terms of the number of NPP power units in the portfolio of foreign projects (33 power units);
- ranked first on the uranium

- enrichment market (36% of the market);
- accounted for 17% of the nuclear fuel market;
- accounted for 14% of uranium production.

Markets served by JSC Atomenergoprom





2.2.1. Natural uranium market

Forecast for changes in uranium demand by 2030

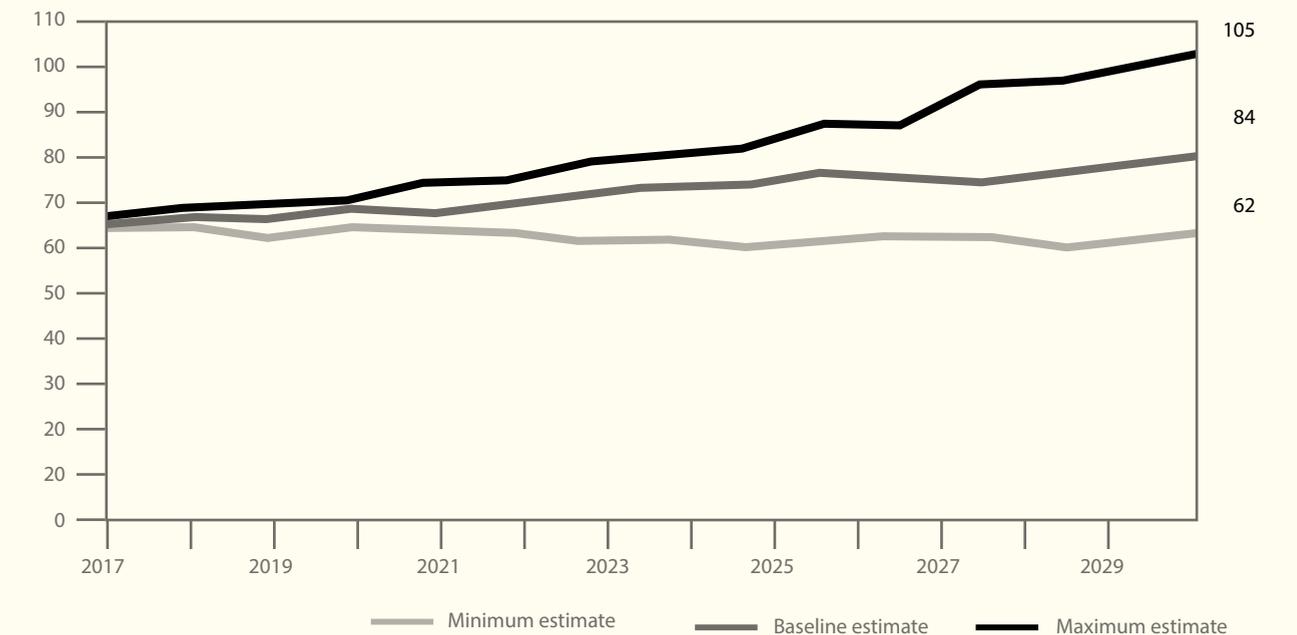
The Fukushima accident in Japan in 2011 led to a significant drop in prices on the nuclear fuel cycle front-end markets, including a decline in quotations for natural uranium.

However, market fundamentals remain strong, and natural uranium demand and prices are expected to recover in the medium and long term.

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



Forecast for changes in uranium demand by 2030, kt



Source: World Nuclear Association, 2017

Global demand for uranium for reactors totalled 65,000 tonnes in 2017, according to the baseline scenario of the World Nuclear Association (WNA). At the same

time, global demand taking into account commercial and strategic stockpiling not intended for current consumption is estimated at 73,000 to 74,000 tonnes.

Under this scenario, global demand for uranium will increase to 84,000 tonnes by 2030.

Natural uranium market overview

In 2017, global production of natural uranium decreased by 6% compared to 2016 and totalled about 58,000 tonnes. The decline in global production was caused by a continued fall in uranium prices in 2017. Supplies from secondary sources (inventories of energy companies and some states, reparation of depleted uranium hexafluoride, reprocessed uranium, etc.) are estimated at 17,000 tonnes of uranium equivalent.

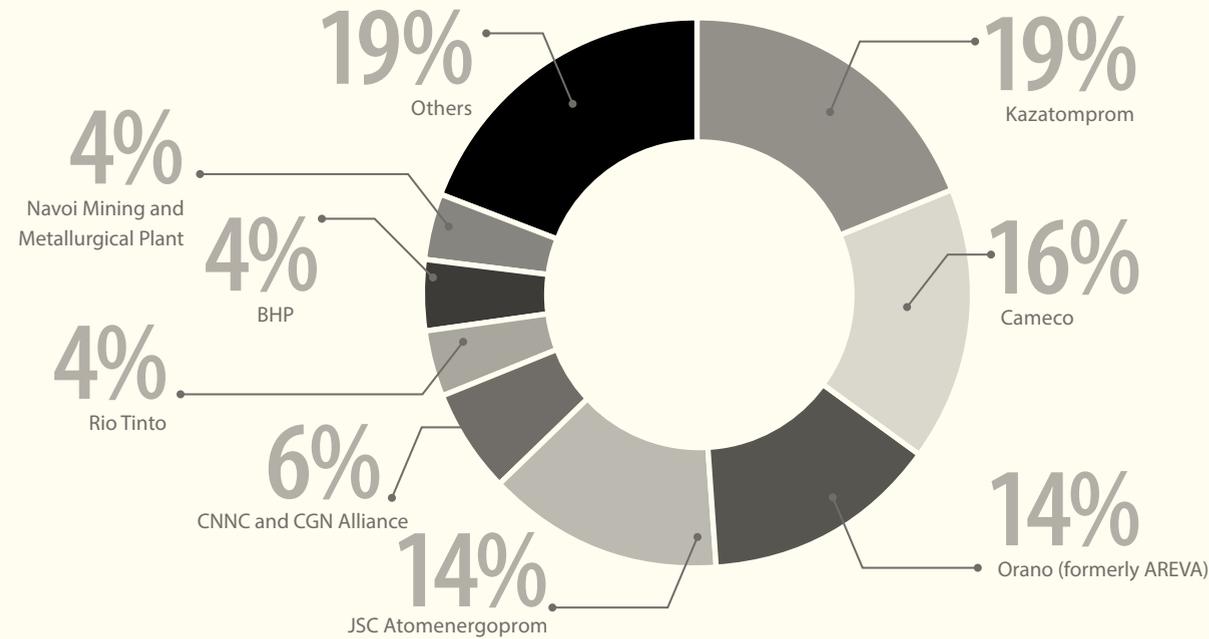
Until 2030, global uranium production is expected to grow due to an increase in NPP installed capacity and, consequently, increased demand for natural uranium.

In 2030, supply from secondary sources will total about 6,000 to 8,000 tonnes of uranium equivalent. A settled group of leaders has now formed on the natural uranium market. At year-end 2017, the group comprised JSC Atomenergoprom (14% of the global output), NAC Kazatomprom (Kazakhstan, 19%), Cameco (Canada, 16%), Orano⁹ (France, 14%), an alliance of CNNC and

CGN (China, 6%), Rio Tinto (Australia-United Kingdom), BHP Billiton (Australia-United Kingdom), and Navoi Mining and Metallurgical Plant (Uzbekistan) (4% each). The nine largest market players account for about 81% of the total uranium output.

⁹ In 2017, in the course of restructuring, the French company AREVA was divided into two companies: Orano (uranium production and enrichment, NPP engineering and decommissioning, nuclear medicine) and Framatome (nuclear fuel fabrication, nuclear mechanical engineering, NPP construction and maintenance). EDF became the main owner of Framatome.

Largest players on the natural uranium market in 2017



Due to persisting negative market trends, in the reporting year, major uranium producers continued to optimize costs and investments in the development of existing enterprises and promising projects, and started to limit production volumes. NAC Kazatomprom, Cameco, Orano and other companies announced the relevant measures aimed at restoring the market balance.

As a result, in 2017, the pace of development of most existing projects remained low. The Husab mine in Namibia (owned by the Chinese CGN) was an exception. In 2017, the enterprise operating in pilot mode produced about 850 tonnes of uranium. Junior companies continued to optimize their key projects (in Canada, the US, Australia and some other countries) with

a view to commissioning them when the uranium market starts to recover. Progress on most of these projects also remained slow due to difficulties with raising funds and arranging product sales.

2.2.2. 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 demand for uranium enrichment services by 2030

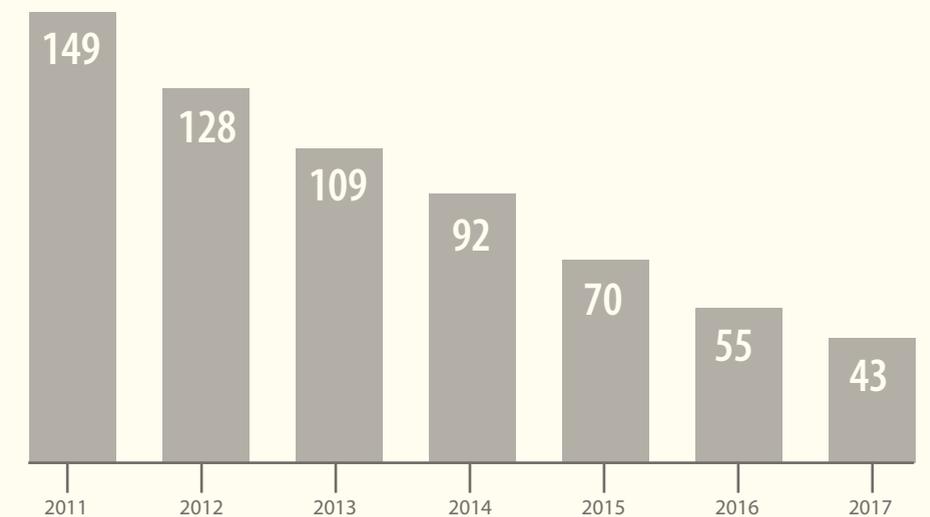
According to the World Nuclear Association's baseline scenario, the world demand for enrichment in 2017 totalled 50 million SWU. Given the current significant oversupply on

the uranium enrichment market, spot market quotations declined by 19% during the year, while long-term quotations fell by 14%. Since the Fukushima nuclear power plant accident

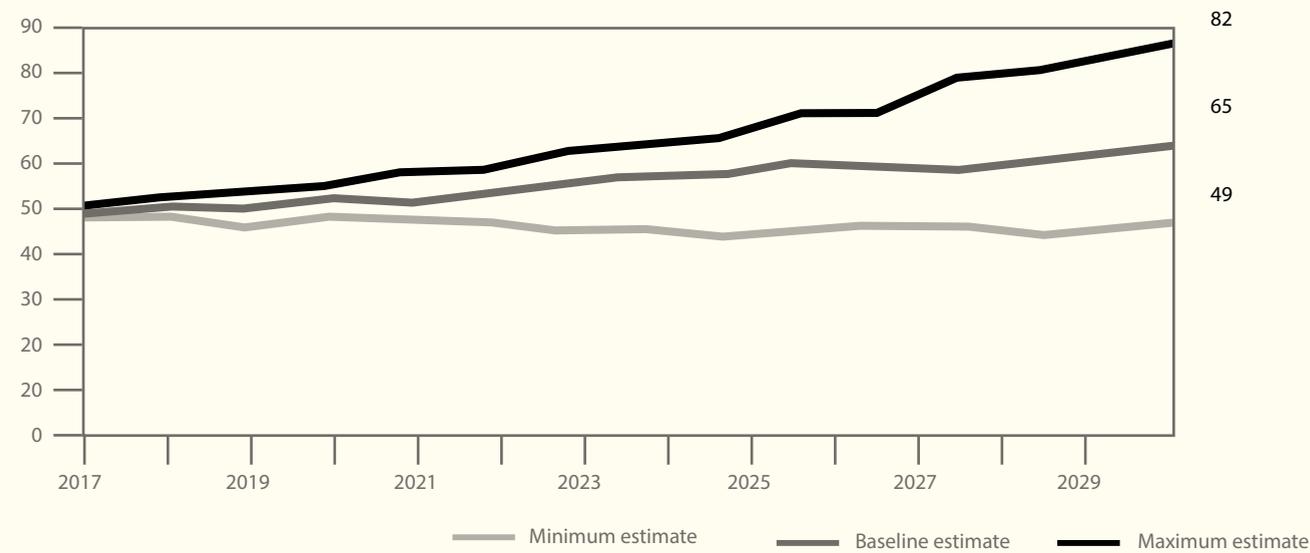
in 2011, quotations for enrichment have dropped by more than 70%.

Average annual quotations for enrichment, USD/SWU

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 53 million SWU and 65 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.



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



Source: World Nuclear Association, 2017

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; 29%), Orano (France; 14%) and Chinese companies (9%).

Together, they control about 90% of the market. At present, all players use modern gas centrifuge technology for uranium enrichment. Given the market decline in 2017, foreign enrichment companies (except for Chinese

companies) abstained from expanding the capacity of gas centrifuge enrichment plants.

2.2.3. Nuclear fuel fabrication market

According to the Company, in 2017, the global nuclear fuel market capacity 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 water-cooled water-moderated power reactors (VVERs));

- 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, Framatome (formerly AREVA), Global Nuclear Fuel and JSC Atomenergoprom.

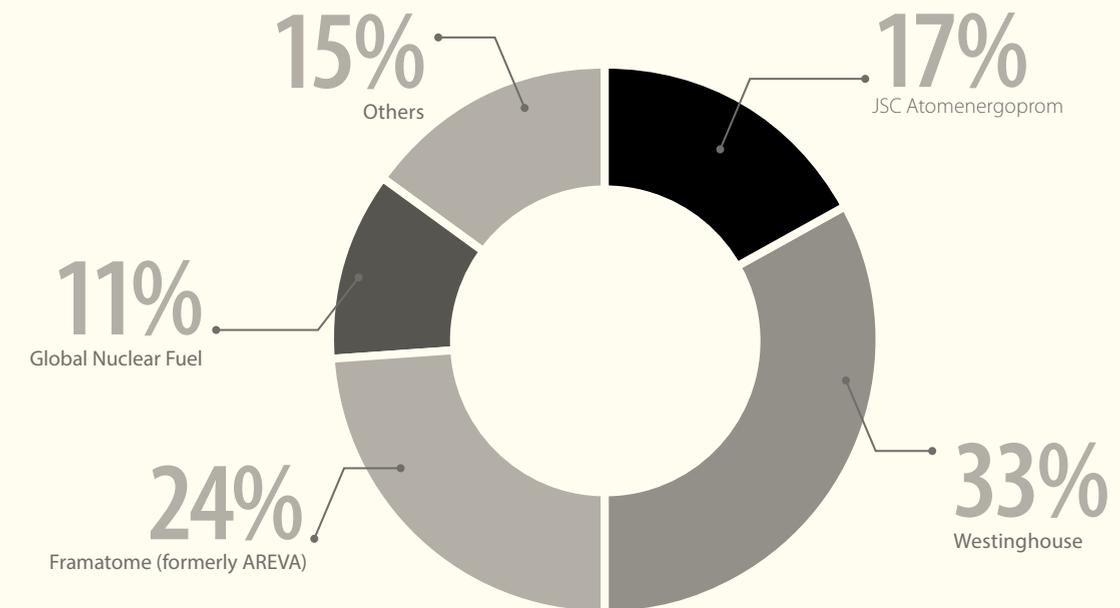
Westinghouse Electric Company fabricates nuclear fuel for nearly all types of light-water reactors (LWRs). Its major markets are the US and Western European countries. Moreover, Westinghouse is actively seeking to enter the market for fuel for VVER reactors and gain a foothold there. The company is the largest player holding 33% of the market. The French Framatome produces fuel for PWR and BWR reactors and holds 24% of the

global fabrication market, with Western Europe being its main end market. Global Nuclear Fuel (GNF) is a joint venture of GE and Hitachi. It 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.

In 2017, Russian nuclear fuel fully met the demand of Russia, the Czech Republic, Slovakia, Hungary, Bulgaria and Armenia for reactor fuel. The Company also partially met the demand of Ukraine (57%), Finland (36%), India (30%) and China (6%) for reactor fuel. JSC Atomenergoprom, in cooperation with Framatome, 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%.

Shares of players on the nuclear fuel fabrication market



Entering new nuclear fuel markets

In 2017, the Company continued to take steps towards entering the markets for fuel for Western-design power reactors, and fuel and components for Western-design research reactors.

A major contract was concluded with Chinese partners: the Company signed a package of documents for fuel supply to Tianwan NPP worth over USD 1 billion. In addition, major contracts were concluded for fuel supply to the Belarusian NPP and El Dabaa NPP in Egypt.

[See also the section 'Fuel Division'.](#)

In the future, the development of a new technological platform for the nuclear power industry based on fast-neutron reactors will result in an increase in demand 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. In addition, as part of the Proryv (Breakthrough) project, a fuel

fabrication and refabrication module is being constructed for the BREST-OD-300 fast-neutron reactor. It will use mixed nitride uranium-plutonium (MNUP) fuel.

[See also the section 'Research and Innovations'.](#)

2.2.4. Power machine engineering market

The modern power machine engineering market is characterized by long lead times, high capital intensity and design for manufacturability. The global power machine engineering market is affected by the trends in the development of the global electricity industry (improved energy efficiency, environmental programmes, etc.) and the commissioning of new generating capacities.

In 2017, the volume of the global power machine engineering market totalled around 65 GW (excluding the gas and petrochemical industry). The market structure remained unchanged, with equipment in the thermal power industry accounting for about 60% of the global

power machine engineering market, equipment in the gas and petrochemical industry for 25% and NPP equipment for 15%.

The Russian power machine engineering market depends on the global market trends and the rate of commissioning of generating capacities. In 2017, the market was estimated at around 4.3 GW. Given that the annual growth rate of the Russian power machine engineering market will average 1-2% due to the slowdown in energy consumption in the country, by 2030 it is expected to expand to 5.1 to 5.2 GW. Main trends are expected to include tougher competition between local producers, as well as a higher degree of import substitution for both power

generation equipment and components for its production. JSC Atomenergomash (an organization of the Company) holds 29.5% of the Russian power machine engineering market.

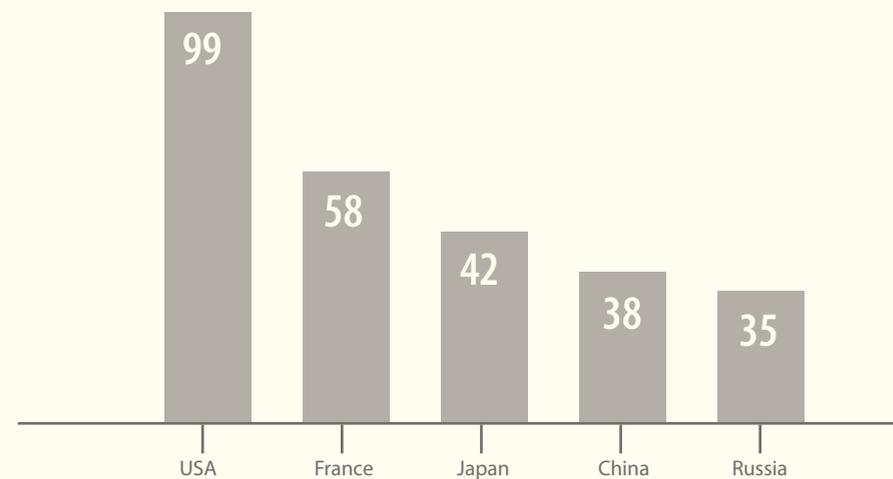
At year-end 2017, JSC Atomenergoprom accounted for 27.9% of the global market for NSSS¹⁰ equipment (production and supply) at NPPs under construction. Equipment produced by the Company's enterprises has been installed in over 20 countries at 15% of NPPs globally and 40% of thermal power plants in Russia.

2.2.5. NPP construction and operation market

In 2017, the nuclear power industry accounted for about 11% of the global electricity supply. 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 (72.3%), Slovakia (54.1%), Ukraine (52.3%), Belgium (51.7%) and Hungary (51.3%).

According to the IAEA, as of December 31, 2017, 448 power reactors were in operation with a total capacity of 391.7 GW (including the suspended Japanese reactors). Another 59 reactors were under construction. JSC Atomenergoprom ranked second among global generating companies in terms of installed NPP capacity (27.9 GW), surpassed only by the French EDF.

Leading countries by the number of operating NPP power units



¹⁰ Nuclear steam supply system.

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.

[For details, see the section 'International Business'](#)

2.2.6. Market for radioactive waste and spent nuclear fuel management and decommissioning of nuclear facilities (back end)

Market for RAW and SNF management, processing and disposal

According to the Company's estimates, in 2017, the market for radioactive waste (RAW) management, processing and disposal totalled USD 8.7 billion. In the future, until 2030, the market volume will range between USD 9 billion and USD 11 billion. Major market players include JSC Atomenergoprom, Energy Solutions, Orano (formerly AREVA), Studsvik, Onet

Technologies, Veolia (Kurion) and Steag. The market for spent nuclear fuel (SNF) management, processing and disposal is expected to be the most dynamic segment of the nuclear fuel cycle back end market with an average annual growth rate of ~6% until 2030. According to the Company, in 2017, this market was estimated at USD 4.3 billion. The market will reach

USD 5.4 billion by 2020 and USD 9 billion by 2030. Major players include JSC Atomenergoprom, Orano (formerly AREVA), JNFL, CNNC, SKB, Holtec, GNS and Skoda.

NPP decommissioning market

According to the Company's estimates, in 2017, the global NPP decommissioning market totalled USD 2.5 billion. The market may double by 2022, as a large number of reactors are expected to be decommissioned. Between 2023 and 2030,

the market will grow at an average annual rate of around 4%. Major players include JSC Atomenergoprom, Energy Solutions, URS, Bechtel, GE-Hitachi, EWN, Ch2M Hill, Westinghouse, Cavendish Nuclear, Amec and Nuvia UK.

[See also the section 'International Business'](#)

2.2.7. Composite materials

The development of production and sales of composite materials is one of the main contributors to the achievement of the Company's strategic goal of developing new products for the Russian and international markets.

The global carbon composite market is currently estimated at USD 3.1 billion (with the Russian market totalling USD 70 million) and has the potential to double every 5 years. Key characteristics of the carbon composite market include the following:

- Fabrics and pre-pregs account for 75% of end use by producers of finished products;
- Carbon composites are strategic materials to which special export controls apply;
- Key consumer industries include aerospace, wind power, the automotive industry, and sports and leisure products.

The consumption of carbon composites is steadily increasing due to their unique properties. Further increase in global demand is forecast due to the replacement

of conventional materials and expansion of the areas of application.

The steadily growing market opens up opportunities for new players. By 2025, consumption is expected to increase by a factor of 2.5 to 161,000 tonnes of carbon fibre. [For details, see the section 'Business Diversification'.](#)

2.2.8. Wind power

Wind power is an important new business for the Company, enabling it to make a more substantial contribution to zero-carbon power generation.

Between 2018 and 2025, up to 3.4 GW of capacity will be commissioned in Russia (the Company has won tenders for the commissioning of 1 GW of capacity and plans to continue to participate in tenders). The Company intends to become a leader on the wind turbine market in Russia, with its market share expected to exceed 30%.

[For details, see the section 'Business Diversification'.](#)



2.2.9. Nuclear medicine

Nuclear medicine is a high-priority business area for JSC Atomenergoprom. The market comprises the following segments:

- healthcare services;
- radiological equipment;
- radiopharmaceuticals.

Healthcare services are the largest segment of the nuclear medicine market. In 2017, the global volume of this segment was ~USD 78 billion (~USD 0.8 billion for Russia). By 2030, the segment is expected to grow to USD 90 billion (to USD 2 billion in Russia). In 2017, the global radiological equipment

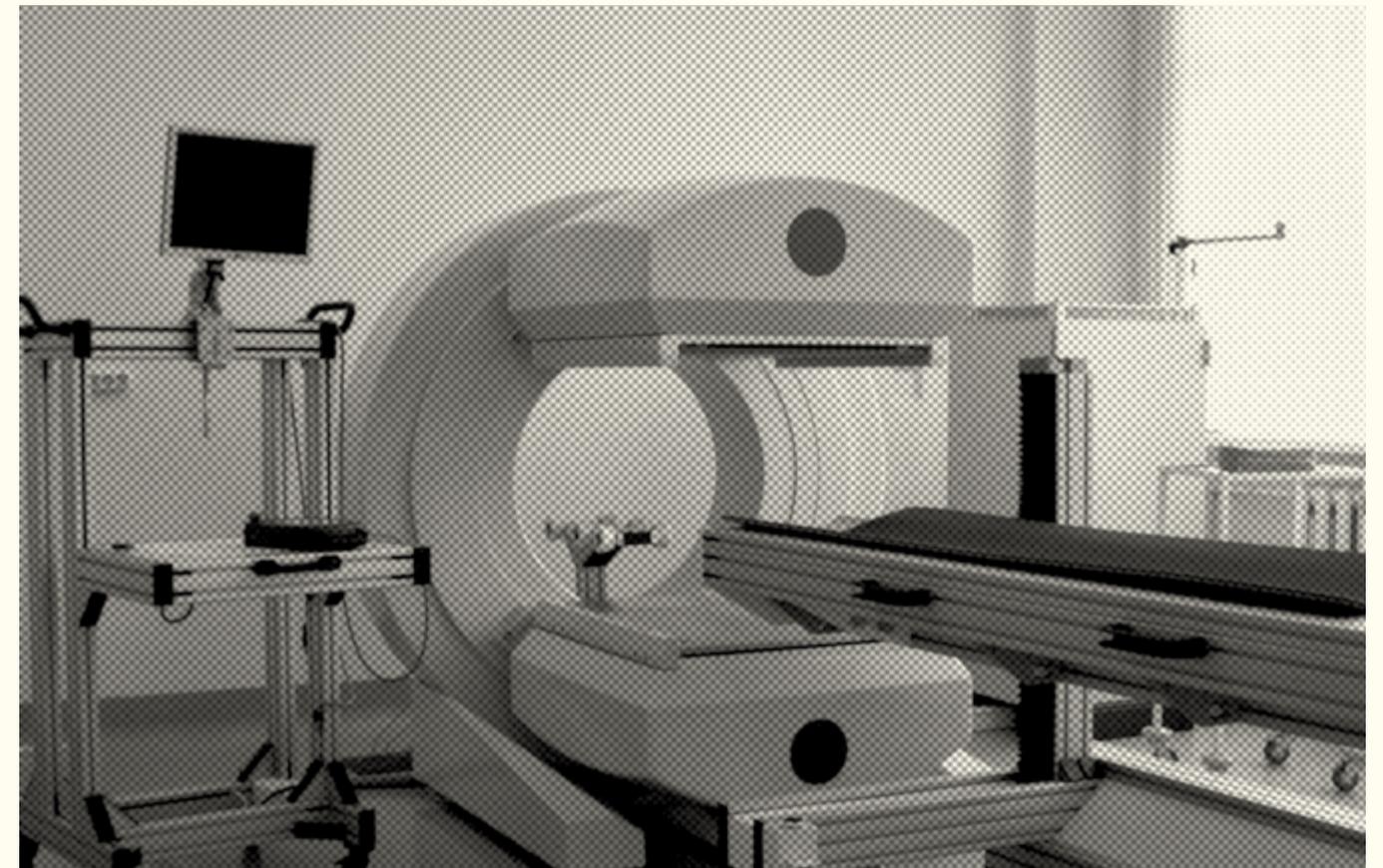
market exceeded USD 8 billion. The segment is expected to grow to USD 17 billion by 2030. In 2017, the Russian radiological equipment market totalled ~USD 37 million. The global radiopharmaceuticals market currently totals around USD 6 billion and is expected to expand to USD 15 billion by 2030. The Russian radiopharmaceuticals market totals around USD 16 million. Key drivers of the nuclear medicine market growth include the increase in cancer morbidity by 2.2-3% per year, population growth, population ageing and active development of the nuclear medicine

market in emerging economies.

Key customers for the construction of large multi-specialty healthcare facilities in Russia include regional administrations, regional and federal executive authorities and healthcare institutions (federal, regional, industry-sponsored and private).

The Company has accumulated technical and production capabilities in nuclear medicine, which are a prerequisite for expansion on this market.

[See also the section 'Business Diversification'.](#)



3. International Business

Performance

>50

number of countries where the Company implements its projects

11

intergovernmental agreements signed in 2017

16

major interdepartmental agreements signed in 2017

>10,000

people provided with employment in the sphere of nuclear infrastructure during construction and operation of an NPP with two power units

>3,000

new jobs related to NPP operation are created as a result of construction and operation of an NPP with two power units

17

portfolio of overseas orders of JSC TENEX at year-end 2017, USD billion

5,102

tonnes of uranium mined by Uranium One enterprises in 2017

216,200

tonnes of uranium - estimated mineral resource base of Uranium One enterprises in 2017

11

regional centres form part of the foreign regional network managed by Rusatom International Network

1.7

sales volume of JSC TENEX in 2017, USD billion

10.8

portfolio of overseas orders of JSC TVEL in 2017, USD billion

1.2

overseas revenue of JSC TVEL in 2017, USD billion

3.1. International Business

Key results in 2017

- The overseas NPP construction project portfolio of ROSATOM included 33 power units in 12 countries around the world;
- The first contract for the construction of a Nuclear Research and Technology Centre (NRTC) was signed with Bolivia;
- Projects are being implemented in over 50 countries worldwide.



3.1.1. Global technological leadership of JSC Atomenergoprom

The Company achieves technological leadership on international markets for nuclear technology and services by providing a unique integrated offer. The Company offers 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. The Company's integrated offer provides the customer with access to the entire range of products and services from one

supplier throughout the NPP life cycle. Today, JSC Atomenergoprom 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). A foreign regional network managed by Rusatom 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, 2017, the foreign regional network comprised 11 regional centres that operated in more than 60 countries around the world.

Nuclear power

is one of the key components of 'green' energy. Together with solar, wind and hydropower, nuclear power forms the 'green square' which will provide the basis for the world's future zero-carbon balance. Accordingly, JSC Atomenergoprom not only develops nuclear technologies but also implements projects related to renewable energy.

Rusatom International Network

regularly supports international multilingual camps for children of employees of partner organizations in the countries where the Company does business. The camps' programme includes educational, sports and artistic events which enable the participants to deepen their knowledge of various areas of science and culture, perfect their cross-cultural skills and learn about the traditions and history of other countries. Special emphasis is placed on teaching foreign children about Russia, its traditions and its rich cultural heritage. 175 children from 12 countries attended multilingual camps in 2017.

3.1.2. Contribution of NPP construction projects to economic development

NPP construction makes a significant contribution to macroeconomic growth both in the customer country and in the supplier country. Construction and operation of NPPs with two power units provides employment in the sphere of nuclear infrastructure for over 10,000 people and creates over 3,000 new jobs related to NPP operation. National companies are guaranteed capacity utilization for more than 70 years.

Various sectors of industry are involved in NPP construction. This creates positive synergies and produces a multiplier effect. Due to these technological links, each dollar invested in an NPP construction project translates into an increase in revenue in related industries in the receiving country by a factor of two or more. NPP construction has a positive impact on the budget by boosting tax revenue both in the customer country and in the supplier country.

Fostering global partnership

In 2017, JSC Atomenergoprom continued to build relations with key partner companies on the global nuclear power and industry market.

The following documents were signed:

- A memorandum of understanding with AREVA NP (France);
- A cooperation program for 2017-2019 with ENGIE (France);
- A memorandum of understanding with the Emirates Nuclear Energy Corporation (ENEC) (UAE);
- A memorandum of understanding with Eletrobras (Brazil);
- A memorandum of understanding with MVM (Hungary).



3.1.3. Construction of NPPs abroad

At year-end 2017, the NPP construction project portfolio of ROSATOM included 33 power units in 12 countries around the world.

Overseas NPP construction projects



3.1.4. Uranium mining abroad

In 2017, uranium mining enterprises of Uranium One implemented the annual production programme in full. They produced 5,102 tonnes of uranium, and Uranium One retained the leading position on the global market in terms of production costs.

Uranium mining by Uranium One enterprises*, t

Country	2015	2016	2017
Uranium mining, including:	4,794	4,919	5,102
Kazakhstan	4,749	4,896	5,063
USA	45	23	39

In 2017, the estimated mineral resource base of the Uranium One enterprises under international reporting standards totalled 216,200 tonnes.

Mineral resource base of Uranium One enterprises*, kt

Category of reserves	2015	2016	2017
Mineral resource base, including:	213.1	220.8	216.2
Measured + Indicated	127.6	132.0	127.4
Inferred	85.5	88.8	88.8

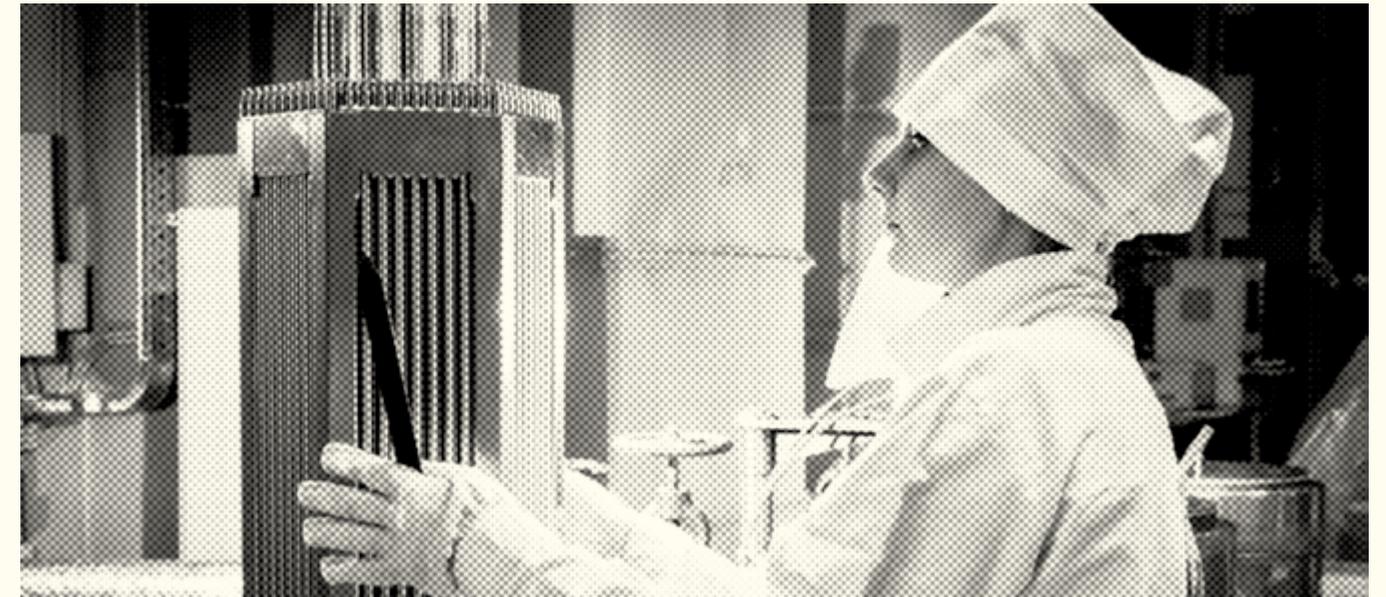
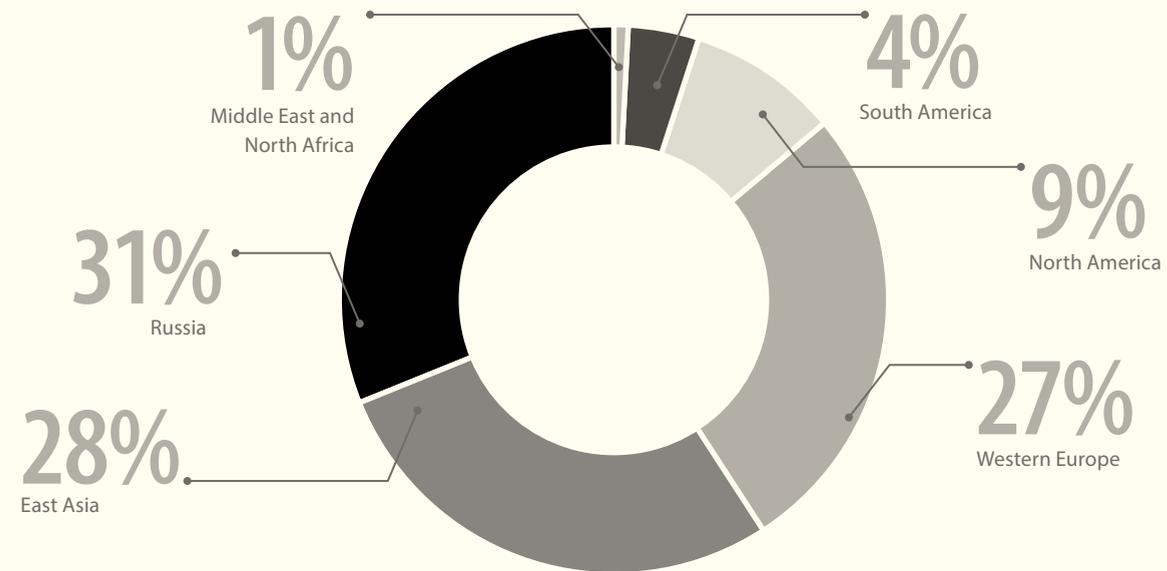
* The mineral resource base and uranium production include the 100% share in Mantra Resources Pty Limited.

In 2017, the Company established cooperation with 22 new counterparties (energy companies, traders and other market participants) on the supply of natural uranium until 2032, including deliveries to the USA, Europe, China, Japan and Brazil. 35 new contracts were concluded. At year-end 2017, the portfolio of overseas orders totalled USD 2.3 billion.

Uranium One

participates in the development of its regions of operation, including Tanzania, where it plans to implement a promising uranium mining project, Mkuju River. In 2017, as part of a joint project with READ International aimed at providing children with access to educational resources in Tanzanian secondary schools, unused classrooms of the Korido secondary school in the Namtumbo District were transformed into well-equipped libraries. Moreover, Uranium One actively assists Tanzanian authorities in their fight against poachers in order to preserve the population of elephants and other wild animals in the Selous Game Reserve.

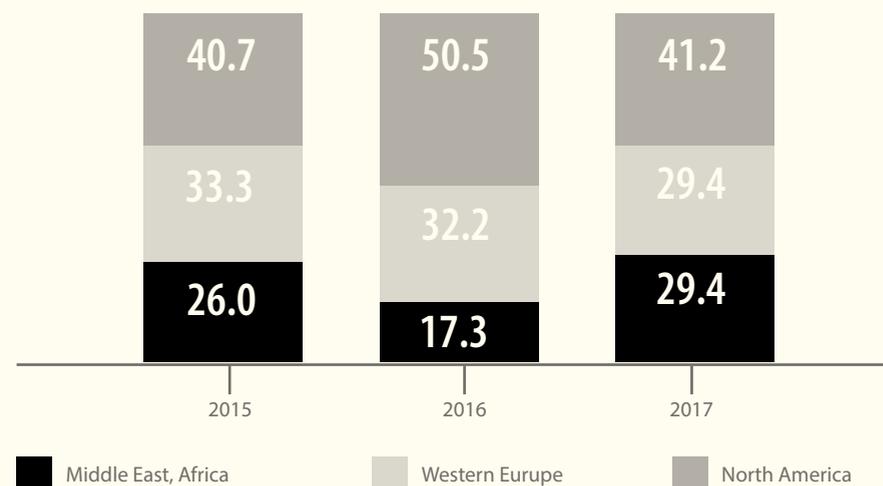
Geography of natural uranium supplies by Uranium One enterprises in 2017



3.1.5. Export of uranium products and natural uranium enrichment services

In 2017, JSC TENEX (an organization of JSC Atomenergoprom) remained one of the leading suppliers of nuclear fuel cycle front-end products as it satisfied a significant share of the demand of Western-design reactors for uranium enrichment services. All obligations under current contracts were fulfilled. The annual sales volume totalled about USD 1.7 billion. Uranium products were supplied to 27 customers from 12 countries. 28 deals worth a total of ~USD 3.3 billion were concluded with 19 customers from nine countries. The portfolio of overseas orders of JSC TENEX totalled USD 17 billion. [See also the annual report of JSC TENEX for 2017.](#)

Changes in the sales structure by region, %



3.1.6. Export of nuclear fuel

At year-end 2017, the portfolio of overseas orders of JSC TVEL (the Company's Fuel Division) totalled USD 10.8 billion, while foreign revenue reached USD 1.2 billion.

In 2017, an NFA delivery contract was signed for the newly commissioned VVR-SM research reactor of the Institute of Nuclear Physics (INP) under the Academy of Sciences of Uzbekistan with the option of further regular supplies and the implementation of an improved uranium-molybdenum fuel.

Contract documents for nuclear fuel supply were signed with CJSC Armenian NPP. Under this contract, an NFA stockpile will be formed.

Fuel supply contracts were signed for Akkuyu NPP (Turkey), the Belarusian NPP and Kozloduy NPP (Bulgaria).

A package of contract documents for the supply of fuel and components and the provision of engineering services was

Export revenue, 10-year portfolio of export orders (changes over a three-year period)

	2015	2016	2017
Overseas revenue, USD billion	1.6	1.4	1.2
Portfolio of overseas orders, USD billion	10.3	10.1	10.8

signed for stage 1 and stage 2 power units of Tianwan NPP (China).

An engineering service contract was signed for the use of modernized second-generation fuel assemblies with an optimized water/uranium rate at the operating power units of Paks NPP (Hungary).

A number of contracts were signed with overseas partners for the testing of zirconium components of fuel and for the supply of fuel components for

Western-design research reactors. The contract for fuel supply for the China Experimental Fast Reactor (CFR) came into force.

The Company continued to promote TVS-KVADRAT fuel for Western-design PWR 17x17 power reactors.

[See also the section 'Fuel Division' and the annual report of JSC TVEL for 2017.](#)

3.1.7. New products for foreign markets

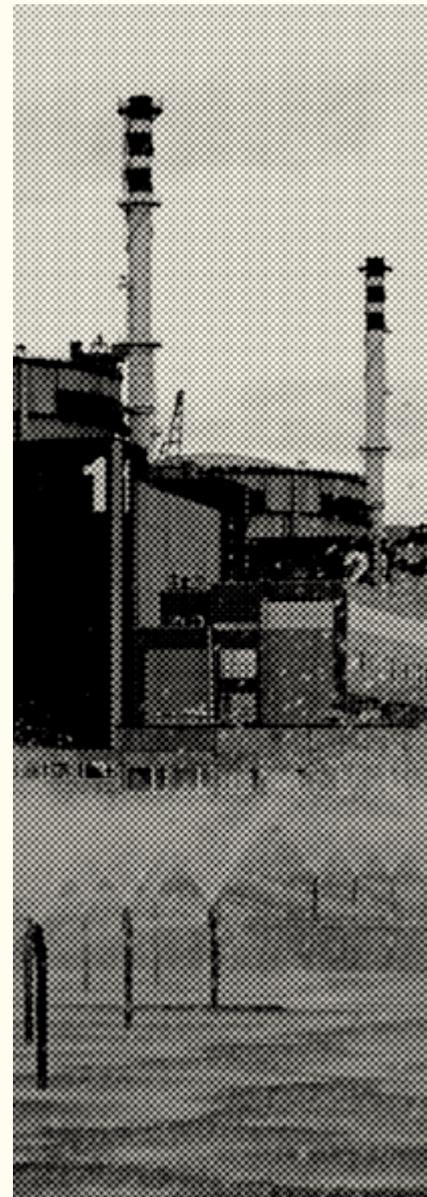
Construction of Nuclear Research and Technology Centres abroad, nuclear infrastructure and personnel training

As part of its efforts to promote new products on the global market, the Company has successfully launched projects in the Nuclear Research and Technology Centres (NRTC) segment, which is a product solution based on a research reactor and a set of additional elements for developing nuclear technologies for scientific research and practical applications.

NRTC development projects are aimed at both creating nuclear power capabilities in the customer country and developing nuclear medicine and radiation technologies for the national economy.

In 2017, the first contract was signed in this product segment; it provides for the construction of an NRTC in El Alto, Bolivia. The Company signed a project development agreement and contracts for assessing nuclear infrastructure and conducting preliminary engineering surveys in Zambia, which is a first step towards implementing the project to construct an integrated NRTC in the country.

ROSATOM signed an agreement on the development of an NRTC construction project with the Nigeria Atomic Energy Commission (NAEC).



Maintenance services

In 2017, JSC Rusatom Service concluded package maintenance service contracts for El Dabaa NPP (Egypt) and Akkuyu NPP (Turkey). Following the completion of the project to extend the life of power unit No. 5 of Kozloduy NPP, the Bulgarian Nuclear Regulatory Agency issued a licence for the

operation of the power unit for the next ten years.

A contract was concluded with MVM Paks NPP for the provision of advisory services related to maintenance and scheduled support of repairs of main circulating pumps of Paks NPP.

Foreign operations in the nuclear fuel cycle back end

The Company continued to promote reference back-end products, works and services (in the sphere of RAW and SNF management, and decommissioning of facilities posing nuclear and radiation hazards) on the global market.

Mitsubishi Research Institute engaged a consortium comprising JSC TENEX and Federal State Unitary Enterprise RosRAO

to carry out a feasibility study for the development of a small neutron detector for accurate search and identification of fuel fragments at Fukushima NPP.

Solid radioactive waste processing and storage facilities were delivered to Ignalina NPP in Lithuania for conducting hot tests. [See also the section 'Business Diversification'.](#)

3.2. International Cooperation

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



Key results in 2017

- 11 intergovernmental agreements (IGAs) and 16 major interdepartmental agreements were concluded. In particular, 5 framework IGAs were concluded with Cambodia, Paraguay, Sudan, Tajikistan and Uzbekistan, which provide the foundation for bilateral cooperation between Russia and these countries in the sphere of nuclear technologies;

- Negotiations began with China on the priority cooperation areas;

- A legal and contractual framework was established for the start of construction of stage 3 of Kudankulam NPP in India;

- A legal framework was established at the intergovernmental level for the construction of an NRTC in Zambia;

- The International IAEA Conference on Fast Reactors and Related Fuel Cycles took place in Ekaterinburg on June 26-29, 2017;

- Under the agreement with the IAEA, the Agency launched the first ever technical cooperation projects to develop nuclear infrastructure in the countries in which the Company implements its projects.

3.2.1. Strengthening the legal and contractual framework for international cooperation

In 2017, expansion of the international legal framework continued in order to promote Russian nuclear technologies in the world. 11 intergovernmental agreements and 16

interdepartmental arrangements were signed (8 and 20 in 2016, 8 and 16 in 2015 respectively).

Cooperation with key partners in strengthening the international legal framework

Cambodia Paraguay Sudan Tajikistan Uzbekistan	Framework IGAs were signed to establish a legal framework for cooperation in the field of nuclear technologies with Cambodia, Paraguay, Sudan, Tajikistan and Uzbekistan. Conditions were provided for promoting	Russian nuclear technologies in these countries and implementing specific nuclear projects.
Zambia	An IGA was signed on the construction of a Nuclear Research and Technology Centre (NRTC) in Zambia. The NRTC will provide opportunities for conducting radiobiological research and starting radioisotope	production in Zambia for extensive application in cancer diagnosis and treatment. The NRTC will train highly qualified personnel for the country's nuclear industry.
Bangladesh	An IGA was signed on the import of spent nuclear fuel (SNF) from Rooppur NPP into Russia. The agreement provides the necessary conditions for NPP construction and operation. It fully complies with Russian	legislation and at the same time sets a precedent for discussing this topic as part of international cooperation, which is important and relevant to Russia.
Kazakhstan	An IGA on cooperation in scientific research and development in the field of nuclear energy was signed on the sidelines of the IAEA General Conference in Vienna on	September 19, 2017. The IGA takes Kazakh-Russian scientific and technical cooperation on the peaceful use of nuclear energy to a whole new level.
Armenia Sweden	Interdepartmental protocols were signed with Armenia and Sweden on the implementation of practical measures for fulfilling the obligations under IGAs on early notification of nuclear accidents and exchange of information on nuclear and radiation safety. The documents establish the notification	procedure and measures for accident notification and rapid exchange of information in case of nuclear accidents; they also establish procedures for joint action in conducting emergency response exercises.
Algeria Laos Sudan Uganda Uzbekistan Philippines Ethiopia	The following interdepartmental agreements were signed: ■ Memoranda on cooperation in the peaceful use of nuclear energy with Sudan, Uganda, Uzbekistan, the Philippines (separately with the Department of Science and Technology and the Department of Energy) and Ethiopia; ■ A memorandum on personnel education and training in the nuclear	power industry and other related fields with Algeria; ■ A road map for cooperation in the field of nuclear technologies with Laos. The signing of these documents will enable the development of nuclear power infrastructure in these countries.

Vietnam	A Cooperation Programme in the Peaceful Use of Nuclear Energy and a Memorandum on the Construction of a Nuclear Research and Technology Centre were signed with Vietnam. The Programme is aimed at fostering bilateral cooperation in all strategic areas in a new environment that emerged after the Vietnamese government decided to suspend the national nuclear	energy programme in late 2016, with a focus on accelerating the construction of the NRTC in Vietnam. The Memorandum sets specific deadlines and outlines specific steps for implementing this high-technology project based on a Russian-design research reactor.
France	Administrative arrangements were signed between ROSATOM and the French Atomic Energy and Alternative Energy Sources Commission under the IGA on	cooperation in the operation of research reactors dated November 18, 2015.
Japan	A memorandum of cooperation on incineration (transmutation) of minor actinides was signed. The document aims to examine the	possibilities for cooperation in reducing the amount of high-level waste, its radiotoxicity and radiation hazard level.

3.2.2. Objectives for 2018 and for the medium term

In 2018, the Company will continue to expand the international legal framework for cooperation for the benefit of industry organizations and enterprises. New priorities include the conclusion of IGAs aimed at dealing with spent nuclear fuel at Russian-design NPPs built abroad and ensuring physical security of these NPPs. The Company plans to intensify cooperation in personnel training, making nuclear power more acceptable

for society and fostering public demand for it. In the course of its international activities, JSC Atomenergoprom is guided by the UN Sustainable Development Goals. The Company seeks to contribute to sustainable development by providing the benefits of environmentally friendly nuclear energy to countries at any level of economic development. At the same time, JSC Atomenergoprom will give

special focus to non-energy applications of the 'peaceful atom'. To do so, it will continue bilateral cooperation and activities on the platforms of specialized international organizations, as extensive international cooperation is a prerequisite for the long-term, sustainable and safe development of nuclear power.

4. Performance of Divisions

523.9

uranium resource base of JSC Atomredmetzoloto in 2017, kt

2,917

uranium production by enterprises of JSC Atomredmetzoloto in 2017, t

2.8

labour productivity at JSC Atomredmetzoloto in 2017, RUB million per person

11

number of NPPs in Russia and abroad where mechanical engineering products were delivered on time by JSC Atomenergomash in 2017

4.05

labour productivity at JSC Atomenergomash in 2017, RUB million per person

8

power units were under construction in Russia as of December 31, 2017

72

NPP power units in Russia and globally are provided with nuclear fuel by JSC TVEL

15

research reactors around the world are provided with nuclear fuel by JSC TVEL

8.46

labour productivity at JSC TVEL in 2017, RUB million per person

83.3%

NPP capacity factor in Russia in 2017

8.65

labour productivity at JSC Rosenergoatom Concern in 2017, RUB million per person

168.5

days - reduction in the duration of repairs at NPP power units against the target in 2017

4.1. Mining Division¹¹

Key results in 2017:

- Uranium resources totalled 523,900 tonnes;
- 2,917 tonnes of uranium were produced (the production programme was 100% completed);
- Pilot production of scandium oxide was launched at JSC Dalur.

The Mining Division (the holding company is JSC Atomredmetzoloto) consolidates uranium mining enterprises in Russia¹² at different stages of the life cycle, from geological exploration to intensive commercial development of deposits.

Strategic priorities of the Division:

- To guarantee that JSC Atomenergoprom's demand for Russian uranium is met;
- To maintain a competitive cost of uranium production;
- To enable sustainable development of the Division, including through business diversification.



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

Strategic goal of JSC Atomenergoprom

Reflection in the strategy of JSC Atomredmetzoloto

INCREASING THE SHARE ON INTERNATIONAL MARKETS

➔ **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

NEW PRODUCTS FOR THE RUSSIAN AND INTERNATIONAL MARKETS

➔ **Implemented directly:**

- Ensuring sustainable profitability, including through business diversification

REDUCTION OF THE COST OF PRODUCTS AND THE LEAD TIME

➔ **Implemented directly:**

- Maintaining a competitive cost of uranium production
- Ensuring sustainable profitability, including through business diversification

¹¹ For details about the Division's results, see the report of JSC Atomredmetzoloto for 2017.

¹² Uranium is mined abroad by Uranium One, an organization of JSC Atomenergoprom (see the section 'International Business').

4.1.1. Results in 2017

Mineral resource base and uranium production

	2015	2016	2017
Mineral resource base, kt	521.2	517.9	523.9
Uranium production, t, including:	3,055	3,005	2,917
PJSC PIMCU	1,977	1,873	1,631
JSC Dalur	590	592	592
JSC Khiagda	488	540	694

Achievement of key performance indicator targets

Indicator	2015	2016	2017 target value	2017 actual value
Labour productivity, RUB million per person	2.6	3.1	3.1	2.8 *
Full cost, RUB billion	Not set	15.3	15.9	15.6
LTIFR ¹³	0.23	0.44	0.54	0.28
Number of events rated at level 2 or higher on the INES scale	0	0	0	0

* The target for labour productivity was not achieved mainly due to external factors beyond the Division's control: a decrease in the USD exchange rate and lower uranium prices.

Operating results

In 2017, the Division produced 2,917 tonnes of uranium. The Division's uranium mining enterprises completely fulfilled the production plan. Between 2015 and 2017, the Division reduced the share of high-cost uranium production (underground mining) and increased production using less costly uranium mining technologies (drillhole in-situ leaching).

Zero fatalities across the Division's enterprises was one of the most significant achievements of the year. PJSC PIMCU, the Division's key uranium mining enterprise, managed to remain

break-even for the second year in a row. The start of financing of the construction of Mine No. 6 in PJSC PIMCU was one of the key results of the reporting year: the first tranche was allocated for infrastructure

¹³ 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.

construction. The launch of the new mine will promote the development of the enterprise and the town of Krasnokamensk. JSC Khiagda completed the physical start-up of the local sorption unit forming part of the mining complex and auxiliary infrastructure facilities at the Vershinnoye deposit. Pilot operation was conducted at the Istochnoye deposit.

JSC Dalur started to prepare for the development of a new uranium deposit, Dobrovolnoye. Its commissioning will help to maintain uranium output at the current level in the long run. This is one of the most significant projects for the social and economic development of the region.

The Division's digital economy projects

JSC Khiagda is developing smart in-situ leaching process simulation methods as part of the Smart Mine project. An IT system is being developed based on a 3D model map of the ore field. The system will model and track mining processes in real time using video surveillance and smart sensors.

The system will make it possible to:

- Promptly and precisely identify ore location in the deposit, ore body characteristics, the best uranium mining method, etc.;
- Model well performance;
- Plan mining operations and the equipment maintenance schedule.

A promising area of development of the Smart Mine project is the Smart Hard Hat, a system making it possible to monitor an employee's physical condition, location, heart rate and body temperature.

Contribution to the implementation of JSC Atomenergoprom's strategy

INCREASE OF THE INTERNATIONAL MARKET SHARE

The Division continued to expand its footprint on international markets. In 2017, a 'pilot' batch of uranium and coal produced by PJSC PIMCU was delivered to China.

REDUCTION OF PRODUCTION COSTS AND THE LEAD TIME

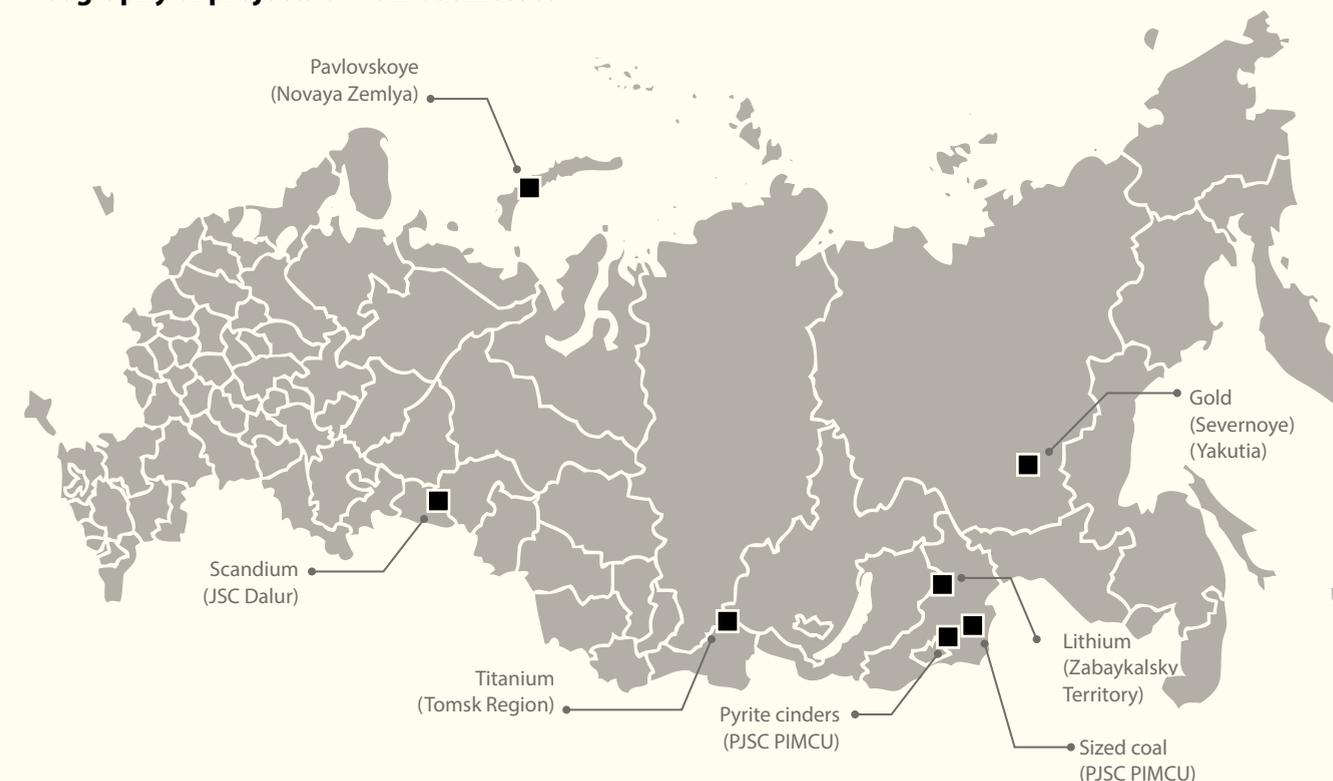
In 2017, the Division reduced the unit cost of uranium production by 2% compared to 2016 by increasing the share of uranium mining at enterprises using the drillhole in-situ leaching technique. Further efforts were undertaken to improve performance. Overall actual savings from operational efficiency improvement measures (including the use of the tools forming part of ROSATOM's Production System) totalled RUB 1.3 billion.

NEW PRODUCTS FOR THE RUSSIAN AND INTERNATIONAL MARKETS

In 2017, JSC Dalur commenced pilot production of high-purity scandium oxide. As part of the construction of a mining and processing plant at the Pavlovskoye lead and zinc deposit on the island of Novaya Zemlya, engineering field surveys were completed; design work was commenced, and preliminary product sale agreements were signed with anchor customers. In addition, the reporting year saw the approval of the Division's initiatives on the production of titanium, lithium and other rare metals.



Geography of projects of new businesses



Road map for the launch* of projects:



- 1 Improving the processing depth of the mineral resource base and industrial waste:
 - Sized coal
 - Scandium
 - Pyrite cinders

- 2 Implementation of large-scale partner greenfield projects:
 - Lithium
 - Titanium
 - Severnoye (gold)

*Date when the project will start to generate revenue.

Contribution to sustainable development

JSC Atomredmetzoloto does business as a socially responsible company, whose sustainable development promotes the well-being of the regions and territories in which it operates.

The Division's sustainable development goals are as follows:

- To participate in maintaining the sustainability of the global uranium market, national and regional economies and a balance between stakeholders' reasonable expectations and interests;
- To minimize the negative environmental

impact of the industry, use mineral resources efficiently, conserve resources and comply with international environmental standards;

- To assume social responsibility for the safety, health and professional development of personnel, social and economic well-being of the population in the regions of operation, support local communities and engage in charity.

The Company made an important contribution to the development of its regions of operation by implementing

a large-scale joint project with PJSC Rostelecom to build fibre optic links (FOLs) in the Bauntovsky and Yeravninsky districts (Republic of Buryatia). The project allowed the Division's organization JSC Khiagda to increase the speed of communication between the production site in the Bauntovsky district and the office in the city of Chita. In addition, the 218 km long FOLs provided a number of towns and villages in the Republic of Buryatia with high-speed connectivity.

4.1.2. Plans for 2018

The Division's key objectives:

- To continue to implement the cost management programme;

- To implement the programme to build Mine No. 6 in PJSC PIMCU;

- To increase scandium oxide output in the interests of Russian high-technology

enterprises as part of business diversification;

- To maintain a zero fatality rate across the Division's enterprises.

Key performance indicators for 2018

Indicator	Target value
Full cost, RUB billion	15.4
Labour productivity, RUB million per person	2.35
Nuclear fuel cycle front-end inventories, RUB billion	109
LTIFR / decrease in the severity of injuries at production sites of enterprises, including contractors, %	0.49/30%
Number of events rated at level 2 or higher on the INES scale	0

4.2. Fuel Division¹⁴

Key results in 2017:

- Mass production of modernized generation 9+ gas centrifuges was launched;

- A number of contracts were signed for the supply of nuclear fuel for Russian-design NPPs that are in operation and under construction (China, Ukraine, Bulgaria, Egypt, Turkey and Belarus);

- The Division established single industry integrators for new businesses: Energy Storage Systems and Additive Manufacturing Technologies.

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

The Division supplies nuclear fuel for 72 power units in Russia and 13 countries in Europe and Asia, as well as 15 research reactors around the world. One in every

six reactors in the world currently use the fuel produced by the Division.

The Division's strategic goals until 2030:

- To increase its share on the markets for uranium enrichment and nuclear fuel fabrication services (in particular, to 22% on the fabrication market) by producing traditional products with high consumer properties and expanding to new nuclear markets;

- To double revenues in comparable terms against 2014;

- To boost revenue from non-nuclear businesses (including newly created businesses) more than tenfold in comparable terms against 2014;

- To increase labour productivity almost threefold in comparable terms against 2014.

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

Strategic goals of ROSATOM

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

Strategic goals of the Fuel Company

Growth on NFC markets	Development of the second business core	Performance improvement	Social and environmental acceptability
↓	↓	↓	↓
■			
		■	
■	■		
			■

¹⁴ For details about the Division's results, see the report of JSC TVEL for 2017.

4.2.1. Results in 2017

Achievement of key performance indicator targets

Indicator	2015	2016	2017 target value	2017 actual value
Semi-fixed costs, RUB billion	35.9	36.9	38.5	36.4
Labour productivity, RUB million per person	8.4	8.25	8.5	8.46
10-year portfolio of overseas orders, USD billion	10.3	10.1	10.1	10.8
Revenue from overseas orders, USD million	1,608.9	1,415	1,029	1,200
The Division's revenue from new products (outside the scope of the nuclear industry) ¹⁵ , RUB billion	4.0	7.0	8.7	6.1
The Division's 10-year portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion	10.3	10.1	4.87	7.2
LTIFR	0.14	0.09	0.3	0.06
Number of events rated at level 2 or higher on the INES scale	0	0	0	0

Operating results

PJSC KMZ and LLC RME Centrotech started mass production of modernized generation 9+ gas centrifuges. The modernized gas centrifuge significantly outperforms previous models in terms of productivity and has a lower production cost. As part of the Proryv project, preliminary tests were successfully conducted on a unique carbothermal nitride synthesis complex built at the request

of JSC SCC¹⁶. In addition, JSC SCC performed acceptance tests of the 16th experimental NFA with mixed nitride uranium-plutonium fuel, and the assembly was installed in the BN-600

¹⁵ In 2015 and 2016, revenue from new products and the portfolio of new products were calculated taking into account intra-group turnovers; starting from 2017, only the volumes outside the scope of the nuclear industry are calculated. Therefore, data for 2015 and 2016 has been recalculated and only indicates revenue from new products and the portfolio of new products outside the scope of ROSATOM.

¹⁶ See also the section 'Research and Innovations'.

reactor core. See also the section 'Research and Innovations'.

The Division's digital economy projects

In 2017, the Division launched a project to develop an information system for managing experimental and engineering data. The project is aimed at

building a shared information space for managing engineering data about the Division's products. Simulation modelling was started as part of the Division's programme to concentrate its operations. Simulation modelling of operations is designed to create a digital model that describes in detail the technology of an existing production facility or a facility under construction

in order to build an ideal process flow and search for the best composition and arrangement of process equipment meeting various criteria. The Division launched a pilot project to develop a data mining and robotics system and integrate it into procurement processes.

Contribution to the implementation of JSC Atomenergoprom's strategy

INCREASE OF THE INTERNATIONAL MARKET SHARE

At year-end 2017, the 10-year portfolio of overseas orders for traditional products totalled USD 10.8 billion.

The Division expanded its cooperation with foreign energy companies and industry partners in promoting TVS-KVADRAT fuel on target markets.

A number of contracts were signed for the supply of nuclear fuel for Russian-design NPPs that are in operation and under construction (China, Ukraine, Bulgaria, Egypt, Turkey and Belarus).

The Division continued to cooperate with Framatome¹⁷ on the production of nuclear fuel and components from reprocessed uranium for PWR-reactor NPPs in Europe using Framatome's technologies at the production sites of PJSC MSZ.

REDUCTION OF PRODUCTION COSTS AND THE LEAD TIME

The Division launched a project to concentrate the operations of JSC VPA Tochmash (the city of Vladimir) and PJSC KMZ (the city of Kovrov) in the Vladimir Region. By 2019, relocation of the main production site of PJSC KMZ to the city of Kovrov will help to reduce the production cost of gas centrifuges and the enterprise's total costs by 11.5% and

almost 50% respectively. The concentration of operations will involve the transfer of employees and provision of housing in the city of Kovrov, as well as helping redundant employees to find employment in the city of Vladimir.

The Division is conducting extensive work to improve the use and reduce the area of production sites. Since 2009, the area occupied by the Division's nuclear fuel cycle business has already been reduced by a factor of 2.5. By 2022, the area of land plots and buildings should decrease from 19,200 ha to 8,100 ha and from 6.6 million sq. m to 4.6 million sq. m respectively.

NEW PRODUCTS FOR THE RUSSIAN AND INTERNATIONAL MARKETS

A contract was concluded with a leading Russian steel and rolled steel producer for the supply of a large batch of calcium injection wire.

A single industry integrator, LLC RME Centrotech, was established within the Division for a new business area: Energy Storage Systems. In-plant electric transport of the Division's organizations JSC UEIP and JSC PA ECP was fitted with Li-ion batteries, which replaced conventional rechargeable batteries. A contract was concluded with

CJSC TROLZA (one of the leading Russian producers of autonomous passenger vehicles) for the production and supply of energy storage devices based on Li-ion batteries.

A single industry integrator, LLC RusAT, was established within the Division for a new business area: Additive Manufacturing Technologies. It will focus on four main areas:

- Development of integrated software packages for the entire additive manufacturing life cycle;
- Manufacturing of a range of process equipment, including 3D printers and their components;
- Production of materials and metal powder for 3D printing;
- Rendering 3D printing services and integrating additive manufacturing technologies into production.

In 2017, a pilot prototype of a second-generation multi-powder metal 3D printer was assembled; the start of batch production is scheduled for 2018. Domestically manufactured printers will be 20% cheaper than foreign analogues.

¹⁷ Formerly AREVA NP.

Contribution to sustainable development

The Division contributes to sustainable development in the following areas:

- Social partnership in the regions of operation;
- Projects to create new jobs and foster a business environment;
- Educational and health care projects;
- Charity;
- Ensuring environmental safety and remediation.

A project titled 'My Home. My Courtyard. My Family' forms part of the Division's strategic social initiative aimed at developing the towns and cities in which it operates and improving living conditions. In 2017, the project covered the following key areas:

- Installing workout facilities;
- Establishing the institute of courtyard coaches (instructors) giving free lessons to children and young adults during the season;

■ Organizing and conducting workout competitions in the form of festivals at the level of neighbourhoods and the city as a whole;

■ Engaging official organizations (the Workout Federation) and large and popular local communities to organize and hold workout festivals.

4.2.2. Plans for 2018

Key performance indicators for 2018

Indicator	Target
Semi-fixed costs, RUB billion	36.9
Labour productivity (JSC TVEL + JSC TENEX), RUB million per person	10.5
The Division's revenue from new products (outside the scope of the nuclear industry), RUB billion	8.7
The Division's 10-year portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion	5.4
LTIFR	0.3
Number of events rated at level 2 or higher on the INES scale	0

4.3. Mechanical Engineering Division ¹⁸

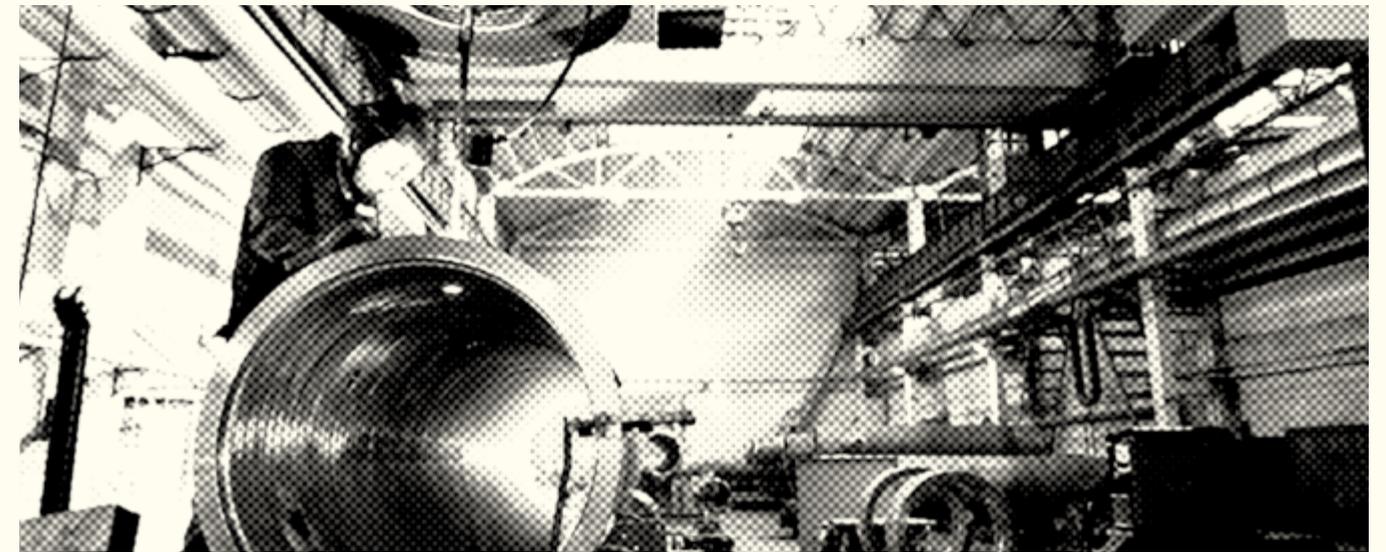
Key results in 2017:

- Mechanical engineering products were delivered on time to 11 NPPs in Russia and abroad;
- Contracts were signed for the package supply of nuclear island

and auxiliary equipment to Rooppur NPP (Bangladesh);

- A strategic partnership and cooperation agreement was signed with the country's largest LNG producer;
- The Division became a single-source supplier of boiler and turbine island equipment for waste-to-energy plants;

■ Contracts were concluded for the production and supply of mini HPPs in Russia and South Africa.



The Mechanical Engineering Division (its holding company is JSC Atomenergomash) is one of Russia's largest groups of mechanical engineering enterprises (29.5% 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. 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.

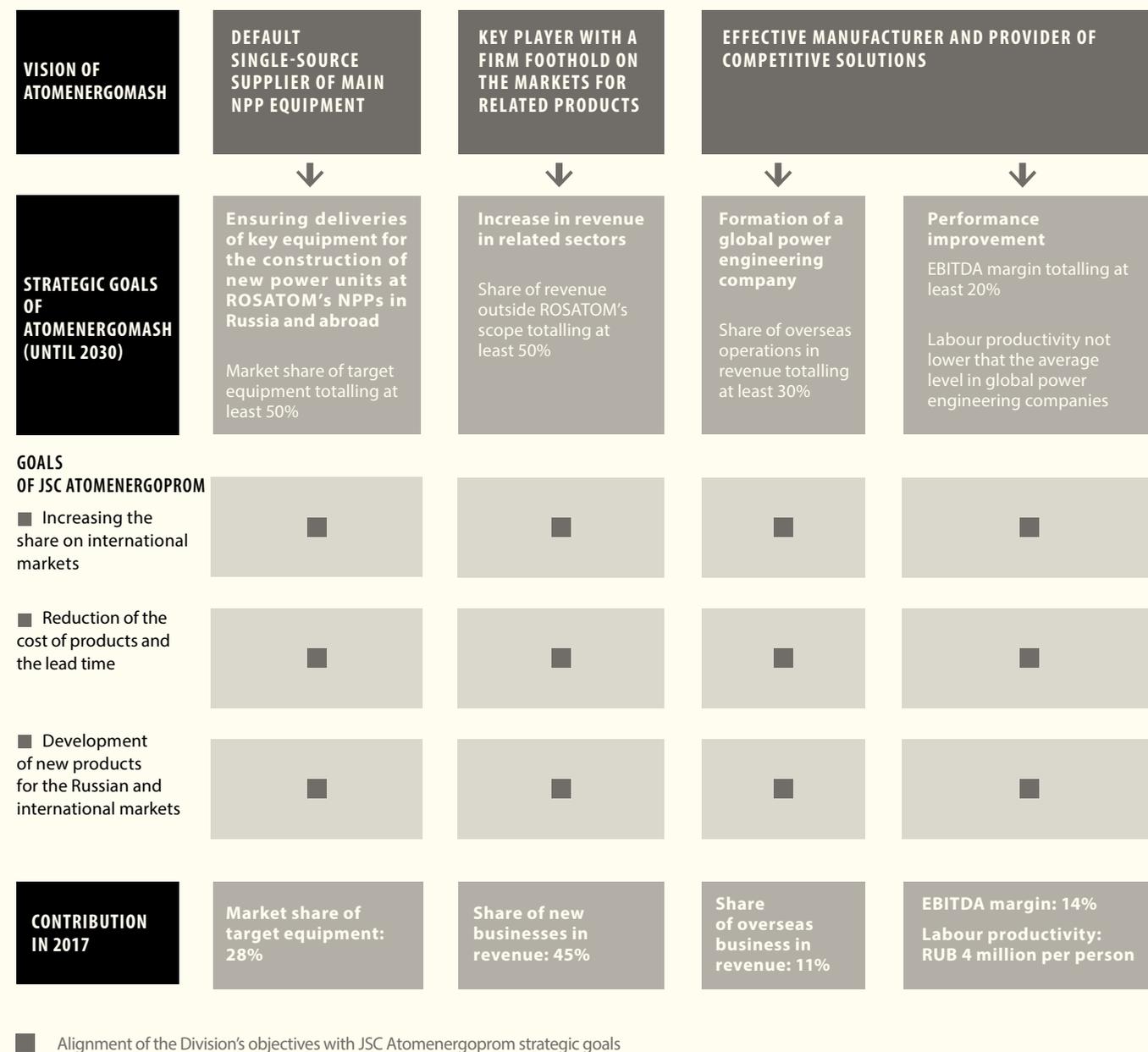
The Division comprises over 20 power machine engineering enterprises, including

manufacturing, research, service and engineering organizations in Russia, the Czech Republic, Hungary and other countries.

¹⁸ For details about the Division's results, see the report of JSC Atomenergomash for 2017.

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

Strategic goals of JSC Atomenergomash



4.3.1. Results in 2017

Achievement of key performance indicator targets

Indicator	2015	2016	2017 target value	2017 actual value
Unit semi-fixed costs, %	41.4	31.5	34.8	34.9
Labour productivity, RUB million per person	2.9	3.7	4.4	4.05
The Division's 10-year portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion ¹⁹	75.2	65.9	62.8	91.5
LTIFR	0.42	0.25	0.42	0.21
Number of events rated at level 2 or higher on the INES scale	0	0	0	0

Contribution to the implementation of JSC Atomenergoprom's strategy

INCREASE OF THE INTERNATIONAL MARKET SHARE

Contracts were signed for the package supply of nuclear island and auxiliary equipment to Rooppur NPP (Bangladesh). The Division is also a single-source supplier of equipment for a nuclear steam generator for the second stage of Kudankulam NPP (India), four units of Akkuyu NPP (Turkey), Hanhikivi 1 NPP (Finland) and the first and second units of the Belarusian NPP.

In partnership with General Electric, the Division is carrying out contracts for package supply of the turbine hall, including turbine unit equipment, for Akkuyu and Hanhikivi 1 NPPs. In addition, the Division continues to produce auxiliary turbine hall equipment for Kudankulam NPP (India) right on schedule, in accordance with the contract.

REDUCTION OF PRODUCTION COSTS AND THE LEAD TIME

In 2017, the Division continued to improve its performance using the tools forming part of ROSATOM's Production System (RPS). During the year, 486 RPS projects and 2,422 proposals for improvement were implemented, with total savings reaching ~RUB 590 million. At year-end, the Division reported a 9.3% increase in labour productivity.

NEW PRODUCTS FOR THE RUSSIAN AND INTERNATIONAL MARKETS

The Division's plants in Volgodonsk and Petrozavodsk manufactured three columns

for refineries in Moscow and Omsk. This unique equipment had never been produced in Russia before.

Equipment supply contracts for two small HPPs were concluded. A salt plant in the Kaliningrad Region and a water treatment complex at the ZapSibNefteKhim petrochemical plant are being built based on the technology and designs developed by JSC SverdNIIkhimmash, an organization of the Division.

In the Thermal Power segment, equipment was produced for CHPP-1 of JSC Arkhangelsk Pulp & Paper Mill.

In 2017, the Division became a single-source supplier of boiler and turbine island

¹⁹ In 2015 and 2016, revenue from new products and the portfolio of new products were calculated taking into account intra-group turnovers; starting from 2017, only the volumes outside the scope of the nuclear industry are calculated. Therefore, data for 2015 and 2016 has been recalculated and only indicates the portfolio of new products outside the scope of ROSATOM.

equipment for waste-to-energy plants that are being built as part of the Energy from Waste project.

A strategic partnership and cooperation

agreement was signed with the country's largest LNG producer. It enables the Division to take part in the localization of complex process equipment for LNG production.

The first contracts under the agreement are already being carried out.

Contribution to sustainable development

The Division follows socially responsible business practices and prioritizes job creation both at its own sites and those of its suppliers. In addition, the Division's regional enterprises participate in the beautification and infrastructure development in the regions of operation, and in charity projects.

The following events were conducted in 2017:

- A Day of Good Deeds for abandoned newborn babies in the Nizhny Novgorod Regional Children's Hospital;

- A New Year event for child patients in the surgery department of Children's Hospital No. 27 Aybolit;

- A charity event titled 'New Year for Everyone' for children from orphanages;

Charitable donations were given to the Korsar Sports Club for the Disabled in Podolsk for the purchase of equipment and sports gear, and to School No. 1 in the town of Vyazniki for targeted payment for treatment and the purchase of drugs for cancer patients.

4.3.2. Plans for 2018

In 2018, the Division's strategy will continue to prioritize timely performance of all contractual

obligations, improved operational performance (including through the systematic implementation of

RPS), increase of export contract volumes and revenue growth across all areas of business.

Key performance indicators for 2018

Indicator	Target value
Semi-fixed costs, % of revenue	35.1
Labour productivity, RUB million per person	4.9
The Division's revenue from new products (outside the scope of the nuclear industry), RUB billion	37.1
The Division's 10-year portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion	81.9
LTIFR	0.38
Number of events rated at level 2 or higher on the INES scale	0

4.4. Engineering Division ²⁰



Key results in 2017:

- The first criticality programme was launched at power unit No. 4 of Rostov NPP and power unit No. 1 of Leningrad NPP-2;
- As of December 31, 2017, 8 power units of NPPs were under construction in Russia;

- As part of the digital transformation programme, the Division signed important agreements with Russian and foreign organizations, and the Main Digital Laboratory was established;
- A contract for PMC services outside the scope of the industry was signed with Electricite de France (EDF).

Link between the Division's goals and the strategic goals of ROSATOM

ROSATOM's strategic goals

INCREASING THE SHARE ON INTERNATIONAL MARKETS

NEW PRODUCTS FOR THE RUSSIAN AND INTERNATIONAL MARKETS

REDUCTION OF THE COST OF PRODUCTS AND THE LEAD TIME

Strategic goals of the Division

LEADERSHIP IN THE CORE BUSINESS: NPP CONSTRUCTION

OPERATIONAL SUSTAINABILITY (DIVERSIFICATION)

FINANCIAL SUSTAINABILITY

Competitive advantages of the Division:

- References on the Russian and foreign markets;
- Safe standard designs with generation 3 / 3+ VVER reactors that are competitive in terms of LCOE, capital expenses and the duration of construction;

- A well-developed project management system for the construction of NPPs and other complex engineering facilities;
- Multi-D, an integrated industrial and technological platform for managing capital construction projects;

- A highly competent management team and operating personnel with extensive experience in building NPPs and other complex engineering facilities;
- In-house design capabilities;
- Extensive engineering and technical capabilities.

²⁰ For details about the Division's results, see the report of the Engineering Division for 2017.

²¹ JSC ASE EC is an organization of ROSATOM.

4.4.1. Results in 2017

Achievement of key performance indicator targets

Indicator	2015	2016	2017 Target	2017 actual
10-year portfolio of overseas orders, USD billion	70.1	92.3	100.6	90.8
Revenue from overseas orders, USD billion	1.6	1.5	2.27	2.3
The Division's revenue from new products (outside the scope of the nuclear industry) ²² , RUB billion	10.1	6.2	11.9	8.3 ²³
The Division's 10-year portfolio of orders for new products (outside the scope of the nuclear industry), RUB billion	59.5	90.8	83.5	91.9
LTIFR (including contractors)	0.16	0.21	0.35	0.06
Number of events rated at level 2 or higher on the INES scale	0	0	0	0

NPP construction in Russia

NOVOVORONEZH NPP-2, POWER UNIT NO. 2

Voltage was produced for the NPP's own needs under the design layout, and the flushing of the open reactor was commenced.

ROSTOV NPP, POWER UNIT NO. 4

On December 6, 2017, the first NFAs were loaded, which marked the start of the first criticality stage at power unit No. 4 of Rostov NPP. Rostov NPP is the only nuclear power plant in modern Russia to launch three power units at one site within 7 years (No. 2 in 2010, No. 3 in 2015, and No. 4 in 2017) and the first NPP in modern history to resume so-called 'continuous construction'. Power unit No. 4 is the last power unit under construction at Rostov NPP, essentially concluding the legendary series of power units with VVER-1000 reactors, which incorporate state-of-the-art approaches

to safety based on the defence-in-depth principle.

LENINGRAD NPP-2, POWER UNIT NO. 1

On December 8, 2017, the first criticality stage was launched at power unit No. 1 with a VVER-1200 reactor at Leningrad NPP-2. It is a state-of-the-art generation 3+ reactor meeting all the latest safety requirements. Power unit No. 1 of Leningrad NPP-2 has become the second generation 3+ power unit launched in Russia (the first one was power unit No. 1 of Novovoronezh NPP-

2, which successfully started commercial operation in February 2017). The VVER-1200 design has a number of advantages compared to conventional power units of the same type which significantly improve its characteristics. In particular, the capacity of the reactor unit has improved by 20% compared to the previous generation (VVER-1000), while the operational life of main equipment has doubled to 60 years with a potential for extension for another 20 years.

²² In 2015 and 2016, revenue from new products and the portfolio of new products were calculated taking into account intra-group turnovers; starting from 2017, only the volumes outside the scope of the nuclear industry are calculated. Therefore, data for 2015 and 2016 has been recalculated and only indicates revenue from new products and the portfolio of new products outside the scope of ROSATOM.

²³ Given the adjustment of the target KPI, work in the Research Reactors segment was excluded.

KURSK NPP-2, POWER UNITS NO. 1 AND 2

The NPP is being constructed according to the VVER-TOI design²⁴. The VVER-TOI design is being developed based on the designs of VVER.1200E, relying as much as possible on the experience of industry organizations in NPP design based on VVER-1200 technology (Novovoronezh NPP-2). VVER-TOI complies with the main international standards and regulations, including WENRA, the IAEA, the EUR and the NRC.

In 2017, preparatory work was carried out at the NPP site, including the organization of the construction base, earthworks and laying of the foundations of buildings and structures. Reinforcement of the foundation slab of the reactor building was started at power unit No. 1.

Increase of the international market share, new products for the Russian and international markets

For details on NPP construction abroad, [see the section 'International Business'](#).

2017 saw the completion of the active stage of construction of facilities for the first stage of decommissioning of Ignalina NPP (Lithuania).

Construction of a national radioactive waste storage facility was launched in Bulgaria (the project is being implemented by a consortium of Russian and Bulgarian companies).

Contracts for the decommissioning of Biblis NPP (Germany) were concluded with regard to the dismantling of steam generators.

An agreement was signed with EDF on the implementation of an information management system.



²⁴ Standard optimized and computerized design of an NPP with two power units with a VVER reactor.

Reduction of production costs and the lead time

In 2017, the performance improvement programme (including the use of RPS tools and digital technologies) helped to achieve the following:

- NPP construction projects abroad were implemented on time and on budget;
- The Division's semi-fixed costs were reduced to RUB 27.2 billion (7.7% below the target).

TCM NC Programme

In 2017, a programme to create and implement a system for integrated management of the

time and cost of construction of nuclear facilities (Total Cost Management Nuclear Construction, TCM NC) was launched in the Russian nuclear industry. The TCM NC Programme is aimed primarily at reducing the duration and cost of NPP construction in order to maintain the Corporation's leadership in the global nuclear industry.

The TCM NC Programme will enable:

- A 20% reduction in the amount of time required to prepare design documents and cost estimates;
- A 50% decrease in the risks of changes in the design;

The Division implemented a system for incentivizing investment and construction projects in order to enable a reduction in the cost and duration of construction of facilities.

- A 20% reduction in the construction planning time;
- A 20% reduction in the cost of preparatory and construction works.

Key participants of the programme include the Industry Centre of Capital Construction, the NPP Product Project Office, the Engineering Division, JSC Rusatom Overseas and JSC Greenatom.



Digital transformation of the Engineering Division

In June 2017, ROSATOM represented by JSC ASE EC became one of the digital economy competence centres under the Russian Government. JSC ASE EC also became a representative of the Building Smart Alliance in Russia. The Main Digital Laboratory was established in the Division.

As part of the digital transformation programme, the Division signed important agreements with Russian and foreign organizations:

- on cooperation with IBM Corporation;
- with Autodesk on the use of information modelling (BIM);
- with Assystem SA, SAP CIS, HILTI;
- with the SKOLKOVO Moscow School of Management and the Centre for Strategic Research North-West Foundation on establishing a Digital Transformation Institute;

- with the National Nuclear Research University MEPhI on the establishment of the Higher Engineering School;
- with the Government of the Nizhny Novgorod Region on cooperation in the application of information technologies;
- with the Industry Development Fund of the Russian Ministry of Industry and Trade on cooperation on the development of a national information system for the industry.

The Multi-D digital platform for managing the life cycle of complex engineering facilities enables:

- a reduction in the cost and duration of construction of complex engineering facilities;
- optimization of construction and installation works, and detailed planning of the sequence of work activities;
- saving up to 10% of the project budget;
- an integrated web-based space for managing capital construction projects;
- adoption of global best practices in the sphere of digital assets and project management;
- compliance with BIM 4.0 approaches;
- partnership with a leading Russian engineering company.

Contribution to sustainable development

The Division's key contributions to sustainable development include the following:

- Ensuring energy security in 23 countries around the world;
- Carrying out nationwide investment projects in a number of countries;
- Positive economic and social impact at the regional, national and international levels (in 2017, the Division created 3,678 jobs, mostly at NPP construction sites in foreign countries);

- Rolling out 'nuclear' know-how in related industries;
- Fulfilling social obligations;
- Meeting the standards of national and international jurisdictions and partnering with Russian and international organizations.

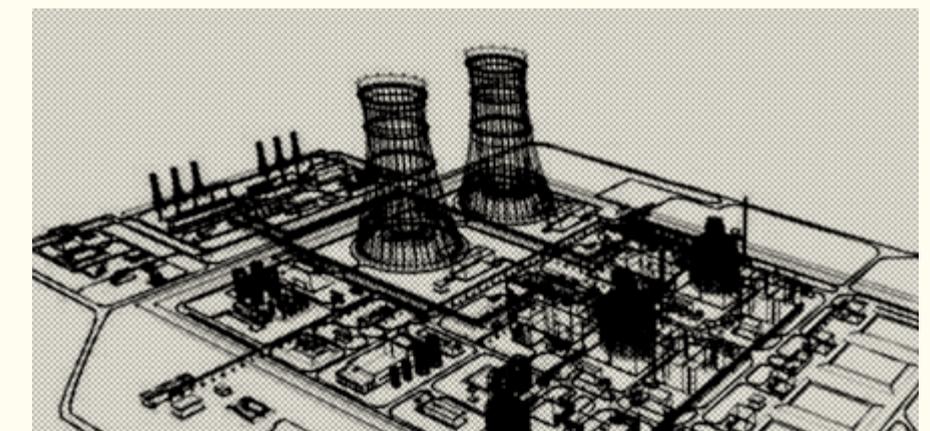
4.4.2. Plans for 2018

In Russia, power start-ups are planned at power unit No. 4 of Rostov NPP and power unit No. 1 of Leningrad NPP-2.

Concreting of the foundation slab ('first concrete') is planned on the construction site of Kursk NPP-2.

Key performance indicators for 2018

Indicator	Target value
LTIFR (including contractors)	0.32
Number of events rated at level 2 or higher on the INES scale	0



4.5. Power Engineering Division ²⁵



Key results in 2017:

■ Power generation by Russian nuclear power plants reached a new all-time high and totalled 202.9 billion kWh (which is comparable to electricity consumption in Moscow and the Moscow Region over two years);

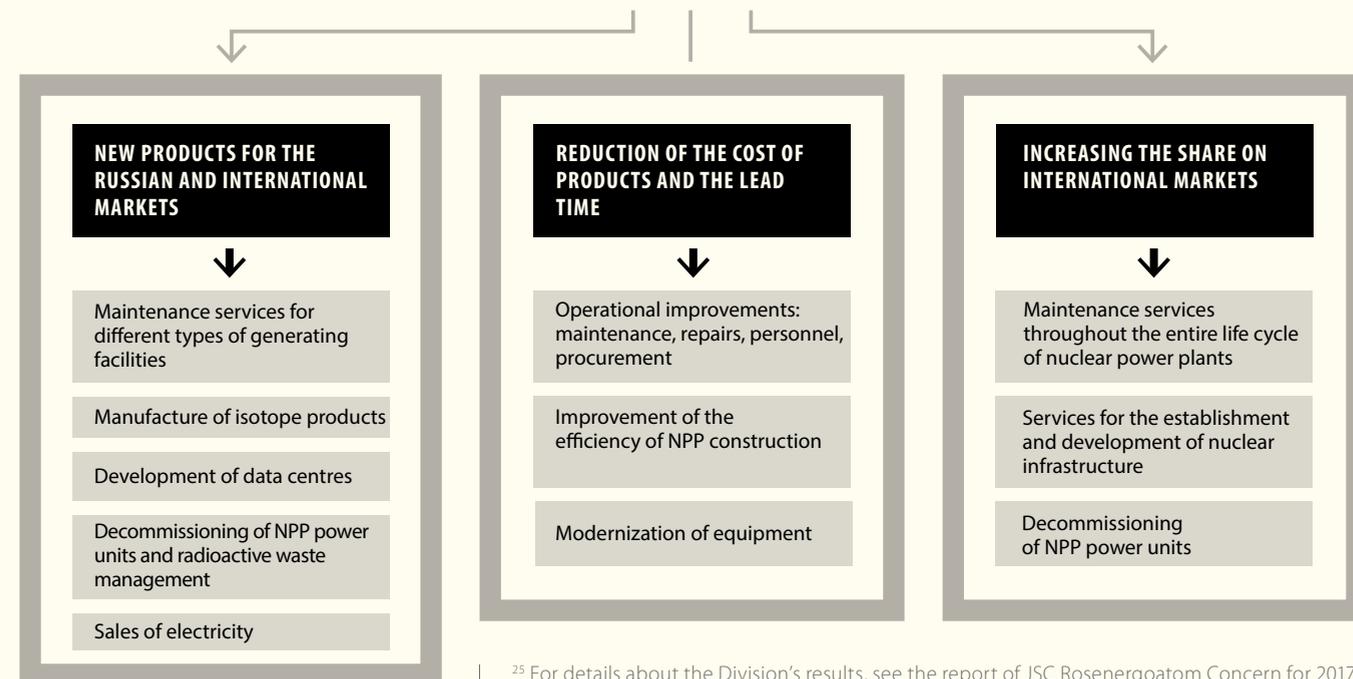
- Installed capacity of 10 Russian NPPs (35 power units) totalled 27.9 GW;
- The NPP capacity factor stood at 83.3%.

The Power Engineering Division generates electricity and heat at nuclear power plants and acts as the operator of all Russian NPPs. JSC Rosenergoatom Concern, the Division's holding company,

is Russia's largest power generation company and ranks second in the world in terms of installed capacity among NPP operators. The Division's mission is to provide consumers with energy

produced by Russian NPPs; its top priority is to ensure safety.

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



²⁵ For details about the Division's results, see the report of JSC Rosenergoatom Concern for 2017.

4.5.1. Results in 2017

Achievement of key performance indicator targets

Indicator	2015	2016	2017 target value	2017 actual value
Nuclear power generation, billion kWh	195.2	196.4	201.1	202.9
Unit semi-fixed costs, RUB '000/MW	1,955	1,670	1,776	1,667
Index of implementation of the Division's investment programme, %	99.75	98.6	100	98.7
Labour productivity, RUB million per person	6.35	7.04	8.5	8.65
The Division's revenue from new products (outside the scope of the nuclear industry), RUB billion ²⁶	45.3	54.1	53.5	60.5
LTIFR (including contractors)	0.02	0.065	0.15	0.08
Number of events rated at level 2 or higher on the INES scale	0	0	0	0

Operating results

Electricity output at 35 power units of 10 operating NPPs totalled 202.9 billion kWh, reaching a new all-time high in the history of Russian nuclear power generation (in 2016, electricity output totalled 196.4 billion kWh). The NPPs' capacity factor amounted to 83.3% (83.1% in 2016). Nuclear power generation accounted for 18.9% of the total electricity output in Russia (18.3% in 2016). On February 27, 2017, power unit No. 1 of Novovoronezh NPP-2 with a VVER-1200 reactor started commercial operation. This is the first generation 3+ power unit in Russia and worldwide. *Power*, a prestigious

US energy magazine, ranked power unit No. 1 of Novovoronezh NPP-2 among the top three power plants of the world in 2017. The Division continued to build the floating thermal nuclear power plant (FTNPP) with an installed capacity of 70 MW, as well as hydraulic structures and onshore facilities in the town of Pevek (Chukotka Autonomous District), where the FTNPP will be located.

The loading of nuclear fuel into the reactor and the first criticality stage are scheduled for 2018. The commissioning of the FTNPP is scheduled for late 2019.

²⁶ In 2015 and 2016, revenue from new products and the portfolio of new products were calculated taking into account intra-group turnovers; starting from 2017, only the volumes outside the scope of the nuclear industry are calculated. Therefore, data for 2015 and 2016 has been recalculated and only indicates revenue from new products outside the scope of ROSATOM.

Contribution to the implementation of JSC Atomenergoprom's strategy



The Division's digital economy projects

The Division is building the Supporting Data Centre (DPC) near Kalinin NPP. With power consumption of up to 80 MW, the DPC will become the largest data centre in Russia and one of the largest data centres in Europe. The project is being implemented in partnership with PJSC Rostelecom, an anchor lessee of the DPC data halls. The Centre will be used for rendering server hardware co-location services. In December 2017, the permit was obtained for commissioning phase 1 of the stage 1 DPC. A phased transition of all IT systems, primarily the system for NPP resource management, operations support and maintenance and the system for consolidating power unit operation parameters and

managing the technical archive, to the new DPC is expected to start in 2018. With regard to spare DPC capacities, the Division is actively involved in pre-contract negotiations with state-owned and commercial companies on rendering a wide range of infrastructure services.

In addition, in 2017, JSC Rosenergoatom Concern won the IT Leader national award in the Energy Enterprises category and won the SAP Value Award 2017 competition in the Digital Transformation Leader category.

INCREASE OF THE INTERNATIONAL MARKET SHARE

The Power Engineering Division services Russian-design NPPs abroad; for details, see the section '[International Business](#)'.

Reduction of production costs and the lead time

In 2017, 39 repairs were conducted at 32 power units of NPPs with a total duration of 1,826.5 days (with the planned duration totalling 1,995 days). The duration of repairs was reduced by a total of 168.5 days due to:

- Thorough search for and elimination of unproductive losses of work time during scheduled maintenance as part of the development of ROSATOM's Production System (RPS);

- The use of a conservative approach to the scheduling of power unit maintenance providing additional slack time for the correction of defects;

- The absence of defects affecting the duration of the critical path of repairs.

Overall, the reduction in the duration of equipment repairs at NPPs enabled additional power generation totalling about 2 billion kWh.

The Division continued to implement the RPS tools. In 2017, overall savings from the implementation of RPS projects and proposals for improvement reached RUB 499.4 million.

NEW PRODUCTS FOR THE RUSSIAN AND INTERNATIONAL MARKETS

In 2017, the Division's sales unit JSC AtomEnergoSbyt continued to operate as the 'energy supplier of last resort' in the Kursk, Tver, Smolensk and Murmansk Regions. The net electricity supply totalled 16.2 billion kWh, up by 0.8% YoY (16.04 billion kWh in 2016). All branches of JSC AtomEnergoSbyt are developing additional products (B2B and B2C). Electricity supply to households increased (by 7% YoY), while supply to industrial and equivalent consumers decreased (by 4% YoY), with net supply to other consumers remaining unchanged.

Contribution to sustainable development

The Division attaches special importance to developing social capital and the regions of operation and investing in infrastructure. Most investment programmes of JSC Rosenergoatom Concern include the construction of social facilities. Key infrastructure facilities in the towns and cities where NPPs are located were created during the construction of NPPs.

In 2017, the Fund for Fostering Development of Municipal Entities Association of Nuclear Power Plants' Territories (founded by JSC Rosenergoatom Concern and local governments of the municipalities where NPPs are located) launched a new programme to develop small and medium-sized businesses. In addition, in 2017, housing and courtyard

improvements were made, and new recreational areas were created in all regions of operation as part of the Urban Environment federal project.



5. Innovations and New Products

70

technological projects were underway

170.9

revenue from new products outside the scope of the nuclear industry, RUB billion

19.8%

share of new products in total revenue

56,673

revenue from electricity sales in 2017, RUB million

18,435

revenue from the shipbuilding business in 2017, RUB million

13,492

revenue from the manufacture of security systems in 2017, RUB million

275

open radionuclide sources supplied to healthcare institutions in Moscow in 2017

470

tonnes of carbon fibre supplied to customers in 2017

550

wind power plants to be built by JSC Atomenergoprom in Russia in the next six to seven years

7,691

revenue from NPP servicing in 2017, RUB million

9,497

revenue from the lasers business in 2017, RUB million

8,345

revenue in the back-end segment in 2017, RUB million

5.1. Research and Innovations

Key results in 2017:

- Over 70 technological projects were underway;
- The Company continued to implement the Proryv (Breakthrough) project aimed at closing the nuclear fuel cycle.

JSC Atomenergoprom creates breakthrough technologies and innovative infrastructure to facilitate long-term development and meet the energy needs of mankind.

5.1.1. Implementation of the Innovative Development and Technological Modernization Programme

A large-scale innovative development and technological modernization programme is underway in the Russian nuclear industry. Its aim is to enable ROSATOM and JSC Atomenergoprom to achieve their strategic goals. In 2017, nuclear organizations, as well as 27 universities, 24 academic institutes and over 35 third-party scientific organizations were engaged in the implementation of over 70 technological projects.

In 2017, innovative activities in the nuclear industry were aimed at developing and introducing new technologies, expanding the range of mechanisms and improving the quality of commercialization of innovative solutions, and providing comprehensive support to innovative projects at all stages. An agreement was concluded with JSC Russian Venture Company to jointly develop and promote high technologies and innovative solutions created using the R&D capabilities and infrastructure of organizations in the industry.

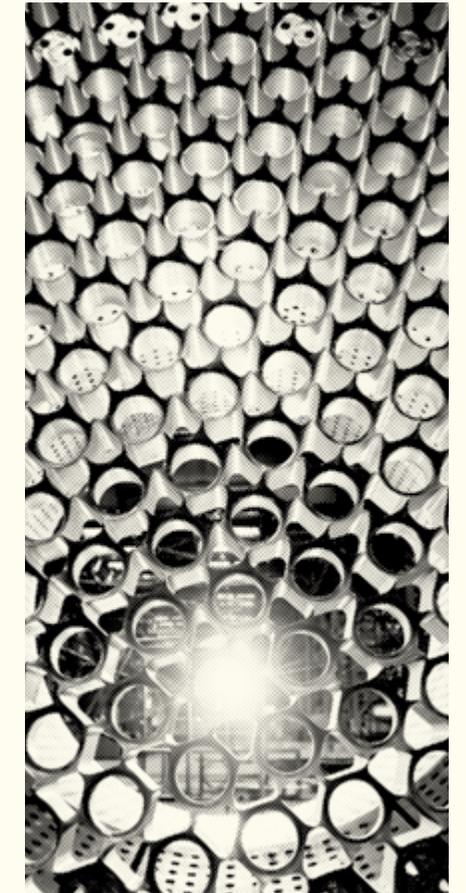
In 2017, ROSATOM was designated a Competence Centre as part of the programme titled 'Digital Economy of the Russian Federation'; it was assigned responsibility for the Building Research Competences and Technological Know-How area. The Centre will process and consolidate all proposals in the area and submit them for expert review to the working group headed by JSC Russian Venture Company.

Construction of the world's most powerful sodium-cooled Multipurpose Fast Neutron Research Reactor (MBIR) continues at the site of JSC SSC RIAR (Dimitrovgrad, Ulyanovsk Region). The MBIR is designed to replace the BOR-60 research reactor that is currently in operation.

Key innovative projects forming part of the Innovative Development and Technological Modernization Programme

Energy projects	Non-energy projects
Adoption of integrated geological and mining simulation techniques; research and technical support for the development of uranium deposits	Development of isotope production technologies in order to expand the use of isotopes in health care
Development of new gas centrifuges for uranium enrichment	Organization of production of the cobalt-60 isotope in an RBMK-type reactor

Energy projects	Non-energy projects
Validation of the VVER TOI design in order to promote it on international markets	Development of a multipurpose medical device based on thulium fibre laser
Development of technological solutions for the processing of graphite stack elements in order to move RAW to a lower hazard class	Development of additive manufacturing technologies for the manufacture of new products
Development of technologies and equipment for the dismantling of graphite stacks during the decommissioning of graphite-moderated uranium reactors	Development of diamond detectors for radiation detection at nuclear power plants and thermonuclear reactors
Development of experimental fuel elements and fuel assemblies based on high-density mixed uranium-plutonium fuel for fast neutron reactors.	Development of materials for positron emission tomography
Development of technologies and launch of production of mixed oxide (MOX) fuel for fast neutron reactors	Development of a nuclear radioisotope diffusion battery
Development and research of fuel assembly materials for fast neutron reactors	Development of porous carbon materials with a regular structure whose properties can be widely varied
Creation of the International Thermonuclear Experimental Reactor (ITER)	Industrial waste processing
Research and development in the field of controlled nuclear fusion	



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

The Proryv (Breakthrough) Project is the key innovative project in the nuclear industry. It is aimed at developing fast neutron reactors and closing the nuclear fuel cycle. The project will result in the development of technologies that will help to solve the problem of radioactive waste accumulation and make nuclear power plants more cost-effective. In 2017, reactor tests of the innovative mixed nitride uranium-plutonium (MNUP) fuel in

the BOR-60 research reactor and the BN-600 power reactor continued successfully. The Company continued to build the MNUP fuel fabrication and refabrication module forming part of a pilot and demonstration energy facility at JSC SCC. Non-standard equipment for the production of MNUP fuel for the BREST-OD-300 reactor unit was manufactured and delivered. Medium-term plans for the Proryv project include the completion of manufacture,

delivery and installation of equipment for the MNUP fuel fabrication and refabrication module. The module is scheduled to be commissioned in 2020. In the long term (2025-2030), the Company plans to build a power unit equipped with the BREST-OD-300 reactor and an SNF processing module.

5.2. Business Diversification

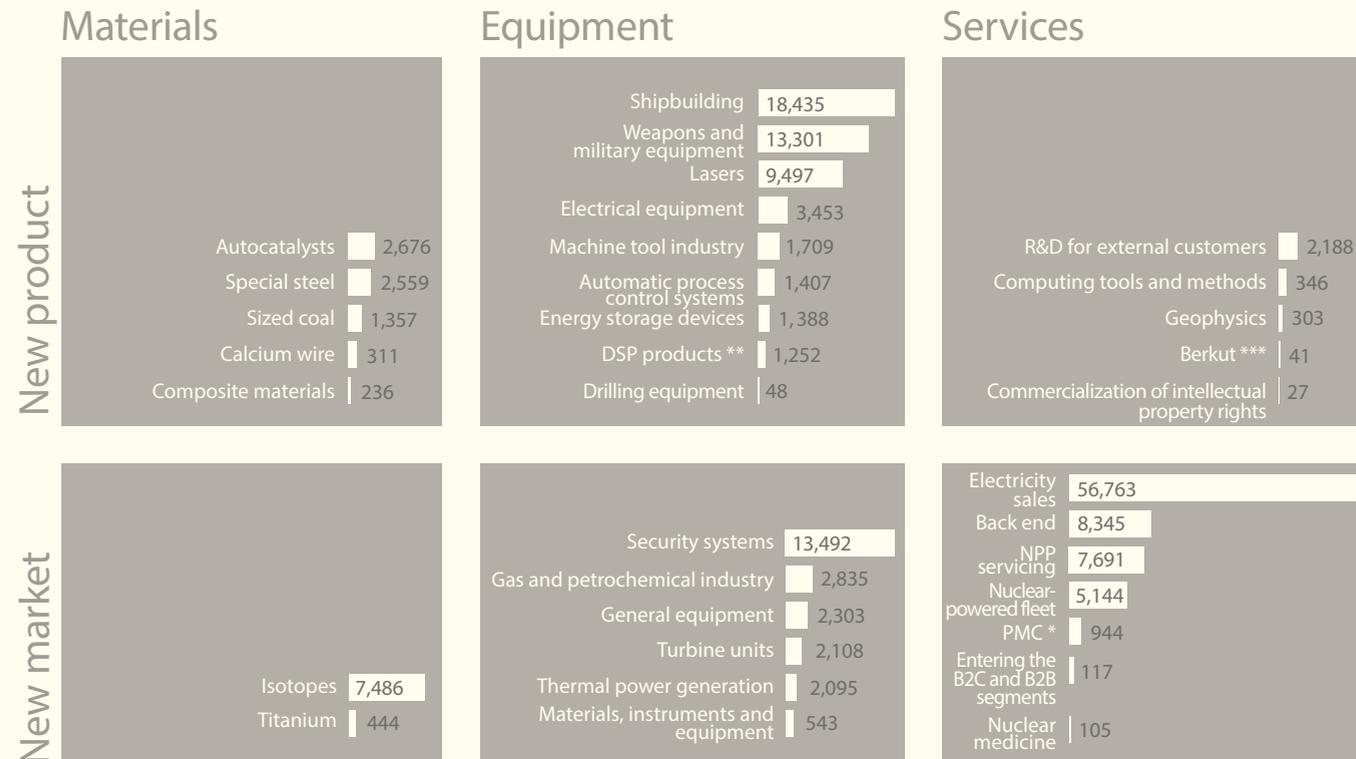
New businesses²⁷ are developed in the segments in which the Company has the relevant competences and/or access to the market. This approach enables the Company to hedge market or technological risks and take advantage of existing market or technological opportunities. To date, six priority segments have been identified in which new businesses will be developed.

Key results in 2017:

■ Revenue from new products outside the scope of the nuclear industry totalled RUB 170.9 billion (RUB 147.4 billion in 2016), making up 19.8% of the total revenue;

■ The 10-year portfolio of orders for new products outside the scope of the nuclear industry reached RUB 814.1 billion (RUB 692.8 billion in 2016).

Map of new businesses



* PMC — project management consulting
 **DSP products mean dedicated and special-purpose products
 ***Berkut stands for LLC Berkut Monitoring Systems (<http://smberkut.ru/>)

303 revenue for 2017, RUB million

²⁷ A new product (business) is a product outside the scope of the integrated offer covering the delivery of a nuclear power plant and research reactors.

5.2.1. Results in 2017

In the reporting year, revenue outside the scope of the nuclear industry totalled RUB 170.9 billion, which is 5.65% above the target (RUB 161.8 billion) and 15.95% higher than in 2016²⁸. The 10-year order portfolio outside the scope of the nuclear industry reached RUB 814.1 billion, which is 14.0% above the target (RUB 714.2 billion) and 17.5% more than in 2016.

Changes in the 10-year order portfolio and revenue from new products (outside the scope of the nuclear industry), RUB billion

	2015	2016	2017
Revenue from new products	99.0	147.4	170.9
10-year portfolio of orders for new products	403.3	692.8	814.1

Wind power

In 2017, a holding company JSC NovaWind was established in order to implement wind power projects. JSC NovaWind will consolidate all of the Company's wind power assets, as well as competences in the leading wind power segments and technological platforms (in particular, in 2017, product strategies were approved for the development of a product line in the peak generation and commercial dispatching segments).

In 2017, the portfolio of the Company's wind farms to be commissioned in Russia by 2022 increased to 970 MW (43% of the Russian wind power market). The Company will build wind farms in the Krasnodar Territory, the Republic of Adygea, the Stavropol Territory and the Rostov Region. The first power generation capacities and a plant manufacturing wind turbines are scheduled to be commissioned in 2018.

In the reporting year, a financing agreement was signed with a major Russian bank for the wind farm construction project. The total funding to be provided for a 10-year period exceeds RUB 60 billion (revenues of JSC VetroOGK under power supply contracts will be the main source of cash flow for debt servicing).



See also the section 'Financial Management'.

JSC NovaWind and the Dutch company Lagerwey established a joint venture, Red Wind B.V., which will be responsible for marketing and sales in Russia, turnkey supply of wind turbines and after-sales service. In addition, the joint venture will be responsible for the qualification

of suppliers and conclusion of contracts for the delivery of components to the production sites of JSC NovaWind in the city of Volgodonsk.

In 2018, the Company plans to launch the production of wind turbine components using Lagerwey technologies at the production facilities of the Mechanical Engineering Division in Volgodonsk

²⁸ In 2015 and 2016, revenue from new products and the portfolio of new products were calculated taking into account intra-group turnovers; starting from 2017, only the volumes outside the scope of the nuclear industry (deliveries to external customers) are calculated. Therefore, data for 2015 and 2016 provided in the report has been recalculated and only indicates revenue from new products and the portfolio of new products outside the scope of ROSATOM.

(to achieve the degree of production localization of 65% in Russia). Commercial capacity of the production facilities will total 100 turbines per year.

In the next 6 to 7 years, the Company intends to build wind power capacities totalling 1.4 GW (around 500 turbines) in Russia. In the future, it intends to expand into the international market.

Nuclear medicine

Nuclear medicine is one of the key areas of JSC Atomenergoprom's business in the long term. The Company is developing new high-technology devices and instruments and new lines of radiopharmaceuticals based on isotopes produced in-house. It also supplies solutions for nuclear medicine centres comprising diagnostic and radiotherapy modules. JSC Rusatom Healthcare is the industry integrator for this business.

In 2017, 137 open radionuclide sources were synthesized, and 275 open radionuclide sources were supplied to healthcare institutions in Moscow (this amount is sufficient for 2,350 PET (positron emission tomography) scans).

The Company started to provide services to local residents at regional healthcare institutions in the Chelyabinsk Region.

The Company started to develop a Russian radiotherapy facility based on a 6 MeV linear electron accelerator. The project is co-financed by the Ministry of Education and Science of the Russian Federation. The product is expected to be launched on the market in 2022.

Projects to produce xenon-133 and molybdenum-99 isotopes to be used in radionuclide diagnostics in Russia and abroad entered an active investment phase.

The site for producing sources of ionizing radiation based on the radioactive cobalt-60 isotope started pilot operation in Dimitrovgrad. The sources will be used in Gamma Knives, radiosurgical devices for treating brain tumours.



The Company won an international tender for the supply of a cyclotron complex with radiochemical laboratories to Thailand. The facility will be used for the production of radiopharmaceuticals. The equipment is scheduled for delivery and installation in 2019 and 2020.

Composite materials

In 2017, the Company initiated the development of the Composites without Borders inter-regional industry cluster in the Moscow and Saratov Regions and the Republic of Tatarstan. The Cluster will support comprehensive development of the polymer composite materials (PCM) industry. Simultaneously, a large-scale programme for introducing PCMs in the nuclear industry was launched.

As part of the PAN production plant construction project, a tender was held for the supply of key equipment, and an agreement was signed with SEZ Alabuga

on the construction of the production building.

In 2017, the Company supplied 470 tonnes of carbon fibre to customers:

- 320 tonnes were exported to China and Europe;

- 150 tonnes were sold in Russia (the Company accounts for 50% of the domestic market).

In 2018, the Company plans to:

- conclude first contracts for the supply of PCMs to the construction sector of the nuclear industry;

- launch pilot production of bidirectional fabrics and tapes;

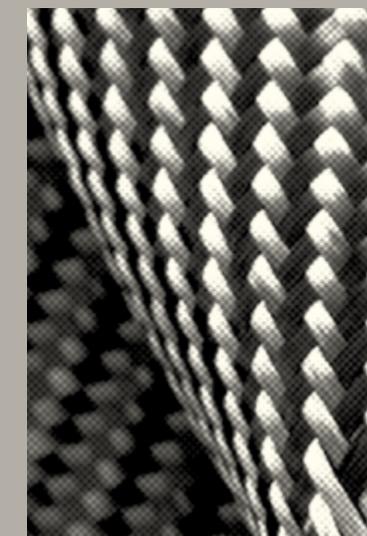
- proceed with the project to develop composite blades for wind turbines.

5.2.2. Plans for 2018

The target for revenue from new products outside the scope of the nuclear industry for 2018 has been set at RUB 197.9 billion, while the

10-year order portfolio outside the scope of the nuclear industry should reach RUB 880.0 billion.

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). Polyacrylonitrile (PAN) precursor is used as feedstock for carbon fibre production. It is the most valuable and carefully protected technology in the production chain.



6. Governance System

31.7

cumulative savings from intra-group financing across the industry, RUB billion

89%

performance against the targets of the investment programme

17.4%

return on the investment portfolio

3

capital of the venture fund which ROSATOM decided to establish in 2017, RUB billion

100

points (the highest possible score) scored by the industry-wide internal control system on all dimensions of the control and audit assessment during rapid monitoring of financial management quality by the Russian Ministry of Finance in 2017

95%

score given to the organization of internal financial control and internal financial audit in the Russian nuclear industry by the Treasury of the Russian Federation in 2017

100%

of voting shares in JSC Atomenergoprom are held by ROSATOM

> 60

financing raised for the wind power plant construction project in the south of Russia, RUB billion

< 10%

average interest rate on the total debt portfolio denominated in Russian roubles

724

inspections conducted in nuclear organizations by specialized internal control bodies in 2017

12

inspections conducted by external regulators in 2017

538

employees in the nuclear industry subjected to disciplinary sanctions following inspections conducted in 2017

6.1. Corporate Governance

6.1.1. Objectives, principles and mechanisms of 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.

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;

- Transfer of a number of 'optional' issues to the level of cooperation between corporate governance bodies of organizations in the industry based on regulatory documents adopted in the industry with regard to various groups of 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.



6.1.2. Governing bodies

Board of Directors of JSC Atomenergoprom

Members of JSC Atomenergoprom's Board of Directors during the period from January 1, 2017 through December 31, 2017 (elected on June 28, 2016 and re-elected on June 30, 2017):

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

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, Director for Economics and Investments 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, Finance Director of 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 as 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 2017, the Board of Directors held 41 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 prior to the Annual General Meeting of Shareholders of JSC Atomenergoprom;

■ 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. [\(see the section 'Key Changes in the Corporate Structure in 2017'\)](#)

6.1.4. Resolutions of the sole shareholder

Five resolutions of the sole shareholder were passed in 2017 on the following matters:

- Profit distribution for 2016;
- Election of the Board of Directors;

■ Payment of dividends for 2016, for the six months of 2017 and for the nine months of 2017;

■ Amendments to the Charter of JSC Atomenergoprom enabling the chief executive to delegate the right to sign consolidated financial statements to other persons;

■ The Extraordinary General Meeting of Shareholders approved the new version of the Company's Charter. Amendments were made to the Charter with regard to the conclusion and approval of non-arm's length transactions and changes in the area of competence of governing bodies. In addition, the Auditing Commission was excluded from the list of governing bodies.

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

In 2017, ROSATOM as the holder of 100% of voting shares in JSC Atomenergoprom revised the amount of interim dividends for the nine months of 2016. In January and February 2017, revised dividends for the nine months of 2016 were paid on book-entry registered ordinary shares held by ROSATOM and book-entry registered preferred shares held by the Russian Ministry of Finance representing the Russian Federation; the dividends totalled RUB 4,022 million and RUB 237 million respectively.

In June 2017, ROSATOM resolved to declare and pay dividends for 2016 totalling RUB 2,686 million, including RUB 2,536 million in dividends on ordinary shares and RUB 150 million on preferred shares. In the third quarter of 2017, JSC Atomenergoprom declared and paid interim dividends for the first half of 2017 totalling RUB 2,438 million, including RUB 2,302 million on ordinary shares and RUB 136 million on preferred shares.

In the fourth quarter of 2017, JSC Atomenergoprom declared and paid interim dividends for the nine months of 2017 totalling RUB 5,823 million, including RUB 5,500 million on ordinary shares and RUB 323 million on preferred shares.

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

MAJOR TRANSACTIONS

In 2017, 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 2017, 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.

6.1.7. Key changes in the corporate structure in 2017

As the holding company of the Wind Power business, JSC Atomenergoprom established a wholly-owned subsidiary Joint-Stock Company NovaWind. [\(for details, see the section 'Business Diversification'\)](#)

In order to reach key milestones in the construction of Leningrad NPP-2, JSC Rosenergoatom Concern acquired a 50% shareholding in JSC Concern Titan-2. To meet market demand for integrated solutions for industry and health care based on radiation technologies, JSC Atomenergoprom established a wholly-owned subsidiary Joint-Stock Company Rusatom Healthcare.

[\(for details, see the section 'Business Diversification'\)](#)

ROSATOM established Limited Liability Company Rusatom – Additive Technologies, an integrator of the Additive Manufacturing business. [\(for details, see the section 'Fuel Division'\)](#)

Limited Liability Company Siberian Titanium was established in the Fuel Division; it will produce titanium dioxide in order to replace imported material.

In order to optimize the Company's presence on the international market, LLC Rusatom Overseas was transformed into a joint-stock company.

The Company resolved to reorganize JSC CenterAtom by merging it with Joint-Stock Company Federal Property Management Centre.

JSC Atomenergoprom divested the following businesses:

- Joint-Stock Company ASE Engineering Company (JSC ASE EC) by selling its stake to Joint-Stock Company Atomstroyexport under a share purchase agreement;

- JSC Scientific Research and Design Institute for Energy Technologies ATOMPROEKT (JSC ATOMPROEKT) by selling its stake to Joint-Stock Company

Atomstroyexport under a share purchase agreement;

- Public Joint-Stock Company Energospetsmontazh (PJSC Energospetsmontazh) by selling its stake to Joint-Stock Company Atomstroyexport under a share purchase agreement.

The following companies were dissolved:

- LLC ASE-Engineering (a wholly-owned subsidiary of JSC ASE);

- JSC KRKAS (a joint venture of JSC ASE and JSC NAC Kazatomprom).

6.1.8. JSC Atomenergoprom's compliance with the principles and recommendations of the Corporate Governance Code recommended by the Central 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).

6.1.9. 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 2017 to pay out remuneration and/or reimburse expenses incurred by the members of JSC Atomenergoprom's Board of Directors; no remuneration and/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 remuneration²⁹.

²⁹ 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-korruptsii/svedeniya-o-doxodax-rabotnicov>

6.2. Risk Management

6.2.1. Risk management system

The Company has in place a risk management system (RMS), which is integrated into planning and management 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.

In 2017:

- A single risk management approach to pilot NPP construction projects was rolled out at Kursk NPP-2;
- Following a diagnostic assessment of the risk management process, proposals were formulated for the improvement of

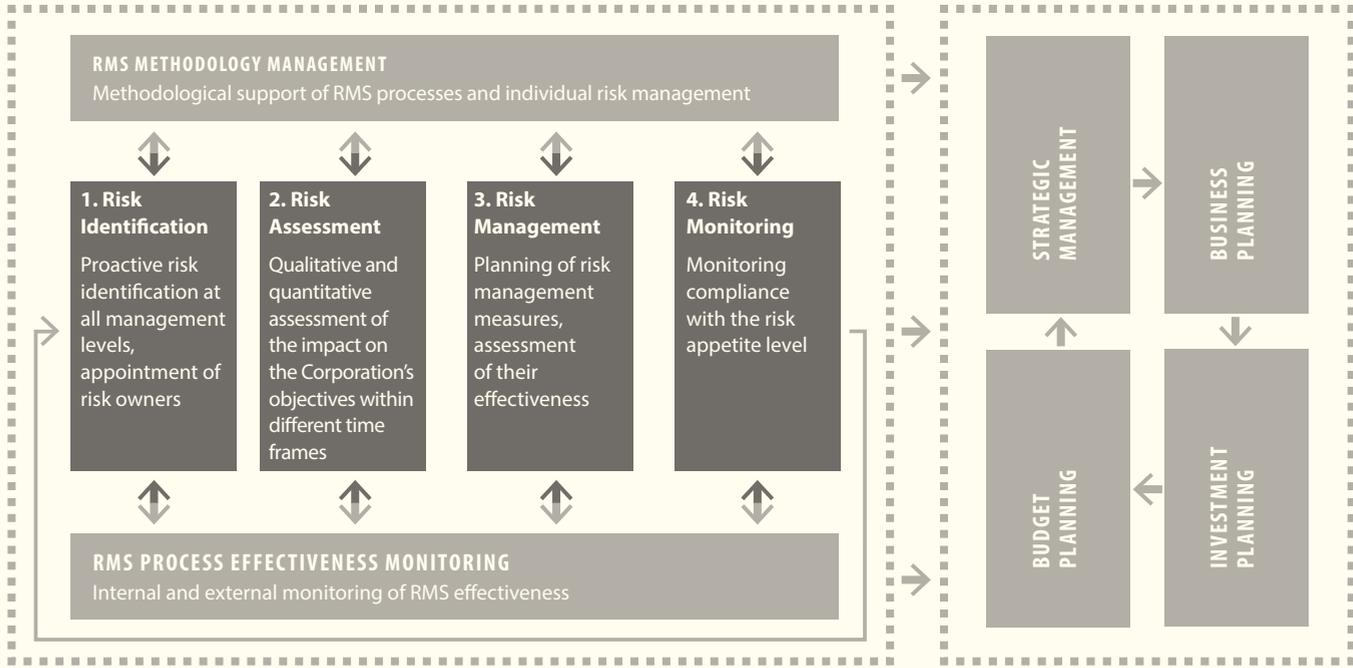
RMS elements in two of the Company's divisions;

- The Uniform Industry-Wide Guidelines for Compliance with Risk Management Procedures for Investment Projects were approved.

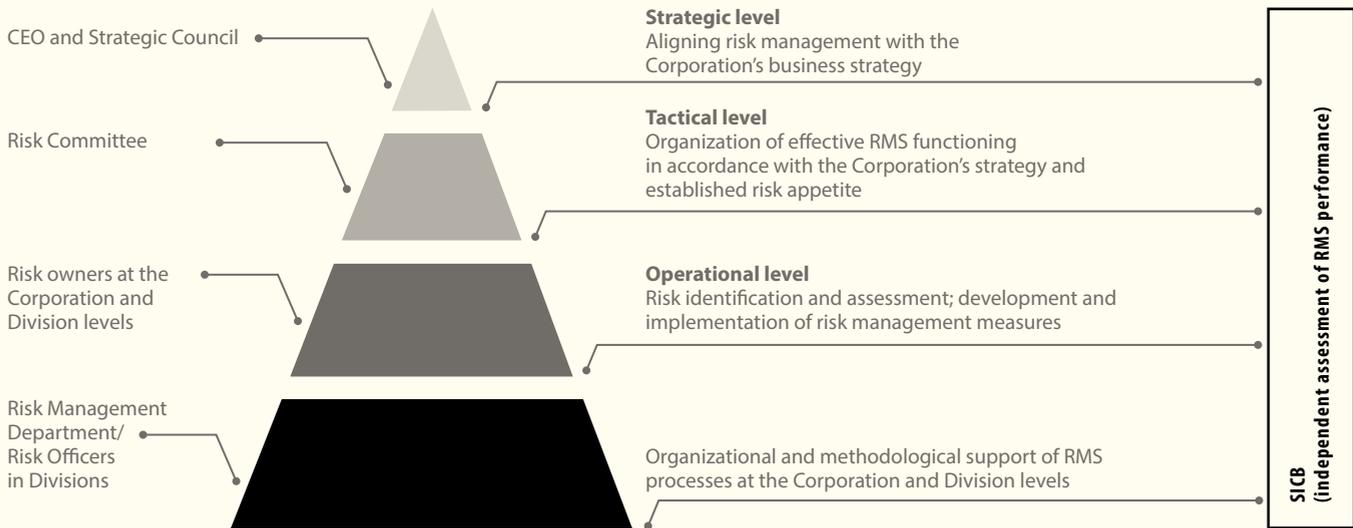


Risk management process at JSC Atomenergoprom

RMS processes



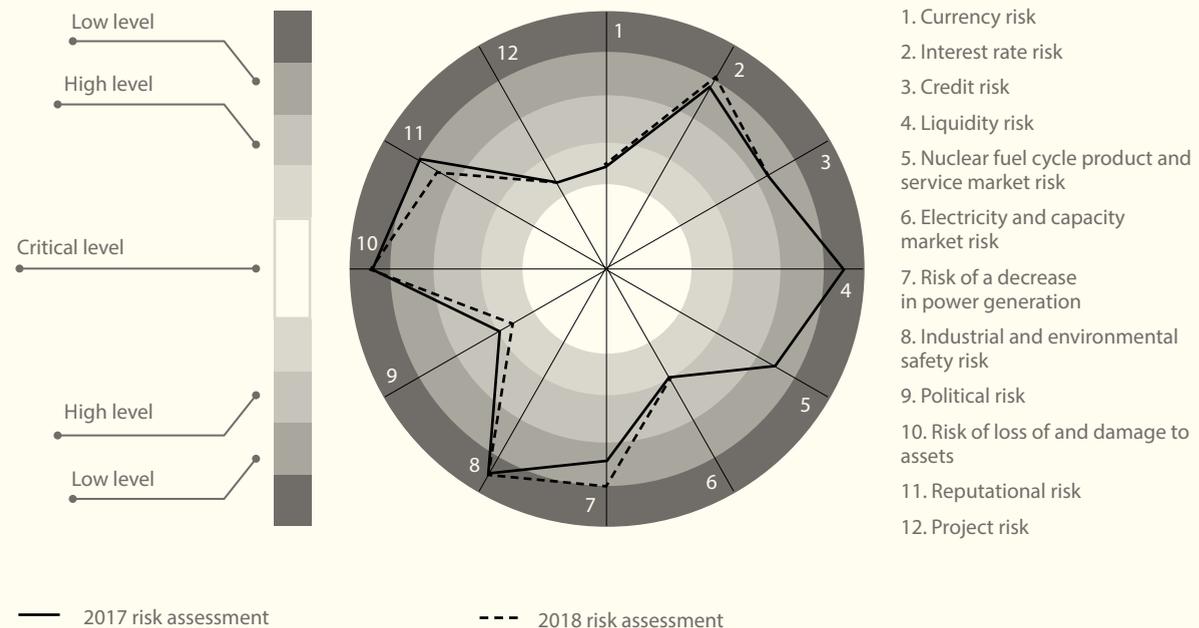
Organizational model of the risk management system



6.2.2. Key business risks³⁰

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



³⁰ The annual report does not contain an exhaustive description of all risks that may affect the Company's operations; it only provides information on key risks.

6.2.3. Risk management outcomes in 2017

Change in estimated risk levels for 2018:

↑ increase ↓ decrease ■ no significant changes

Comprehensive risk management measures largely offset the negative impact of external factors on the implementation of the Company's strategy. The connection between critical risks and the Company's strategic goals is shown in the table below.

Strategic goals of the Company:

- 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

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Financial risks			
<p>1. Currency risk</p> <p>■ (Heads of Divisions)</p>	Adverse changes in exchange rates	<p>Management approaches:</p> <ul style="list-style-type: none"> ■ Maintaining a balance of claims and liabilities denominated in foreign currencies (natural hedging); ■ Use of financial hedging instruments. <p>Results: An optimal ratio of assets and liabilities denominated in the same currency was maintained.</p>	<p>1</p> <p>2</p> <p>3</p>
<p>2. Interest rate risk</p> <p>↓ (Treasury Department)</p>	Adverse changes in interest rates, different timing of interest income and interest expenses	<p>Management approaches:</p> <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. All things being equal, the Company prefers long-term fixed-rate loans with the option of penalty-free early repayment. It has not raised any loans with interest rates linked to the refinancing rate/key rate of the Bank of Russia; ■ Floating-rate loans on which interest rates may be increased are refinanced using the intragroup liquidity pool. <p>Results: The Company maintains a stable long-term credit portfolio. The average interest rate on the total debt portfolio was reduced to below 6.2%, partly because the rouble-denominated portion of the credit portfolio was refinanced in 2017.</p> <p>Changes: The reduction in the risk level was the result of effective use of the risk management approaches described above and a decrease in volatility of the Russian credit market.</p> <p>For details, see the section 'Financial Management'.</p>	<p>1</p> <p>2</p> <p>3</p>

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Financial risks			
3. Credit risk ■ (ROSATOM's 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	<p>Management approaches:</p> <ul style="list-style-type: none"> ■ Setting limits for counterparty banks; ■ Use of suretyship, guarantees, restrictions on advance payments in favour of external counterparties; ■ Improvement of the legal framework for the wholesale electricity and capacity market (including an increase in fines, improvement of the system of financial guarantees); ■ Monitoring of accounts receivable and the financial position of counterparties; ■ Internal counterparty solvency rating system. <p>Results: There were no significant losses through the fault of counterparties.</p>	1 2
4. Liquidity risk ■ (Treasury Department / Heads of Divisions)	Lack of funds for the fulfilment of obligations by the Company and its organizations	<p>Management approaches:</p> <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 when this is advisable from an economic perspective; ■ Discussion of matters related to state support with Russian federal executive authorities. <p>Results: The Company maintained sufficient liquidity to repay liabilities on time, preventing unacceptable losses and managing reputational risk.</p> <p>For details, see the section 'Financial Management'.</p>	1 3

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Commodity risks			
5. Nuclear fuel cycle (NFC) 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	<p>Management approaches:</p> <ul style="list-style-type: none"> ■ Maintaining an optimal balance between market-focused and escalation pricing mechanisms (benchmark price inflation) in contracts; ■ Aligning pricing mechanisms used for procurement and those used in contracts with a high level of commodity risk; ■ Discussing the volume of future orders with customers in advance; ■ Embedding options in contracts with suppliers to align purchase and sales volumes; ■ Providing supply guarantee mechanisms; ■ Improving the technical and economic characteristics of nuclear fuel; developing new types of fuel; ■ Promoting products in new market segments. <p>Results: Despite persisting stagnation of demand and prices on the NFC product and service markets, in 2017, the 10-year portfolio of overseas orders on these markets exceeded USD 36 billion. The risk level remains unchanged, as the fact that natural uranium prices and separative work unit (SWU) 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).</p> <p>For details, see the section 'International Business' and annual reports of JSC TENEX and JSC TVEL for 2017.</p>	1 2
6. Electricity and capacity market risks ■ (CEO of JSC Rosenergoatom Concern)	Adverse changes in electricity and capacity prices	<p>Management approaches: The risk depends exclusively on external factors. The risk cannot be hedged using financial instruments due to the low liquidity of the market. To reduce the risk, power supply divisions of JSC Rosenergoatom Concern are negotiating with PJSC FGC UES and JSC SO UEC in order to align the schedule of power grid equipment maintenance.</p> <p>Results: In 2017, the risk partially materialized as the system operator introduced restrictions on changes in the parameters of electricity and capacity output that all power plants in the Russian Federation must comply with.</p> <p>For details, see the annual report of JSC Rosenergoatom Concern for 2017.</p>	1

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
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	<p>Management approaches:</p> <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). <p>Results:</p> <p>All incidents and equipment failures have been properly investigated. Corrective and preventive measures have been developed in order to address the root causes of the incidents and prevent their recurrence.</p> <p>Changes:</p> <p>The risk level has decreased. Use of tools forming part of ROSATOM's Production System for the purposes of business process optimization helped to offset the impact of negative factors in 2017.</p> <p>For details, see the section 'Power Engineering Division' and the annual report of JSC Rosenergoatom Concern for 2017.</p>	1
8. Industrial and environmental safety risk ■ (Heads of Divisions)	Major accidents/incidents at nuclear enterprises	<p>Management approaches:</p> <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. <p>Results:</p> <p>Safe operation of nuclear facilities and hazardous industrial facilities.</p> <p>For details, see the section 'Nuclear and Radiation Safety: Occupational Safety and Health'.</p>	1 3

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Operational risks			
9. Political risk ↑ (International Cooperation Department)	Changes in the regulatory and political climate in foreign countries imposing restrictions on the operations of the Company and its organizations	<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>The Company maintained a sizable portfolio of overseas orders. It concluded 11 intergovernmental agreements and 16 major interdepartmental agreements, which is a positive trend.</p> <p>Changes:</p> <p>The risk is likely to increase due to an unfavourable foreign policy environment.</p> <p>For details, see the sections 'International Cooperation' and 'International Business'.</p>	1 2 3
10. Risk of loss of and damage to assets ■ (Asset Protection Department)	Corruption and other offences leading to the damage to/loss of assets	<p>Management approaches:</p> <p>An integrated industry-wide system for the prevention of corruption and other offences is in place in the Russian nuclear industry.</p> <p>Result:</p> <p>Benefits from preventive measures and inspections carried out in 2017 in order to protect the Company's assets are estimated at RUB 8 billion.</p>	1 2

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Operational risks			
11. Reputational risk ↑ (Communications Department and Heads of Divisions)	Changes in stakeholder perception of the trustworthiness and appeal of the Company and its organizations	<p>Management approaches:</p> <ul style="list-style-type: none"> 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 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. It continuously monitors and analyses news reports in the national and international media and 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>Results:</p> <p>According to an independent opinion survey by Levada-Centre, in early 2018, 73.9% of the Russian population supported the use of nuclear power (71% in 2016; over the past few years, this figure remains persistently high).</p> <p>Projects implemented abroad are supported by government bodies. The main Russian nuclear industry exhibition, Atomexpo 2017, titled 'Nuclear Technologies: Safety, Environment, Stability' was attended by over 6,500 specialists and experts from 65 countries worldwide.</p> <p>Changes:</p> <p>An increase in the risk level was due to its strong correlation with political risk.</p> <p><i>For details, see the section 'Stakeholder Engagement'.</i></p>	1 3

Risks and changes in risk levels (risk owners)	Risk description	Risk management practices	Connection with strategic goals
Operational risks			
12. Project risk ■ (Heads of Divisions)	Changes in the macroeconomic indicators of countries participating in the projects; contractors' failure to fulfil their commitments with regard to the schedule and quality of work to be performed	<p>Management approaches:</p> <ul style="list-style-type: none"> Development of action plans for the interaction with a foreign customer; Implementation of a programme to reduce the cost and duration of NPP construction; Reallocation of available credit resources between projects, when possible. <p>Results:</p> <p>The Company continuously improves the system for managing all stages of NPP construction, from front-end engineering design to the commissioning of power units. Requirements for the monitoring of construction and installation have been drafted and implemented at NPP construction sites; they help to standardize the collection and analysis of data and information on the quality of construction and installation work across all construction sites.</p> <p><i>For details, see the section 'International Business' and the annual reports of JSC ASE EC and JSC Rosenergoatom Concern for 2017.</i></p>	1 3

6.2.4. Risk insurance

Risk insurance is one of the main risk management approaches used by JSC Atomenergoprom. To improve the reliability of insurance coverage, in 2017, the Company continued to cooperate with the insurance community on the reinsurance of Russian operators against property risks in the international pooling

system. A significant share of liability of Russian NPPs for potential nuclear damage was transferred for reinsurance to the international pooling system. 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 2018.

6.2.5 Objectives for 2018 and for the medium term

To further develop the RMS, the Company plans to:

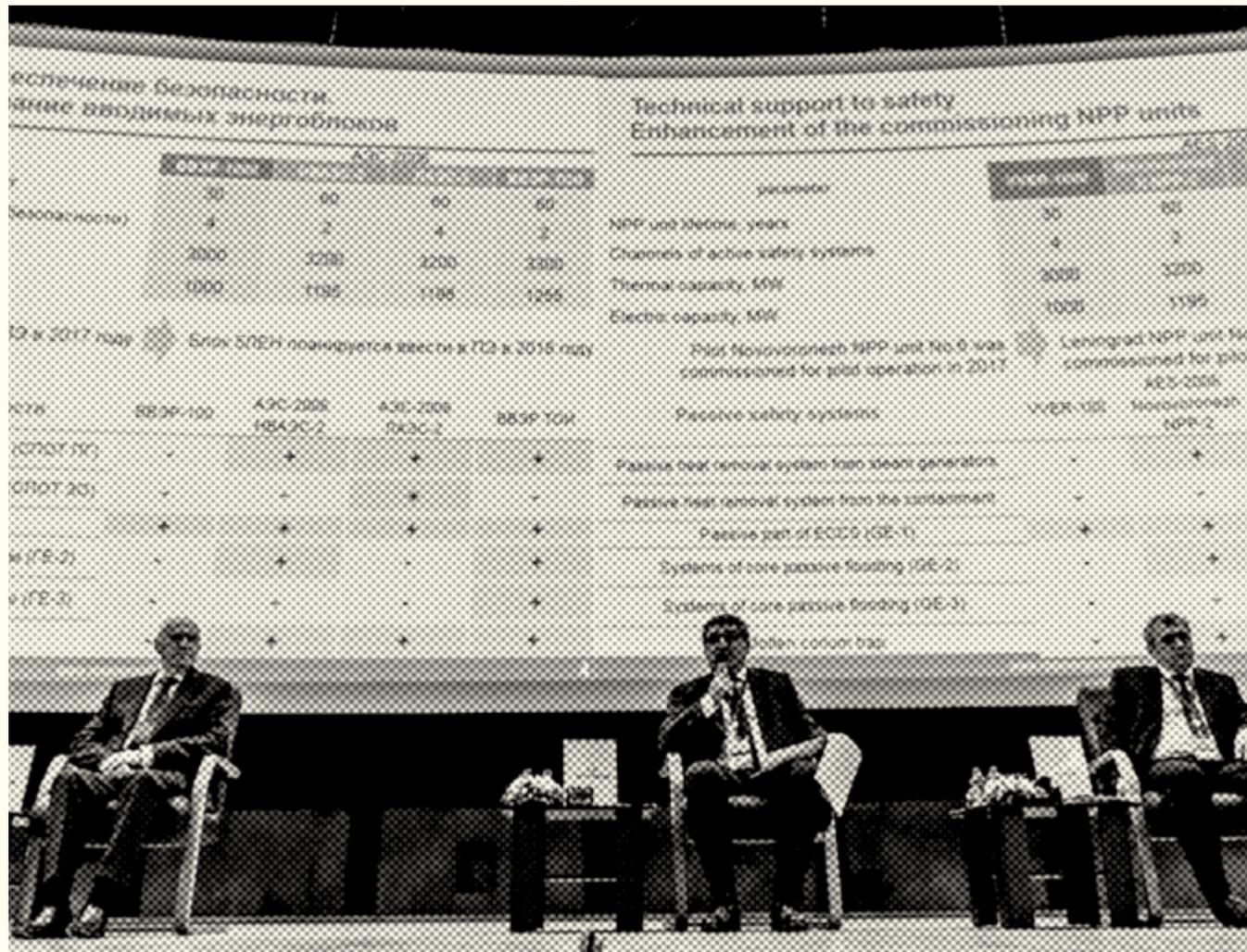
- Improve escalation mechanisms for the provision of information on risks for various decision-making levels and improve

mechanisms for allocating risk management responsibilities;

- Implement the Risk Management component of the Programme to Implement the Total Cost Management Nuclear

Construction (TCM NC) Framework for 2018 and 2019;

- Improve RMS processes taking into account the findings of diagnostic assessment of the risk management culture in the Company.



6.3. Financial Management

Key results in 2017:

- A total of about RUB 31.7 billion was saved through intra-group financing within the industry between 2010 and 2017;

- Each Big Three international 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- (as of December 31, 2017);

- A financial partner was engaged to participate in the wind power plant construction project in the south of Russia and provided financing exceeding RUB 60 billion.

6.3.1. 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.

Key financial transactions of the Company have been centralized. Cash flow management is centralized through:

- An established single industry-wide legal framework regulating financial management (including the Uniform Industry-Wide Financial Policy);

- Vertical integration of treasury departments in subsidiaries and affiliates, which are functionally accountable to the Treasury Department. The established treasury structure enables 100% control of funds in the industry;

- Concentration of principal treasury functions of nuclear organizations in the Treasury Department, which communicates with nuclear organizations and is essentially a liquidity management centre;

- An industry-wide automated system for recording treasury transactions (the Corporate Settlement Centre Information System), which enables the recording of all treasury transactions across the scope of consolidation of ROSATOM on a daily basis.

Targets for 2017 in the sphere of cooperation with banks, development of the cash pool and debt management set out in the financial strategy have been achieved. In order to improve the performance of the treasury functions, in 2017, the Company continued to work towards:

- Accumulating spare cash in the accounts of pool leaders³¹;

- Improving the accuracy of payment scheduling (a rolling liquidity forecast);

³¹ A pool leader is an organization on whose accounts spare cash is accumulated and subsequently redistributed between the Corporation's organizations through loan agreements. A pool leader is appointed under the resolution of ROSATOM's executive bodies.

- Ensuring competitiveness of the cost of servicing of the consolidated debt portfolio;

- Centralizing treasury transactions (complying with the financial policy).

A total of about RUB 31.7 billion was saved through intra-group financing within the industry between 2010 and 2017.

6.3.2. Raising financing for ongoing projects

In 2017, a financial partner was engaged to participate in the wind power plant construction project in the south of Russia and provided financing exceeding RUB 60 billion in the form of both senior debt and mezzanine financing (by acquiring a 49.5% equity stake in a project company JSC VetroOGK and issuing shareholder loans). This deal enabled the Company to

engage a major co-investor to cooperate on the project. In addition, the use of project financing will make it possible to develop the promising business without an increase in financial leverage and to roll out the relevant experience across other projects of the Company. [See also the section 'Business Diversification'.](#)

In addition, in 2017, the Company signed a credit facility agreement with a project company Fennovoima Oy as part of the project to build Hanhikivi 1 NPP in Finland. The principal amount of the credit facility totals up to EUR 500 million; it matures on December 31, 2027 with the option of extension until December 31, 2029.

6.3.3. Receiving and maintaining credit ratings

Given ongoing reforms in the credit rating industry in Russia, in 2017, JSC Atomenergoprom worked towards receiving a national credit rating from the national rating agency JSC Expert RA. As a result, JSC Atomenergoprom was assigned a rating at the level of Russia's sovereign

credit rating: 'ruAAA', with a stable outlook. In addition, in the reporting year, JSC Atomenergoprom continued to make efforts to maintain its credit ratings assigned by international rating agencies. Each Big Three international 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- (as of December 31, 2017).

6.3.4. Debt portfolio management

The Company managed to keep the average interest rate on the total debt portfolio denominated in Russian roubles below 10%. Throughout 2017, the Company maintained sufficient liquidity or sources of liquidity (credit facilities, etc.) to repay liabilities on time, preventing unacceptable losses and managing reputational risk.

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 and as a means for reducing the cost of financing. 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.

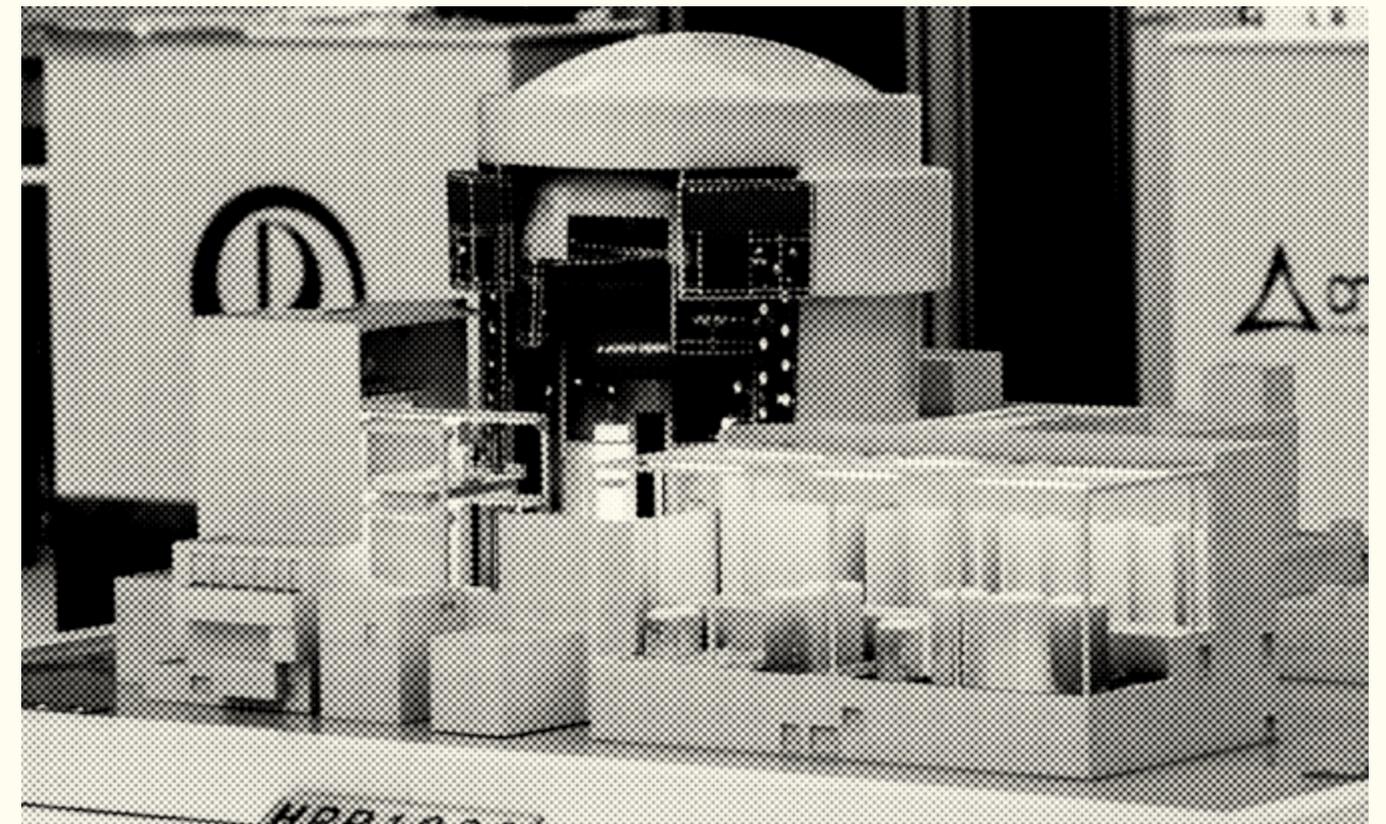
6.3.5. Plans for 2018 and for the medium term

- To ensure a consistent payment discipline for intra-group financing;
- To improve the accuracy of medium-term cash flow planning;
- To prevent internal competition for credit resources between organizations;
- To continue to centralize cash management;

- To focus on maintaining relations with supporting banks as the most reliable partners providing accessible funds in terms of both volumes and cost;
- To fulfil all obligations, including covenants, to current lenders and rating agencies;
- To discuss project financing arrangements to reduce recourse on ROSATOM and minimize the use of consolidated investment resources

(including through the use of project financing instruments);

- To expand the range of financing instruments used by the Company (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.



6.4. Investment Management

Key results in 2017:

- The investment programme was 89% completed;
- Return on the investment portfolio stood at 17.4%.

6.4.1. 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.

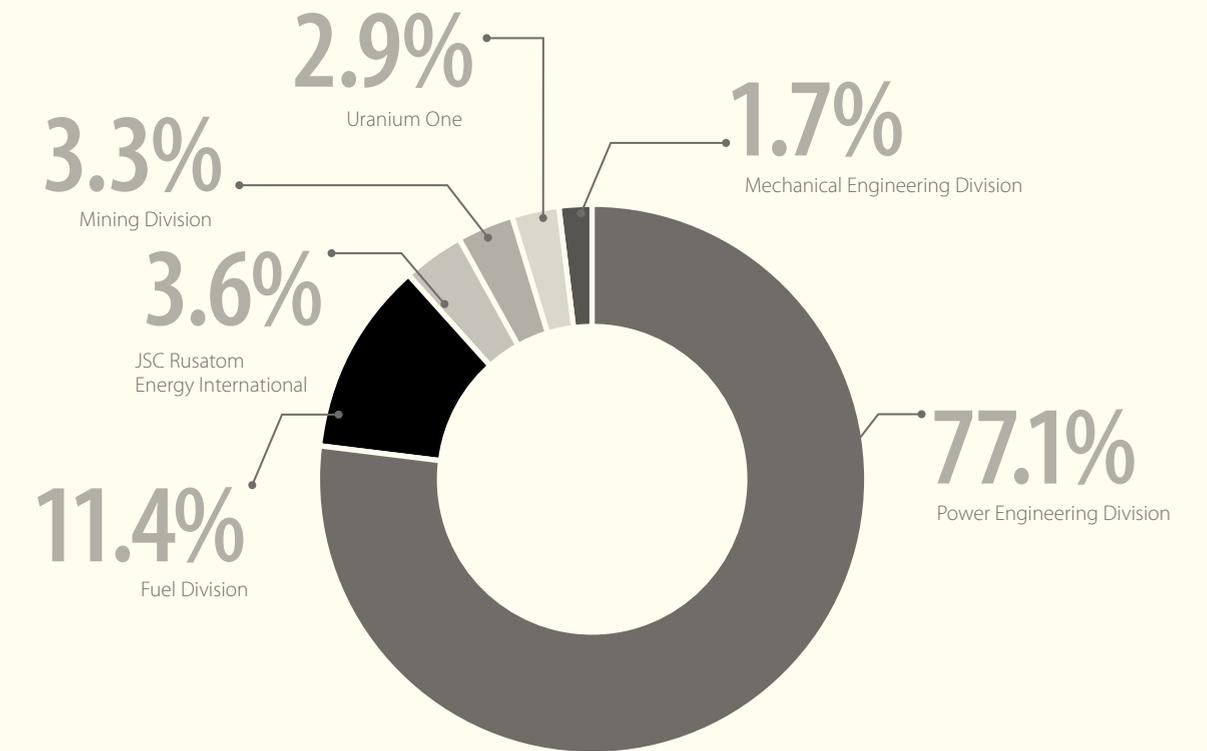
6.4.2. Results in 2017

In 2017, the investment programme in the Russian nuclear industry was 89% completed, while the return on the investment portfolio stood at 17.4%. The investment programme was not

implemented in full (including in ROSATOM's divisions) due to the deferral of expenditure on certain projects to subsequent reporting periods. In turn, the deferrals were necessitated by the

need to revise project implementation plans in some cases given a change in the external environment in order to use the funds more efficiently.

Breakdown of investments by core division in 2017



6.4.3. Measures to improve investment efficiency

In 2017, the Company completed the first stage of the project to establish a Project Management School, a single industry-wide platform for project talent management. It launched employee training and assessment at a basic level in accordance with the corporate methodology, best practices in the sphere of project management and the ISO 21500 standard. The Company completed the formalization

of the risk management process for investment projects and introduced a qualitative risk assessment methodology and the relevant tools for project managers in order to improve the quality of risk management.

A decision was made to establish an industry venture fund worth RUB 3 billion or more; in 2017, the legal form of the fund was discussed, and the team was selected.

Jointly with the Skolkovo Foundation, the Company launched a project to hold a Start-Up Contest in the new sectors of the industry. The Corporation plans to select start-ups to meet its objectives taking into account their maturity and the findings of a technological assessment carried out by industry specialists and invited independent experts.

6.4.4. Challenges of the reporting period and mitigation measures

Challenge	Mitigation measures
Inadequate rationale for investments	<ul style="list-style-type: none"> ■ Further 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; ■ Improved accuracy of investment and project planning; ■ Stricter control in order to prevent misuse of funds; ■ Improvement of the risk management system.
Lack of manoeuvrability of the project portfolio	Linking projects through shared deliverables to track their mutual influence; use of a programme-based approach.
Lack of professional project managers	<ul style="list-style-type: none"> ■ Further development of centralized tools for assessment, training and formulation of individual development plans for senior and middle-level project managers and project team members; ■ Further 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.

6.4.5. Plans for 2018 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 introduce option-based incentives;
- To develop the entrepreneurship culture in the industry by holding the relevant industry events and using programme management approaches to develop new businesses in the industry;
- To develop certain elements of the investment environment using the 'open innovations' model (the Start-Up Contest, the industry venture fund, supporting acceleration programmes);
- To ensure that the level of maturity of project management in nuclear organizations is consistent with best practices;
- To increase the level of project and investment automation.

6.5. Internal Control System

Key results in 2017:

- During rapid monitoring of financial management quality by the Russian Ministry of Finance in 2017, 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 the federal budget performance audit for 2016, the Accounts Chamber of the Russian

Federation gave a high score to internal financial audit in the industry;

- The Treasury of the Russian Federation rated the organization of internal financial control and internal financial audit in the Russian nuclear industry at 95% (to compare, the average score of 93 key budget holders stood at 64%).

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).

6.5.1. Results in 2017

Conducting inspections

Specialized internal control bodies (SICBs) conducted 724 inspections in nuclear organizations.

12 inspections were conducted by external regulators, including 7 inspections by the Accounts Chamber of the Russian Federation. No instances of misuse or illegal use of budgetary funds or assets were detected.

Findings of inspections conducted in 2017 show an improvement of financial and business discipline in a number of areas. There was a reduction in the number of breaches of business contracts, violations in the sphere of procurement, accounting

and remuneration, as well as in the number of instances of non-compliance with local regulations.

Following the inspections, 589 corrective measures were developed and scheduled for implementation. Implementation of corrective measures remains effective, which helps to reduce the number of repeated violations.

Based on the findings of inspections conducted in the reporting year, disciplinary sanctions were imposed on 538 employees of nuclear organizations, including the dismissal of 8 senior managers.



7. HR Policy

and Social Responsibility

78,200

average monthly salary, RUB

32.2%

share of employees aged under 35

31

employees were presented with government awards

7.2

million people — viewership of channels broadcasting the *Strana ROSATOM* TV programme in various regions of Russia

52,200

employees have a university degree

1,250

number of Candidates and Doctors of Sciences

4,332

employees received industry awards

74%

of the population in Russia supports the use of nuclear energy

470,000

people visited Nuclear Energy Information Centres

113.3

total staff costs in 2017, RUB billion

54,400

employees underwent training and retraining and completed professional development programmes in 2017

3,372.8

expenditure of JSC Atomenergoprom on key corporate social programmes in 2017, RUB million

7.1. Personnel Management

Key results in 2017:

- The average monthly salary totalled RUB 78,200 per month;
- 32.2% of employees were aged under 35;
- 31 employees of JSC Atomenergoprom were presented with government awards; 4,332 employees received industry awards.



In 2017, JSC Atomenergoprom and its organizations employed 91,000 people. 52,200 employees have a university degree. 1,250 employees are Candidates and Doctors of Sciences. The age of employees averaged 43 years. The share of employees aged under 35 stood at 32.2%.

7.1.1. Staff costs

In 2017, staff costs totalled RUB 113.3 billion, up by 5.6% year on year. The costs per employee per year increased from RUB 1,175,100 in 2016 to RUB 1,240,700 in 2017.

Structure of staff costs, %

	2015	2016	2017
Payroll fund	76.0	76.0	75.7
Insurance contributions	20.2	20.3	20.5
Social and other expenses (including personnel training)	3.8	3.7	3.8

Remuneration system

The current remuneration system in the Company:

- Provides adequate remuneration matching the compensation in the best Russian companies;
- Is result-based: strengthening the link between employees' compensation and their efficiency and achievement of key performance indicators (KPIs).

Employees' remuneration is linked to their performance through a number of mechanisms, including regular salary reviews based on personal performance evaluation, as well as annual and ad hoc bonuses for the achievement of targets which are set following a decomposition of industry-wide strategic goals. Managerial KPIs are linked to the achievement of strategic goals and KPIs; strategic objectives set for the organizations and enterprises are converted into KPI maps of specific managers and cascaded down to

business units and employees. In 2017, the monthly average salary per employee in JSC Atomenergoprom increased by 5.25% against 2016 and totalled RUB 78,200 per month.

7.1.2. Personnel training

The Company's HR policy prioritizes the development of competences and employee training. In 2017, over 54,400 employees of JSC Atomenergoprom underwent training and retraining and completed professional development programmes.

Annual average training hours per employee by employee category

	2015	2016	2017
Executives	36	34.4	40
Specialists and office workers	15	14.9	30
Workers	36	23.5	45.5



7.1.3. Participation in the WorldSkills movement

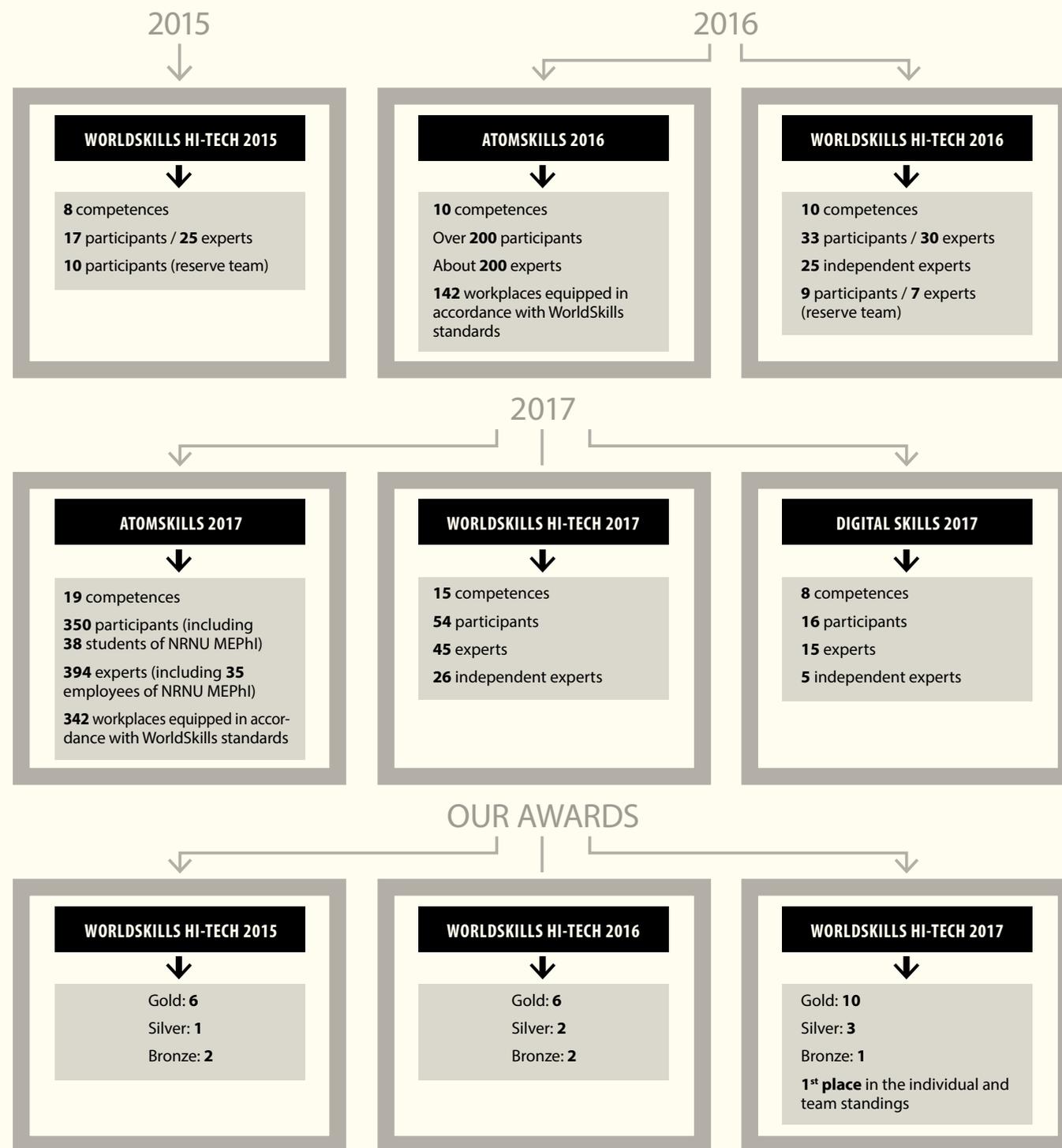
WorldSkills International is a not for profit association operating in 76 member countries worldwide. The aim of WorldSkills is to provide skills training to meet market needs and to develop talent by organizing professional skill competitions. Participants of the movement include college and university students, young specialists, teachers, the government and industries.

Areas of cooperation between the Russian nuclear industry and WorldSkills International/ the WorldSkills Russia Union: <https://worldskills.ru>

- Organization of sectoral and national skills competitions in accordance with WorldSkills standards (AtomSkills, DigitalSkills, WorldSkills Hi-Tech³²);
- Analysis and benchmarking of qualifications of the Corporation's employees against the national, European and international level;
- Establishment and development of expert communities in the industry;
- Provision of infrastructure for large-scale training of highly qualified workers and engineers.

³² AtomSkills is a professional skills contest organized by ROSATOM; DigitalSkills is a national contest for digital economy specialists; WorldSkills Hi-Tech is Russia's largest professional skills contest for the winners of corporate contests.

WORLDSKILLS CHAMPIONSHIP AT ROSATOM



7.1.4. 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.

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

Key corporate social programmes of JSC Atomenergoprom, RUB million

	2015	2016	2017
Voluntary health insurance	900.3	782.4	834.3
Accident and illness insurance	46.4	31.4	50.3
Health resort treatment and recreation for employees and their children, including:	407.4	259.3	264.1
health resort and rehabilitation treatment for employees	382.1	180.2	182.1
health resort treatment and recreation for children	141.8	79.1	82.0
Provision of housing for employees	486.8	198.6	229.7
Private pension plans	480.7	248.7	238.3
Support for retirees	887.2	841.8	886.8
Catering arrangements	28.4	11.6	23.5
Sporting and cultural events	933.1	361.0	402.0
Assistance to employees	552.9	319.0	345.0
Other	805.6	198.7	98.8
Total:	5,528.8	3,252.5	3,372.8

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 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. The Agreement incorporates the

opportunities provided by 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 of three months for situations that may lead to mass dismissal.

Collective agreements cover 70% of employees working at ROSATOM's enterprises.

Code of Ethics

ROSATOM and JSC Atomenergoprom have in place the Code of Ethics and Professional Conduct for Employees. The Code of Ethics promotes the corporate values and establishes the relevant ethical principles of conduct in the course of interaction with a wide range of external and internal

stakeholders. The rules of conduct set out in the Code concern combating corruption, ensuring the security of resources, property and information, occupational, industrial and environmental safety, preventing conflicts, resolving conflicts of interest and keeping up the corporate image.

The Code of Ethics is available on the official website of the Corporation. <http://rosatom.ru/upload/iblock/6ac/6ac47db324cf7fb8226449794e1868d3.pdf>

7.1.5 Recruitment of young professionals

JSC Atomenergoprom gives special focus to working with young professionals and recruiting talented young people into the nuclear industry.

In 2017, a total of 975 students attended universities under arrangements with JSC Atomenergoprom. The Company continued to organize work placements for students from specialized universities: in 2017, 3,140 students

undertook internships in the organizations of JSC Atomenergoprom. In 2017, over 1,200 university graduates were hired by nuclear organizations.

7.1.6. Plans for 2018 and for the medium term

- To increase the share of executive succession pool members appointed to top 30 and top 1,000 positions;
- To maintain a high level of employee engagement;

- To establish an HR Shared Services Centre;
- To develop professional competence centres in the industry;

- To recruit university graduates to nuclear organizations;
- To improve the level of satisfaction of the Corporation'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.

7.2.1. Ensuring the energy security of Russian regions

NPPs accounted for 18.9% of the total electricity output in Russia (18.3% in 2016). Nuclear power generation contributes significantly to Russia's regional power systems.

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 at JSC Rosenergoatom Concern, billion kWh	202.869	202.64	100.36	32.00	36.90	23.18	10.20	0.23
Share of nuclear power generation at JSC Rosenergoatom Concern, %	18.9	24.9	42.2	29.7	34.1	23.2	3.9	0.46
Power generation in Russia***	1,073.6	814.4	237.5	107.8	108.4	100.0	260.7	48.9

* 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 2017 according to the press release of the System Operator of the Unified Power System dated January 10, 2018 (www.so-ups.ru).

7.3. Stakeholder Engagement

Key results in 2017:

- 74% of the population in Russia supports the use of nuclear energy;
- Over 470,000 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

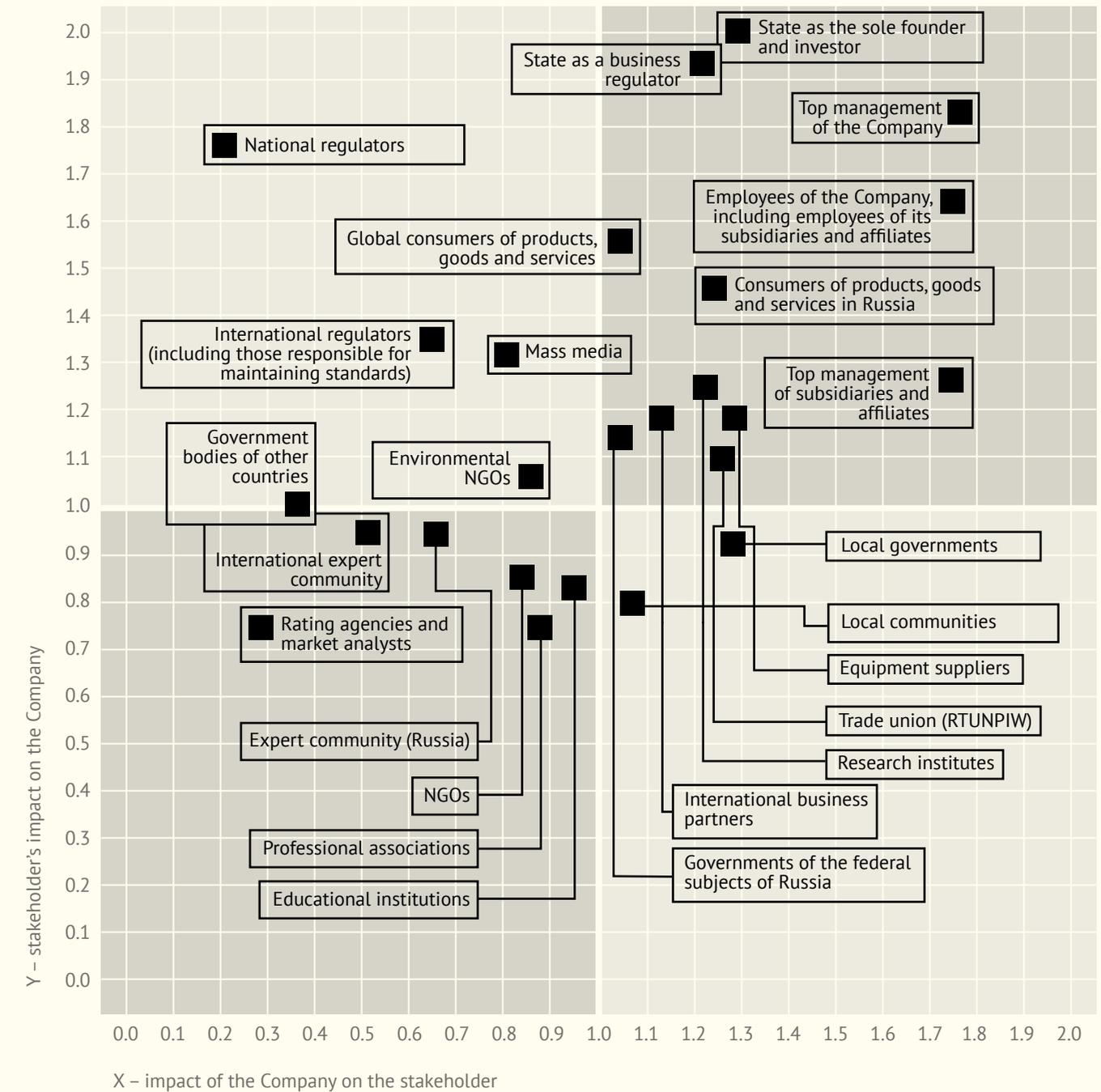
Due to its scale and special characteristics of its business, JSC Atomenergoprom has a wide range of stakeholders both in Russia and worldwide. Targeted work with stakeholders is aimed at achieving strategic objectives and getting the public on board for developing nuclear energy. The Company fosters 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.



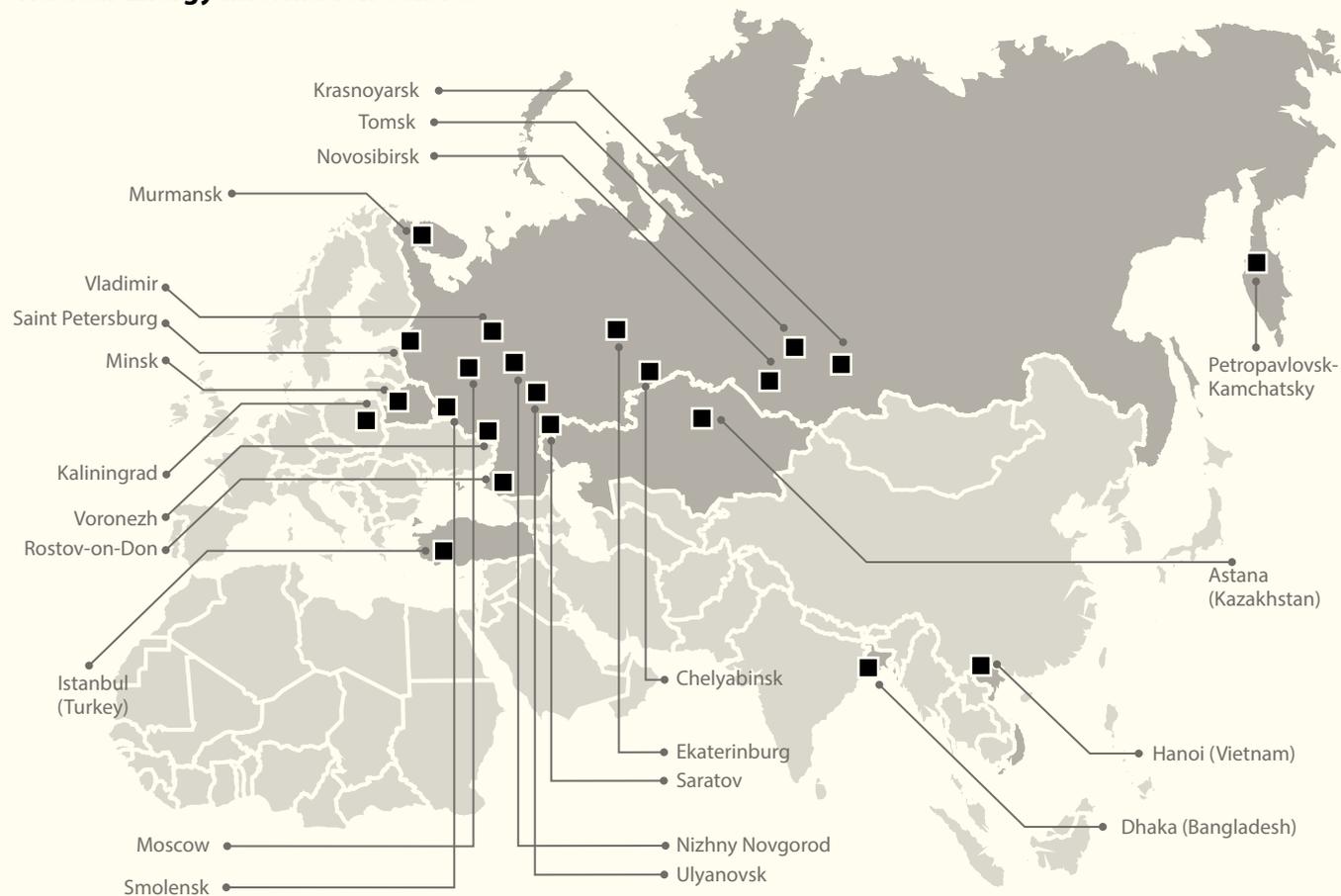
Stakeholder map



7.3.2. Nuclear energy information centres³³

Since 2008, a project has been underway to build a network of nuclear energy information centres (NEICs) in the Company's operating regions. The first centre was opened in 2008. As of December 31, 2017, the NEIC network comprised 17 centres in Russia and 5 centres abroad. In 2017, over 470,000 people visited the centres.

Nuclear Energy Information Centres



³³ <http://www.myatom.ru>

7.3.3. Exhibitions

Russian nuclear enterprises participated in 12 major exhibitions abroad. Apart from traditional exhibitions on nuclear power as part of events such as the 42nd annual World Nuclear Association (WNA) Symposium, the 61st IAEA General Conference, etc., they also participated in exhibitions on new areas of business, such as Composites Europe 2017 — the 12th European Trade Fair & Forum for Composites, Technology and Applications (Stuttgart, Germany) and the Wind Europe Conference & Exhibition 2017 (Amsterdam, the Netherlands).

In 2017, the Company organized and held a number of workshops on Russian nuclear technologies in a range of countries, including Brazil, Paraguay, Sudan, Zambia, Ghana, Egypt and China. The Atomex Europe 2017 International Forum of Nuclear Industry

Suppliers organized and held in Hungary was a landmark event. It was attended by about 400 participants willing to cooperate with JSC Atomenergoprom on overseas NPP construction projects. A forum for Finnish suppliers involved in the Hanhikivi 1 NPP construction project was held in Finland. In June 2017, ROSATOM and the World Energy Council (WEC) signed an agreement on participation in the Patronage Programme, which was another important milestone for ROSATOM.

The 9th International Forum ATOMEXPO 2017 (Moscow) was a major event for the international nuclear business community. The main topic of the forum was 'Nuclear Technologies: Safety, Environment, Stability'. The event was attended by over 6,500 people from 65 countries around the world. For the first time in its history, the forum was attended by representatives of Sudan, Ethiopia, Colombia and Sri Lanka. Five official interdepartmental documents were signed during the event.



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);

- A radio programme (it is broadcast two or 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).



7.3.5. Opinion polls

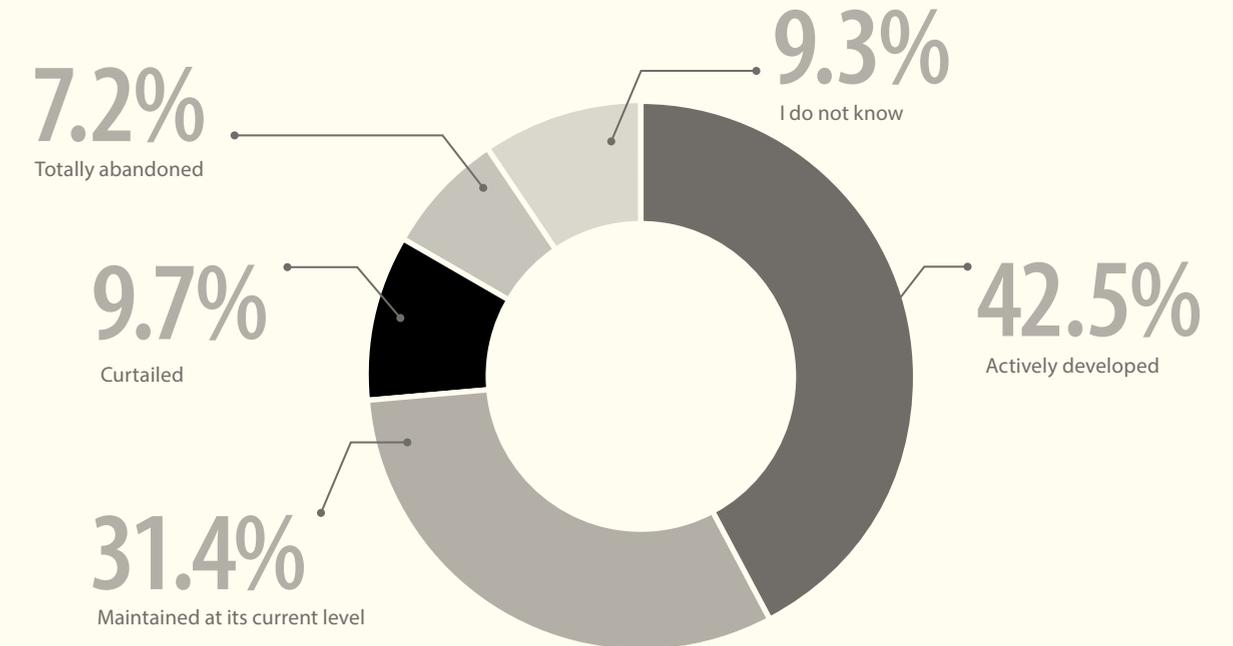
JSC Atomenergoprom analyses the public perception of the development of nuclear power in Russia on a yearly basis and adjusts its communication with stakeholders accordingly.

According to an independent opinion survey by Levada-Centre³⁴, 73.9% of the Russian population supported the use of nuclear power (71% in 2016; over the past

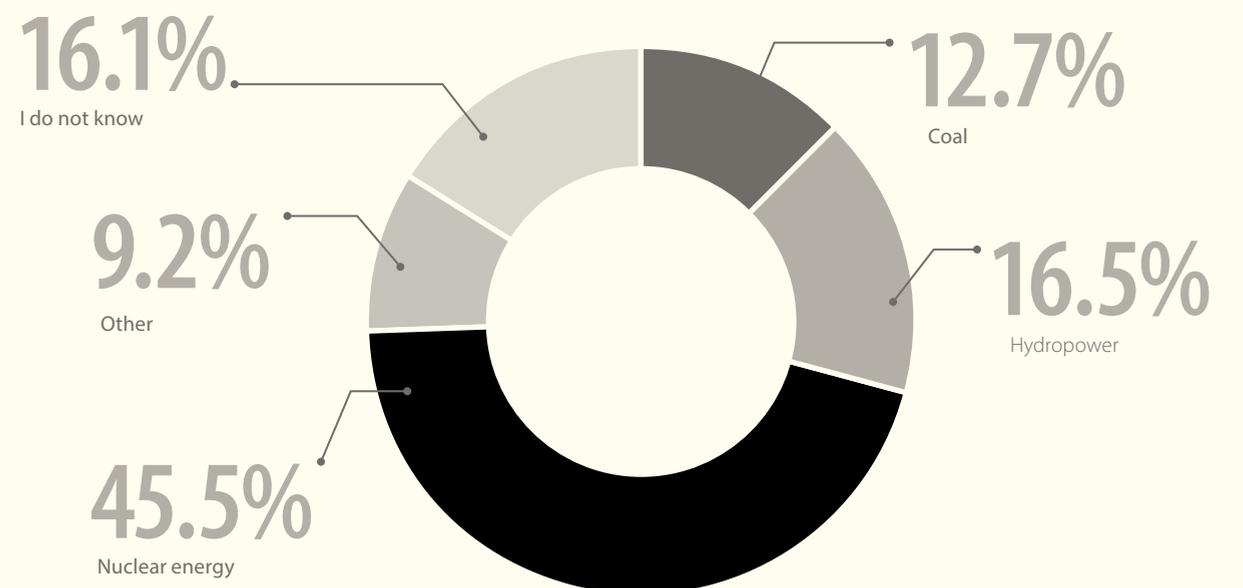
few years, this figure remains persistently high).

³⁴The survey was conducted from February 8 through February 21, 2018 across a representative sample of Russian citizens consisting of 4,003 people aged 18 and above.

— **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?**



8.

Environmental Safety

0.26

injury frequency rate

0.13

LTIFR

for **65,614**

people, individual radiation risk was calculated using the IRAW system

6.8%

cumulative total reduction in energy consumption against 2015 as the base year in 2017

8.4%

cumulative reduction in energy costs against 2015 as the base year in the Fuel Division in 2017

2.9%

cumulative reduction in energy costs against 2015 as the base year in the Power Engineering Division in 2017

at **9**

enterprises in the industry, integrated management systems were in place

19

organizations in the industry were issued with certificates of compliance with the requirements of the ISO 14001 standard for environmental management systems

37

enterprises in the industry were issued with certificates of compliance with the requirements of the ISO 9001 standard for quality management systems

8.4%

cumulative reduction in energy costs against 2015 as the base year in the Mechanical Engineering Division in 2017

11.9%

cumulative reduction in energy costs against 2015 as the base year in the Mining Division in 2017

6.2%

cumulative reduction in energy costs against 2015 as the base year in the Innovation Management Unit in 2017

8.1. Nuclear and Radiation Safety; Occupational Safety and Health

Key results in 2017:

- 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 0.26 and 0.13 respectively;
- Individual radiation risk was calculated for 65,614 people using the IRAW system.

8.1.1. Nuclear and radiation safety at nuclear facilities

In 2017, JSC Atomenergoprom ensured safe and steady operation of enterprises in the nuclear industry. In 2017, there were no incidents involving radiation leaks. Limits on employee radiation exposure were not exceeded.

As in recent years, in 2017, 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). Moreover, in

2017, no events rated level 1 on the INES scale were detected at Russian NPPs.

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, 2017, on-site ARMSs integrated into the IARMS operated in the locations of 31 facilities of ROSATOM

posing nuclear and radiation hazards, including all NPPs. In 2017, the total number of fixed monitoring stations increased to 443 compared to 440 in 2016 (with 308 stations located outside industrial sites and 135 ARMS stations

located at industrial sites of ROSATOM's organizations). Real-time data from radiation monitoring stations operated by the Corporation's organizations is available on the website at www.russianatom.ru.

8.1.3. Physical protection of nuclear facilities

The security and physical protection of ROSATOM's facilities posing nuclear and radiation hazards and nuclear and radioactive materials used and stored

by ROSATOM (including during their transportation) complies with 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 employees in the industry. Internal regulations adopted in the Company's organizations are designed to prevent accidents and occupational diseases, facilitate systematic monitoring of working conditions and occupational safety and health performance and support occupational safety and health not only in the Company, but also in contractor and

subcontractor organizations engaged in the operation of nuclear facilities. In 2017, the injury frequency rate across the industry was relatively low compared to major Russian companies. The injury frequency rate (FR) stood at 0.26, which is more than five times lower than the national average (FR = 1.4). In addition to the FR injury frequency rate, the Company also uses the lost time injury frequency rate (LTIFR), which enables it to

benchmark the injury rate against that of other companies and countries. In 2017, the LTIFR across the Russian nuclear industry stood at 0.13.

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 2017, the average annual effective radiation dose of the Company's personnel totalled 1.62 mSv. Over the past nine years, average effective employee radiation exposure and the number of people exposed to radiation have been varying insignificantly and remain low. Over the last four years, the average

individual radiation risk across ROSATOM did not exceed 8% of the regulatory limit, while the maximum individual risk has been decreasing steadily.

8.2. Environmental Safety

8.2.1. Environmental safety and environmental protection management

JSC Atomenergoprom attaches great importance to environmental safety and environmental protection. One of its major priorities is to minimize the negative environmental impact of nuclear facilities. The Uniform Sectoral Environmental Policy is the main regulatory document on environmental safety and environmental protection. In 2017, the Policy was updated and approved by the Federation Council Committee on Agriculture and Food Policy and Environmental Management, the State Duma Committee on Ecology and Environmental Protection, the Civic Chamber of the Russian Federation and the Public Council of ROSATOM. <http://www.rosatom.ru/upload/iblock/74e/74eb9c650aa73e74d0b9b9aadea0c1f8.pdf>

To improve environmental safety and the efficiency of environmental protection measures, organizations that make a

considerable impact on the environment introduce environmental management, quality management, occupational health and safety management and energy management systems. In 2017, 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 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

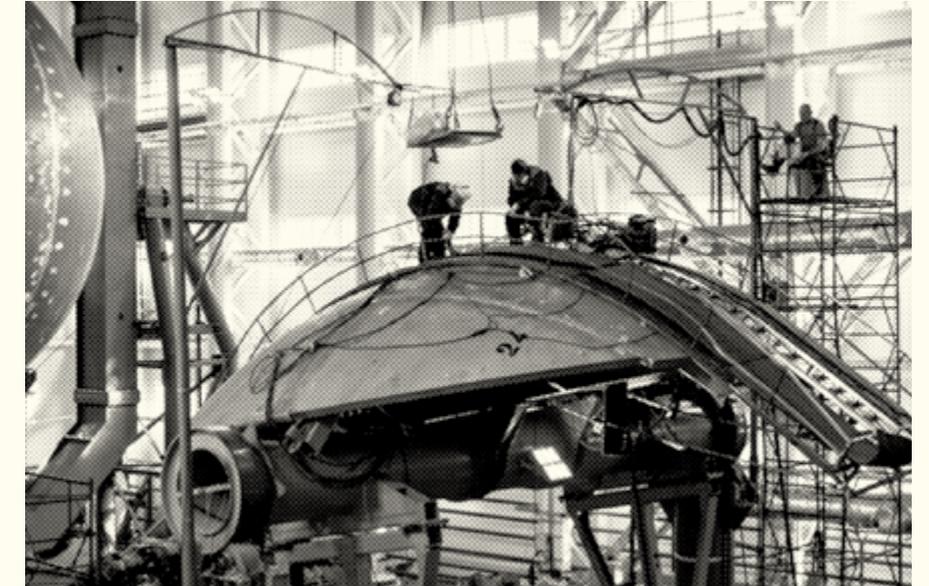
environmental management systems, and 37 enterprises were issued with certificates of compliance with the requirements of the ISO 9001 standard for quality management systems.

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

When assessing the impact of measures aimed at improving energy efficiency, the Company uses 2015 as the base period (2015 marked the completion of the first five-year period of implementation of energy conservation programmes). In 2017, the annual energy conservation target of 4% was exceeded. The cumulative total reduction in energy consumption against 2015 as the base year amounted to 6.8%, or RUB 2.5 billion.



An energy management system compliant with the ISO 50001 standard has been implemented in the Power Engineering Division (JSC Rosenergoatom Concern) and the Fuel Division (JSC TVEL).

Energy cost reduction in 2017

Division/Unit	Cumulative total compared to 2015, RUB million	Cumulative total compared to 2015, %
Fuel Division	834.0	8.4
Power Engineering Division	403.2	2.9
Mechanical Engineering Division	114.3	10.9
Mining Division	209.3	11.6
Innovation Management Unit	51.1	5.4

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 Standards, Technical Protocols and Sector Supplements
Global Reporting Initiative (GRI) Sustainability Reporting Standards	standards establishing principles that 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 its 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
HEU	highly enriched uranium
HLW	high-level waste
IAEA	International Atomic Energy Agency
IEPRS	a 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
Russia	Russian Federation
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 6.2. Risk Management 3.1. Markets Served by Atomenergoprom

GRI Standard (2016) used by the Company	Section of the Report where the Standard is used / comment
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
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 2017 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

GRI Standard (2016) used by the Company	Section of the Report where the Standard is used / comment
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	
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 ³⁵
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	6.2. Risk Management 8.1. Nuclear and Radiation Safety; Occupational Safety and Health
Disclosure 302-4 from Standard 302: Energy	8.2. Environmental Safety

³⁵ Benefits specified in section 7.1.5. 'Social Policy' are not provided to part-time employees.

Appendix 2. Summary consolidated financial statements of JSC Atomenergoprom based on consolidated financial statements for the year ended December 31, 2017, and the independent auditors' report



Joint Stock Company Atomic Energy Power Corporation

**Summarised consolidated financial statements
for the year ended 31 December 2017
and Independent Auditors' Report**



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 2017, 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 2017.

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 2018. That report also includes the communication of key audit matters.

Audited entity: JSC Atomic Energy Power Corporation
JSC "Atomenergoprom"
Registration No. in the Unified State Register of Legal Entities: 1077756021654
Moscow, Russia

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.
Registration No. in the Unified State Register of Legal Entities: 1027730125428

Member of the Self-regulated organization of auditors "Russian Union of auditors" (Association). The Principal Registration Number of the Entry in the Register of Auditors and Audit Organizations: No. 11602003203



JSC "Atomenergoprom"
Independent Auditors' Report on the Summarised Consolidated Financial Statements
Page 2

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.

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 2018



Joint Stock Company Atomic Energy Power Corporation
Summarised consolidated statement of financial position as at 31 December 2017
(in millions of Russian roubles)

	31 December 2017	31 December 2016 (restated*)
Assets		
Non-current assets		
Goodwill	33 693	35 481
Property, plant and equipment	1 729 195	1 685 230
Intangible assets	92 367	108 569
Investments in equity accounted investees	39 029	37 003
Available-for-sale financial assets	98 256	22 537
Trade and other receivables	44 103	19 915
Non-current loans given	80 770	63 695
Deferred tax assets	10 435	8 139
Other non-current assets	78 848	55 953
Total non-current assets	2 206 696	2 036 522
Current assets		
Inventories	141 174	163 887
Income tax receivable	4 890	4 438
Other taxes receivable	1 306	500
Bank deposits	13 906	1 805
Trade and other receivables	272 479	267 802
Current loans given	21 325	19 372
Cash and cash equivalents	227 904	312 229
Other current assets	2 068	2 461
Total current assets	685 052	772 494
Total assets	2 891 748	2 809 016

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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 2017
(in millions of Russian roubles)

	31 December 2017	31 December 2016 (restated*)
EQUITY AND LIABILITIES		
Equity		
Share capital	1 035 873	1 031 787
Share premium	361	361
Reserves	19 481	21 362
Retained earnings	712 429	633 375
Total equity attributable to owners of the Company	1 768 144	1 686 885
Non-controlling interests	282 892	239 372
Total equity	2 051 036	1 926 257
Non-current liabilities		
Loans and borrowings	145 256	195 260
Trade and other payables	169 035	107 424
Grants and other financing	7 949	8 636
Employee benefits	12 932	13 582
Provisions	151 271	141 041
Deferred tax liabilities	33 029	31 604
Other non-current liabilities	1 086	1 214
Total non-current liabilities	520 558	498 761
Current liabilities		
Loans and borrowings	39 465	100 538
Income tax payable	6 078	1 734
Other taxes payable	19 397	14 914
Trade and other payables	243 390	258 325
Other current liabilities	11 824	8 487
Total current liabilities	320 154	383 998
Total liabilities	840 712	882 759
Total equity and liabilities	2 891 748	2 809 016

Director
Chief Accountant
«11» Апрель 2018



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 2017
(in millions of Russian roubles)

	2017	2016 (restated*)
Revenue	747 096	699 892
Cost of sales	(478 018)	(461 612)
Gross profit	269 078	238 280
Distribution expenses	(14 564)	(16 332)
Administrative expenses	(64 839)	(65 440)
Other income	20 462	14 421
Other expenses	(46 967)	(31 499)
Results from operating activities	163 170	139 430
Finance income	25 306	26 359
Finance costs	(37 421)	(78 690)
Share of net profit of equity accounted investees	2 947	4 702
Income from business combination	-	25 956
Profit before income tax	154 002	117 757
Income tax expense	(37 804)	(24 973)
Profit for the period	116 198	92 784
Profit for the period attributable to:		
Owners of the Company	107 458	89 205
Non-controlling interests	8 740	3 579

Director
Chief Accountant
«11» April 2018



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 2017
(in millions of Russian roubles)

	2017	2016 (restated*)
Profit for the period	116 198	92 784
Other comprehensive income		
Items that will never be reclassified to profit or loss		
Remeasurements of defined benefit liability	761	(514)
Income tax on other comprehensive income	(152)	103
Total	609	(411)
Items that may be reclassified subsequently to profit or loss		
Net change in fair value of available-for-sale financial assets	1 088	28
Hedging reserve	363	(3 451)
Foreign currency translation differences	(5 868)	(27 298)
Reclassification of foreign currency translation differences to statement of profit and loss	-	(2 070)
Income tax on other comprehensive income	(218)	(6)
Total	(4 635)	(32 797)
Total other comprehensive loss	(4 026)	(33 208)
Total comprehensive income for the period	112 172	59 576
Total comprehensive income/(loss) for the period attributable to:		
Owners of the Company	105 577	63 913
Non-controlling interests	6 595	(4 337)

Director
Chief Accountant
«11» April 2018



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 changes in equity for the year ended 31 December 2017
(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
Balance at 1 January 2016	1 017 569	361	-	42 708	3 946	569 988	1 625 572
Effect of the transaction under common control	-	-	-	-	-	3 043	3 043
Balance at 1 January 2016 (restated*)	1 017 569	361	-	42 708	3 946	564 031	1 628 615
Total comprehensive income for the period	-	-	-	-	-	89 205	89 205
Profit for the period (restated*)	-	-	-	-	-	89 205	89 205
Other comprehensive income	-	-	-	-	-	-	-
Foreign currency translation differences	-	-	-	(21 452)	-	-	(21 452)
Net change in fair value of available-for-sale financial assets	-	-	28	-	-	-	28
Remeasurements of defined benefit liability	-	-	-	-	(514)	-	(514)
Hedging reserve	-	-	-	-	(3 451)	-	(3 451)
Income tax on other comprehensive income	-	-	(6)	-	103	-	97
Other comprehensive loss	-	-	22	(21 452)	(3 862)	-	(25 292)
Total comprehensive income for the period	-	-	22	(21 452)	(3 862)	89 205	63 913
							(4 337)
							59 576
							204 226
							1 829 798
							3 043
							1 832 841

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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 2017
(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
Balance at 1 January 2016	1 031 787	361	22	21 256	84	633 375	1 686 885
Dividends	-	-	-	-	-	(11 388)	(11 388)
Shares issued	14 218	-	-	-	-	-	14 218
Total contributions by and distributions to owners	14 218	-	-	-	-	(11 388)	2 830
Changes in non-controlling interests in subsidiaries	-	-	-	-	-	(13 374)	(13 374)
Effect of the transaction under common control	-	-	-	-	-	4 901	4 901
Effect of business combination	-	-	-	-	-	-	-
Total transactions with owners	14 218	-	-	-	-	(19 861)	(5 643)
Balance at 31 December 2016 (restated*)	1 031 787	361	22	21 256	84	633 375	1 686 885
							239 372
							1 926 257
							(2 538)
							(13 926)
							14 218
							(2 538)
							292
							23 011
							9 637
							(1 364)
							3 537
							20 374
							39 483
							33 840

*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 2017
(in millions of Russian roubles)

	Equity							Total 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 2017	1 031 787	361	22	21 256	83	639 408	239 372	1 923 289
Effect of the transaction under common control	-	-	-	-	1	2 967	-	2 968
Balance at 1 January 2017 (restated*)	1 031 787	361	22	21 256	84	633 375	239 372	1 926 257
Total comprehensive income for the period	-	-	-	-	-	107 458	8 740	116 198
Profit for the period	-	-	-	-	-	107 458	8 740	116 198
Other comprehensive income	-	-	-	-	-	-	-	-
Foreign currency translation differences	-	-	-	(3 723)	-	-	(2 145)	(5 868)
Net change in fair value of available-for-sale financial assets	-	-	1 088	-	-	-	-	1 088
Remeasurements of defined benefit liability	-	-	-	-	761	-	-	761
Hedging reserve	-	-	-	-	363	-	-	363
Income tax recognized in other comprehensive income	-	-	(218)	-	(152)	-	-	(370)
Other comprehensive loss	-	-	870	(3 723)	972	-	(2 145)	(4 026)
Total comprehensive income for the period	-	-	870	(3 723)	972	107 458	6 595	112 172

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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 2017
(in millions of Russian roubles)

	Equity							Total 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	
Contributions by and distributions to owners	-	-	-	-	-	(10 970)	(1 752)	(12 722)
Dividends	-	-	-	-	-	-	-	-
Shares issued	4 086	-	-	-	-	4 086	-	4 086
Total contributions by and distributions to owners	4 086	-	-	-	-	(10 970)	(1 752)	(8 636)
Changes in non-controlling interests in subsidiaries	-	-	-	-	-	(14 315)	38 677	24 362
Effect of the transaction under common control	-	-	-	-	-	(3 119)	-	(3 119)
Total transactions with owners	4 086	-	-	-	-	(28 404)	36 925	12 607
Balance at 31 December 2017	1 035 873	361	892	17 533	1 056	712 429	282 892	2 051 036

Director

Chief Accountant

« 14 » December 2018

K.B. Komarov
V.A. Andrienko

*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 2017
(in millions of Russian roubles)

	2017	2016 (restated*)
CASH FLOWS FROM OPERATING ACTIVITIES		
Profit before income tax	154 002	117 757
<i>Adjustments for:</i>		
Depreciation and amortization	101 885	94 237
Impairment losses on property, plant and equipment	30 789	6 903
Loss on disposal of property, plant and equipment, intangible assets and other assets	2 937	5 070
Share of net profit of equity accounted investees	(2 947)	(4 702)
Income from business combination	-	(25 956)
Net finance costs	12 115	52 331
Trade receivables impairment allowance	3 954	6 168
Inventories impairment allowance	977	12 765
Change and accrual of provisions	(8 463)	6 517
Other	(1 648)	572
Cash from operating activities before changes in working capital	293 601	271 662
Change in inventories	20 557	12 767
Change in trade and other receivables	(43 995)	(7 440)
Change in other taxes receivable	(806)	(33)
Change in trade and other payables	22 482	170
Change in other taxes payable	5 028	2 481
Cash flows from operations before income tax and interest paid	296 867	279 607
Income tax paid	(35 049)	(31 572)
Interest paid	(21 005)	(25 314)
Net cash from operating activities	240 813	222 721
CASH FLOWS FROM INVESTING ACTIVITIES		
Interest received	13 794	18 965
Dividends received from equity accounted investees	4 092	4 093
Acquisition of property, plant and equipment	(148 574)	(174 198)
Acquisition of intangible assets	(10 371)	(5 937)
Purchase of investments	(69 796)	(20 763)
New deposits	(59 681)	(1 933)
Redemption of deposits	47 329	399
Investments in joint arrangement	(3 024)	(2 464)
Proceeds from business combination	-	2 205
Disposal of subsidiaries	2 709	1 781
Loans given to other entities	(24 909)	(12 977)
Proceeds from loans given to other entities	13 973	21 467
Proceeds from disposal of property, plant and equipment and intangible assets	9 701	7 995
Proceeds from grants and other financing	5 881	3 178
Net cash used in investing activities	(218 876)	(158 189)

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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 2017
(in millions of Russian roubles)

	2017	2016 (restated*)
CASH FLOWS FROM FINANCING ACTIVITIES		
Proceeds from issue of share capital	1 836	8 993
Settlement of swap on expiration date	-	(7 053)
Proceeds from borrowings and issued debentures	171 545	234 709
Repayment of borrowings and redemption of debentures	(272 231)	(270 088)
Dividends paid	(10 333)	(9 423)
Net cash (used in)/from financing activities	(109 183)	(42 862)
Net increase in cash and cash equivalents	(87 246)	21 670
Cash and cash equivalents at the beginning of the period	312 051	328 364
Effect of movements in foreign exchange rates on cash and cash equivalents	2 748	(37 983)
Cash and cash equivalents at the end of the period	227 553	312 051

Director

Chief Accountant

«11» *Andrienko* 2018



K.B. Komarov

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).

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 2017, 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 2017 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 2017 (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 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:

<input type="checkbox"/> Employee of JSC Atomenergoprom or ROSATOM	<input type="checkbox"/> Representative of a customer / consumer of goods and services
<input type="checkbox"/> Employee of an organization forming part of JSC Atomenergoprom or ROSATOM	<input type="checkbox"/> Representative of a business partner
<input type="checkbox"/> Representative of the federal government	<input type="checkbox"/> Representative of a non-governmental organization
<input type="checkbox"/> Representative of a regional government	<input type="checkbox"/> Representative of the media
<input type="checkbox"/> Representative of a local government	<input type="checkbox"/> Representative of the expert community
<input type="checkbox"/> Representative of a contractor / supplier	<input type="checkbox"/> Other (please specify)

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