

Integrated Annual Report 2015



Integrated Annual Report JSC Atomenergomash

2015

ar2015.aem-group.ru

JSC Atomenergomash provides access to the integrated interactive version of the annual report for 2015 for its stakeholders. This product allows easy information presentation of the main annual results of the Company, as well as the access to additional data, which was not included in the print version in a analysis-friendly format.

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The Company in brief

JSC Atomenergomash (the Company, AEM) is a Mechanical Engineering Division of the Rosatom State Corporation (the Division) and

is one of the largest power engineering holdings in Russia,

that offers a full range of solutions in the areas of design, manufacture, and supply of equipment for nuclear and thermal energy, gas and petrochemical, shipbuilding industries, and the market of special steels.

The Division is comprised of largest power-engineering businesses, including research, engineering, manufacturing, construction and installation companies. Production capacities are located in the Russian Federation, Ukraine, the Czech Republic, and Hungary.

The Company has full control over the production chain of key equipment for the nuclear island and the power island –

from Research & Development and development of technical documentation to the design of industrial processes and the manufacture of equipment. In addition, the Division is developing new lines of business, the key of which are thermal energy, gas and petrochemical industry, shipbuilding industry, and special steel.

Equipment manufactured by the Division has been installed in more than 20 countries;

14% of the nuclear power plants in operation worldwide and 40% of the thermal power plants in the Russian Federation and FSU countries use the Company's equipment.

2015 Performance Highlights

ECONOMIC PERFORMANCE



Combined revenue

56.2 bln rubles

AEM 1.3

EBITDA

1.98 bln rubles

OPERATING PERFORMANCE



Products shipped to

11

nuclear power plants under construction

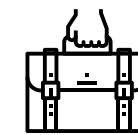
Fulfillment of contractual obligations

97%

The share of production for existing nuclear power plants that has passed incoming inspection from the moment of first presentation

99%

COMMERCIAL ACTIVITIES



Market share in the Russian power engineering industry

23%

Total value of concluded contracts

172 bln rubles

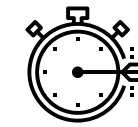
Order book at the year-end

392.7 bln rubles

Share of orders in the portfolio of new products

33%

EFFICIENCY IMPROVEMENT



Effect of the RPS introduction

691 mln rubles

Energy savings

1 mln GJ

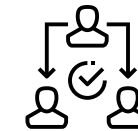
Transferred to outsourcing

>500 persons

Labor productivity growth

23%

STAFF CAPACITY



Share of specialists under 35 years old

33%

Engagement level

75%

Share of employees with seniority of more than 5 years

57%

SCIENTIFIC ACTIVITIES



77 patents and intellectual property certificates

256 scientific publications

SOCIAL RESPONSIBILITY



Paid to the budget

6.5 bln rubles

Charity expenses

13.6 mln rubles

ENVIRONMENTAL RESPONSIBILITY



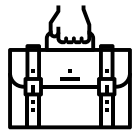
Reduction of greenhouse gas emissions

12%

Environmental impact mitigation costs

93 mln rubles

Key Events in 2015



Commercial Activities

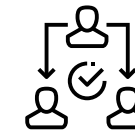
- The first reactor vessel manufactured at the production site of the Atom mash plant (branch of AEM-Technology JSC) was supplied to the Belarusian Nuclear Power Plant after a thirty-years' interruption. In addition, this is the first WWER reactor vessel manufactured by Rosatom State Corporation¹.
- PJSC ZiO-Podolsk successfully completed contracts for the supply of steam generators to the Leningrad NPP-2 and to the second stage of the Tianwan Nuclear Power Plant (power units No. 3 and No. 4).
- The stage of power start-up and development of the power unit No. 4 with a BN-800 reactor at Beloyarsk NPP, which was developed and delivered by the chief designer of fast-neutron reactor units JSC Afrinkantov OKBM, was started.
- The enterprises of JSC Atomenergomash have assembled the vessels of two reactors of the RITM-200 power plant for the Arctic, the world's largest Russian new-generation nuclear icebreaker, which is currently under construction.



Scientific Activities

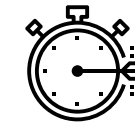
- Commissioning of unique equipment for the industrial production of MOX fuel for fast-neutron reactors, which has been largely developed and delivered by JSC SverdNIikhimmash and JSC TsKBM.
- JSC TsKBM has successfully completed the resource testing of a new design of the GTsNA-1753 main circulation pump featuring a single-shaft arrangement with a water-cooled motor and water-cooled bearing units, which will increase the safety of nuclear power plants.
- Employees of JSC NPO TsNIITMASH received science and technology awards from the Russian Government for their developments in 2015.

¹ – Earlier, Rosatom State Corporation acquired these products from an external supplier.



Staff capacity

- JSC Atomenergomash graduated succession candidate as part of a project for the development of engineering and scientific personnel at the enterprises of the Division called "I AM AN AEM ENGINEER."
- The team of JSC TsKBM won the branch Event Young Professionals «Temp-2015» - a large-scale project of the Rosatom State Corporation and the Rosatom Corporate Academy for attraction of young professionals to work in the nuclear industry.
- Atom mash (a branch of AEM-Technology JSC) held a ceremony of award of diplomas to the first graduates of the Production Foreman School project, the concept of which was to create a comprehensive system of training managers under a program for industrial engineers.



Efficiency improvement

- A project of restoration of the Atom mash production complex (branch of AEM-Technology JSC), which was accompanied by the renewal of equipment, the training of members of the personnel, and the introduction of new processing technologies, was implemented. The project featured participation from the following enterprises: JSC NPO TsNIITMASH, JSC OKB GIDROPRESS, and PJSC ZiO-Podolsk; Rosatom State Corporation acted as a curator.
- The industry RPS project of JSC Afrinkantov OKBM named «Assembly, Testing, and Manufacturing of NSO 250/15 and NSO 250/30 Pump Components on the Critical Path» allowed reducing the time of manufacture of the products in comparison with the previous year by 32%.
- JSC SNIIP successfully passed the first supervisory audit of the energy management system based on ISO 9001:2008, which was conducted by the official representative of the Certification Body for Management Systems and Personnel of TÜV Thüringen.
- JSC NPO TsNIITMASH developed and implemented a new technology for sectional forging of bottoms of steam generators that will save up to 40% of the metal and reduce the complexity and power consumption.

Message from the Company Management



**Lyakhova
Ekaterina**

*Chairwoman of the Board of Directors
of JSC Atomenergomash
Director of Investment Management
and Operational Efficiency
at Rosatom State Corporation*

« Labor productivity growth has been provided for, and the overall economic effect of the introduction of the Rosatom Production System is almost twice the figures of 2014 and amounts to approximately 700 mln rubles. »

Dear colleagues and partners,

I am pleased to present to you the Integrated Annual Report of JSC Atomenergomash for 2015. The report focuses particularly on production, financial, social and environmental issues related to the activities of the Mechanical Engineering Division of Rosatom State Corporation.

In 2015, the Division continued its dynamic development. Despite macroeconomic difficulties, the Company demonstrates stable growth of financial and economic performance indicators while remaining one of the leaders of the Russian power engineering industry.

An important step towards sustainable development was the final positioning of the Division as a complete supplier of equipment for the nuclear industry. A significant milestone and a bright page in 2015 was the shipment of a reactor for the Belarusian NPP, which was the first reactor manufactured by entities of the Rosatom State Corporation circuit. Thanks to the restoration of the work of the engineering giant, the Atomenergomash, the Division is currently able to produce up to four sets of the reactor island equipment per year. This is fundamentally important for the unconditional implementation of the portfolio of orders of the Rosatom State Corporation, which includes contracts for the construction of 30 nuclear power units in 12 countries.

One of the priorities of the Rosatom State Corporation is the diversification of its business activities, the development of manufacture of new products, including products that do not fall into the framework of nuclear energy. I am sure that JSC Atomenergomash should be a reference division when addressing these issues due to the numerous competences of its enterprises and the developed business development logic. At the end of

2015, one may note a significant growth in the volume of orders of thermal power, gas and oil industry, and general engineering. The Division has also intensified its efforts to increase export earnings and consolidates the necessary resources for more active operation on foreign markets.

In the context of strategic objectives posed before Rosatom State Corporation, it is necessary to pay attention to the systematic work of the management team of the Division, which is aimed at reducing the costs and improving the efficiency. Labor productivity growth has been provided for, and the overall economic effect of the introduction of the Rosatom Production System is almost twice the figures of 2014 and amounts to approximately 700 mln rubles. Another priority of development is the focus of the Company on innovation. Enterprises of the Division successfully develop advanced technological solutions, are key players in the industry projects aimed at creating new types of equipment, and form an image of the future of nuclear energy today.

The achievement of such high production and financial results resulted from the Company's management commitment and responsibility as well as from the high professionalism and conscientious work of all its employees. On behalf of the Rosatom State Corporation, I would like to thank you for your work and to wish you continued success in the development of our Company.

« One of the major industrial developments in 2015 was the shipment of the reactor for the Belarusian Nuclear Power Plant from the Atommash production site. »



**Nikipelov
Andrey**

—
*Chief Executive Officer of
JSC Atomenergomash*

Dear colleagues and partners,

I present to you the 2015 Annual Report of the Mechanical Engineering Division of Rosatom State Corporation - JSC Atomenergomash.

Previous year was full of significant achievements and bright events that will not only consolidate the Company's leading role in the market and nuclear power engineering but also achieve significant success in other industries that are not related to energy.

Despite the difficult macroeconomic conditions, the combined revenues of the Division increased by 15% for the year and amounted to more than 56 bln rubles. The order book of the Company for the ten-year period amounted to approximately 400 bln rubles, which is 73% higher than the corresponding value for 2014. In particular, contracts for the supply of reactor island equipment to the Kudankulam Nuclear Power Plant as well as auxiliary equipment for the turbine island for Kudankulam and Bushehr Nuclear Power Plants have been signed.

Systematic work on the implementation of the Company's strategy in terms of business diversification has resulted in a significant portfolio growth in related business areas. The volume of contracts concluded in the market of equipment for gas and oil industry more than tripled while the volume of contracts concluded in the power industry more than doubled; the current volume of contracts concluded in the shipbuilding industry was practically preserved.

For example, PJSC ZiO-Podolsk started the manufacture of boiler equipment for a number of thermal power plants in Russia as well as implements projects on modernization of thermal power plants in Kazakhstan. AEM-Technology JSC signed contracts for the supply of column and reactor equipment for three refineries of PJSC Gazprom Neft. JSC SverdNIlkhimmash won an order for the design and the supply of vacuum-evaporator installations for the receipt of «Extra» grade table salt in Kaliningrad region. In addition to the production of power reactor plants, contracts for the supply of propellers and other equipment for the new generation of icebreakers produced by Baltic Plant were signed.

One of the major industrial developments in 2015 was the shipment of the reactor for the Belarusian Nuclear Power Plant from the Atommash production site. This is the first reactor manufactured by the plant in the post-Soviet period, and the first reactor manufactured by Rosatom State Corporation.

Since 2012, when Atom mash became a part of the Division, the Company has implemented a large-scale program to restore the production of equipment for the nuclear industry. This included the modernization of machinery equipment, the installation of new welding equipment, and other operations. At the same time, staff training and introduction of new technologies were implemented. Assistance was provided by specialists of several companies of the Division: JSC NPO TsNIITMASH, JSC OKB GIDROPRESS, PJSC ZIO-Podolsk. Successful shipment of a reactor for Belarusian Nuclear Power Plant and steam generators for Rostov Nuclear Power Plant has confirmed that the plant has completely regained its competence in the nuclear field and is able today to produce up to four sets of reactor island equipment per year. Currently, the Company is manufacturing equipment for a number of Russian and foreign nuclear power plants. Also, the production for Kursk Nuclear Power Plant, “Kudankulam” Nuclear Power Plant, and Hanhikivi Nuclear Power Plant will be launched soon.

In the reporting year, the power start of a new unit at Beloyarsk Nuclear Power Plant with a BN-800 fast-neutron reactor was implemented. This is a major event for the entire industry and, above all, for JSC Afrinkantov OKBM, which is the chief designer of this type of reactors. PJSC ZIO-Podolsk, JSC OKB GIDROPRESS, JSC SverdNIlkhimmash and other enterprises of the Division were involved in the production of equipment for the power unit. Earlier, the launch of of MOX fuel production at Gas Chemical Complex FSUE had been implemented. A significant part of the unique equipment was developed by JSC TsKBM and JSC SverdNIlkhimmash. During this project, we have also acquired a huge scientific and technological experience, which will be in great demand in the future.

Last year, the amount of work of JSC OKB GIDROPRESS, which is the chief design office for new power plants of Russian design in Finland, Vietnam, Egypt, and other countries, significantly increased. JSC SNIP received a record revenue based on year results, which was also contributed to by the implemented revamping program, which has led to a significant increase in terms of efficiency. In the course of the year, PJSC Energomashpetsstal confirmed its reputation as a reliable partner by ensuring timely execution of orders for such metallurgical and energy giants like ArcelorMittal and General Electric. The Company has consistently strengthened its presence in Europe, India, South Korea, and Iran and expanded the reference of supply. Moreover, all of the enterprises of the Division that are involved in the performance of the State Defense Order fulfill their obligations in full and on time.

In 2015, JSC Atomenergomash expanded its comprehensive technological cooperation with the world’s largest engineering companies. During the year, it signed a Memorandum of Understanding on joint implementation of projects in the field of production of boiler equipment for the SCSP with Mitsubishi-Hitachi Power Systems. Two Memoranda of Understanding in the field of manufacture of equipment for a new generation of incinerators were also signed: with Mitsubishi Heavy Industries Environmental & Chemical Engineering and with Hitachi Zosen Inova AG and LLC RT-Invest. Issues of implementation of joint projects in other areas are discussed with such companies as Siemens, General Electric, and AREVA.

Enhancing production efficiency, including through further implementation of the Rosatom Production System, fulfilling all contractual obligations in a timely manner, increasing the revenue across all business lines, and participating actively in import substitution programs will remain our strategic priorities in 2016.

In conclusion, I would like to express my sincere gratitude to our customers and partners for their trust and constructive cooperation and to all the employees of JSC Atomenergomash for their successful and efficient work and commitment to the values of Rosatom State Corporation. I am confident that the results of the reporting year will be a solid basis for subsequent sustainable development of JSC Atomenergomash as a global Company that provides its customers with the most reliable and efficient solutions.

KPIs set for the Chief Executive Officer of JSC Atomenergomash in 2015

Indicator	Target value	Actual value	Performance Status
AEM’s adjusted free cash flow (AFCF), bln rubles	-5.4	2.0	Maximum
Labor productivity, bln rubles/person	3.31	2.947	Minimum
Index of implementation of the REA Concern Investment Program as it pertains to AEM, %	100	100	Target
Integral indicator for new products, %	100	120	Maximum
Integral indicator of investment performance ² , %	100	93	Minimum
Revenue from new products outside the contour and inside the contour on a competitive basis, mln rubles	22,695	17,134	Not performed
Semi-fixed costs, mln rubles	23.84	23.45	Target
Overseas revenue, mln USD	128	122	Minimum
LTIFR, %	0.63	0.42	Target
Fulfillment of the State Defense Order (SDO), %	100	100	Target
Book of orders of the State Corporation for 10 years for new products, mln rubles	70,748	116,304	Maximum
Book of foreign orders for 10 years, mln USD	99	129	Maximum
IRR of the portfolio of projects for new businesses, %	12	34	Maximum

Failure to comply with key indicators at the target level is due to the postponement of a number of non-nuclear and foreign projects for long-cycle equipment and to the overall macroeconomic situation.

2 – Detailed information is contained in the relevant section.

Public Business Model of the Mechanical Engineering Division of the Rosatom State Corporation

AEM resources



Personnel composition

Human capital → Over 19,000 qualified employees



Infrastructure

Manufacturing capital → Exclusive manufacturing capacities and modern equipment



Financial and economic performance

Financial and economic capital → Revenue growth driven by an expansion of the order portfolio and an enhancement of operational efficiency



Technologies

Innovation capital → A balanced portfolio of actively developing traditional and potentially innovative power technologies

Core activities

Products by business area



Nuclear power

Reactor compartment, turbine plant and auxiliary NPP equipment



RU MCS

Reactor plant monitoring and control system for VVER designs



RAW/SNIF

RAW/SNIF storage, transportation and processing equipment



Special steels

Castings and forgings from special steel



Shipbuilding

Various types of equipment for shipbuilding



Transport and marine energy solutions

Reactors for icebreaker and marine fleets, floating nuclear plants and the Russian Navy fleet



Thermal power

Reactor plant monitoring and control system for VVER designs



Gas and petrochemical industry

Oil and gas processing equipment for oil refineries and marine and ship-based plants



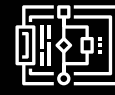
General equipment

Special equipment and heavy machinery components for the military-industrial complex



Wind power

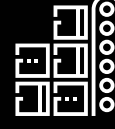
Wind power facilities equipment



Equipment design



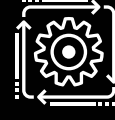
Equipment production



Equipment supply



Equipment installation and commissioning



Maintenance and modernization

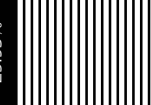
Sales

95,212
55.37%



Nuclear power/
Core products

44,591
25.93%



Nuclear power/
New products

9,915

5.77%

Gas and
petrochemical
industry

6,491

3.77%

General
equipment

4,582

2.66%

Other

4,503

2.62%

RAW/SNIF

3,273

1.90%

Special steels

1,234

0.72%

Shipbuilding

1,176

0.68%

Thermal power

978

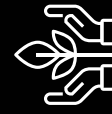
0.57%

Transport and
marine energy
solutions

Total order portfolio **392.7**
bln RUB (excl. VAT) **increase by 73% by 2014**

Contracts signed in 2015 by business area (bln RUB)

Creation of value for stakeholders



Natural capital

Decrease in waste volume 12.7%

Reduction in CO₂ emissions, 19.9%



Social capital

Deductions for budget 6.5 bln RUB

Spending on charity 13.6 mln rubles

Creation of value for the Company

Personnel composition

Enhancement of employee efficiency and development of employee potential

Strategic objective

Staff turnover reduction 13%
Increase in productivity 23%
Growth of personnel share with higher education 1.1%

Infrastructure

Enhancement of efficiency and flexibility of manufacturing capacities

Volume of realized investment 3.7 bln RUB

Increase in the percentage of products to existing nuclear power plants that passed input control from the first time

Financial and economic performance

Economic efficiency and sustainability

Increase in combined revenue 15%

Revenue from secondary assets 909 mln rubles

Technologies

Product competitiveness and technological leadership

Patents and intellectual activity results certificates granted 77
Research papers and works published 256

Specialization of the Division's Enterprises

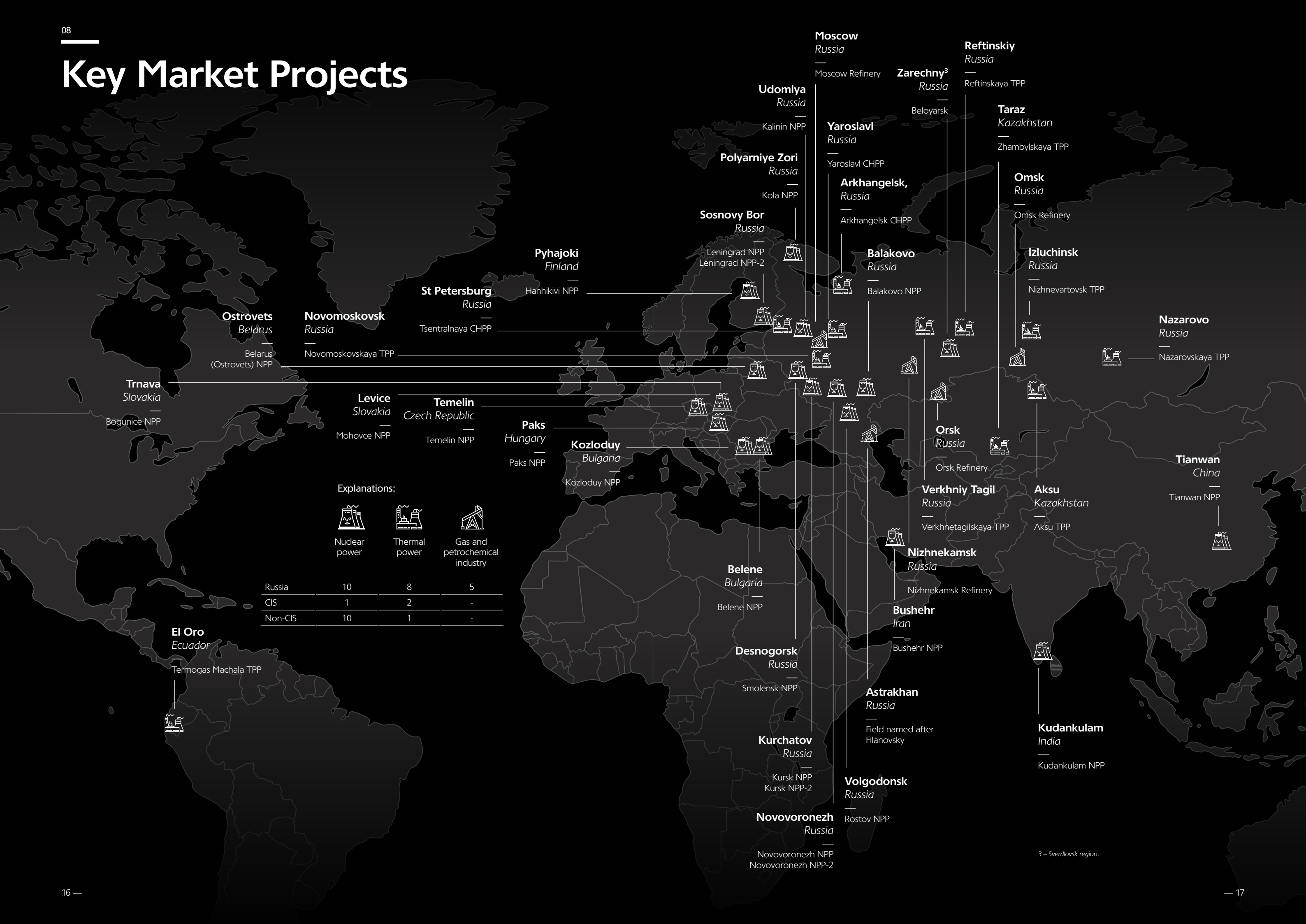
Division's enterprises	Nuclear power	WWER RUMCS*	RAW/SNF**	TMES***	Shipbuilding	Special steels	Thermal power	Gas and petro-chemical industry	General equipment	Wind Power
AEM-Technology JSC	●		●		●			●		●
PJSC ZIO-Podolsk	●			●	●		●	●	●	
JSC ZIOMAR EC	●						●	●		
JSC TSKBM	●		●							
JSC OKB GIDROPRESS	●									
JSC Afrikantov OKBM	●		●	●	●					
ARAKO spol. s.r.o.	●				●		●	●		
JSC SverdNIIkhimmash			●							
JSC GSPI			●							
JSC SNIIP		●		●	●					
LLC AAEM	●									
PJSC EMSS						●				

* WWER RUMCS - Water-water energetic reactor assembly monitoring and control system.
** RAW/SNF - Radioactive waste/spent nuclear fuel.
*** TMES - Transport and marine energy solutions.




Business Geography



Key Market Projects



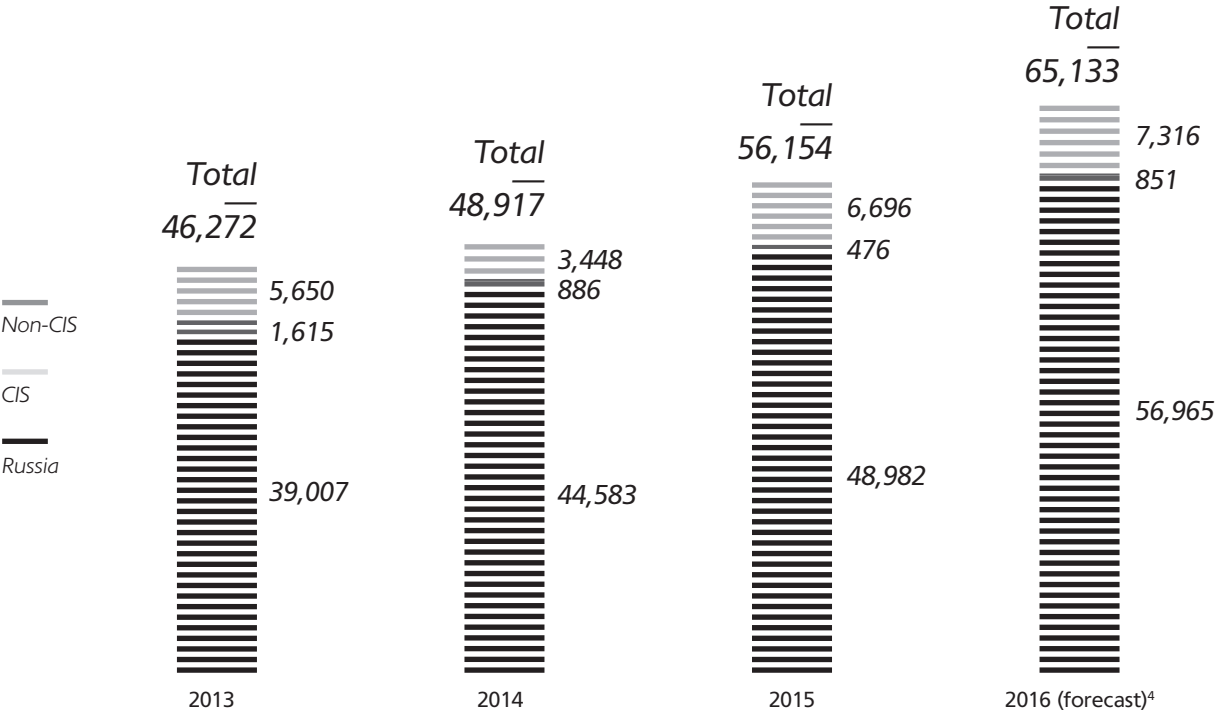
Explanations:

-  Nuclear power
-  Thermal power
-  Gas and petrochemical industry

Russia	10	8	5
CIS	1	2	-
Non-CIS	10	1	-

3 – Sverdlovsk region.

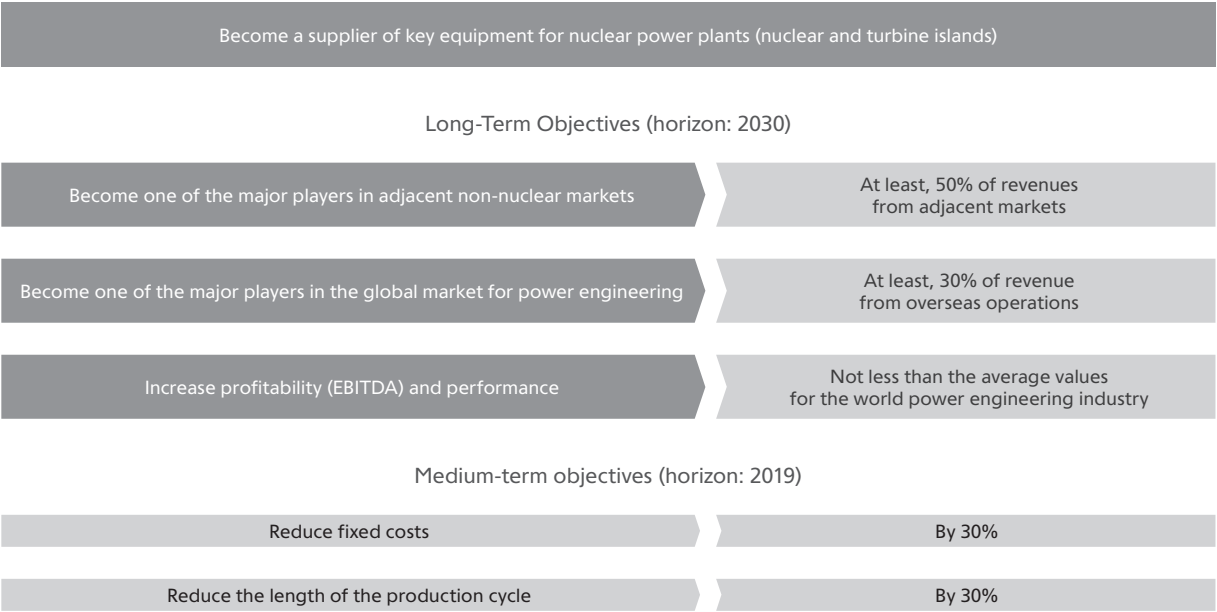
Combined revenue by geographical area/country (mln rubles)



09

Strategic Vision and Objectives

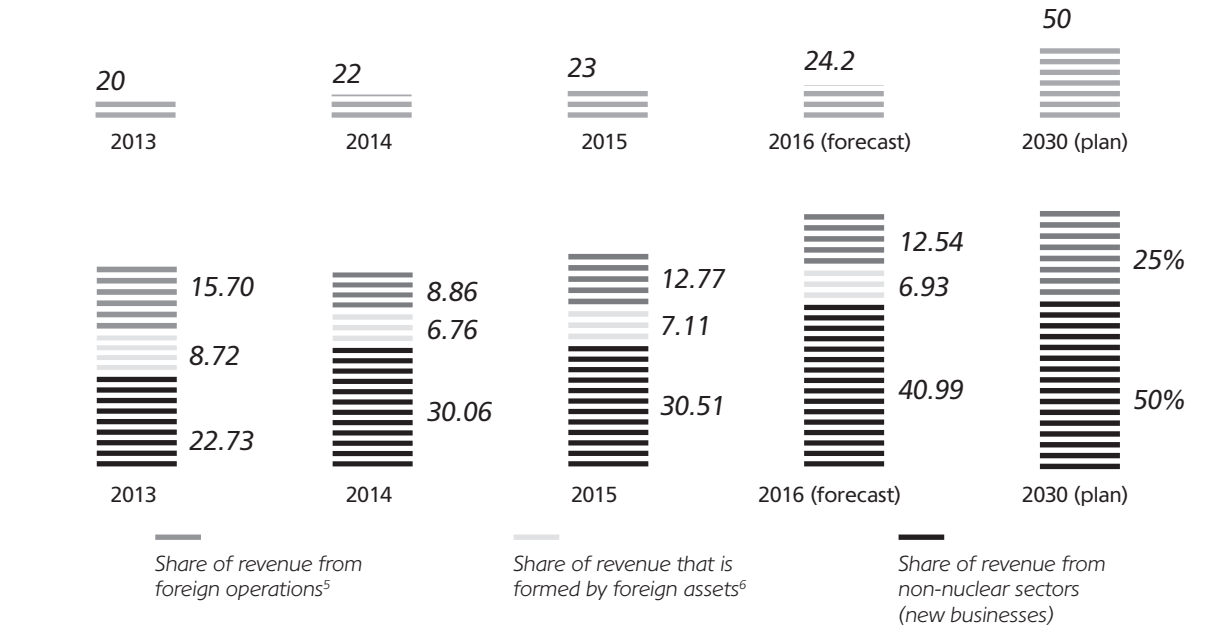
Strategic Objectives of JSC Atomenergomash



4 – Revenue forecast for 2016 is presented on the basis of JSC Atomenergomash Business Plan for 2016-2018.

The strategy of JSC Atomenergomash identifies long-term targets that outline the implementation of the aforementioned strategic objectives:

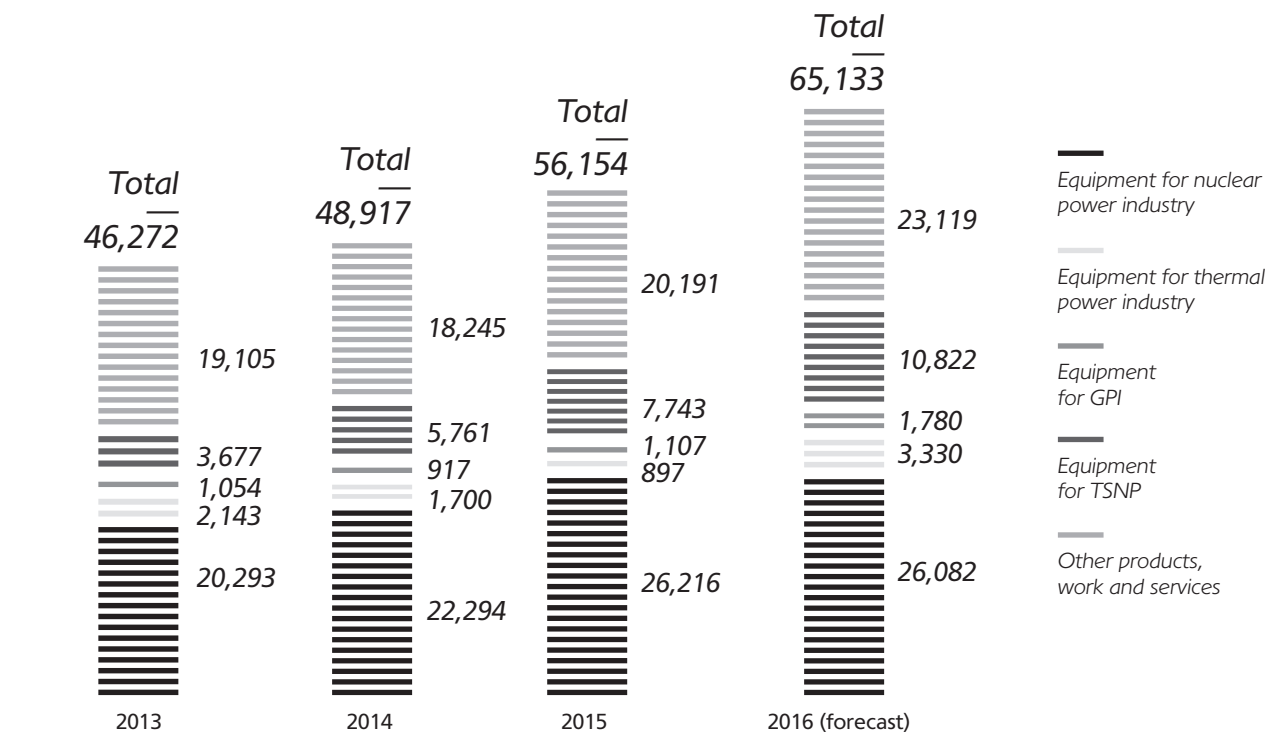
Share of the Russian power engineering industry



10

Economic Performance

Combined revenue by operating sector (mln rubles)

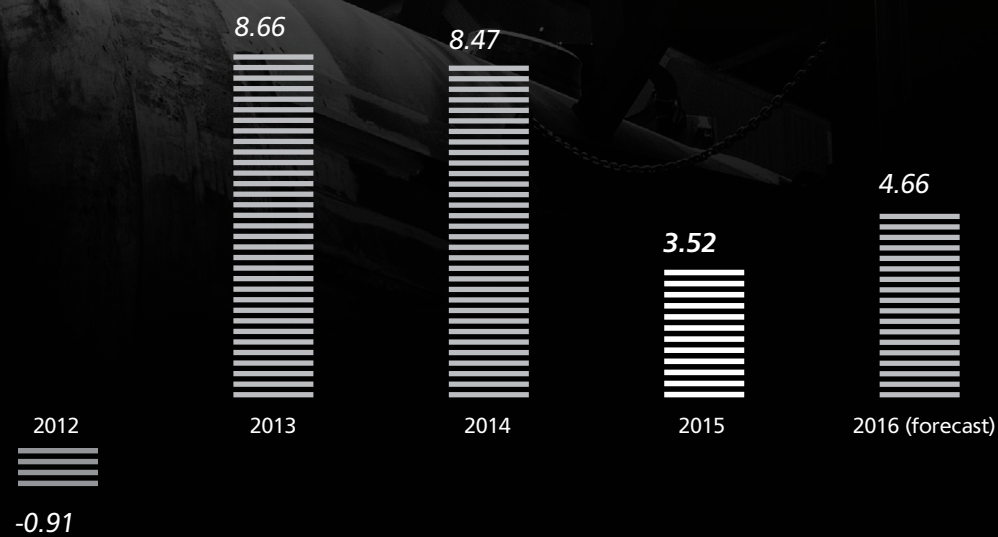


5 – Information on 2015 is provided without regard to projects carried out for RAOS Project Oy at Hanhikivi Nuclear Power Plant (according to the methodology of Rosatom State Corporation for calculating foreign revenue of the Mechanical Engineering Division).
6 – ARAKO spol. s.r.o. and PJSC Energomashspetsstal.



The process of machining of steam generator body holes
(the Atom mash branch of JSC AEM-Technology in Volgogradsk)

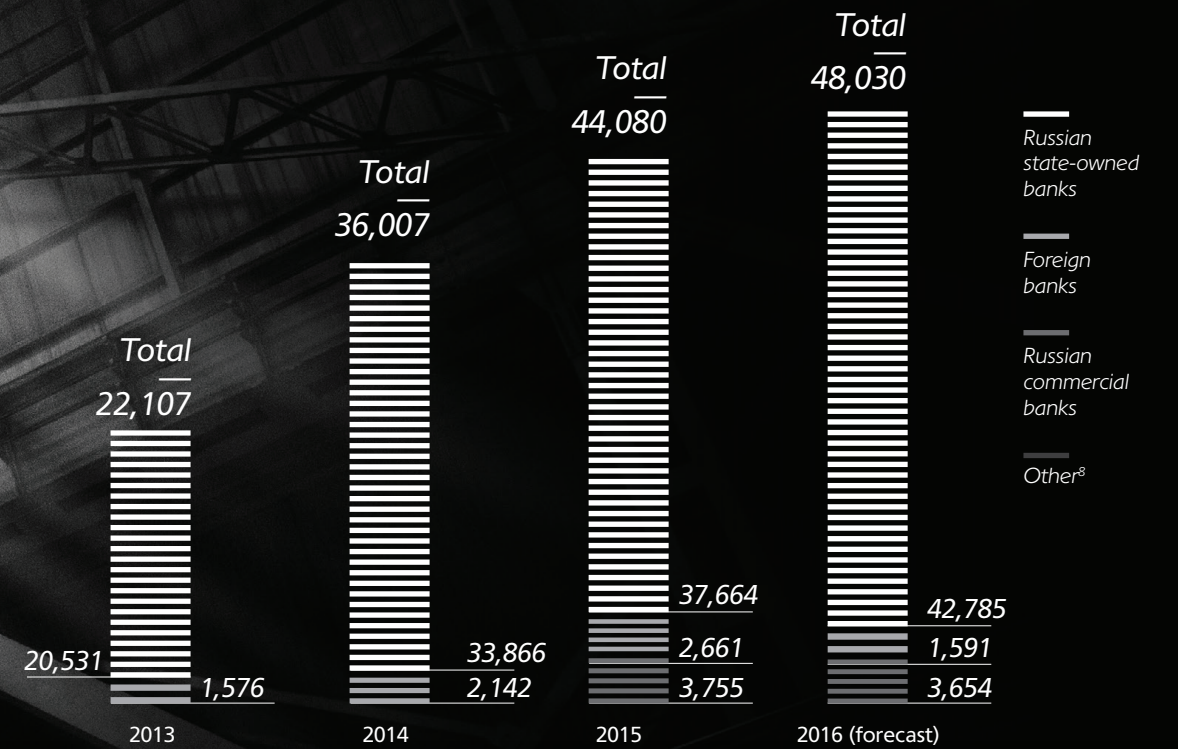
EBITDA margin (%)



Labor productivity within the Division (thousand rubles/person per year)⁷



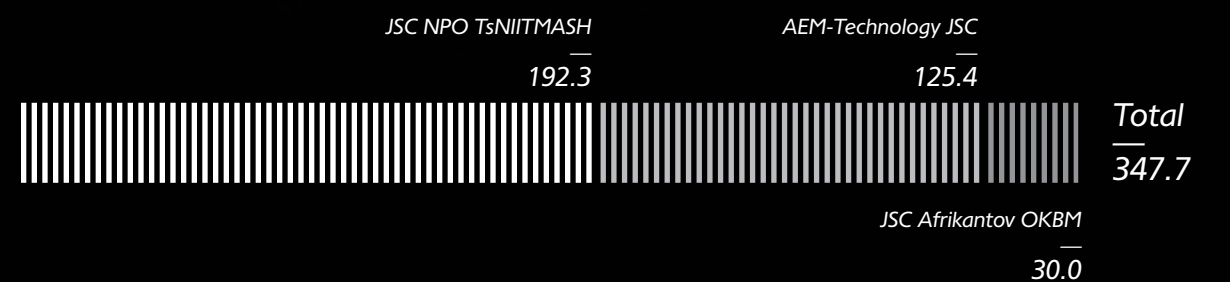
Net debt structure (mln rubles)



Short-term solvency ratio⁹



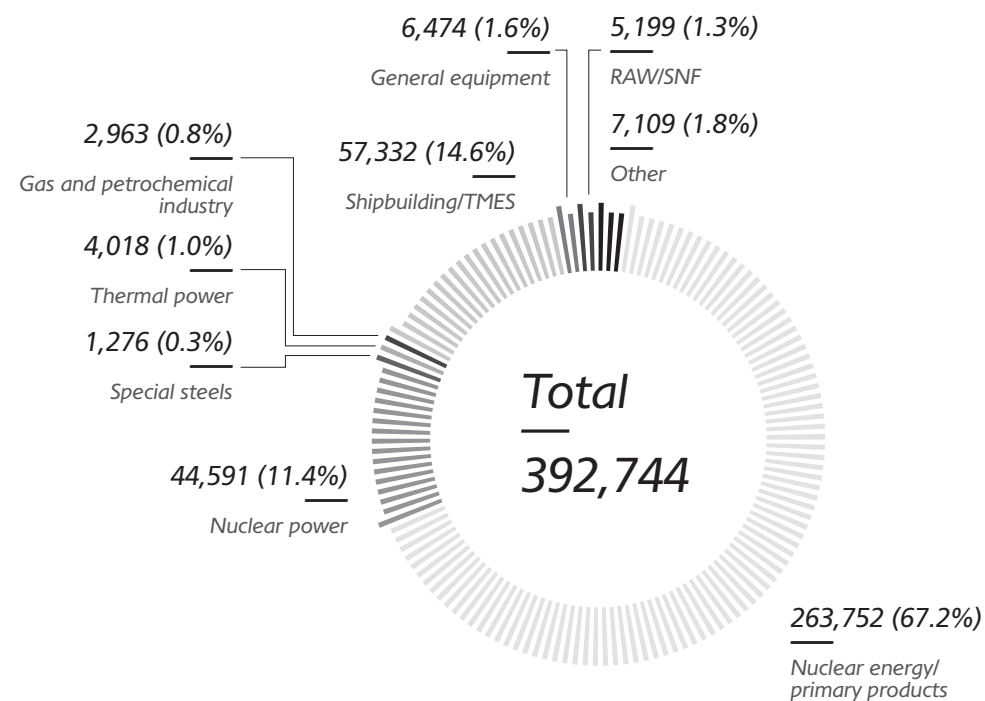
State Aid in 2015 (mln rubles)



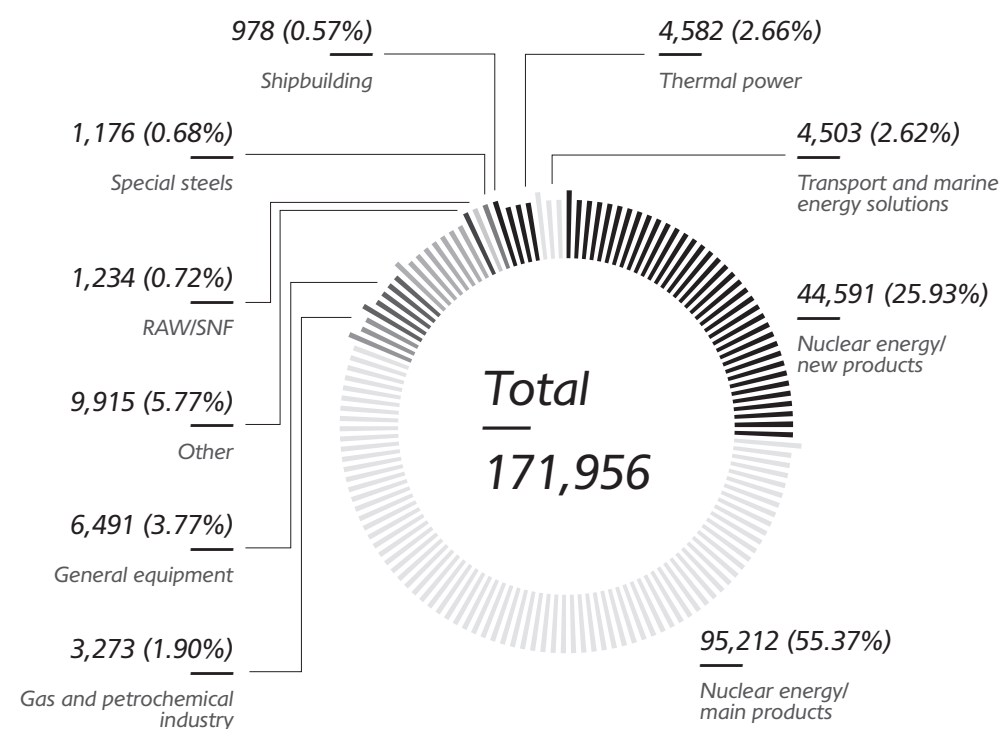
7 – This indicator is consolidated for the budget perimeter.
8 – Including industry funding.
9 – This indicator shows the receivables to payables ratio.
Calculated from the balance sheet item "Short-term receivables".

Commercial Activities

Sectoral structure of the order book at the year-end (mln rubles)

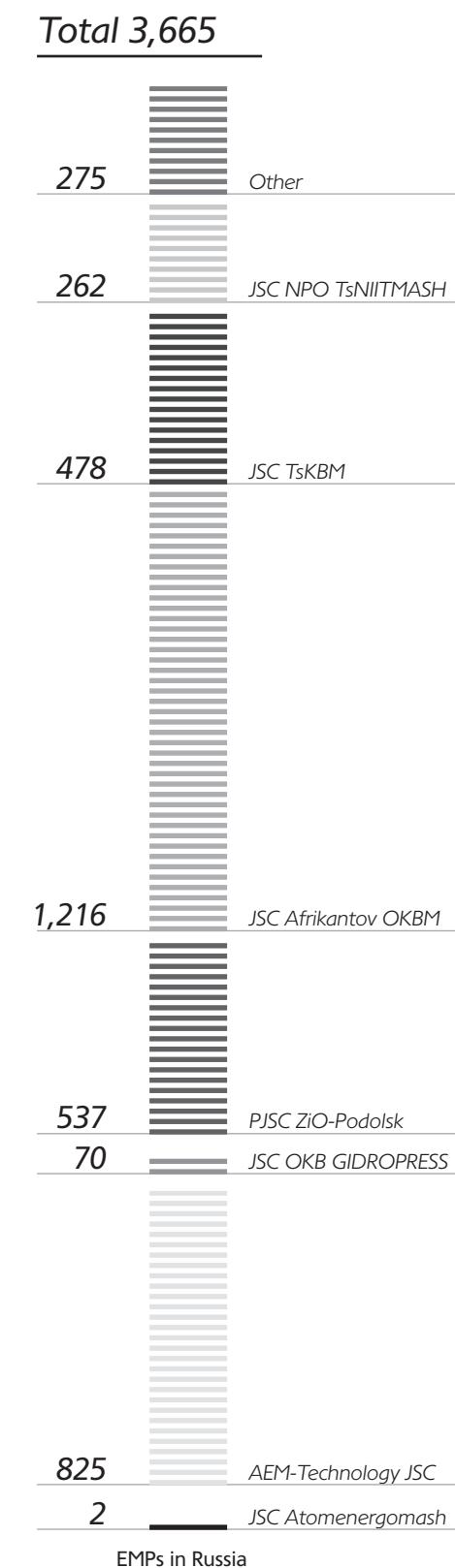


Structure of contracts concluded in the reporting year by operating segment (mln rubles)



Investment Activities

Volume of investments by EMP and country (mln rubles)



In the reporting year, the volume of financing of the investment program of the Company amounted to 3.7 bln rubles as compared to the plan of 6.1 bln rubles. Thus, the investment program of the Division has been completed by a rate of 60% in 2015 due to several factors: the rejection of the implementation of the activities and projects in view of the loss of their relevance; the postponement of the implementation of key projects for subsequent periods due to changes in the timing of delivery of equipment within the responsibility of the supplier; savings as a result of procurement procedures.

Results of Production Activities

The key performance indicators for production activities of the Division in 2015:



Nuclear Power

- supply of products for the following NPPs: Beloyarsk Nuclear Power Plant, Bilibino Nuclear Power Plant, Kola Nuclear Power Plant, Rostov Nuclear Power Plant (power units 3, 4), Kalinin Nuclear Power Plant, Smolensk Nuclear Power Plant, Balakovo Nuclear Power Plant, Novovoronezh Nuclear Power Plant, Novovoronezh Nuclear Power Plant-2, Kursk Nuclear Power Plant, Leningrad Nuclear Power Plant, Leningrad Nuclear Power Plant-2, Baltic Nuclear Power Plant, Mohovce Nuclear Power Plant, Tianwan Nuclear Power Plant-2, Belarusian Nuclear Power Plant, Kozloduy Nuclear Power Plant, Temelin Nuclear Power Plant (power units 1, 2), Bushehr Nuclear Power Plant, and Yuzhno-Ukrainsk Nuclear Power Plant;



Thermal Power

- commissioning of facilities that use products developed by JSC ZIOMAR EC and supplied by PJSC ZIO-Podolsk:
 - › new CCGT-220T power unit at CHPP-12 of MOSENERGO;
 - › power unit No. 1 at Chelyabinsk TPP;
 - › new combined heat and power plant at Nizhneturinskaya TPP;
- delivery of products to the production site of PJSC Uralkali, Verkhnetagilskaya TPP, Berezhovskaya TPP, Zhambyl TPP, Yaroslavl PGO-CHP, Yaivinskaya TPP, Shatura TPP, Pskov TPP, Perm TPP, etc.;
- completion of delivery of the equipment of the waste heat boiler for the Nadezhda Metallurgical Plant of the Zapolyarye branch of PJSC MMC Norilsk Nickel.



Gas and Petrochemical Industry

- delivery of equipment manufactured by PJSC ZIO-Podolsk and the Volgodonsk branch of AEM-Technology JSC to major Russian oil and gas companies:
 - › PJSC GAZPROM (completed execution of a major contract for the delivery of central dust collecting units for the Bovanenkovo-Ukhta main natural-gas transmission pipelines);
 - › PJSC LUKOIL (completed shipment of input column separating units and equipment for oil refineries of Yamalneftegaz business unit and Kogalymneftegaz business unit respectively);
 - › PJSC TATNEFT (for the large refinery complex of JSC TANeko under construction in Nizhnekamsk, the Republic of Tatarstan);
- delivery of ARAKO equipment for the PERN Przyjazn State Oil Transportation Company (Poland).



Special Steels

- shipment of castings and forgings for the RITM-200 reactor shell for the nuclear icebreaker LK-60 has been completed;
- shipment of the product to ArcelorMittal plants (Belgium, Germany, Spain, Luxembourg, France, the Czech Republic), Alstom Company (Poland), VoestAlpine (Austria), Iron Acciai Speciali (Italy), Bhushan Power (India), General Electric (the USA, Brazil), AH Industries (Denmark), OJSC Power Machines, Acciai Brianza (Italy), Eurostaal (Netherlands), Oberste-Beulmann (Germany), Euskalforging (Spain), Von Schaeuwen (Germany), ThyssenKrupp Rothe Erde (Germany), Voestalpine (Austria), Steinhoff (Germany), and other leading European companies.

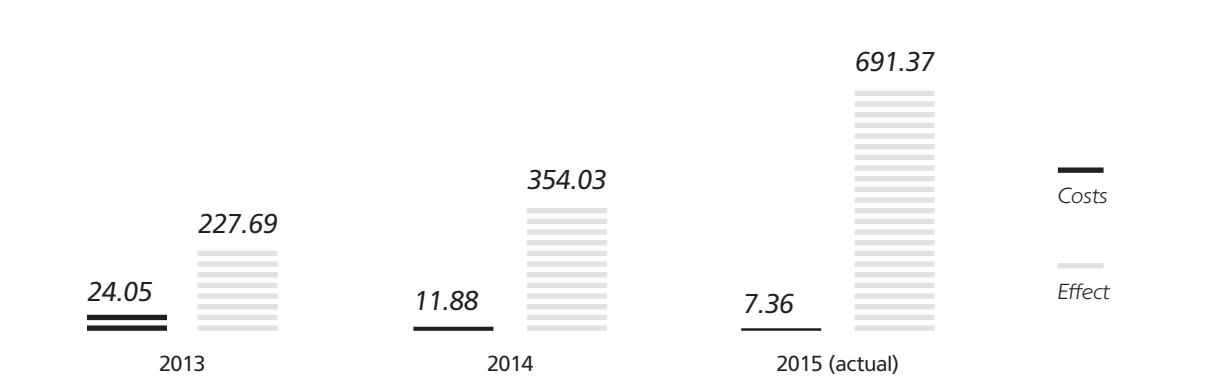
Quality and Industrial Safety

Enterprises holding ISO 9001 certificates

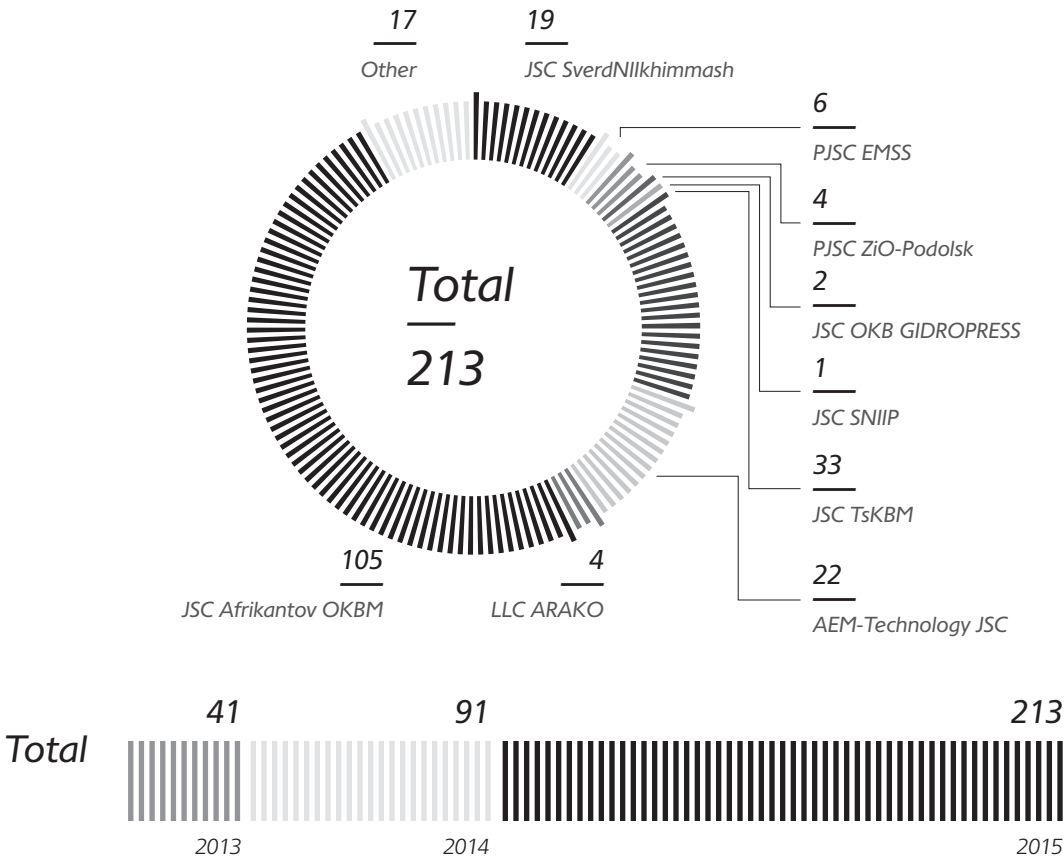
Name of the entity	Name of certification system	Certificate's validity period
ARAKO spol. s.r.o.	TÜV SÜD	September 14, 2018
JSC Atomenergomash	IQNet (the Russian Register of St Petersburg)	December 26, 2016
JSC OKB GIDROPRESS	BUREAU VERITAS Certification	October 23, 2017
JSC Afrikantov OKBM	TÜV Thüringen	April 17, 2017
JSC NPO TsNIITMASH	BUREAU VERITAS Certification	March 11, 2017
CJSC ATM	AFNOR Certification	November 14, 2016
AEM-Technology JSC	IQNet (the Russian Register of St Petersburg)	July 26, 2016
OJSC Venta	GOST R VCS	December 24, 2017
JSC VNIIAM	Evro-Reestr VCS	July 17, 2018
PJSC ZiO-Podolsk/JSC ZIOMAR EC	Lloyd's Register Quality Assurance	September 14, 2018
JSC SverdNIIkhimmash	Management System Register VCS	September 1, 2018
JSC SNIIP	TÜV CERT	September 15, 2018
JSC TsKBM	IQNet (LLC Test – St Petersburg)	June 30, 2017
LLC AAEM	IQNet (the Russian Register of St Petersburg)	September 15, 2018
LLC EMKO	IQNet (the Russian Register of St Petersburg)	April 13, 2018
PJSC EMSS	TÜV Thüringen	August 21, 2016

Optimization of Production Processes

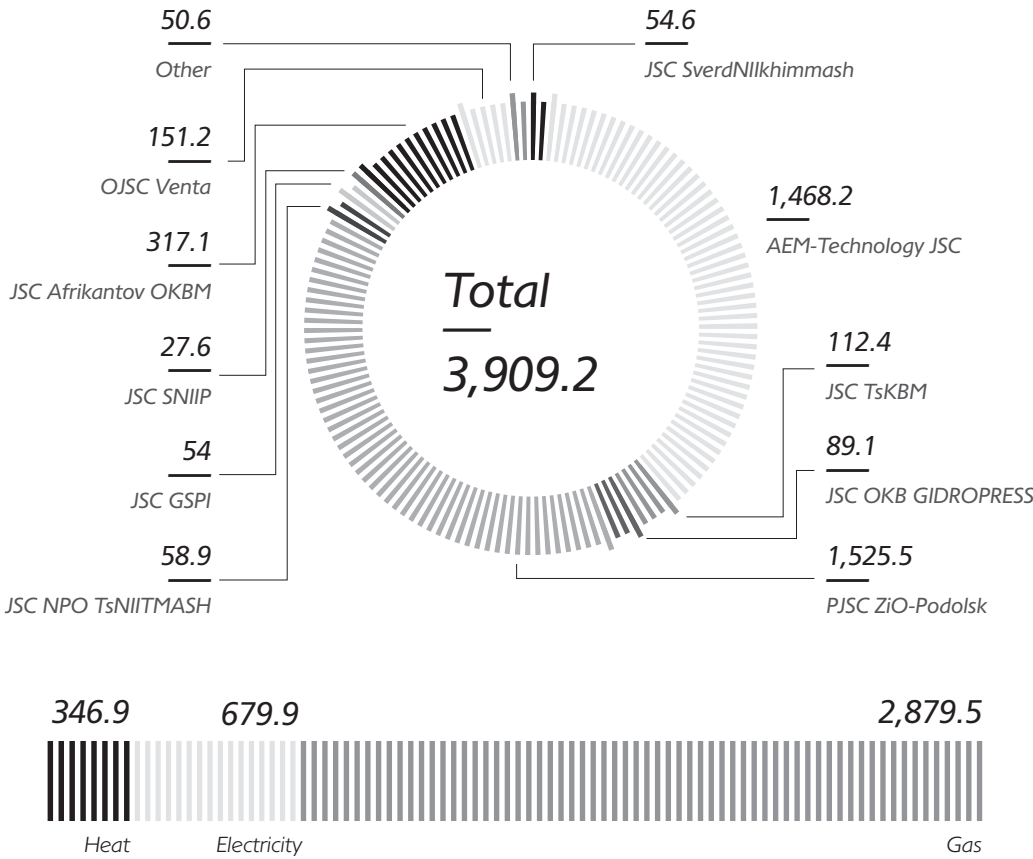
RPS costs and economic effect from RPS projects (mln rubles)



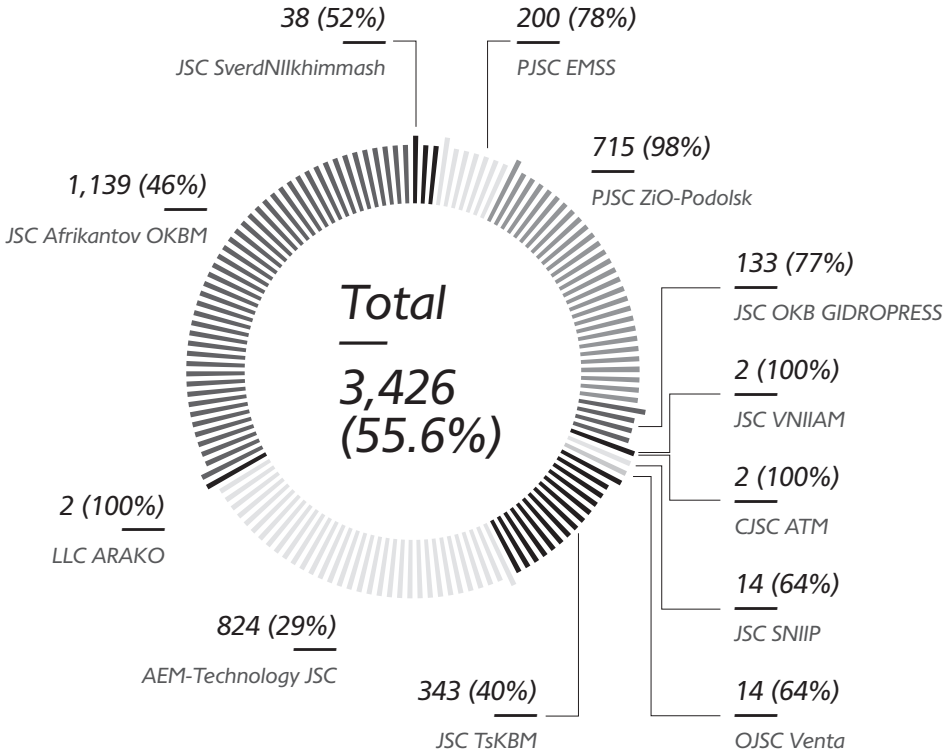
Number of RPS projects (pcs)



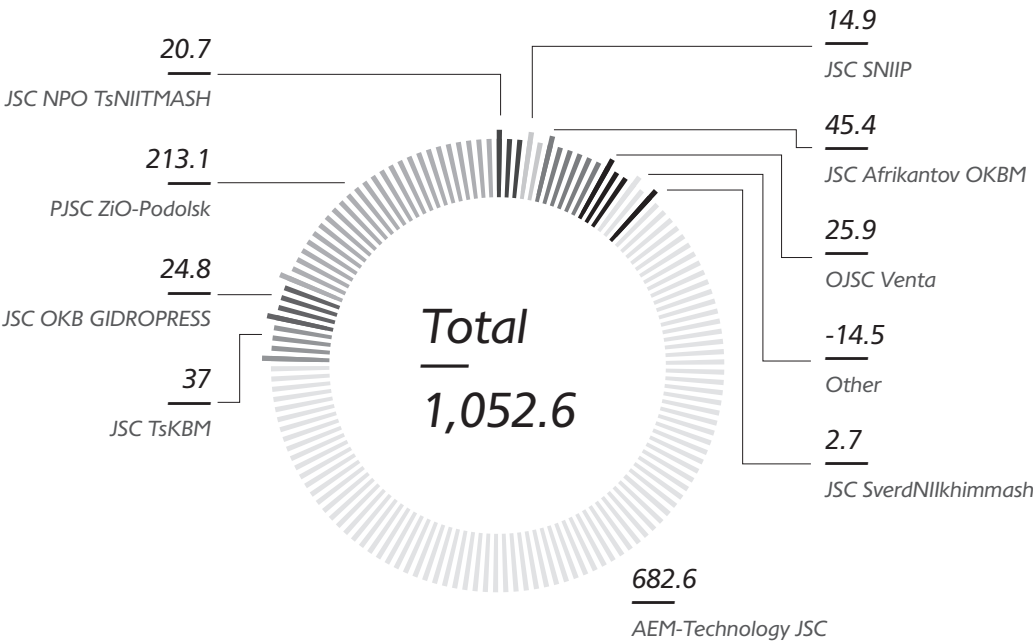
Energy Consumption (thousand GJ)¹⁰



Number of submitted proposals and share of realized proposals



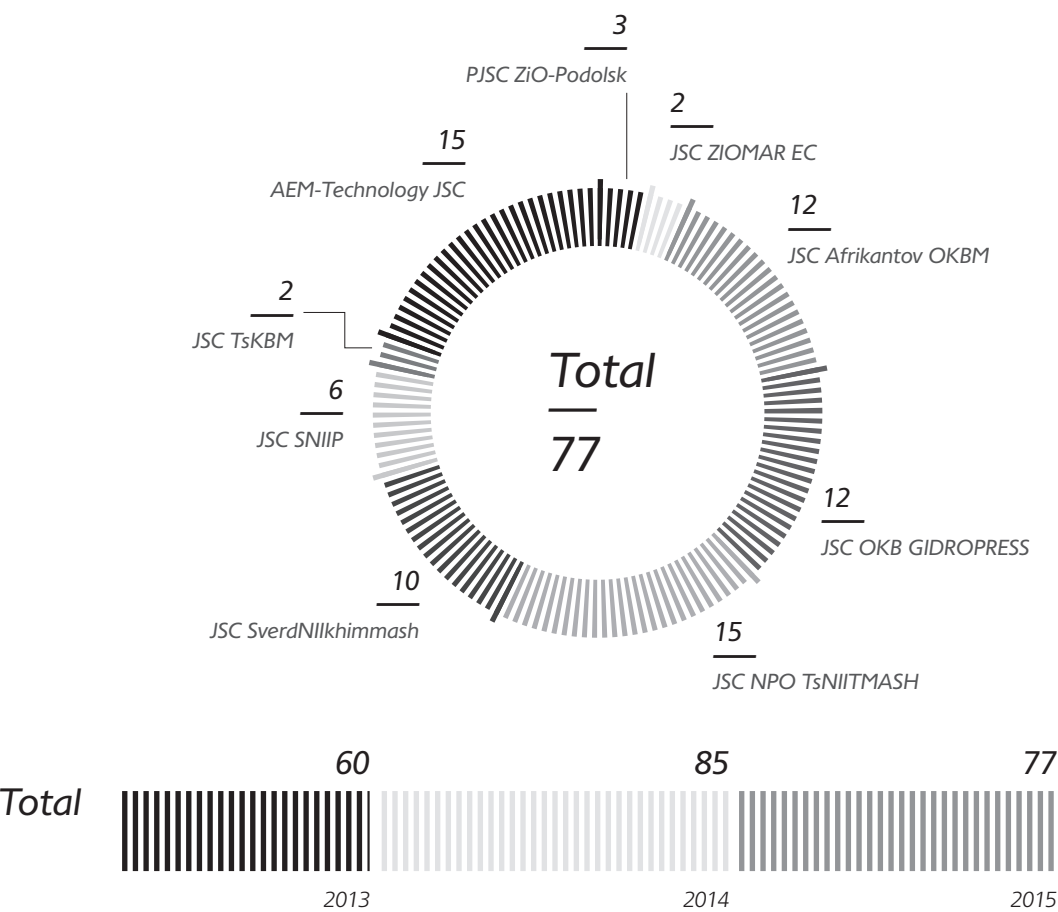
Energy savings (thousand GJ)



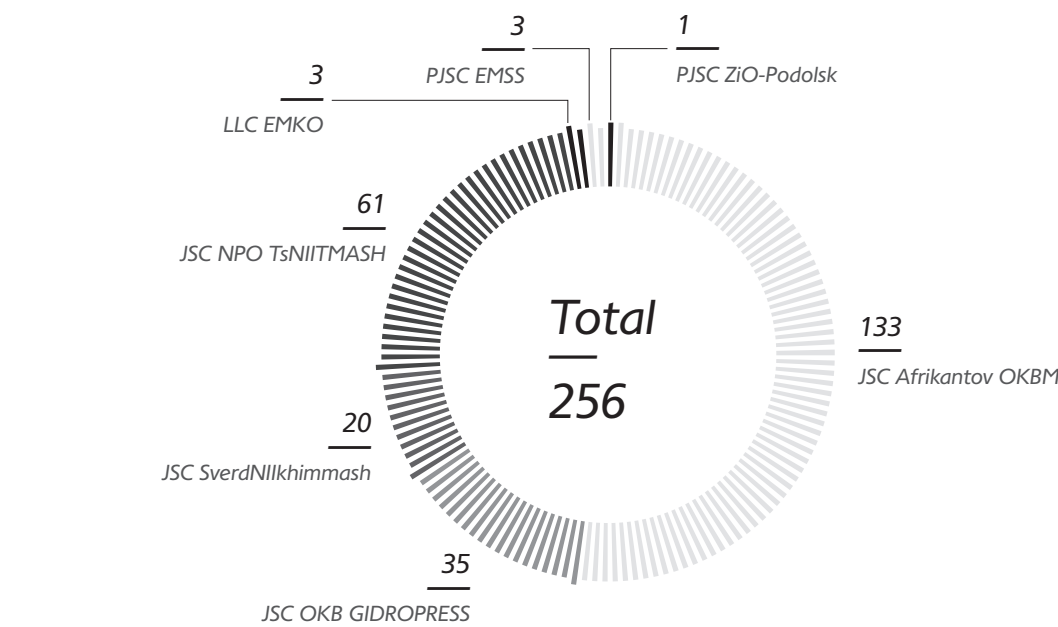
¹⁰ – The data were obtained by direct measurement.

Innovation Development

Number of patents and intellectual property certificates (pcs)



Research papers and works published in 2015 (pcs)



Participation in scientific conferences

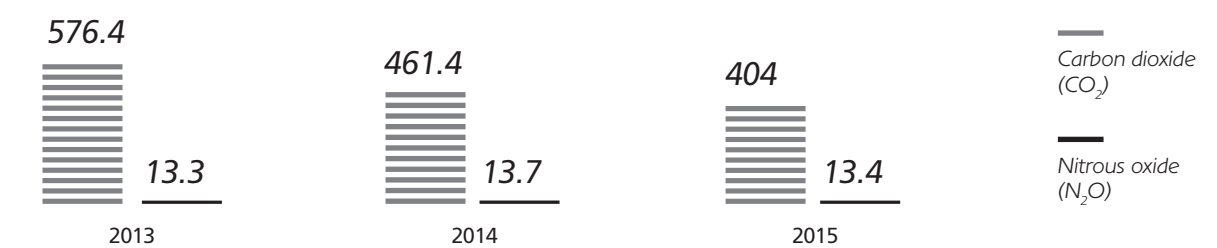
	1	224	110	36	35	2	5	3	7	4	2	Total
Domestic	1	31	8	0	5	0	1	1	3	0	2	62
International	2	119	82	24	16	2	3	0	3	2	0	255
with reports	PJSC EMSS	JSC GSPi	JSC SNIIP	JSC SverdNIIkhim mash	JSC TsKBM	PJSC ZiO-Podolsk	JSC Atomenergomash	AEM-Technology JSC	JSC NPO TsNIITMASH	JSC OKB GIDROPRESS	JSC Afrikantov OKBM	LLC AAEM

Environmental Management and Environmental Impact

Enterprises holding ISO 14001 certificates¹¹

Companies	Availability of ISO 14001 certificate
JSC SNIIP	YES
AEM-Technology JSC	Certification is planned for 2016
PJSC Energomashpetsstal	YES

Direct emissions of greenhouse gases (tons)

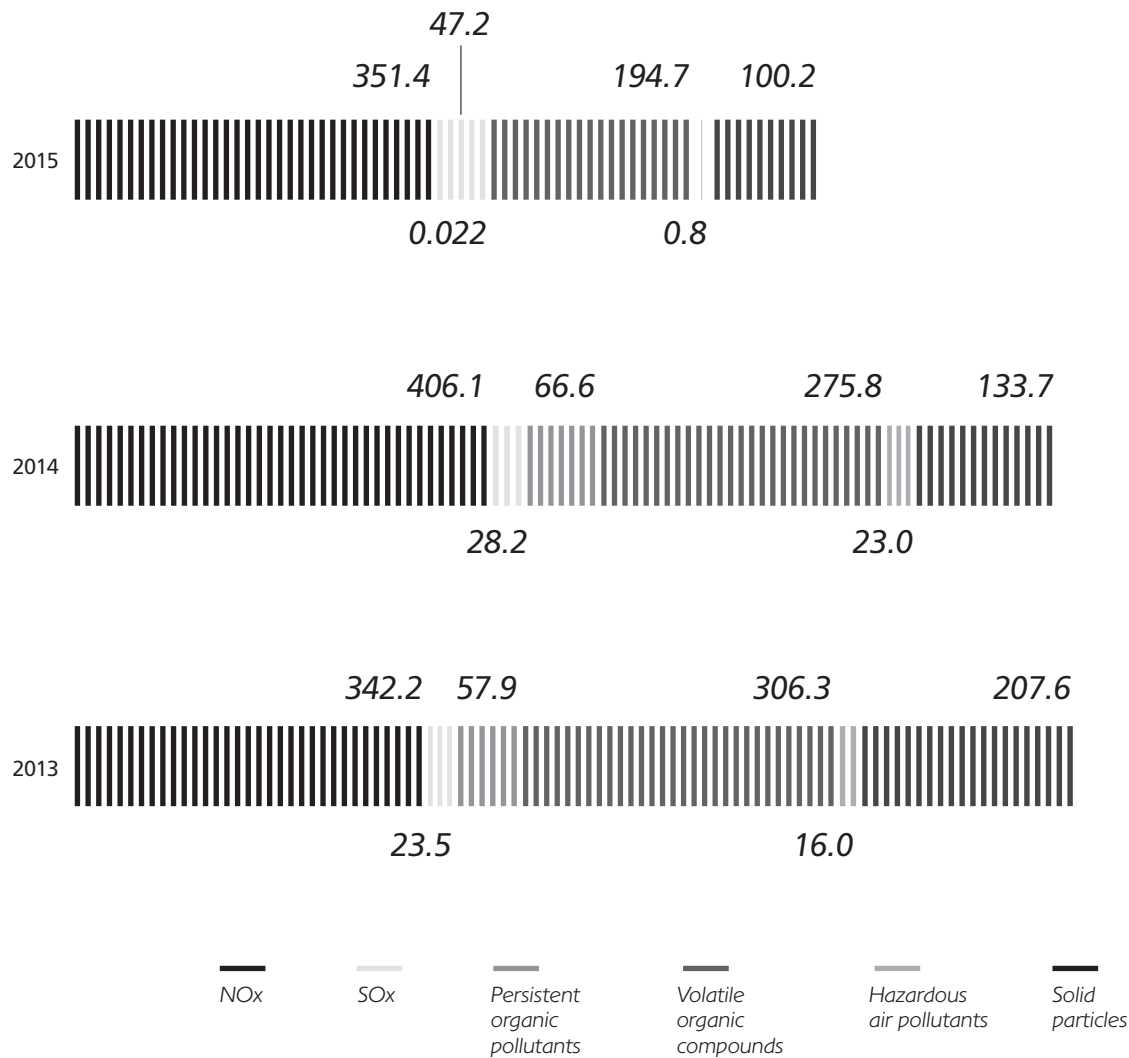


11 – ISO 14001 is a series of international standards on environmental management.

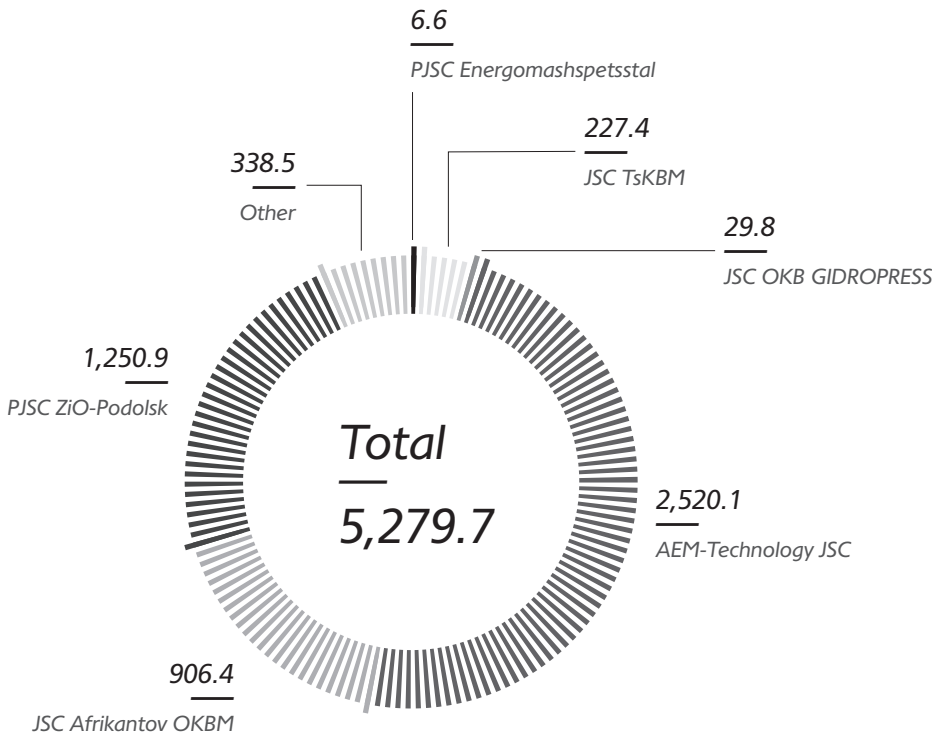
Emissions of ozone-depleting substances (tons)

Company	Substance type	2013	2014	2015
JSC SverdNIikhimmash	CCl ₄ (carbon tetrachloride)	0.04	0.04	0.04
JSC Afrikantov OKBM	CCl ₄ (carbon tetrachloride)	0.068	0.018	0.022
	CHCl ₃ (trichloromethane)	-	0.03	0.026
PJSC ZiO-Podolsk	CF ₃ CCl ₃ (trifluorotrichloroethane)	0.5	-	-
	CHCl ₃ (trichloromethane)	0.006	-	-
	CCl ₄ (carbon tetrachloride)	0.003	0.013	0.013
	CF ₃ Cl (trifluorochloromethane)	0.1	0.1	-

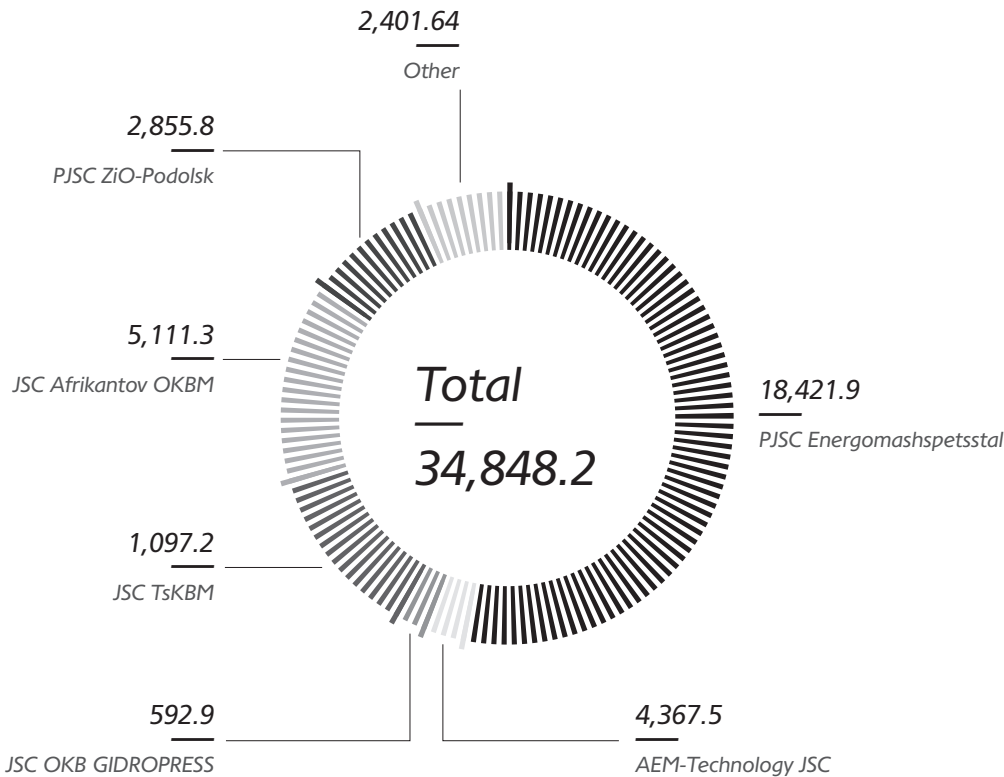
Atmospheric emissions of NOx, SOx, and other significant pollutants (tons)



Total weight of hazardous waste (tons)

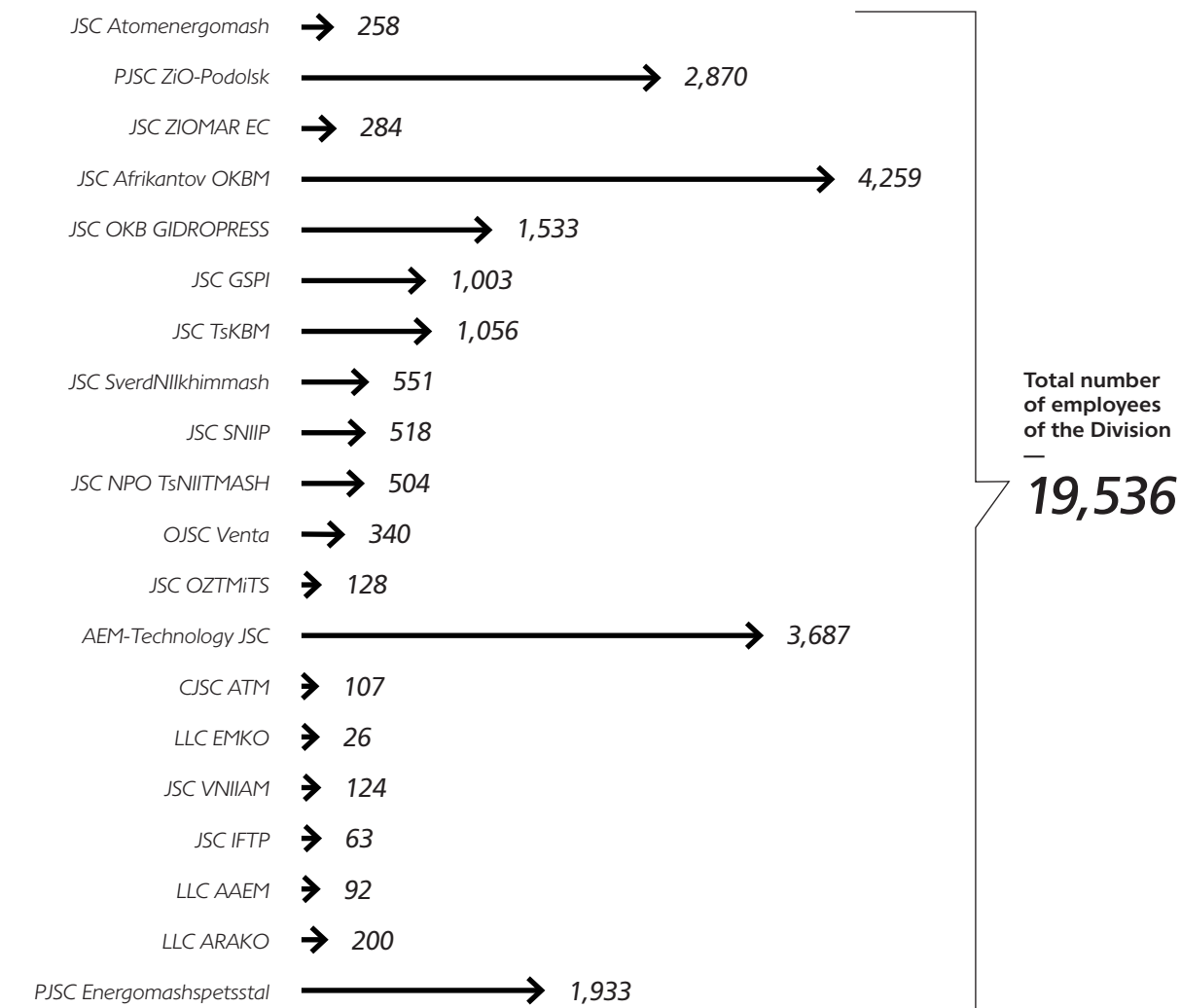


Total weight of non-hazardous waste (tons)

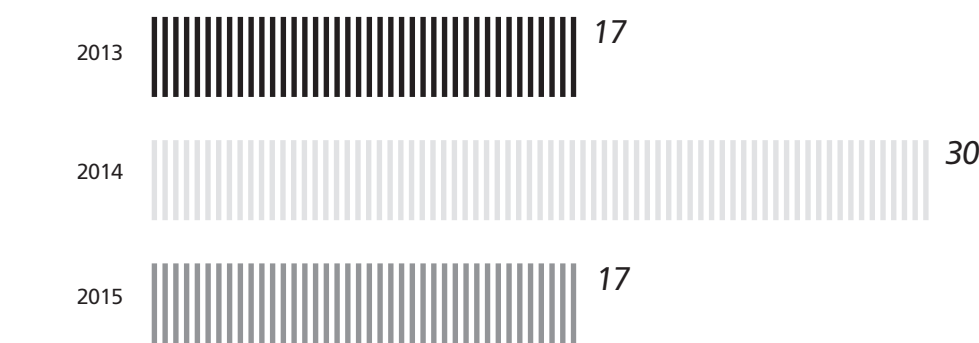


Personnel Composition

Number of employees (persons)

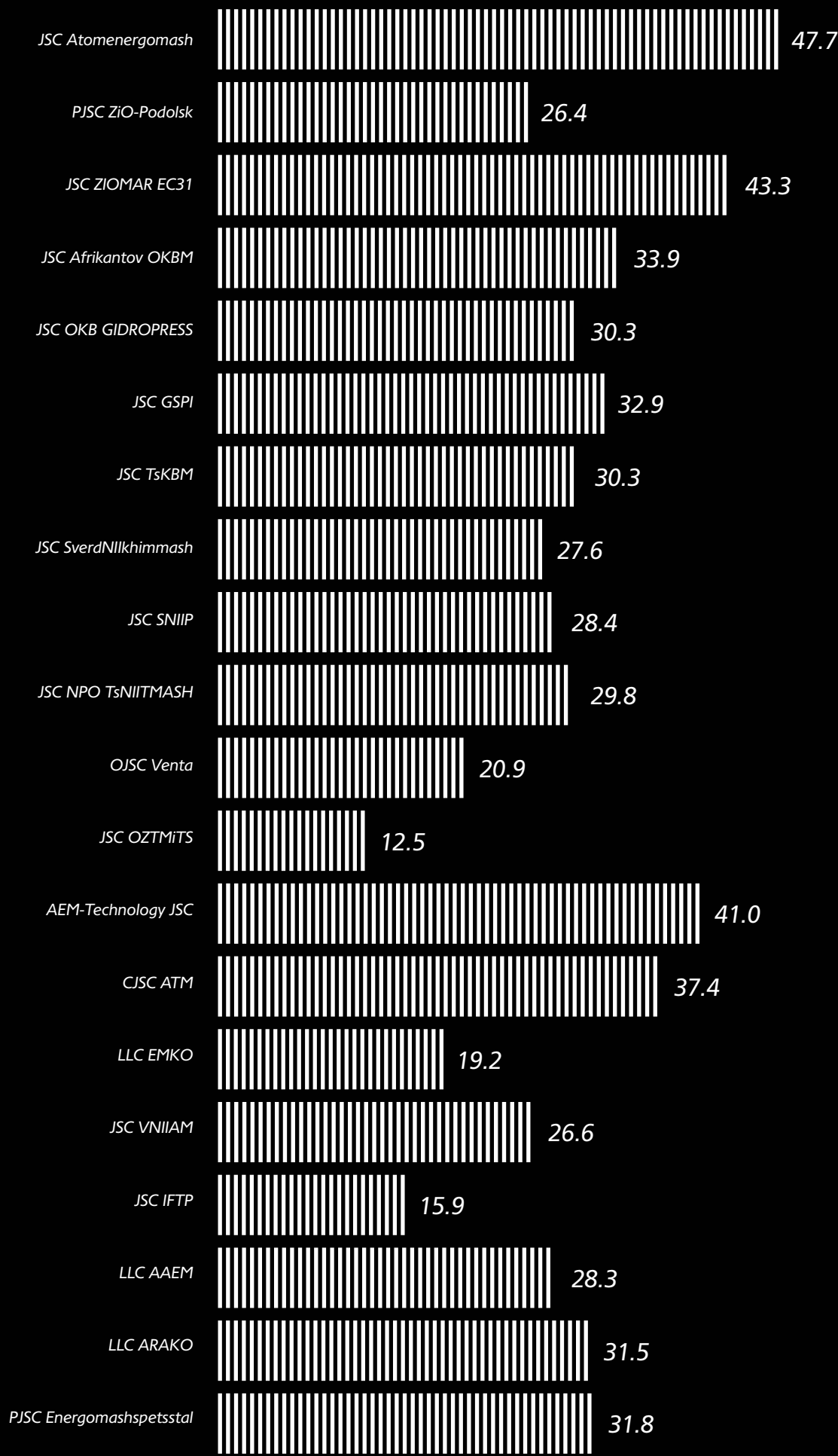


Personnel turnover (%)

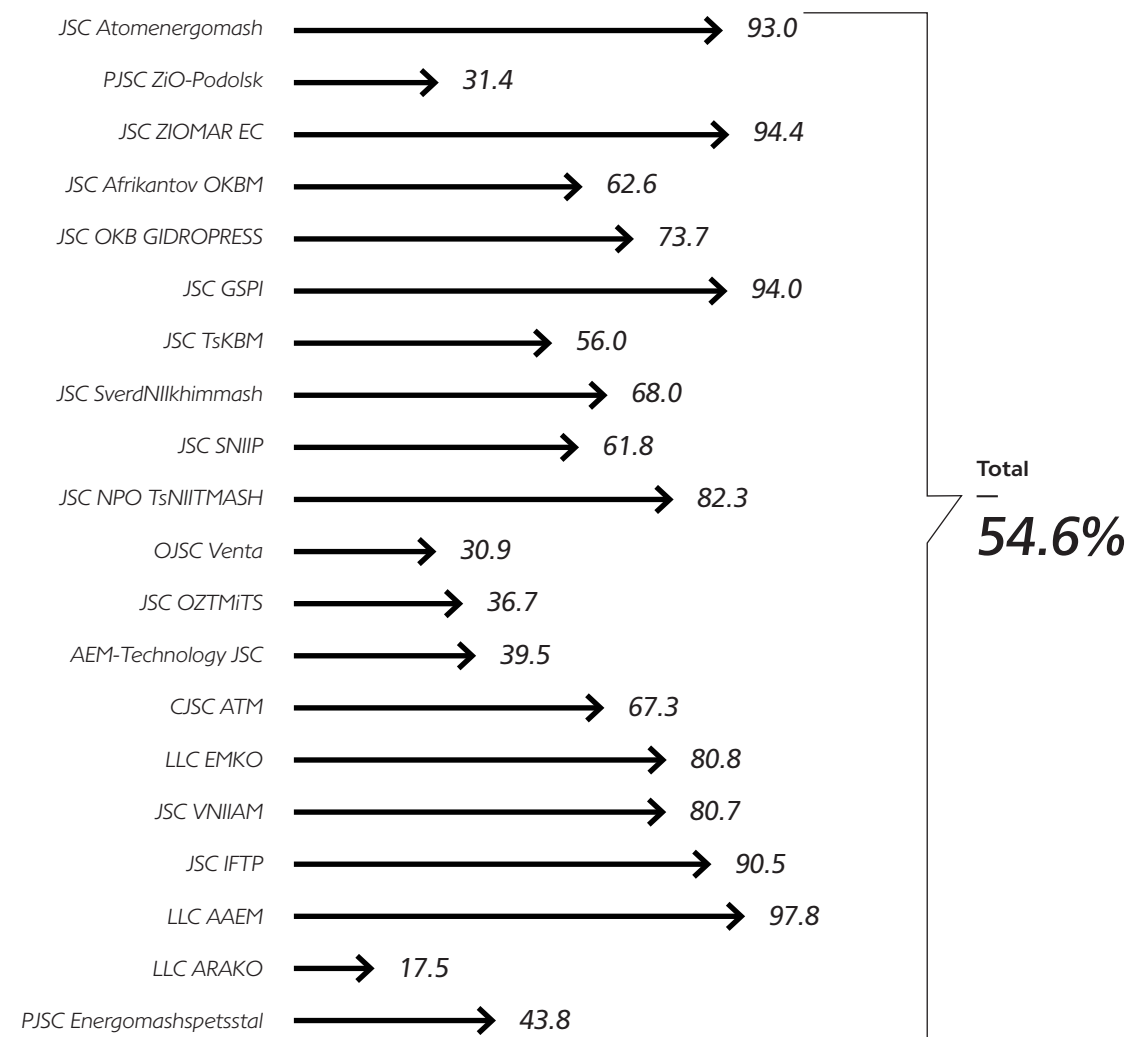


JSC Atomenergomash maintains a rather high percentage of employees of enterprises who have worked for more than five years – the average value for the Division: more than **56%**

Share of specialists under 35 years old (%)



Share of employees with higher education (%)



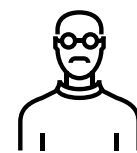
Candidates and Doctors of Science (persons)



Candidates

83	JSC NPO TsNIITMASH
83	JSC Afrikantov OKBM
58	JSC OKB GIDROPRESS
18	JSC SNIIP
11	JSC SverdNIkhimmash
88	Other

Total
341

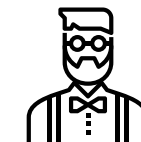


Doctors

34
15
9
7
0
8

Total
73

RAS Academicians, professors (persons)



Academicians

1	JSC Afrikantov OKBM
1	JSC OKB GIDROPRESS
0	JSC NPO TsNIITMASH
0	JSC Atomenergomash
0	JSC GSPI
Total	
2	



Professors

5
2
19
1
1
Total
28

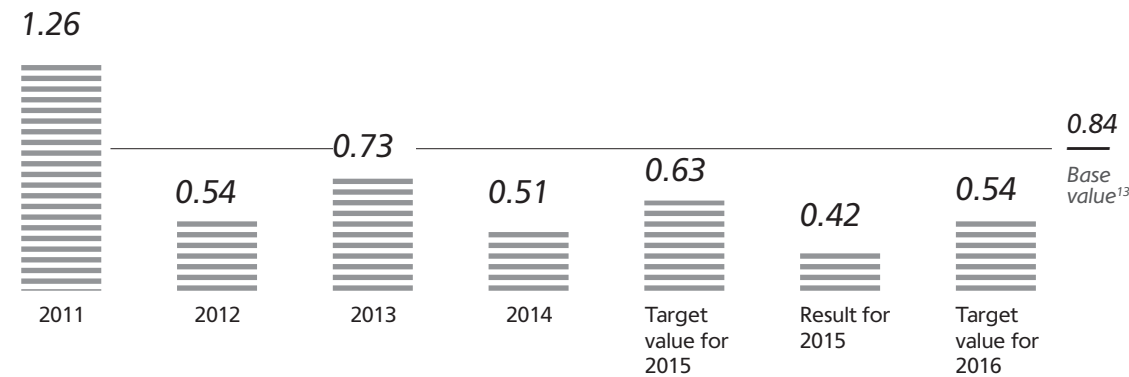
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Occupational Safety and Health

Enterprises holding OHSAS 18001 certificates¹²

EMPs	Availability of OHSAS 18001 certificate
JSC ZIOMAR EC	Certification is planned for 2016
PJSC ZiO-Podolsk	Certification is planned for 2016
JSC SNIIP	YES
OJSC Venta	Certification is planned for 2016
AEM-Technology JSC	Certification is planned for 2016
JSC VNIIAM	YES
PJSC Energomashspetsstal	Certification is planned for 2016

LTIFR for the Division as a whole





¹² – OHSAS 18000 is a series of standards containing requirements and guidelines for the development and implementation of occupational safety and health management systems, which enables organizations to manage the risks integrated in their management system and improve its functioning.
¹³ – The baseline value: the average value for 3 years.









Hydrotesting of a nuclear reactor in a special underground bench (the Atomash branch of AEM-Technology JSC in Volgogradsk)

Frequency of occupational accidents¹⁴

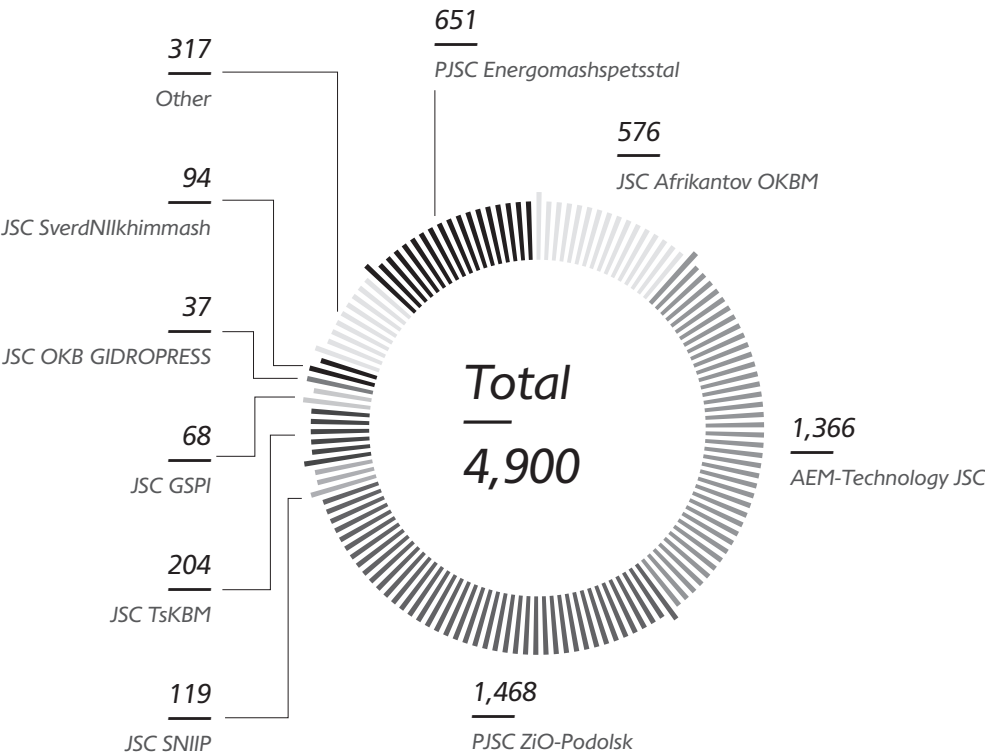
	2013		2014		2015	
						
Number of injuries	22	7	18	1	11	4
Number of days lost owing to injuries	1,629		1,714		874	
LTIFR	0.73		0.51		0.42	

Occupational injuries and diseases

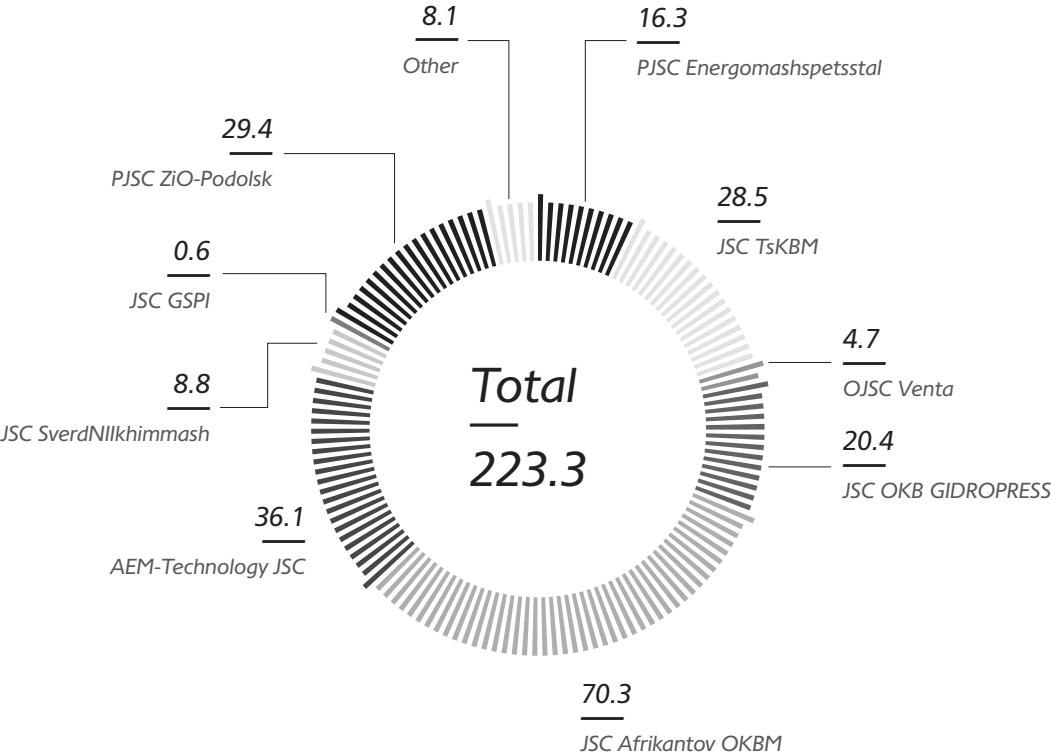
	2013		2014		2015	
						
PJSC Energomashspetsstal	1	-	-	-	-	-
AEM-Technology JSC	2	-	2	-	1	-

¹⁴ - In enterprises that are not included in the table, no injuries were recorded in the period.

Number of employees working under harmful conditions (people)



Occupational safety and expenditures (mln rubles)



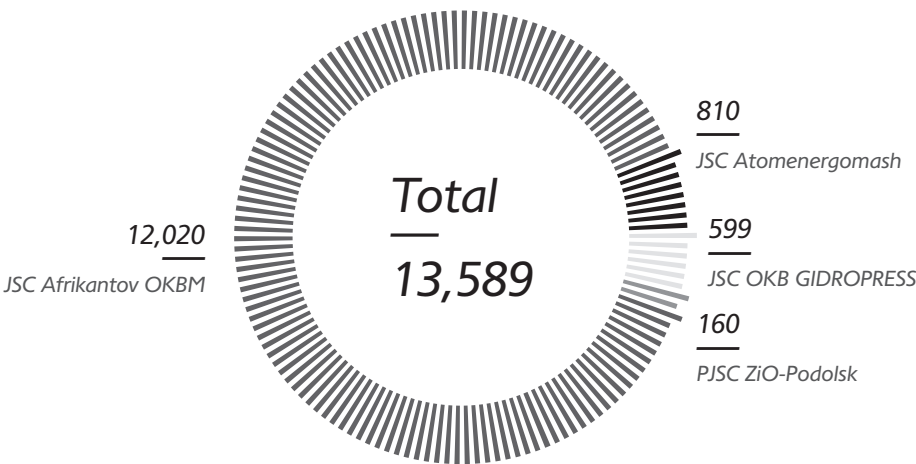


Social Responsibility

Payments to the budgets of different levels (thousand rubles)

Budget Type	2013		2014		2015		2016 (forecast)	
	Assessed (thousand RUB)	Paid (thousand RUB)	Assessed (thousand RUB)	Paid (thousand RUB)	Assessed (thousand RUB)	Paid (thousand RUB)	Assessed (thousand RUB)	Paid (thousand RUB)
Total	3,623,424	3,752,241	4,805,678	3,744,199	6,552,303	6,544,455	5,064,720	4,931,865
including:								
Federal budget	3,245,339	3,067,000	4,367,121	3,355,674	5,740,392	5,696,057	4,670,327	4,614,997
Budgets of the constituent entities of the Russian Federation	285,702	582,169	334,773	293,454	729,197	732,116	303,414	256,814
Local budgets	92,383	103,072	103,785	95,072	82,714	116,282	90,979	60,054

Charity expenses (thousand rubles)



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