

**75 YEARS  
OF NUCLEAR  
INDUSTRY**

AHEAD  
OF THE TIMES



**PERFORMANCE  
OF THE MECHANICAL  
ENGINEERING DIVISION  
IN 2019**



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OF NUCLEAR  
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*AHEAD  
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**ATOMENERGOMASH**  
**ROSATOM**

# **PERFORMANCE OF THE MECHANICAL ENGINEERING DIVISION IN 2019**

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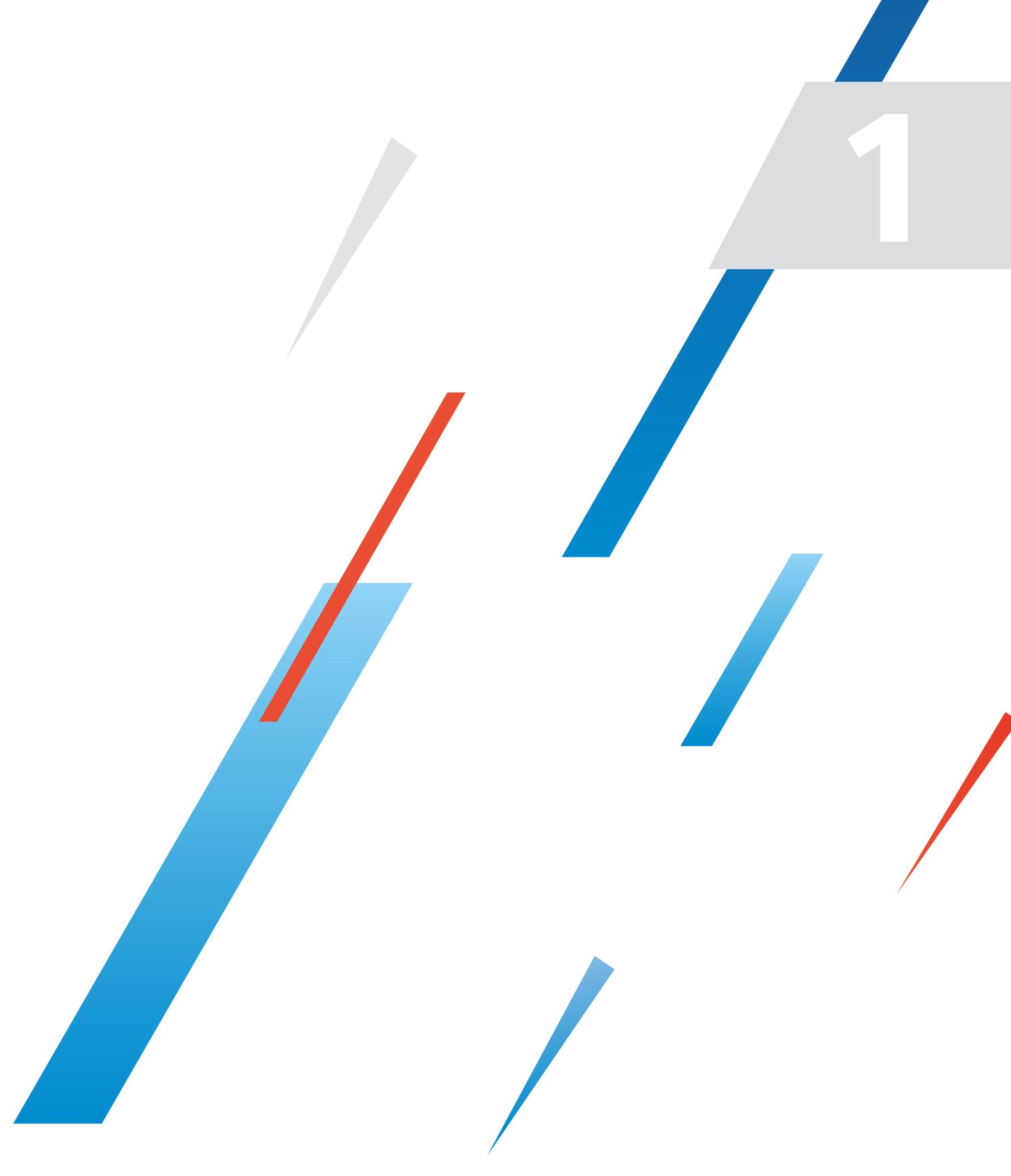
# 1. MESSAGE FROM THE HEAD OF THE DIVISION

(GRI 102-14)

*Since 2012, our consolidated revenue has almost doubled, and at year-end 2019, it totalled RUB 75.1 billion. It is expected to double again over the next two years. Such volumes have never before been recorded in the nuclear engineering industry, even in the most prosperous Soviet times.*

**ANDREY NIKIPELOV**

Head of the Mechanical Engineering Division,  
Chief Executive Officer of the holding company of the Division,  
JSC Atomenergomash



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Dear shareholders, colleagues and partners,

I would like to present the operating results of the Mechanical Engineering Division for 2019.

The past year was full of important events that enabled the Mechanical Engineering Division of State Atomic Energy Corporation Rosatom to remain a leader on the Russian power machine engineering market. Since 2012, our consolidated revenue has almost doubled, and at year-end 2019, it totalled RUB 75.1 billion. It is expected to double again over the next two years. Such volumes have never before been recorded in the nuclear engineering industry, even in the most prosperous Soviet times. In 2019, JSC Atomenergomash expanded its portfolio of orders by adding six NPP power units. In the shipbuilding industry, contracts for the supply of RITM-200 units for the fourth and fifth new-generation icebreakers were concluded.

Today, we have started the production of a nuclear steam generating plant (NSGP) and the turbine island for Akkuyu NPP, Rooppur NPP, Kursk NPP-2, new units of Tianwan NPP and Kudankulam NPP. We are preparing to start production for Xudabao NPP and El Dabaa NPP. As early as next year, we will start to ship three or four sets annually. Up to 10 sets of equipment will be in production simultaneously.

At present, the Company is a single-source supplier of NSGP equipment for a total of 17 NPP power units. Furthermore, in partnership with General Electric, our joint venture Turbine Technology AAEM LLC is carrying out 11 contracts for the package supply of a turbine island, including turbine generator sets.

We have launched an investment programme, which includes upgrading our machine tools and introducing digital systems. It is aimed at eliminating bottlenecks and enabling timely production of equipment for NSGPs and turbine islands, taking into account the growing volumes.

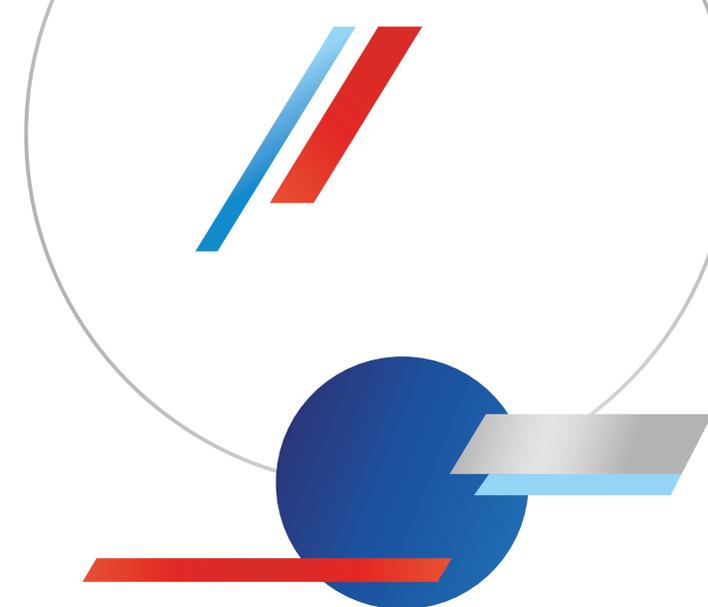
As for new products, including equipment for the NPP turbine island, their share in revenue currently exceeds 50%.

Our 10-year portfolio of orders almost tripled between 2014 and 2019, reaching RUB 756.2 billion, and this increase was driven to a large extent by new products. For example, the portfolio of orders for equipment for waste incineration plants alone exceeds RUB 24 billion.

We not only supply boiler equipment, but have also formed a consortium with Hitachi. Together we produce almost one hundred percent of equipment for plants in the Moscow Region. In addition, we have made arrangements whereby PJSC ZiO-Podolsk will implement projects outside Russia. The first contract has already been signed: the enterprise is producing a replacement set of steam superheaters for steam boilers at the Riverside incinerator in the UK. Their delivery is scheduled for 2020.

Another important area of our business is the oil, gas and petrochemical industry, including equipment for the production of liquefied natural gas. For instance, last year, the first domestically manufactured heat exchangers for the Yamal LNG project were delivered to the customer from PJSC ZiO-Podolsk plant. This is the main equipment used in gas liquefaction. In addition, the first cryogenic pumps manufactured by JSC Afrikantov OKBM, which are required for pumping LNG onto tankers, were shipped. JSC D.V. Efremov Institute of Electrophysical Apparatus produced a test bench designed specifically for testing pumps for a medium-scale LNG plant. In addition, under instructions from the Government of the Russian Federation, State Atomic Energy Corporation Rosatom is building a test bench for a large-scale LNG plant, which will be the first facility of this kind in Russia and the third one in the world. It will be used to test the entire range of pumps and valves required for the implementation of domestic LNG projects.

Our current market position and development plans require us to revise the global positioning of JSC Atomenergomash



**Andrey Nikipelov**

Head of the Mechanical Engineering Division, Chief Executive Officer of the holding company of the Division, JSC Atomenergomash



for the period from 2020 through 2030, in order to ensure that the Division is able to implement the ambitious road map of State Atomic Energy Corporation Rosatom for the construction of nuclear power plants, while at the same time maintaining its position in the markets for related products. In the long term, until 2030, we need to gradually replace orders from the nuclear industry with external sources of revenue, including our own products, to achieve targets for the share of foreign revenue and to expand product offers within the current scope of the Division's business.

Accordingly, in 2020, our strategic priorities are to become part of global production chains by participating in partner projects and leveraging the advantages of being a leader in

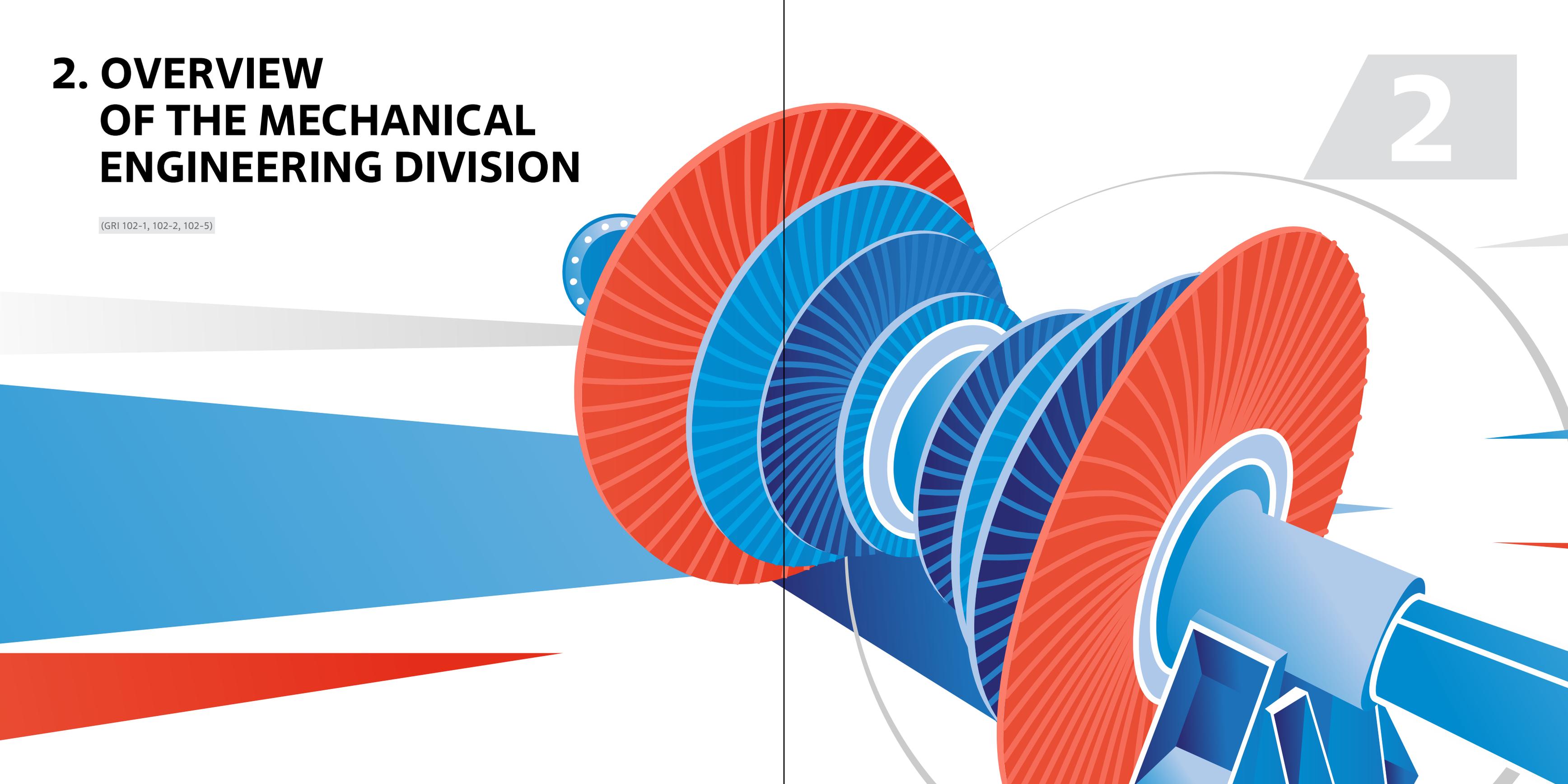
the Russian market and the reputation of a reliable partner, and to develop our own capabilities, technological solutions and products.

In conclusion, I would like to thank our customers and partners for fruitful cooperation, and the entire team for their professionalism.

# 2. OVERVIEW OF THE MECHANICAL ENGINEERING DIVISION

(GRI 102-1, 102-2, 102-5)

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## 2.1. CORE BUSINESS AREAS

The Mechanical Engineering Division of State Atomic Energy Corporation Rosatom (ROSATOM) (hereinafter referred to as the Division or the Mechanical Engineering Division) is one of the largest groups of power machine engineering enterprises in Russia 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 industries, shipbuilding and the special steel market. JSC Atomenergomash (the Company) is the holding company of the Division.

**At year-end 2019, the Division's 10-year portfolio of orders exceeded RUB 756 billion, while revenue exceeded RUB 75 billion.**

The Division includes research, engineering and manufacturing organizations in Russia, Europe and the CIS. The Division's production and design capabilities cover the entire production chain of the main equipment for nuclear power plants and comprise more than 10 production sites, including the restored capacities of the giant of the Soviet nuclear industry, Atommash (Volgodonsk).

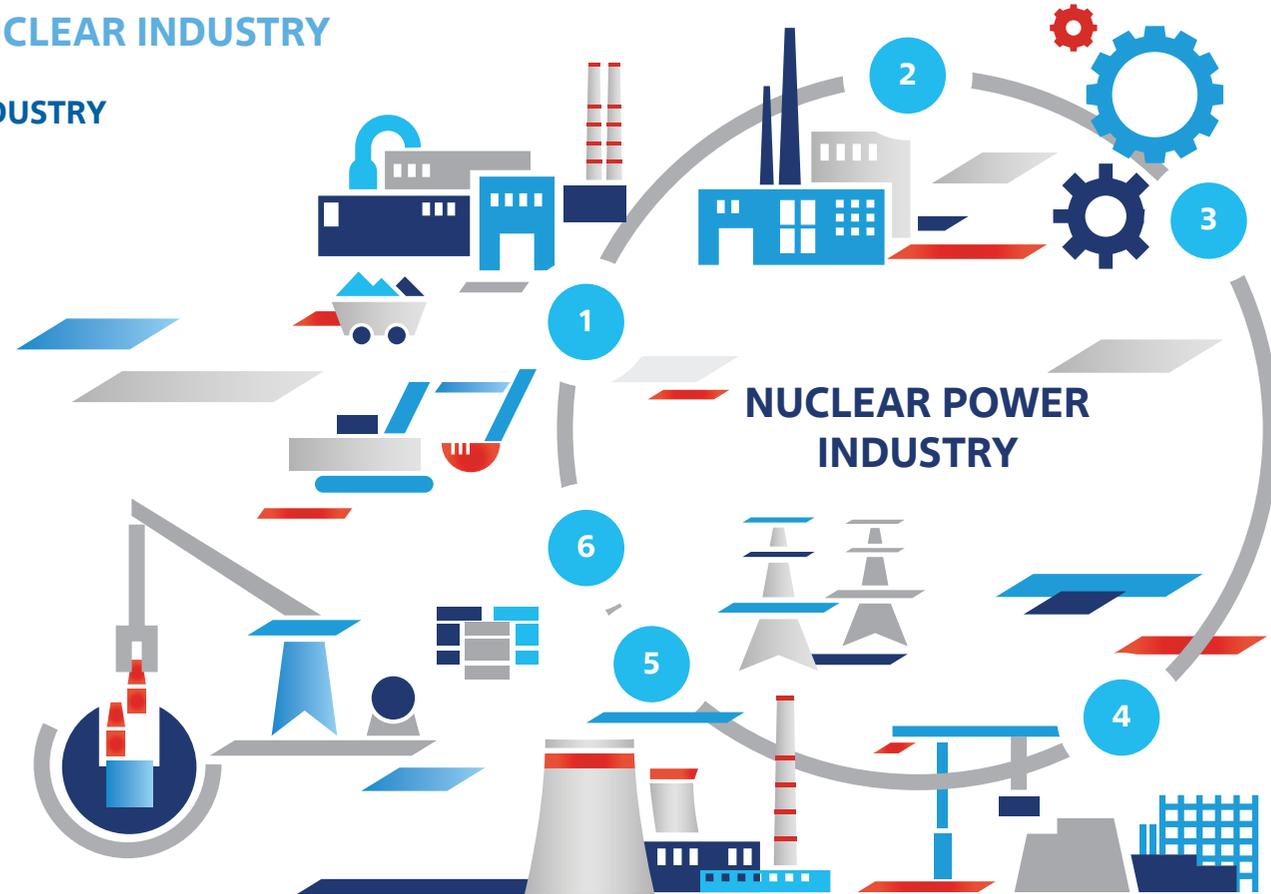
The unique production and technological capabilities of the Division's enterprises enable us to offer equipment meeting the highest standards.

**Equipment manufactured by the Division's enterprises is used at power generation facilities in more than 20 countries, including 14% of nuclear power plants in the world and 40% of thermal power plants in Russia and the former Soviet Union countries.**



# ROLE OF THE MECHANICAL ENGINEERING DIVISION IN THE STRUCTURE OF THE NUCLEAR INDUSTRY

## NUCLEAR INDUSTRY STRUCTURE



- 1 MINING DIVISION**
  - Geological exploration
  - Uranium mining
  - Ore processing
- 2 FUEL DIVISION**
  - Conversion
  - Enrichment
  - Fuel fabrication
- 3 MECHANICAL ENGINEERING DIVISION**
  - Equipment design
  - Equipment manufacture
  - Equipment supply
  - Installation and pre-commissioning
  - Maintenance and upgrade
- 4 ENGINEERING DIVISION**
  - Design and engineering
  - NPP construction
- 5 POWER ENGINEERING DIVISION**
  - Power generation at NPPs
  - NPP servicing
- 6 BACK END**
  - SNF management
  - Decommissioning
  - RAW management



- 7 R&D**
- 8 DEVELOPING THE NORTHERN SEA ROUTE**
- 9 WIND POWER**
- 10 NUCLEAR MEDICINE**
- 11 ADVANCED MATERIALS AND TECHNOLOGIES**
- 12 DIGITAL PRODUCTS**
- 13 INFRASTRUCTURE SOLUTIONS**
- 14 ADDITIVE MANUFACTURING AND ENERGY STORAGE SYSTEMS**
- 15 PROCESS CONTROL SYSTEMS AND ELECTRICAL ENGINEERING**
- 16 ENVIRONMENTAL SOLUTIONS**

## 2.2. CORPORATE GOVERNANCE SYSTEM

The corporate governance system at JSC Atomenergomash is based on the requirements of Russian legislation in the field of corporate law.

The Company applies some provisions of the Corporate Governance Code recommended in Letter No. 06-52/2463 of the Bank of Russia dated April 10, 2014, with due regard to special characteristics of the Corporation's legal status stipulated in laws and regulations of the Russian Federation that ensure consistent management of organizations in the nuclear industry. These provisions are incorporated in a number of local regulations of the Company. (GRI 102-18)

## 2.3. GOVERNING BODIES

In accordance with the Articles of Association, the Company has the following governing bodies<sup>1</sup>:

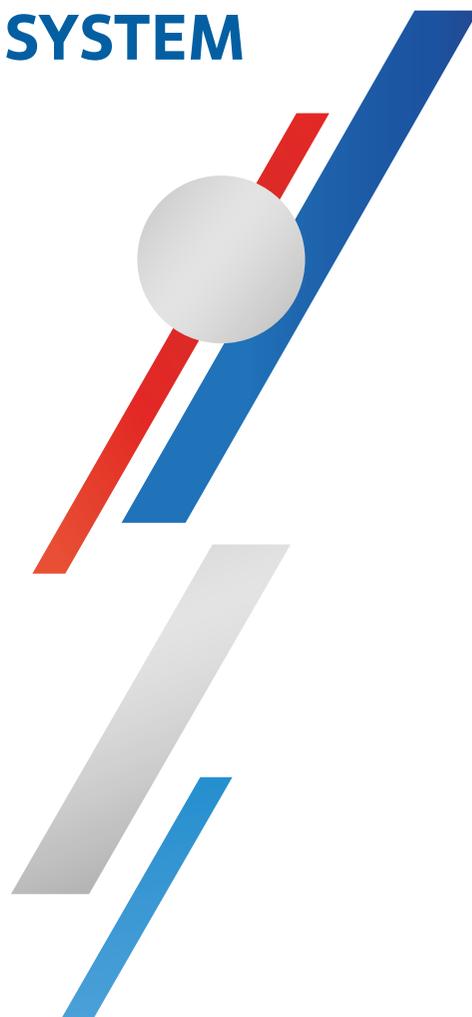
- **The General Meeting of Shareholders** (Sole Shareholder);

- **The Board of Directors;**

- **The Chief Executive Officer** (Sole Executive Body).

(GRI 201-4, GRI 102-10)

<sup>1</sup> The Company has no Audit Committee as the internal audit of its operations is conducted in accordance with the Company's internal documents and local regulations.



## 2.4. AUTHORIZED CAPITAL STRUCTURE

As at January 1, 2019, the Company's registered authorized capital totalled RUB 2,566,657 (two million five hundred and sixty-six thousand six hundred and fifty-seven roubles) and was divided into 2,566,657 (two million five hundred and sixty-six thousand six hundred and fifty-seven) ordinary registered shares (hereinafter referred to as 'shares') with a par value of RUB 1 each.

As at December 31, 2019, taking into account additional share issuance in December, the Company had 2,602,394 (two million six hundred and two thousand three hundred and ninety-four) outstanding ordinary registered shares.

100% of the outstanding shares are held by Joint-Stock Company Atomic Energy Power Corporation.

### GENERAL MEETING OF SHAREHOLDERS

The powers and the procedure for convening and holding the General Meeting are stipulated in the Company's Articles of Association and the Federal Law on Joint-Stock Companies. In 2019, two resolutions were passed, and three issues were considered.

In 2019, no dividends were paid as the Company did not make any decisions on declaring and paying out dividends for 2018, the first quarter, the first half or the nine months of the reporting year. The Company adopted no local regulations governing its dividend policy.

No.	Resolution date	Matters discussed
1	April 16, 2019	1) Establishment of the sole executive body of JSC Atomenergomash and determination of its term of office.
2	June 28, 2019	1) Distribution of profit (losses) of JSC Atomenergomash (including payment (declaration) of dividends) for the financial year. 2) Election of members of the Board of Directors of JSC Atomenergomash.

### BOARD OF DIRECTORS (GRI 102-33)

The powers of the Board of Directors are stipulated in the Company's Articles of Association. The meetings of the Board of Directors are convened when necessary, initiated by the Chairman or members of the Board of Directors, the Chief Executive Officer or the Company's Auditor.

The Board of Directors is responsible for the strategic management of the Company's operations and supervises the activities of the executive body.

In 2019, the Board of Directors held 25 meetings and discussed 37 matters. (GRI 102-22)

The Company has no independent members of the Board of Directors, as defined in the Corporate Governance Code. (GRI 102-18)

Throughout 2019, no resolutions were adopted on paying remuneration and/or compensations to the members of the Board of Directors; no remuneration was paid, and no expenses were reimbursed. No committees were established under the Board of Directors. Apart from the Chief Executive

## MEMBERS OF THE BOARD OF DIRECTORS<sup>2</sup>

(GRI 102-23)

### Vladislav Korogodin

**Chairman of the Board of Directors**

Date of birth: October 25, 1969  
Tenure of office: since June 30, 2015

2012 – present: **Director for NFC and NPP Life Cycle Management at ROSATOM.**

### Ilya Nikolsky

Date of birth: October 28, 1981  
Tenure of office: since June 29, 2018

2017 – present: **Head of the Economic Planning and Modelling Department at ROSATOM.**

<sup>2</sup> <http://www.aem-group.ru/about/leadership/directors/sig.html>

Officer, the Board of Director includes no members that were the Company's full-time or part-time employees during the reporting period.

None of the members of the Board of Directors hold the Company's shares. In 2019, there were no changes in the number of members (five people) or the composition of the Board of Directors of JSC Atomenergomash.

### Boris Silin

Date of birth: October 26, 1954  
Tenure of office: since November 27, 2014

2010 – present: **Advisor to the First Deputy Director General for Operations Management at ROSATOM.**

### Andrey Nikipelov

Date of birth: March 7, 1968  
Tenure of office: since June 29, 2012

2012 – present: **Head of the Mechanical Engineering Division of ROSATOM.**

2012 – present: **Member of the Management Board of ROSATOM.**

2012 – present: **Chief Executive Officer of JSC Atomenergomash.**

### Boris Arseev

Date of birth: September 22, 1971  
Tenure of office: since June 30, 2017

2016 – present: **Deputy Head of the Corporate Development and International Business Unit, Head of the International Business Department at ROSATOM.**

## CHIEF EXECUTIVE OFFICER

The functions and powers of the Chief Executive Officer are stipulated in the Company's Articles of Association and are exercised in compliance with the Federal Law on Joint-Stock Companies.

The Chief Executive Officer of the Company, Andrey Nikipelov, has been exercising his powers since April 17, 2012, pursuant to resolutions of the General Meeting of Shareholders (Minutes No. 04/12-BOCA dated April 16, 2016 and No. 02/17-BOCA dated April 14, 2017). Mr. Nikipelov does not hold the Company's shares. (GRI 102-26)

The Chief Executive Officer is directly involved in developing the corporate strategy for the Division's development, as well as functional strategies<sup>3</sup>.

In 2019, the Company made no major transactions that are subject to approval by the authorized executive body of the Company pursuant to Chapter X of the Federal Law on Joint-Stock Companies.

The definition of a non-arm's length transaction is given in Chapter XI of the Federal Law on Joint-Stock Companies. However, Clause 3.11 of the Company's Articles of Association stipulates that provisions of Chapter XI of the Federal Law on Joint-Stock Companies do not apply to the Company.

<sup>3</sup> The role of the Board of Directors in defining the Company's development strategy is stipulated in the Company's Articles of Association (p. 16).

The remuneration of the Chief Executive Officer is stipulated in the employment contract in accordance with Russian legislation and is based on the remuneration system adopted in ROSATOM's organizations; it takes into account progress in achieving key performance indicator (KPI) targets set for the Chief Executive Officer every year.

Information on declared income, property and liabilities is annually published on ROSATOM's official website, in the Anti-Corruption section, in accordance with Russian legislation. (GRI 102-20)

## Senior management of JSC Atomenergomash

Biographical details and other information regarding the Chief Executive Officer and the senior management of the Company are available at: <http://www.aem-group.ru/about/leadership/management/>

(GRI 102-6)

## 2.5. BUSINESS ASSETS OF THE COMPANY

City, country	CO <sup>4</sup> name
Volgodonsk, Russia	Atomash branch of JSC AEM-Technology
Petrozavodsk, Russia	Petrozavodskmash branch of JSC AEM-Technology
Nizhny Novgorod, Russia	JSC Afrikantov OKBM
Ekaterinburg, Russia	Sverdlovsk Chemical Engineering Research Institute JSC
Podolsk, Russia	JSC Experimental and Design Organization GIDROPRESS
	PJSC ZiO-Podolsk
	JSC Engineering Company ZIOMAR
Saint Petersburg, Russia	JSC CDBMB
	JSC AEM-Technology
	AAEM LLC
	JSC RPA CNIITMASH
Moscow, Russia	JSC ATM
	JSC Refractory and Hard Metals Pilot Production Plant
Kramatorsk, Ukraine	JSC Branch Design and Technology Bureau for the Development of Modern Technologies and Glass Manufacturing (JSC BDTB GM)
	PJSC EMSS
Budapest, Hungary	Ganz EEM
Opava, Czech Republic	ARAKO spol. s.r.o.

<sup>4</sup> Controlled organizations.

## 2.6. THE DIVISION'S POSITION ON THE MARKET<sup>5</sup>

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 influenced by trends in the development of the global electricity industry (improved energy efficiency, environmental programmes, etc.) and the commissioning of new generating capacities.

According to preliminary estimates, the volume of the global market for commissioned power generation equipment, including the volume of the modernized capacity market, totalled about 221 GW. The shares of different types of commissioned power generation equipment (in physical terms) were distributed as follows: equipment for increasing thermal power generation capacities made up the largest share (74%), while the shares of hydropower, nuclear power and renewable energy equipment stood at 9%, 3% and 14% respectively. According to analysts, if these growth rates are maintained, by 2035, the total global capacity may increase by 53%.

At the same time, the shares of the power generation equipment that is already in operation were distributed as follows: equipment for thermal power generation accounted for 64%, while the shares of hydropower, nuclear power and renewable energy equipment stood at 19%, 6% and 11% respectively.

According to forecasts, an accelerating shift towards carbon-free energy is becoming the main trend in the development of global energy markets. Thus, by 2030, certain changes are expected in the structure of energy consumption, as renewable generation will replace carbon-based energy. Despite these changes, the share of nuclear power in the energy mix will remain unchanged at 5–6%.

The Russian power generation equipment market is influenced by trends in the development of the global power machine engineering market, the economic situation in Russia and the DPM-2 modernization programme. According to analysts' estimates, in 2019, the production of new power generation equipment on the Russian power machine engineering market slightly decreased (by 12% to 20.4 GW). However, not all market segments saw a decline. In the industrial gas turbine segment, newly commissioned capacities increased by 11% to 704 MW. By contrast, in the steam turbine market segment, production decreased by 52% to 974 MW. The production of hydraulic turbines and water wheels decreased by 47% to 336 MW, while the production of central heating boilers (hot-water and low-pressure steam boilers) decreased by 7% to 18.4 GW.

According to the Federal State Statistics Service (Rosstat), the Federal Customs Service and the Federal Tax Service, the shares of key market players remained unchanged in 2019. In particular, the share of the Mechanical Engineering Division on the Russian power machine engineering market in terms of revenue increased to 37.9% (as against 33.9% in 2018), with the Division retaining the first place among the industry leaders.

<sup>5</sup> The estimates are presented based on data from a survey by the Industrial Marketing Research Group: Power Generation Equipment Market in 2020.

## 2.7. QUALITY MANAGEMENT SYSTEMS AND STANDARDS

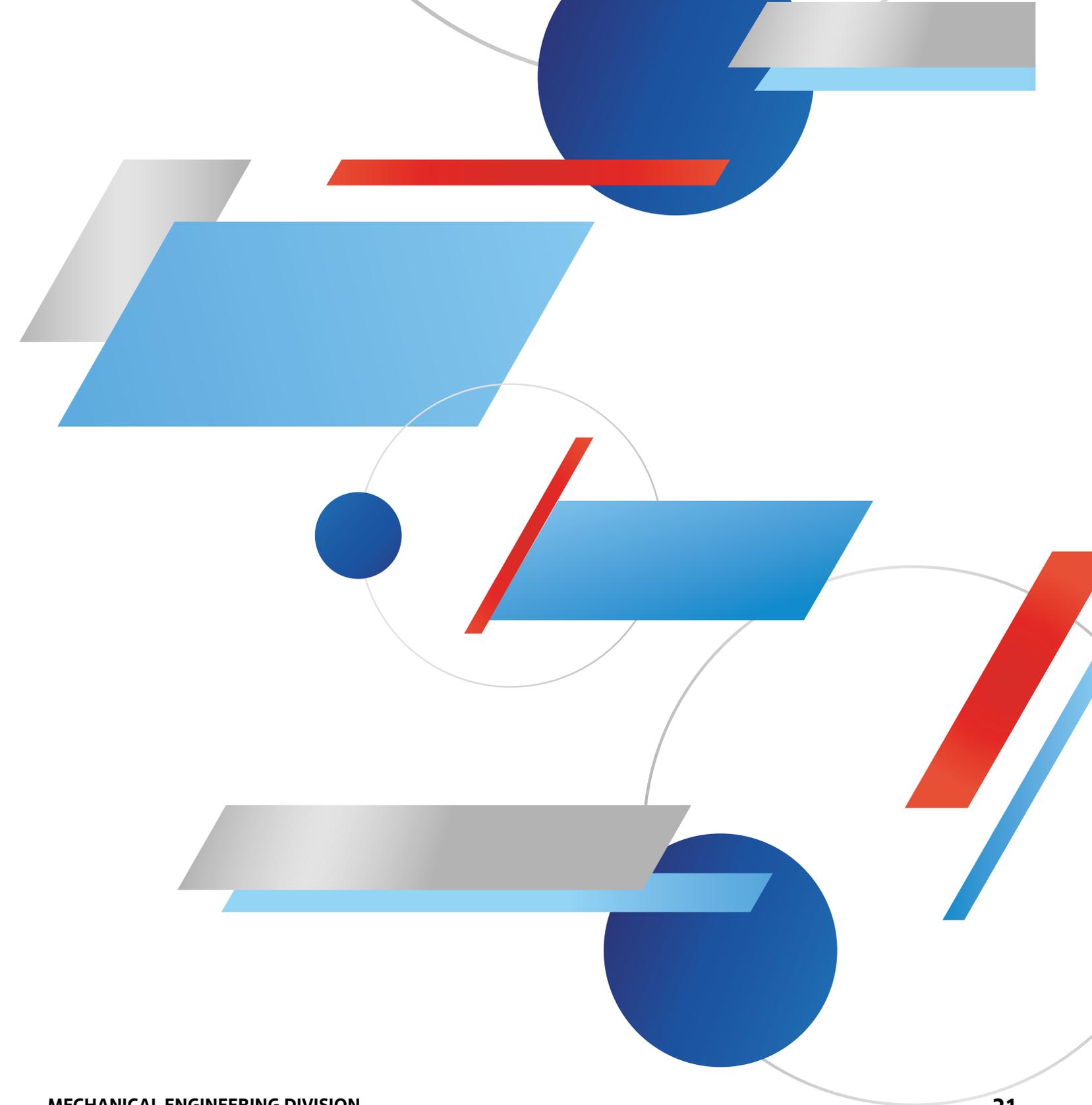
In 2019, all organizations controlled by JSC Atomenergomash started to operate the Unified Industry-Wide Quality Management System of ROSATOM (UIS-Quality) on a permanent basis.

The UIS-Quality information system records:

- Irregularities revealed during the incoming inspection of products supplied to NPPs;
- Irregularities detected during the design and manufacture of products and the running of processes (these can be detected by the customer, a specialized organization, engineering personnel, controllers or any employee of the organization);
- Irregularities detected in the organization during management system audits conducted by the first, second and third parties. (GRI 416-1)

One of the main values of ROSATOM is safety. Increasingly strict safety requirements for nuclear facilities under construction and in operation impose special obligations on all of the Division's enterprises in terms of product quality. Safety assessment is becoming an integral part of the manufacture of all types of products.

**Accordingly, quality management systems (QMS) have been developed in the Division's enterprises (JSC Atomenergomash, JSC AEM-Technology, JSC RPA CNIITMASH, JSC Afrikantov OKBM, Sverdlovsk Chemical Engineering Research Institute JSC, JSC CDBMB, JSC Experimental and Design Organization GIDROPRESS, JSC ATM, AAEM LLC, PJSC ZiO-Podolsk, PJSC EMSS, Ganz EEM, ARAKO) and have undergone certification to the ISO 9001 standard.**



# 3. KEY RESULTS AND PERFORMANCE INDICATORS OF THE DIVISION

(GRI 102-7)

3



## 3.1. KEY RESULTS

Indicator	2017	2018	2019
Shipment of mechanical engineering products, number of NPPs	11	6	9
Share in the Russian power machine engineering industry by revenue, %	27.9	33.9	37.9
Consolidated revenue, RUB billion	68	71	75
Average headcount	15,998.7	16,064.2	16,732.5
LTIFR <sup>6</sup>	0.21	0.11	0.14
Taxes paid, RUB billion	8.7	6.8	8.1
Charity expenses, RUB million	3.7	27.8	76.3
Occupational health and safety costs, RUB million	317.2	385.6	332.5

<sup>6</sup> The indicator does not include foreign enterprises of the Division.

## 3.2. OPERATING ACTIVITIES

(GRI 102-4, 102-7)

### KEY MARKETS AND PROJECTS

Russia	The CIS	Non-CIS countries
--------	---------	-------------------

Business area	City, country	Project
NUCLEAR POWER INDUSTRY	Kurchatov, Russia	Kursk NPP
	Makarovka, Russia	Kursk NPP-2
	Balakovo, Russia	Balakovo NPP
	Volgodonsk, Russia	Rostov NPP
	Sosnovy Bor, Russia	Leningrad NPP
		Leningrad NPP-2
	Novovoronezh, Russia	Novovoronezh NPP
	Zarechny, Sverdlovsk Region, Russia	Beloyarsk NPP
	Polyarnye Zori, Russia	Kola NPP
	Desnogorsk, Russia	Smolensk NPP
	Udomlya, Russia	Kalinin NPP
	Pevek, Russia	Akademik Lomonosov FTNPP <sup>7</sup>

<sup>7</sup> Floating thermal nuclear power plant.

Business area	City, country	Project
NUCLEAR POWER INDUSTRY	Ostrovets, Belarus	Belarusian (Ostrovets) NPP
	Metsamor, Armenia	Armenian NPP
NUCLEAR POWER INDUSTRY	El Dabaa, Egypt	El Dabaa NPP
	Kudankulam, India	Kudankulam NPP
	Liaoning, China	Xudabao NPP
	Tianwan, China	Tianwan NPP
	Gulnar, Turkey	Akkuyu NPP
	Pyhäjoki, Finland	Hanhikivi 1 NPP
	Temelin, Czech Republic	Temelin NPP
	Paks, Hungary	Paks II NPP
	Pabna, Bangladesh	Rooppur NPP
	Kozloduy, Bulgaria	Kozloduy NPP
	Belene, Bulgaria	Belene NPP
THERMAL POWER INDUSTRY	Levice, Slovakia	Mochovce NPP
	Trnava, Slovakia	Bohunice NPP
	Sharypovo, Russia	Berezovskaya SDPP
	Nazarovo, Russia	Nazarovskaya SDPP
THERMAL POWER INDUSTRY	Verkhniy Tagil, Russia	Verkhnetagilskaya SDPP
	Novomoskovsk, Russia	Novomoskovskaya SDPP

Business area	City, country	Project
THERMAL POWER INDUSTRY	Reftinsky, Russia	Reftinskaya SDPP
	Izluchinsk, Russia	Nizhnevartovskaya SDPP
	Saint Petersburg, Russia	Central CHPP
	Arkhangelsk, Russia	Arkhangelsk CHPP
	Yaroslavl, Russia	Yaroslavl CHPP
	Kaliningrad, Russia	Pregolskaya TPP
	Omsk, Russia	Omsk Refinery
	Svetly, Russia	Primorskaya TPP
	Aksu, Kazakhstan	Aksu TPP
	Taraz, Kazakhstan	Zhambyl SDPP
	Topar, Kazakhstan	Topar SDPP
GAS AND PETROCHEMICAL INDUSTRY	Moscow, Russia	Moscow Refinery
	Kaliningrad, Russia	Varnitsa, LLC
	Tobolsk, Russia	West Siberian deep hydrocarbon conversion plant

### 3.3. INVESTMENT ACTIVITIES

The Division is a single-source supplier and main manufacturer of equipment for the reactor and turbine islands of Russian-design NPPs that are currently under construction.

Given the expected growth in production for NPP construction projects, the Division's management is implementing a large-scale investment programme to modernize the Division's production assets.

The aim of the investment programme is the unconditional execution of contracts for the supply of key equipment for NPPs in Russia and abroad.

The investment programme ensures the achievement of the Division's main mission: to design and develop globally competitive technological solutions for the energy sector in order to maintain a high standard of living and to improve the Division's business performance.

To date, the following major investment projects have been launched and are being implemented at key production sites for NSGP equipment:

■ A project to create capacities at JSC AEM-Technology under the road map for the supply of equipment for NPPs under construction. It is intended that the site will be provided with production facilities by 2022 in order to accommodate peak utilization by 2023–2025 and to achieve production capacity of four power units per year to ensure the fulfilment of the target for the supply of key equipment for the construction of ROSATOM's new NPP units in Russia and abroad.

■ ARABELLE Project at the site of PJSC ZiO-Podolsk. The Project is aimed at the acquisition of equipment necessary to perform orders for the manufacture of turbine island equipment for NPPs under construction abroad.

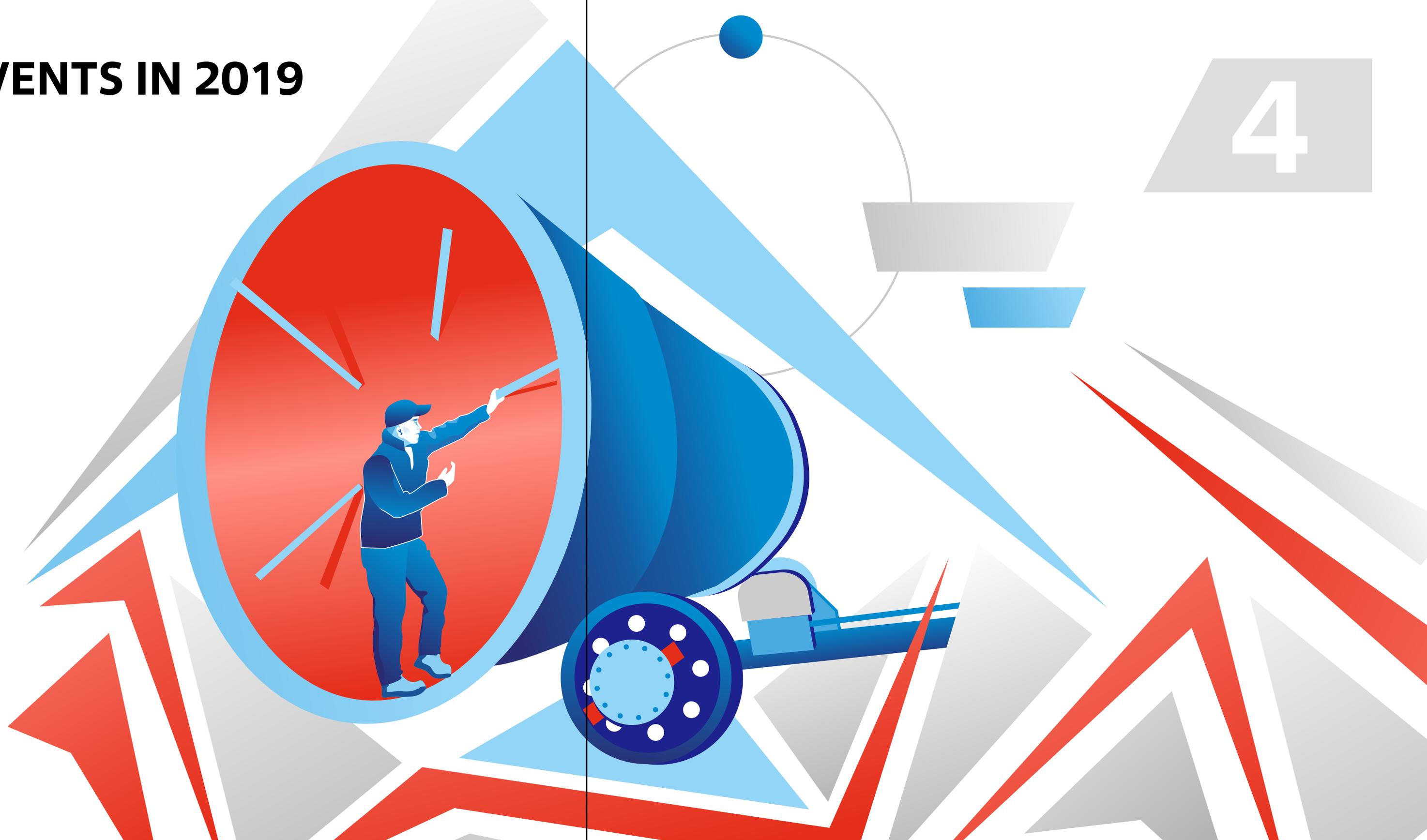
■ In addition, a number of projects are underway to maintain and upgrade the production facilities of JSC Experimental and Design Organization GIDROPRESS, JSC CDBMB, JSC RPA CNIITMASH and other companies controlled by the Division.

### 3.4. PRODUCTION PLANS

- To produce equipment on schedule.
- To achieve an increase in foreign revenue.
- To manufacture equipment for the second waste incineration plant in the Moscow Region. To sign contracts for new waste incineration plant construction projects in Russia.
- To sign contracts for CHPP modernization projects in the Russian Federation.
- To sign contracts and produce a batch of LNG loading pumps for a large-scale LNG plant. To start the production of marine loading arms for LNG offloading and turboexpanders.
- To systematically implement project management principles in the Division.

# 4. KEY EVENTS IN 2019

4

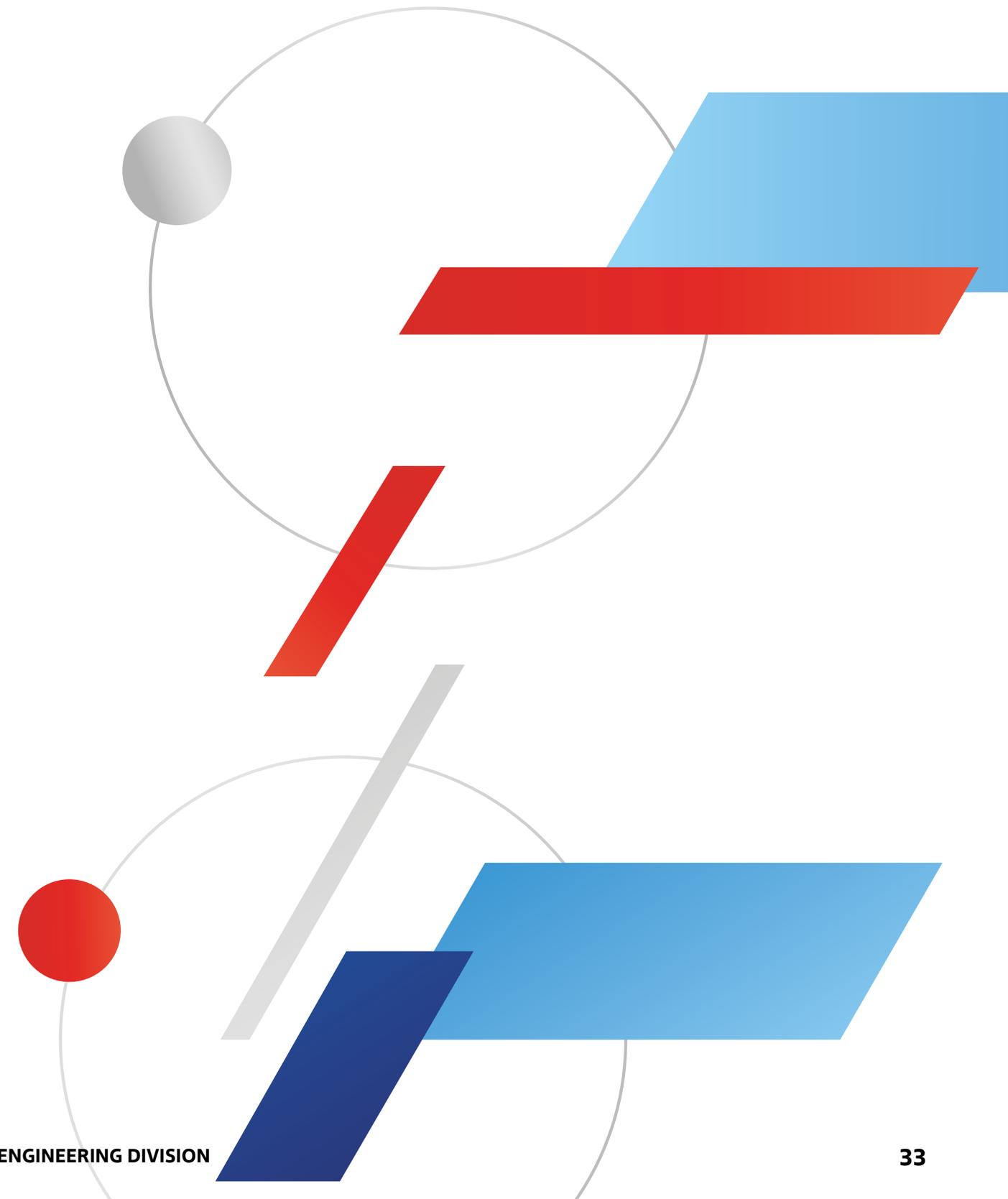


## KEY EVENTS IN 2019

- A contract was signed for the supply of elements of the main circulation pipe for a foreign NPP. It was the first contract for the supply of primary circuit equipment for a foreign-design NPP in the history of the Russian nuclear industry.
- The production of equipment for the reactor unit (RU) and of heat exchange equipment for the turbine island of power unit No. 4 of Kudankulam NPP (India) was completed.
- The package supply of equipment for RITM-200 reactor units and KSU TS<sup>8</sup> for the flagship icebreaker and two follow-on nuclear icebreakers was completed.
- Contracts were signed for the package supply of RU equipment for El Dabaa NPP (power units No. 1, 2, 3 and 4) and Tianwan NPP (power units No. 7 and 8).
- The production of boiler equipment for the first waste incineration plant (Svistyagino, Moscow Region) was completed. Construction of waste incineration plants is included in the Ecology National Project.
- A consortium agreement was signed with HZI<sup>9</sup>, allowing PJSC ZiO-Podolsk to manufacture equipment for incineration plants for projects outside the Russian Federation.
- In February 2019, a bench for the testing of LNG pumps using liquid nitrogen was put into operation.
- The first LNG pumps and coil heat exchangers in the Russian Federation were manufactured for the fourth line of the Yamal LNG project and installed at the facility. The equipment was produced in July and August 2019 respectively. Installation was completed in October 2019.
- In September 2019, a tender was won for the project to create test benches for the testing of dynamic equipment using LNG (as part of the implementation of the road map of the Government of the Russian Federation for the localization of production of critical LNG equipment).
- The first high-performance LNG pump in the Russian Federation was manufactured.
- A contract was signed for the package supply of RITM-200 reactor units for the fourth and fifth Project 22220 icebreakers.

<sup>8</sup> Turnkey equipment control system.

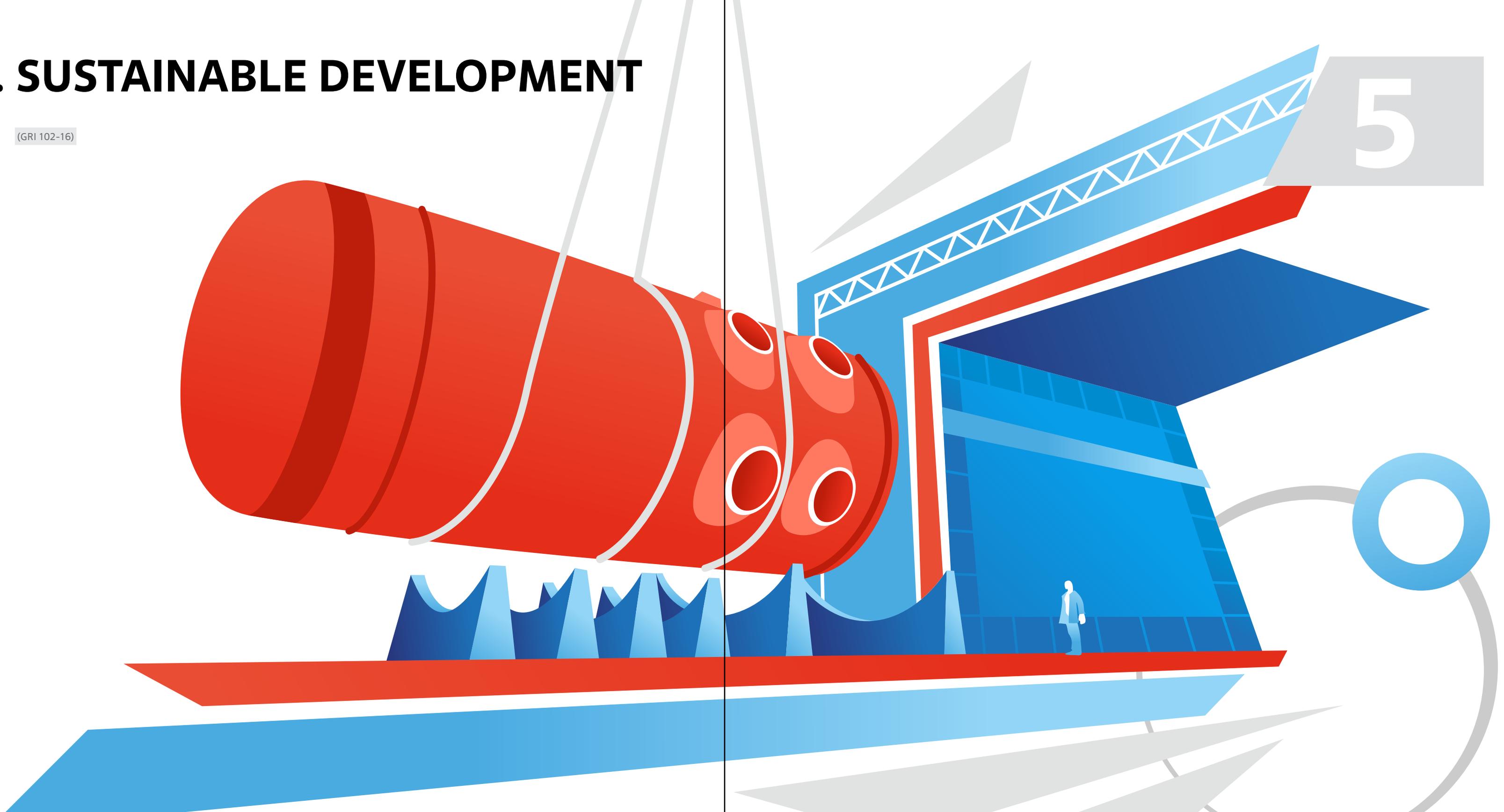
<sup>9</sup> Hitachi Zosen Inova.



# 5. SUSTAINABLE DEVELOPMENT

(GRI 102-16)

5



The Company considers adhering to the sustainable development concept as one of the key drivers of success in the medium and long term. Sustainable development principles are deeply integrated into the Company's operations and are reflected in the Mechanical Engineering Division's mission formalized in the corporate strategy, namely: to design and develop globally competitive technological solutions for the energy sector in order to maintain a high standard of living and improve the Division's business performance.

**Therefore, the Division seeks to operate as efficiently and transparently as possible, protect the environment, ensure safety and promote mutually beneficial cooperation with all stakeholders.**

## 5.1. ENVIRONMENT AND INDUSTRIAL SAFETY

(GRI 102-11)

The Division has always sought to preserve the environment, comply with environmental legislation, use natural resources efficiently and continuously improve its environmental performance. As the operations of any industrial company invariably have a negative impact on the environment, environmental protection is one of the top priorities for the Mechanical Engineering Division of ROSATOM.

The Division is committed to fundamental sustainable development principles and seeks to maintain a balance between the demands and expectations of all stakeholders, including shareholders, employees, residents of the Company's regions of operation, counterparties, contractors, representatives of the relevant ministries and government agencies and the media.

More details on measures taken by ROSATOM's Mechanical Engineering Division in this area in 2019 can be found in Chapter 11 'Environmental Safety'.

## 5.2. OCCUPATIONAL HEALTH AND SAFETY

One of the Division's priorities is to reduce the number of accidents, incidents, fatalities and injuries. The Division is fully aware of its responsibility towards its employees, their friends and families, and towards society as a whole and, accordingly, seeks to provide the most favourable and comfortable working conditions.

More details on measures taken by ROSATOM's Mechanical Engineering Division in this area in 2019 can be found in Chapter 9 'Developing the Human Capital'.

## 5.3. COMMUNITY RELATIONS

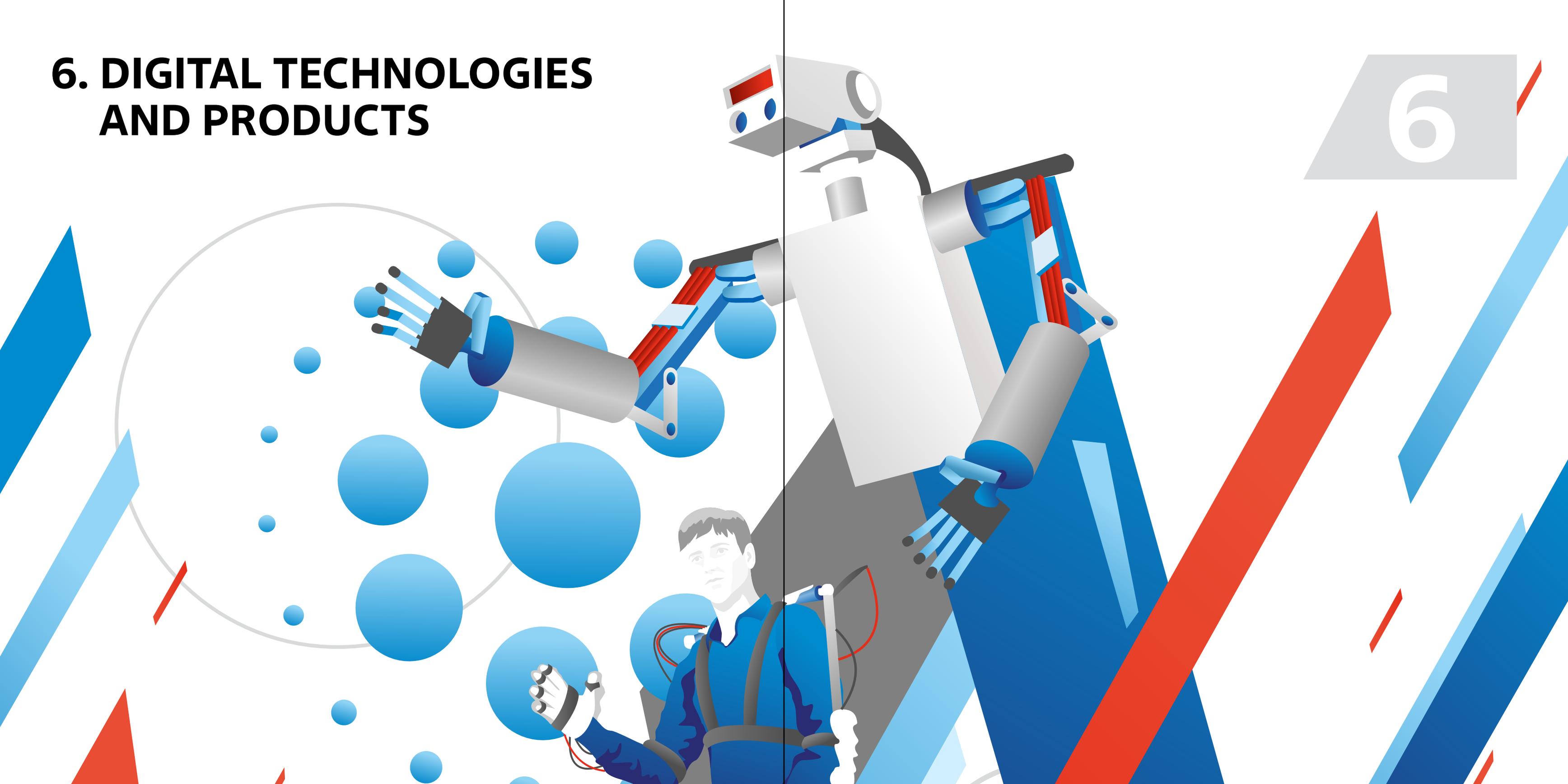
The Division's enterprises are located in different constituents of the Russian Federation and in Central Europe. Accordingly, it is crucial for the Division to create and maintain a positive image in its regions of operation and cooperate with local companies and specialists.

In the reporting year, the Mechanical Engineering Division of ROSATOM continued to cooperate with local administrations under the existing partnership agreements. In particular, the Division supported a range of projects focused on urban infrastructure development and urban improvement, environmental protection and assistance to municipalities. In addition, the Division actively supported initiatives in the sphere of sports, culture and education; it also actively communicated and cooperated with non-governmental organizations and implemented a number of charity projects and sponsorship campaigns.

More details on measures taken by ROSATOM's Mechanical Engineering Division in this area in 2019 can be found in Chapter 10 'Developing the Regions of Operation'.

# 6. DIGITAL TECHNOLOGIES AND PRODUCTS

6



The goal of the digitization programme of ROSATOM's Mechanical Engineering Division is to optimize and digitize the Division's business processes (key enterprises include JSC Atomenergomash, JSC AEM-Technology, PJSC ZiO-Podolsk and JSC Afrikantov OKBM).

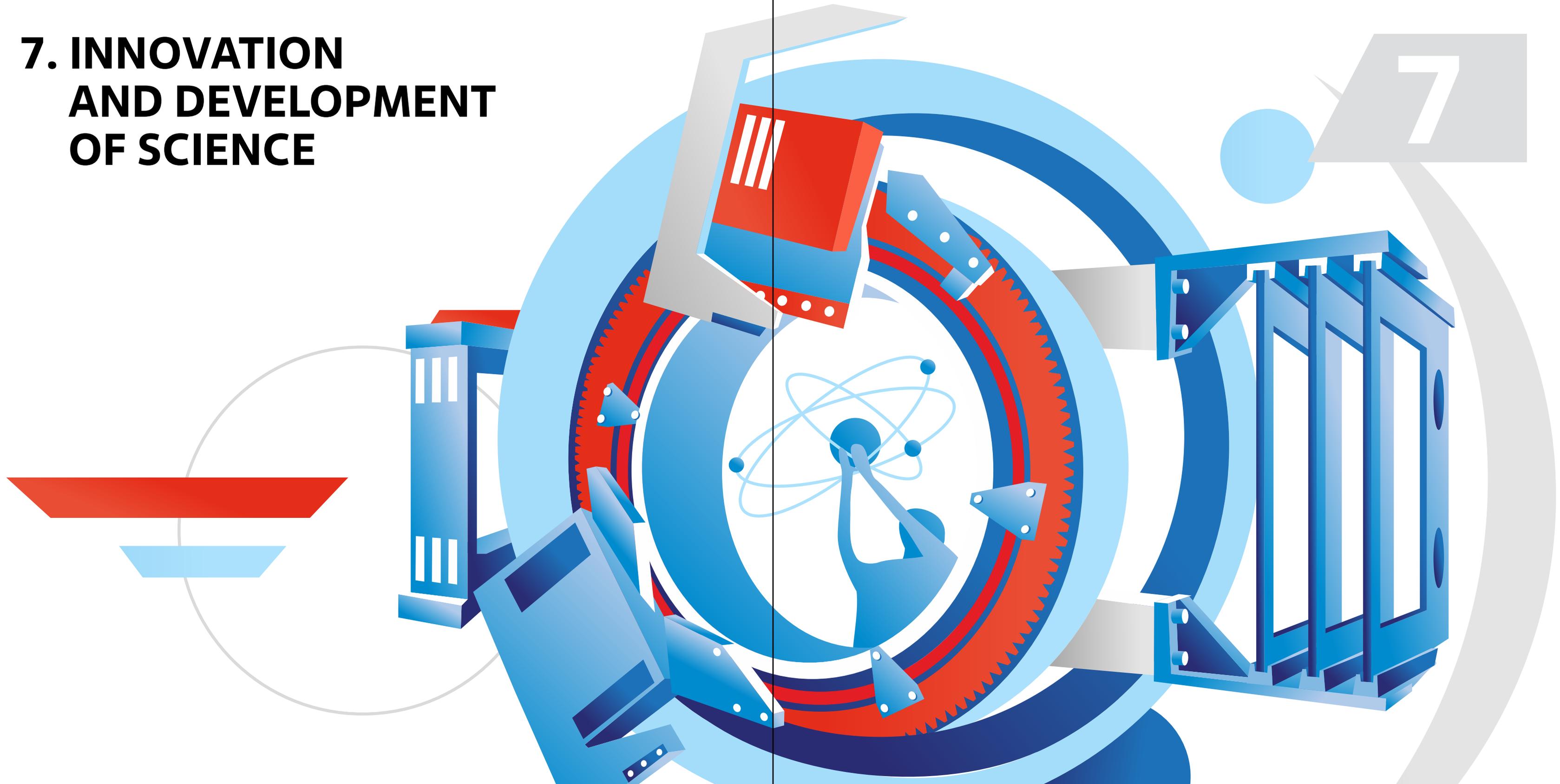
These projects are aimed at increasing the efficiency and speed of business operations of the Division's enterprises:

Project	Enterprise	Key results
<b>Creation of a section of the system of core information services for the international business (a network segment providing access to data from foreign COs)</b>	JSC Atomenergomash	<ul style="list-style-type: none"> <li>A portal has been created to enable COs (including foreign ones) to exchange data from vCloud, 1C:CRM and BI Qlik Sense</li> </ul>
<b>Creation of a divisional management reporting and data visualization (BI) system</b>	JSC Atomenergomash	<ul style="list-style-type: none"> <li>The process of business planning of the portfolio of orders (1C:CRM, Qlik Sense) has been automated</li> </ul>
<b>Implementation of a project management information system at JSC AEM-Technology</b>	JSC AEM-Technology	<ul style="list-style-type: none"> <li>The project management system has been implemented and put into commercial operation at JSC AEM-Technology and in its branches</li> </ul>



Project	Enterprise	Key results
<b>Implementation of a MES system in the Petrozavodsk branch of JSC AEM-Technology</b>	JSC AEM-Technology, Petrozavodskmash (a branch of JSC AEM-Technology)	<ul style="list-style-type: none"> <li>A subsystem for scheduling the load of work centres has been implemented</li> <li>A mobile application has been developed for working with the load schedule, setting shift/daily targets and recording their achievement</li> </ul>
<b>Implementation of a risk and opportunity management system: developing and updating a register of project risks for business areas and a register of risks for functional systems</b>	JSC Afrikantov OKBM	<ul style="list-style-type: none"> <li>A risk and opportunity management system has been designed and is used for developing and updating a register of project risks for business areas and a register of risks for functional systems</li> </ul>
<b>Implementation of production automation projects</b>	JSC Afrikantov OKBM	<ul style="list-style-type: none"> <li>The process of moving products to the production stage has been optimized and digitized</li> </ul>
<b>Implementation of production automation projects</b>	PJSC ZiO-Podolsk	<ul style="list-style-type: none"> <li>Mechanisms for supervising the production of general equipment and automating the recording of cutting operations have been introduced; a solution for recording the achievement of shift production targets has been implemented at data terminals</li> </ul>

# 7. INNOVATION AND DEVELOPMENT OF SCIENCE



Research and development (R&D) efforts of ROSATOM's Mechanical Engineering Division are focused on developing innovative solutions for the power industry and making the Division's products competitive. In 2019, the Division's enterprises implemented a number of innovative solutions to optimize work and to reduce the lead time.

**JSC CDBMB:**

- An investment project involving the development and start of production of pumps for NPP turbine islands was completed. As a result, a test bench was created, and the first stage of testing of hydraulic piston pump units (a new line of equipment produced by JSC CDBMB) was carried out;

- A number of R&D projects were implemented, including the draft design of a line for the production of fuel elements for a fuel fabrication and refabrication facility forming part of an industrial power complex with a high-power fast reactor.

**JSC AEM-TECHNOLOGY:**

- New agglomerated (ceramic) fluxes were developed for automatic welding of austenitic steels and anti-corrosion cladding, which will be used in products for nuclear power units;

- Indirect welding technology was developed for use in the welding of bottoms to vertical steam generator casings.

**JSC AFRIKANTOV OKBM:**

- Fundamentally new computational technologies, a modern software suite and methodological guidelines were developed for the design of reactor units for various purposes, including using a supercomputer;

- A data and knowledge base was created for innovative developments; new materials were introduced; items of intellectual property were commercialized (introduced into commerce);

- The research and technical capabilities of the enterprise were expanded, and the intellectual property management system was improved.

## 7.1. NUMBER OF PATENTS AND CERTIFICATES FOR INTELLECTUAL PROPERTY OBTAINED BY THE DIVISION (PCS.)

2017	2018	2019
80	73	90

**Investment in innovation and R&D is one of the main factors giving the Division a competitive edge. The Division is aware of the need to develop this area and, accordingly, gives priority to the implementation of R&D projects.**



## 7.2. R&D AGREEMENTS CONCLUDED WITH UNIVERSITIES

2017		2018		2019	
Number of contracts (pcs.)	Total value, RUB million	Number of contracts (pcs.)	Total value, RUB million	Number of contracts (pcs.)	Total value, RUB million
6	43.9	9	66.2	11	85.4

The Division's R&D efforts are focused on developing innovative solutions for the power industry and making the Division's products competitive.

**Key indicators reflecting the Division's performance in the sphere of scientific research include the number of published scientific papers and articles (228 in 2019, including 72 on research topics) and participation in scientific conferences (338 conferences in 2019, including presentations at 187 conferences). JSC Afrikantov OKBM and JSC Experimental and Design Organization GIDROPRESS traditionally remain the most active in this sphere.**

# 8. NEW PRODUCTS AND BUSINESSES



## 8.1. NUCLEAR POWER INDUSTRY

**JSC Atomenergomash supplies key equipment for all Russian-design NPPs under construction and for a number of foreign NPPs. The equipment produced by the Division's enterprises has been installed at 14% of NPPs in the world.**

The Division is a reference supplier of a wide range of equipment for the reactor island and the turbine island of NPPs. In the reporting year, the Division's enterprises shipped mechanical engineering products to nine NPPs on schedule.

The volume and geography of nuclear power markets are determined by ROSATOM's obligations to build new NPP units in Russia and abroad; in recent years, there has been a significant growth in the number of foreign projects.

In 2019, the enterprises of JSC Atomenergomash manufactured the key turbine island equipment for a number of NPPs located in Russia and abroad (Kursk NPP-2 (power unit No. 1), Leningrad NPP-2 (power unit No. 2), Kola NPP (power unit No. 1), Akkuyu NPP (the first batch of equipment for power unit No. 1 was delivered), Kudankulam NPP (power units No. 3 and 4), Rooppur NPP (power units No. 1 and 2), Belarusian NPP (the delivery of NSGP equipment was completed).

## 8.2. GAS AND PETROCHEMICAL INDUSTRY

**This year, the Division continued to actively work on import substitution projects covering a wide range of critical equipment for the oil and gas industry.**

In 2019, PJSC ZiO-Podolsk designed and delivered coil heat exchangers (ethane evaporators and a flash drum), which form part of the key static equipment for the fourth gas liquefaction line of the Yamal LNG project.

During the reporting period, JSC Afrikantov OKBM manufactured and supplied LNG pumps for the fourth line of the Yamal LNG project; the pumps were tested on a cryogenic test bench using liquid nitrogen, which had been created by JSC D.V. Efremov Institute of Electrophysical Apparatus, an enterprise of ROSATOM.

**This is the first time that Russian-designed and Russian-made equipment will be used at an operating medium-scale LNG plant.**

**The supply of equipment for the fourth line of the Yamal LNG project opens up opportunities for the development, manufacture and supply of similar Russian equipment for large-scale liquefaction projects, including the Obsk LNG plant, which is the first large-scale liquefaction project using Russian technology.**

Construction of a full-scale test bench for the testing of equipment for LNG production was commenced at JSC D.V. Efremov Institute of Electrophysical Apparatus. The commissioning of this facility will enable full-scale development of Russian-designed LNG pumps and compressors, and testing and certification of Russian-made and foreign equipment in the Russian Federation.

## 8.3. SHIPBUILDING

**The expertise and competences of the Division's enterprises enable the Division to meet the highest quality standards. Enterprises of JSC Atomenergomash are leaders on the Russian market for the design and production of reactor units for the navy and the nuclear-powered icebreaker fleet. Today, the Division produces not only auxiliary equipment but also propulsion systems for the shipbuilding industry. The production chain formed in the Division and covering all stages, from a metal blank to the end product, enables the Division to offer a wide range of solutions meeting customer needs.**

One of the key events for the shipbuilding business was the signing of contracts for the manufacture and supply of the RITM-200 reactor unit, hull castings and propeller parts for the third and fourth follow-on multipurpose nuclear icebreakers.

In 2019, JSC Atomenergomash successfully completed the delivery of a set of auxiliary boiler equipment for a Project 00216m chemical tanker. In addition, as part of its efforts to start the production of new types of equipment and expand its range, the Division concluded a number of agreements on the localization of production with leading foreign developers and manufacturers of ship components.

## 8.4. SPECIAL STEELS

**This business area comprises production and R&D assets specializing in the design of new structural materials and technologies and in the manufacture of finished products for the power industry (hydropower, wind, steam and nuclear power), shipbuilding, the metals industry and mechanical engineering.**

The priority task for this business area in 2019 was to produce blanks for follow-on nuclear icebreakers, including:

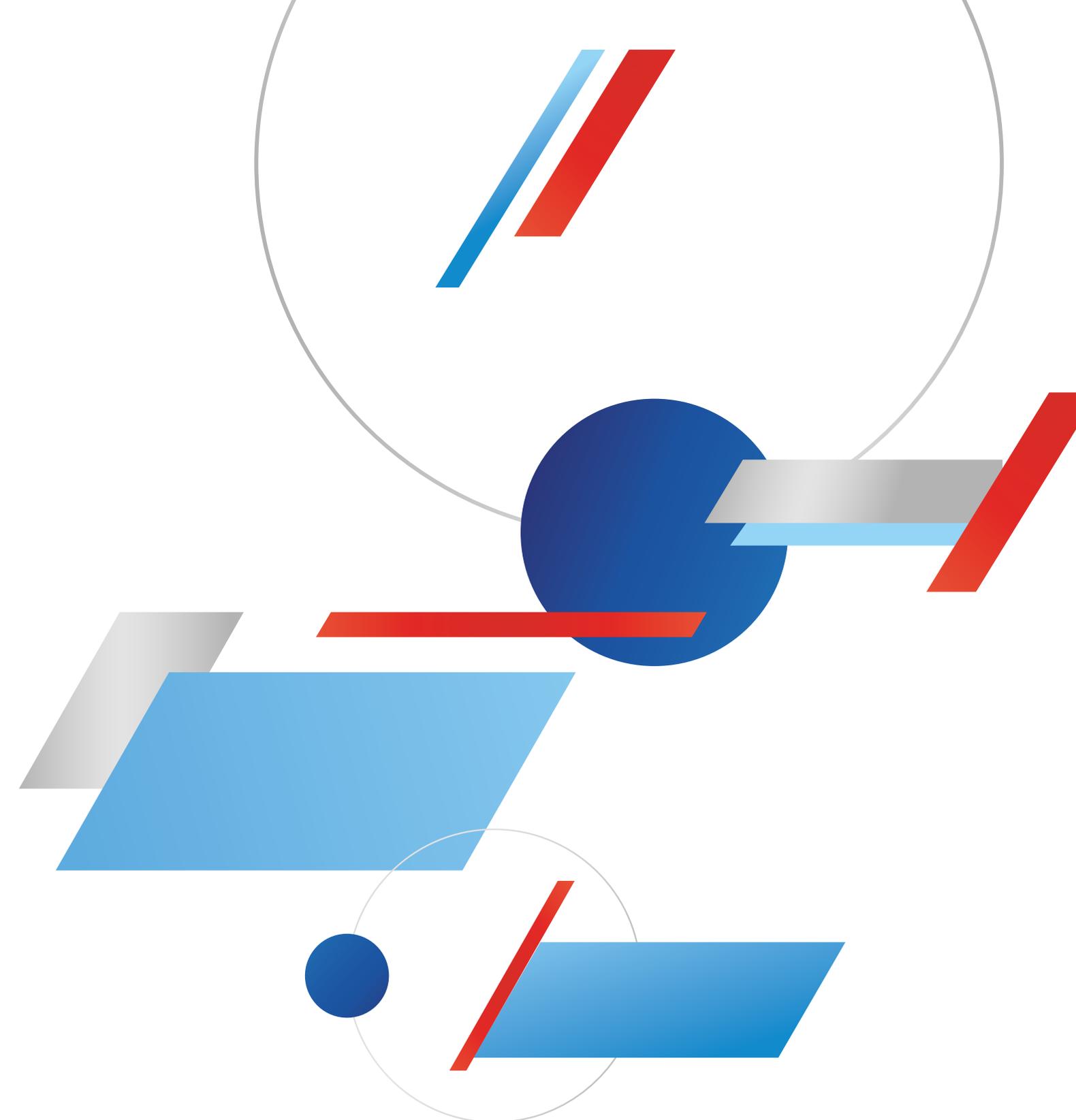
- Signing contracts for the manufacture and supply of the RITM-200 reactor units, hull castings and propeller parts for the third and fourth follow-on multipurpose nuclear icebreakers;
- Completing the package supply of equipment for the RITM-200 reactor units and KSU TS for the flagship and two follow-on Project 22220 nuclear icebreakers;
- Signing an agreement for the development of detailed engineering designs and R&D work to provide a rationale for the technical characteristics of the reactor core for the Lider nuclear icebreaker.

In addition, PJSC EMSS acts as a contractor manufacturing blanks for the nuclear power industry:

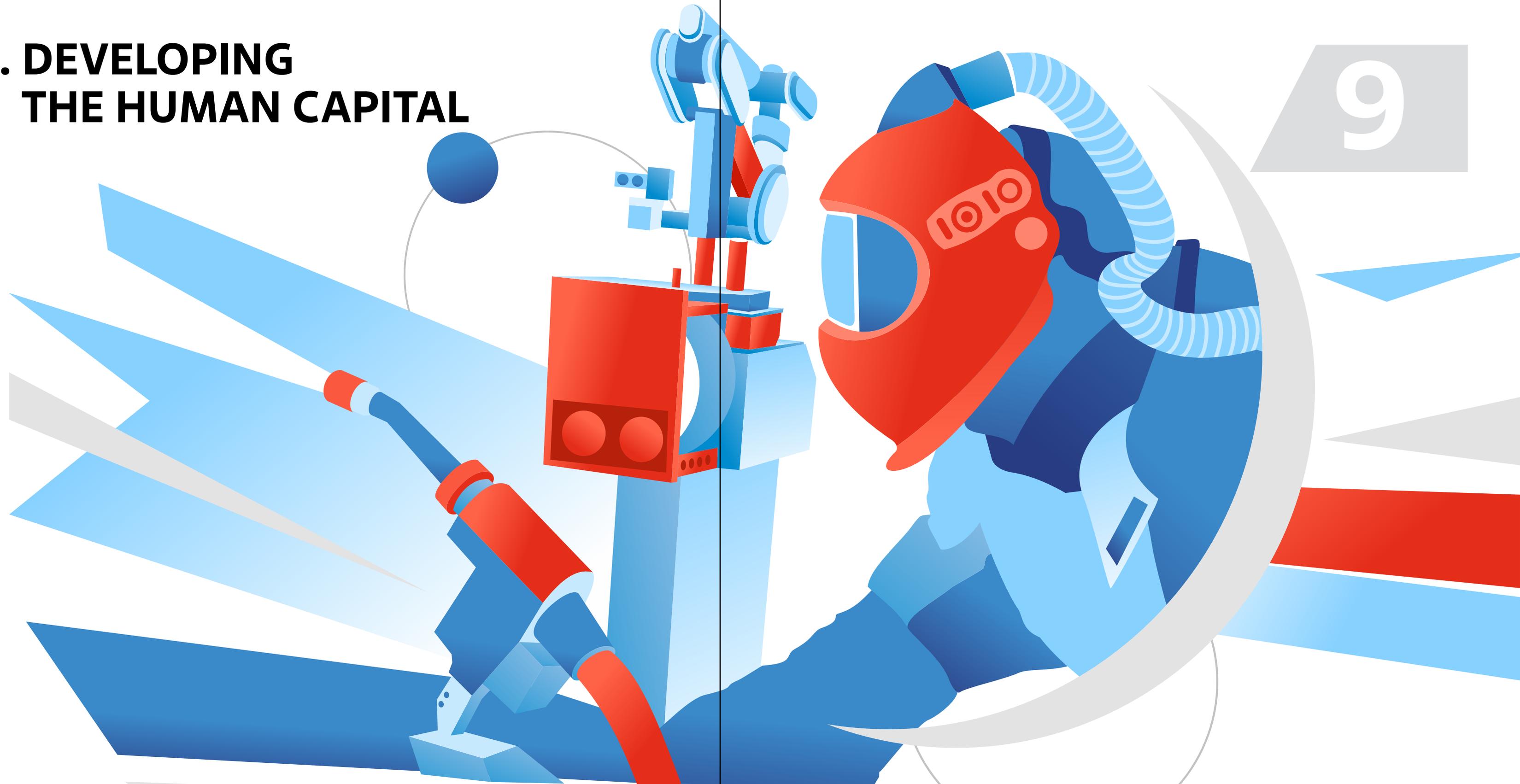
- A contract was signed for the supply of blanks for Tianwan NPP (units No. 7 and 8);
- A contract was signed for the supply of blanks for Xudabao NPP (units No. 3 and 4).

**Under these contracts, the blanks are scheduled to be manufactured in 2020 and 2021.**

One of the highlights of 2019 in this business area was product certification as a supplier of parts of long-lead blanks for HIP rotors produced by General Electric (USA) for ROSATOM's NPP construction projects abroad, with General Electric acting as the main regulator of the implementation of this project directly involved in determining the production schedule. In December 2019, General Electric placed an official purchase order for the supply of products in 2020.



# 9. DEVELOPING THE HUMAN CAPITAL



## 9.1. PERSONNEL COMPOSITION

Staffing of enterprises is one of the most important elements of effective business management and, undoubtedly, one of the key development priorities for the Division. The Division does business in a socially responsible manner and is committed to providing equal opportunities for employees in different gender and age groups. (GRI 102-7, 102-8)

**The six largest enterprises of the Division (JSC Afrikantov OKBM, JSC AEM-Technology, PJSC ZiO-Podolsk, PJSC EMSS, JSC Experimental and Design Organization GIDROPRESS and JSC CDBMB) account for more than 80% of the total headcount. The special features of their operations, namely the fact that jobs in these manufacturing enterprises are physically demanding, have resulted in the relevant predominance of men over women, with an average ratio of 65 to 35.**

### HEADCOUNT BY GENDER (PEOPLE)

Year	2017		2018		2019		2020 (estimate)	
Actual headcount	16,558		17,113		17,939		18,721	
By gender	male	female	male	female	male	female	male	female
	10,794	5,764	11,147	5,966	<b>11,727</b>	<b>6,212</b>	12,317	6,404
Average headcount	15,998.7		16,064.2		16,753.2		17,992	
By gender	male	female	male	female	male	female	male	female
	10,730.3	5,268.4	10,809.1	5,255.1	<b>11,207.9</b>	<b>5,545.3</b>	12,052.6	5,939.4

The majority of employees work full-time (98.8%). Fixed-term contracts were signed with 10.4% of employees.

### PERSONNEL STRUCTURE BY EMPLOYMENT TYPE

Employee category	2017		2018		2019		2020 (estimate)	
	male	female	male	female	male	female	male	female
Number of fixed-term contracts (people)	1,060	806	1,069	831	<b>1,062</b>	<b>803</b>	1,095	819
Share of fixed-term contracts (%)	<b>11.3</b>		<b>11.1</b>		<b>10.4</b>		<b>9.9</b>	
Number of part-time employees (people)	134	64	146	82	<b>128</b>	<b>96</b>	144	107
Share of part-time employees (%)	<b>1.2</b>		<b>1.3</b>		<b>1.2</b>		<b>1.3</b>	

The Division's enterprises successfully maintain an optimal balance between the number of highly qualified and experienced employees of retirement age (about 16%) and young promising employees (about a third). (GRI 405-1)

### PERSONNEL STRUCTURE BY AGE GROUP, PEOPLE

Employee category	2017		2018		2019		2020 (estimate)	
	male	female	male	female	male	female	male	female
Under 35	3,910	1,765	3,861	1,769	<b>4,006</b>	<b>1,648</b>	4,765	2,031
Retirement age	<b>1,579</b>	<b>1,336</b>	<b>1,493</b>	<b>1,364</b>	<b>1,474</b>	<b>1,354</b>	<b>1,555</b>	<b>1,379</b>

All employees have received appropriate education necessary to obtain the relevant qualifications: at production sites, employees with secondary vocational education prevail, while employees in design bureaus and holding companies have higher vocational education.

**In 2019, the share of employees with higher education in the Division's enterprises stood at 58%. A number of employees have academic degrees and the titles of professors. The Division employs one academician of the Russian Academy of Sciences and 19 professors.**

## 9.2. WORKING CONDITIONS AND WORK ORGANIZATION

In order to make the remuneration system more transparent and increase the level of motivation, the Division has introduced an Integrated Standardized Remuneration System, which makes it possible to establish equal remuneration for employees holding positions comparable in terms of their value to ROSATOM, and to ensure that a significant part of the total financial remuneration received by employees is linked to the achievement of KPI targets.

Agreement) is in force between ROSATOM, the Russian Union of Employers in the Nuclear Industry, Power and Science and the Russian Trade Union of Nuclear Power and Industry Workers. It establishes general principles for regulating social and labour relations in the nuclear industry, including mutual obligations of the parties related to matters concerning remuneration, working conditions and occupational health and safety, the work-life balance, employment, social guarantees, benefits and compensation for employees.

(GRI 102-13)

**The main goal of the current system is to encourage efficient work and guarantee social security for the Division's employees.**

More than 80% of the Division's enterprises have in place collective agreements that cover all employees of the enterprises. (GRI 102-41)

(GRI 102-13)

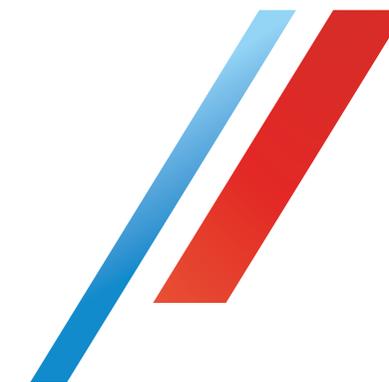
The main regulatory document in this sphere is the Regulation on Remuneration. In addition, the Industry-Wide Agreement on Nuclear Power, Industry and Science for 2018–2020 (hereinafter referred to as the Industry-Wide

In accordance with the Labour Code of Russia, employees in all enterprises of the Division are notified of organizational changes at least two months in advance. (GRI 402-1)

The Division's enterprises provide all their employees, regardless of the status and type of employment contract, with a package of social welfare payments and benefits approved in the relevant regulatory documents: (GRI 401-2)

- Health insurance;
- Pension schemes;
- Housing programmes;
- Health resort treatment and recreation for employees and their children;
- Sporting and cultural events;
- Catering arrangements for employees;
- Provision of financial assistance;
- Subsidized gym membership;
- Support for veterans and retirees of the industry.

**Social expenses per employee grow annually; in 2019, they totalled RUB 27,600 (RUB 23,600 in 2018).**



## 9.3. OCCUPATIONAL HEALTH AND SAFETY

The Division's enterprises comply with all industrial safety and occupational health and safety requirements. Performance in this area is assessed through the Lost Time Injury Frequency Rate (LTIFR) KPI.

**In the reporting year, the LTIFR stood at 0.14, which is more than twice as low as the target (0.34).**

(GRI 403-2)

### WORKPLACE INJURIES AND OCCUPATIONAL DISEASES

Figure	Gender	2017	2018	2019
Injuries	Male	5	1	4
	Female	2	2	1

Figure	Gender	2017	2018	2019
Days lost because of injuries	Total	250	276	256
	Male	0	2	1
	Female	0	0	0
Fatalities	Male	1	0	0
	Female	0	0	0
LTIFR	Total	0.21	0.11	0.14

A number of enterprises (PJSC ZiO-Podolsk, JSC RPA CNI-ITMASH, AAEM LLC, Ganz EEM, ARAKO) have been issued with a certificate of compliance with the requirements of the OHSAS 18001 international standard on the occupational safety and health management system.

Matters related to the health and safety of employees in the industry, social security, sports and fitness, recreation and education are also regulated by the Industry-Wide Agreement (see section 6.2) and by collective agreements in the Division's enterprises. In 2019, occupational health and safety costs totalled RUB 332.5 million. (GRI 403-4)

#### OCCUPATIONAL HEALTH AND SAFETY COSTS (RUB MILLION)

2017	2018	2019	2020 (estimate)
317.2	385.6	332.5	387.6

**All employees working in hazardous working conditions (4,419 people) regularly undergo periodic medical examinations and are entitled to extra medical examinations.**

#### NUMBER OF EMPLOYEES WORKING IN HAZARDOUS WORKING CONDITIONS (PEOPLE)

(GRI 403-3)

2017	2018	2019
3,918	4,305	4,419

## 9.4. EMPLOYEE PERFORMANCE MANAGEMENT

The Division has in place a single employee performance management policy, which includes:

(GRI 404-3)

- Developing standardized principles and tools for setting KPI targets and evaluating their achievement by employees;
- Evaluating the level of employees' skills, including for the payment of bonuses<sup>10</sup>;
- Preparing recommendations for forming the talent pool;
- Preparing individual development plans for employees to plan further training.

<sup>10</sup> Performance assessment covers employees in all of the Division's enterprises.

**The main indicator reflecting employee performance is labour productivity, which has been growing steadily in recent years.**

Employee engagement surveys are an important driver of employee performance. Based on the findings of the survey, the Division's management can gain an insight as to whether employees in the industry are motivated to address prioritized tasks, and can identify the key levers for increasing employee engagement and motivation.

## 9.5. EMPLOYEE TURNOVER

Employee turnover<sup>11</sup> is inevitable in any company. Across the Division's enterprises, there are no cyclical (seasonal, etc.) headcount fluctuations: changes in the headcount are caused by downsizing and voluntary retirements.

<sup>11</sup> Calculations are based on the average headcount.

**In 2019, the average employee turnover rate across the Division decreased against 2018 and reached 11%. The share of newly hired employees remained the same as in 2018 and stood at 14%.**

(GRI 401-1)

### EMPLOYEE TURNOVER (PEOPLE / %)

Age and gender	2017		2018		2019	
	people	%	people	%	people	%
Under 35	749	13	713	13	692	12
Over 35	2,027	19	1,235	11	1,251	10
Male	2,007	19	1,339	12	1,191	10
Female	769	13	608	10	752	12
<b>TOTAL</b>	<b>2,776</b>	<b>17</b>	<b>1,947</b>	<b>11</b>	<b>1,943</b>	<b>11</b>

### NEWLY HIRED EMPLOYEES (PEOPLE / %)

Age and gender	2017		2018		2019	
	people	%	people	%	people	%
Under 35	1,051	19	1,391	25	1,411	25
Over 35	1,321	12	954	8	1,049	9
Male	1,731	16	1,610	14	1,639	14
Female	644	11	735	12	821	13
<b>TOTAL</b>	<b>2,375</b>	<b>14</b>	<b>2,345</b>	<b>14</b>	<b>2,460</b>	<b>14</b>

Professional development of employees is a vital prerequisite for the Division's dynamic growth and competitive strength.

The Division's enterprises are active participants of professional skill and managerial competence development programmes. Special emphasis is placed on the onboarding of new employees and transfer of key knowledge from experienced mentors to ensure that young specialists demonstrate high performance soon and preserve the unique and valuable proprietary information within the Division.

## 9.6. DEVELOPMENT OF OPERATING PERSONNEL

■ Specialists of enterprises of JSC Atomenergomash won six medals in the WorldSkills Hi-Tech 2019 National Competition: five golds and one silver. An employee of the Atom-mash branch of JSC AEM-Technology won the title of the best welder for the fifth time in a row.

■ The Atom-mash branch of JSC AEM-Technology and JSC RPA CNIITMASH have founded competence centres specializing in welding technologies. These centres provide training both for specialists in the industry and for employees of other organizations.

# 10. DEVELOPING THE REGIONS OF OPERATION

10



## 10.1. SOCIAL RESPONSIBILITY AND CHARITY IN THE REGIONS OF OPERATION

The development of social programmes and active communication and cooperation with regional governments on matters related to the labour market helps to make ROSA-TOM's Mechanical Engineering Division more attractive to employees and reduce social tension in the regions.

Regional enterprises of the Division are involved in urban improvement and infrastructure development in its regions of operation, especially in their host towns and cities. In addition, the Division takes part in charity projects.

**In total, in 2019, the Division's enterprises spent over RUB 76 million on charity projects.**

### CHARITY EXPENSES (RUB '000) (GRI 203-1)

Enterprise	2017	2018	2019
JSC Atomenergomash	3,511	6,547	7,000
JSC Experimental and Design Organization GIDROPRESS	18	450	5,700
PJSC ZiO-Podolsk	-	955	7,000
JSC Afrikantov OKBM	12	19,724	18,693
JSC AEM-Technology	150	166	15,653
PJSC EMSS	-	-	22,296
<b>TOTAL</b>	<b>3,691</b>	<b>27,842</b>	<b>76,342</b>

### 2019 PROJECTS

No.	Name	Description
1	<b>Helping the elderly</b>	<ul style="list-style-type: none"> <li>Volunteer campaign on the International Day of Older Persons: celebrations and congratulations for the elderly (JSC ATM, Volgodonsk).</li> <li>The Joy of Old Age: collection of gifts for the elderly in care homes and nursing departments of rural hospitals (Moscow).</li> </ul>
2	<b>Helping children (assistance to orphans, cancer patients and those suffering from other diseases)</b>	<ul style="list-style-type: none"> <li>Collection of gifts and humanitarian aid for the Aistenok children's social rehabilitation centre, for low-income families with many children, and for children with disabilities at boarding school No. 2. In addition to the gifts collected for children, a New Year party was held in the Aistenok SRC (Atomash branch of JSC AEM-Technology, Volgodonsk).</li> <li>Preparation of New Year's gifts for children at boarding school No. 8 for orphans and abandoned children (JSC Afrikantov OKBM, Nizhny Novgorod).</li> </ul>
3	<b>Helping animals</b>	<ul style="list-style-type: none"> <li>Fundraising during the Ice Fun event. Food for animals, financial resources, etc. (JSC Afrikantov OKBM, Nizhny Novgorod).</li> </ul>
4	<b>Helping employees</b>	<ul style="list-style-type: none"> <li>Collection of charitable contributions from employees in order to help colleagues who are in a difficult situation related to their health or the life and health of their children.</li> </ul>
5	<b>Preserving the environment</b>	<ul style="list-style-type: none"> <li>Creation of the Green Office Change Support Team consisting of passionate and proactive colleagues. The team set up a used battery collection point in the office and the process for the disposal of used batteries, conducted a clean-up in the office, organized waste paper collection and installed a health-food vending machine in the office (JSC Atomenergomash, Moscow).</li> <li>An environmental event involving rafting on the Lukh River (in the Klyazminsko-Lukhsky State Nature Reserve) and garbage collection from tourist sites along the river bank (JSC Afrikantov OKBM, Nizhny Novgorod).</li> </ul>

No.	Name	Description
6	Other	<ul style="list-style-type: none"> <li>■ Blood donation campaigns are conducted in 70% of the Division's enterprises.</li> <li>■ MARATHON OF KINDNESS. On a weekly basis, employees were provided with information about different opportunities for involvement in national and local charity and volunteer projects: Imaginarium Dobro, Dishes for a Children's Hospice, Intellectual Volunteer, Zero-Waste Life, On Vacation for #Good, 100 Things and Nothing Unwanted (donating unwanted items), Grandchildren by Correspondence (as part of the Joy of Old Age campaign), Plant a Forest. We monitored statistical data on participants in each campaign and collected feedback. Participants included eight enterprises of the Division (Moscow, Ekaterinburg, Saint Petersburg, Volgodonsk, Petrozavodsk, Podolsk).</li> <li>■ Running a first aid training course for employees (Moscow).</li> </ul>

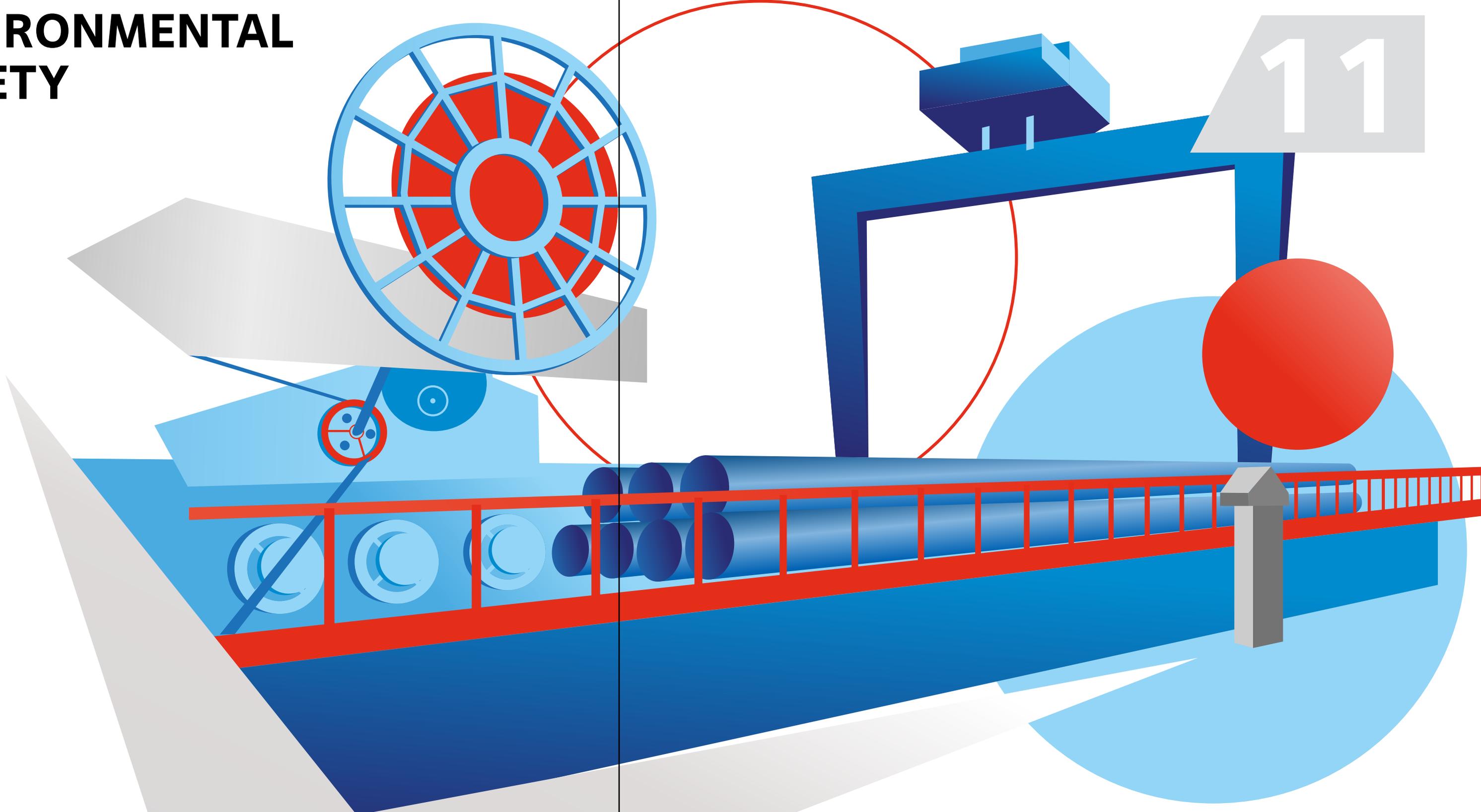
The Division's enterprises pay taxes to budgets of different levels every year, with JSC Experimental and Design Organization GIDROPRESS, JSC Afrikantov OKBM, JSC AEM-Technology and PJSC ZiO-Podolsk ranking among the largest taxpayers in their respective regions.

**PAYMENTS TO BUDGETS OF DIFFERENT LEVELS (RUB MILLION)**

2018		2019		2020 (estimate)	
Accrued	Paid	Accrued	Paid	Accrued	Paid
7,449.5	6,816.9	8,088.1	8,009.2	5,093.7	6,230.9



# 11. ENVIRONMENTAL SAFETY



# 11.1. ENVIRONMENTAL MANAGEMENT

Environmental management is a crucial aspect of the Division’s operations, as the Division has a wide network of manufacturing enterprises of various specializations that consume resources in the course of production and make an impact on the environment.

A number of the Division’s enterprises (PJSC ZiO-Podolsk, JSC RPA CNIITMASH, AAEM LLC, PJSC EMSS, JSC ATM, JSC Experimental and Design Organization GIDROPRESS, JSC CDBMB, JSC Atomenergomash, JSC Afrikantov OKBM) have been issued with certificates of conformity to ISO 14001<sup>12</sup>.

An important priority is to minimize the negative environmental impact of nuclear facilities.

As part of their large-scale projects, the Division’s enterprises incur costs related to measures aimed at preventing and minimizing the environmental impact and to the operation of the environmental management system. In 2019, the total environmental costs exceeded RUB 225 million.

Mechanical engineering enterprises need uninterrupted and efficient energy supply for the production process. Energy is needed for the operation of machine tools, heating and lighting in buildings, as well as for heat treatment of finished products and blanks.

**To assess benefits from measures to improve energy efficiency, a differentiated target is set in the Division for the annual reduction in the consumption of resources (expressed as a percentage). In 2019, the target was met, with energy costs decreasing by 20.55% compared to 2015 (savings totalled about RUB 196 million).**

<sup>12</sup> ISO 14001 is part of a series of international standards for the implementation of environmental management systems.

## ENERGY CONSUMPTION (‘000 GJ) (GRI 302-1)

2017	2018	2019				2020 (estimate)
		Heat <sup>13</sup>	Electricity	Gas	Total	
5,205	5,283.6	0.2	541.3	2,916.7	3,458.2	3,721.3

<sup>13</sup> Heat is supplied to PJSC ZiO-Podolsk, JSC Afrikantov OKBM and the Petrozavodskmash branch of JSC AEM-Technology from their own boiler houses, which are fuelled mainly with natural gas.

**The biggest energy savings were traditionally achieved by the Atomash and Petrozavodskmash branches of JSC AEM-Technology and JSC Afrikantov OKBM<sup>14</sup>.**

<sup>14</sup> Calculated in relation to the base year (2015).

## ENERGY SAVINGS (‘000 GJ) (GRI 302-4)

2017	2018	2019			
		Heat	Electricity	Gas	Total
205.9	554.8	-4	174.7	488.4	659.1

Water resources are required for the business operations of the enterprises and are used in industrial processes (in cooling / heating systems, when checking whether products are leak-proof, as part of process fluids).

**There was no significant change in water consumption compared to 2018.**

### WATER CONSUMPTION ('000 M<sup>3</sup>) (GRI 303-1)

Source	2017	2018	2019
Municipal water supply	1,494.4	1,481.6	<b>1,490.2</b>
Wastewater	1,027.8	1,058.7	<b>1,068.1</b>
Groundwater	370.7	345.5	<b>340.8</b>
Surface water	1,107.8	959.1	<b>994.6</b>
<b>TOTAL</b>	<b>4,000.7</b>	<b>3,844.9</b>	<b>3,893.7</b>

### WASTEWATER DISCHARGES ('000 M<sup>3</sup>) (GRI 306-1)

Destination	2017	2018	2019
Municipal sewerage systems	1,964	1,939	<b>1,912</b>
Surface water bodies	218.8	225.2	<b>232.7</b>
<b>TOTAL</b>	<b>2,183</b>	<b>2,164</b>	<b>2,145</b>

## 11.2. GREENHOUSE GAS EMISSIONS

In accordance with the legislation of the Russian Federation, enterprises develop draft standards regulating waste generation and setting limits for waste disposal, as well as draft standards stipulating maximum permissible emissions of air pollutants. As a result, enterprises receive documents for the disposal of industrial and consumer waste and permits for the emission of pollutants into the atmosphere.

The Division's enterprises are a source of direct emissions of two types of greenhouse gases: carbon dioxide (CO<sub>2</sub>) and nitrous oxide (N<sub>2</sub>O). (GRI 305-1)

### DIRECT GREENHOUSE GAS EMISSIONS (TONNES)

Gas	2017	2018	2019
Carbon dioxide (CO <sub>2</sub> )	342.7	379.1	<b>371.2</b>
Nitrous oxide (N <sub>2</sub> O)	3.6	3.8	<b>3.8</b>

## 11.3. EMISSIONS OF POLLUTANTS

The Division's enterprises regularly undertake initiatives to reduce the emission of pollutants. As part of these initiatives, the following measures are implemented on the premises of the enterprises:

- Industrial environmental control and monitoring of pollutant emissions into the atmosphere;

- Monitoring of compliance with standards and the requirements of environmental legislation;

- Improvements in buffer areas;

- Maintenance, servicing and cleaning of dust collectors, gas scrubbers and wastewater discharge outlets.

## EMISSIONS OF OZONE-DEPLETING SUBSTANCES (TONNES<sup>15</sup>) (GRI 305-6)

Substance	2017	2018	2019 (target)	2019 (actual)	2020 (estimate)
Tetrachloromethane	0.0503	0.0513	0.0513	<b>0.0513</b>	0.0513

<sup>15</sup> CFC-11 equivalent.

Large enterprises of the Division (PJSC ZiO-Podolsk, JSC Afrikantov OKBM and PJSC EMSS) account for the largest share of emissions.

## POLLUTANT EMISSIONS INTO THE ATMOSPHERE (TONNES) (GRI 305-7)

Pollutant	2017	2018	2019 (target)	2019 (actual)	2020 (estimate)
NOx	241.2	253.9	511.3	<b>371.3</b>	377
SOx	35.2	38.7	36.5	<b>24.3</b>	26.1
Volatile organic compounds (VOCs)	75.6	46.7	74.4	<b>45.7</b>	45.2
Hazardous air pollutants (HAPs)	15.4	19	19	<b>19</b>	19
Particulate matter (PM)	64.6	46.6	72.8	<b>72.6</b>	72.9
Other	136.9	166.4	173	<b>191</b>	191.5

## 11.4. WASTE MANAGEMENT

Waste sorting has been introduced at PJSC ZiO-Podolsk (this involves collecting waste paper, cardboard, polyethylene and used batteries).

■ Atommash branch of JSC AEM-Technology;  
■ JSC RPA CNIITMASH.

In addition, a number of enterprises are working to reduce the amount of hazard class 1 mercury-containing waste by replacing mercury-containing light bulbs with energy-saving LED light bulbs:

The main waste processing methods used by the Division's enterprises include reuse, disposal at a landfill and transfer to specialized contractors.

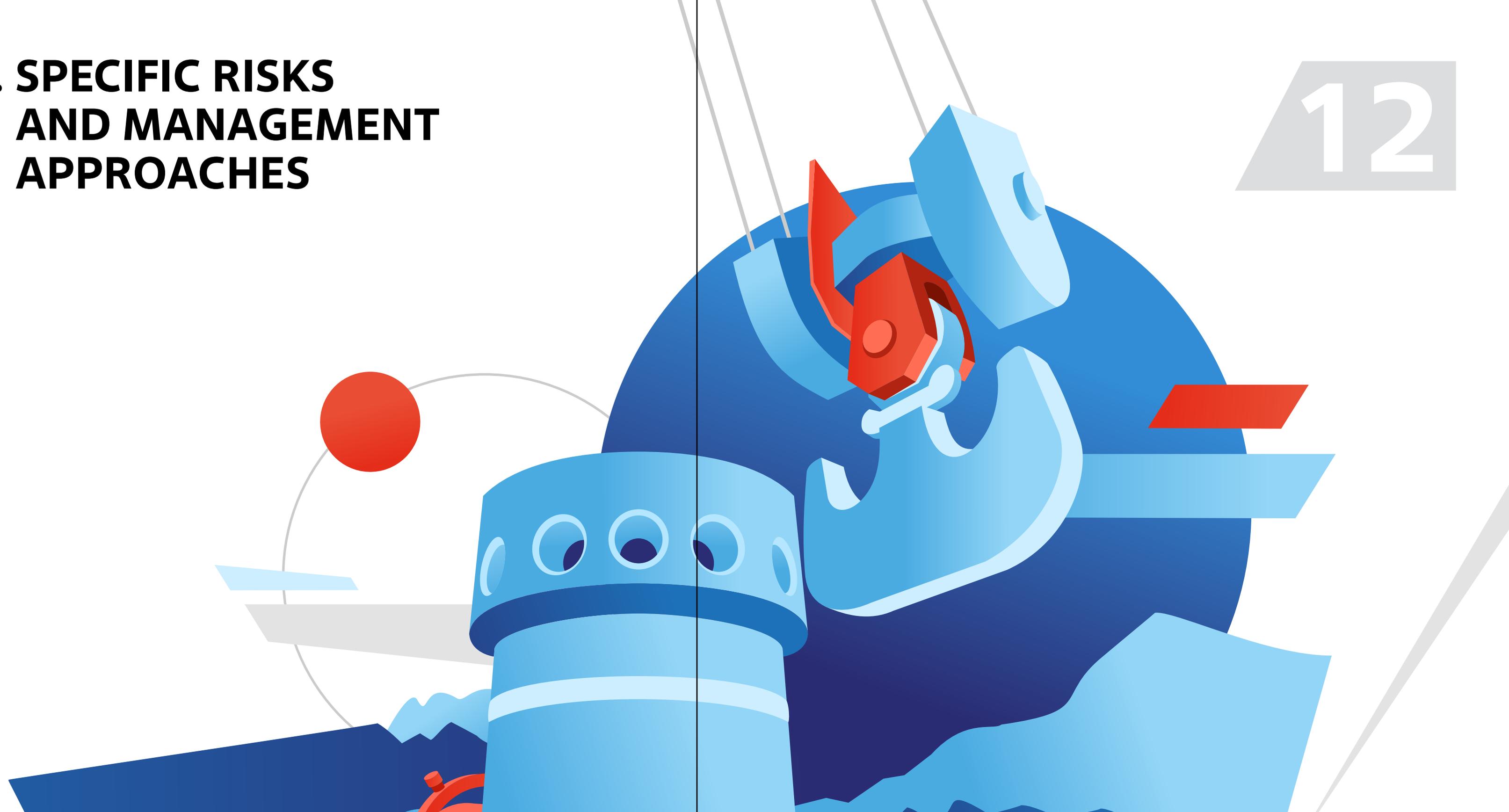
## TOTAL WEIGHT OF WASTE (TONNES) (GRI 306-2)

Waste	2017	2018	2019 (target)	2019 (actual)	2020 (estimate)
Hazardous	3,987.3	4,189.4	5,038.6	<b>3,428.5</b>	6,054.3
Non-hazardous	26,030.2	27,069.7	30,516.3	<b>26,765.6</b>	28,002.1
<b>Total</b>	<b>30,017.6</b>	<b>31,259.1</b>	<b>35,554.9</b>	<b>30,194.1</b>	<b>34,056.4</b>

## SHARE OF WASTE BY DISPOSAL METHOD

Disposal method	Volume and share of waste (tonnes / %)
Reuse	8,096.6 / 26.8
Recovery of valuable components	419.4 / 1.4
Disposal at a landfill	10,064.6 / 33.3
On-site storage	4,102.4 / 13.6
Other	7,511.1 / 24.9

# 12. SPECIFIC RISKS AND MANAGEMENT APPROACHES



A Risk Management Group has been formed in JSC Atomenergomash, acting on the basis of the Regulation on the Risk Management Group of JSC Atomenergomash. It is tasked with forming the Corporate Risk Management System (CRMS) and coordinating activities in the field of risk and insurance management, as well as the settlement of insurance claims.

The Group's responsibilities include regular risk audit and verification of compliance with the established risk limits, organization of communication and cooperation between all participants of the risk management process, from the level of COs to ROSATOM, in the course of decision-making related to risks and insurance.

In 2019, the CRMS was integrated into strategic, investment and budget planning processes and the management of accounts receivable and payable.

**The Risk Management Group has been included in the scope of mandatory preliminary approval of contracts proposed for conclusion by JSC Atomenergomash, which has significantly enhanced its ability to monitor and manage risks at the stage of contract preparation.**

The Risk Management Group also manages insurance claims settlement processes in the Division. In 2019, as part the settlement of claims related to an insurable event involving an ARIES machine in the Petrozavodskmash branch of JSC AEM-Technology, the arbitration court resolved to recover more than RUB 62 million in favour of JSC AEM-Technology.

This ruling not only made a direct economic impact on the Division, but also set a precedent for a successful settlement of a dispute with a major insurance company for the industry as a whole.

As part of the integration of risk and insurance management processes, JSC Atomenergomash analyses property risks of the main operating COs (including pre-insurance surveys) and develops a property risk management programme; it also organizes and monitors the settlement of claims related to insurable events in the enterprises.

In 2019, the Risk Committee functioned in JSC Atomenergomash; it includes the owners of key risks of the Mechanical Engineering Division at the level of Deputy Chief Executive Officers. An operating model was created for assessing risks associated with potential projects in the 1C:CRM environment; training programmes in the sphere of risk and insurance management were developed. Training seminars were held (face to face and via video conferencing) for managers and specialists responsible for risk and insurance management in the main operating COs.

**At the end of 2019, the Risk Management Standard for the Company's Projects was developed and adopted.**

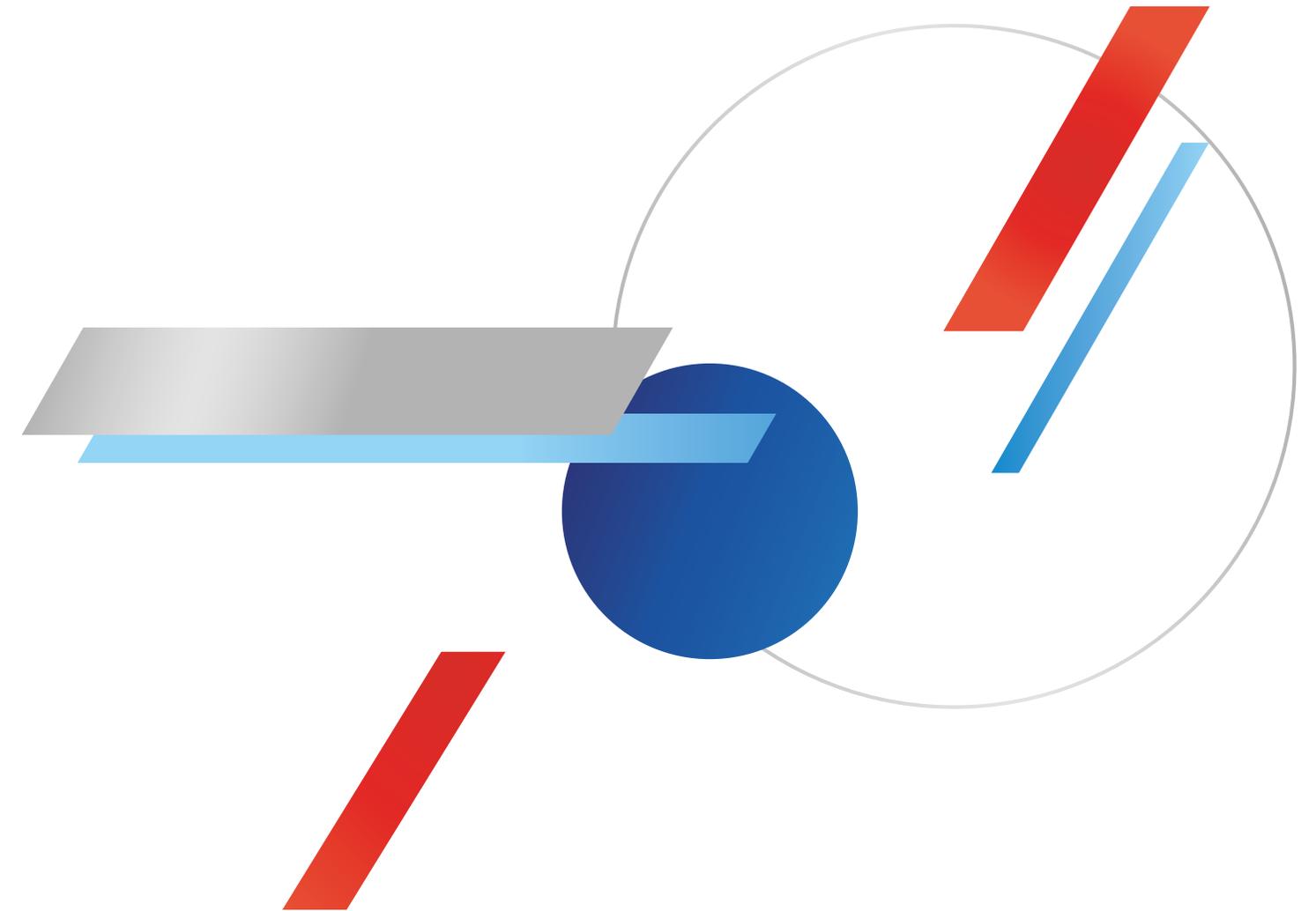


The Company regularly improves the risk management system and assesses its compliance with international standards (ISO 31000:2018, etc.), best industry and international practice.

Key risks for the Company in 2019 included currency risks, operational risks (falling behind schedule or postponement of implementation), inflation and interest rate risks, and credit risks (counterparty risks).

Main risk factors include the persisting macroeconomic and foreign policy uncertainty, a possible deterioration in the market environment and the financial position of existing and potential counterparties.

The most effective methods and measures for risk management at year-end 2019 included the monitoring of purchases made in foreign currencies or in roubles at the foreign exchange rate, the terms and conditions of revenue contracts mirroring those of expense contracts, rescheduling the start of production, implementing RPS projects, achieving savings from procurement procedures, changes in the volume of overhead costs, reducing the consumption of raw materials, analysing counterparty risks when concluding contracts, and monitoring debt risks throughout the entire life cycle of a project.



# 13. ADDITIONAL INFORMATION

13



**GRI CONTENT INDEX** (GRI 102-54, 102-55)

The report has been prepared in accordance with the GRI Standards, the Core option.

Disclosure	Page in the reporting materials / Comments	Disclosure	Page in the reporting materials / Comments	Disclosure	Page in the reporting materials / Comments
<b>GRI 101. Foundation (2016)</b>					
101	98				
<b>GRI 102. General Disclosures (2016)</b>					
102-1	8	102-14	6	102-45	98
102-2	8	102-16	34	102-46	Detailed information on the Company's compliance with the principles established in the GRI Standards is presented in the interactive annual report of JSC Atomenergomash for 2018 at <a href="https://ar2018.aem-group.ru">https://ar2018.aem-group.ru</a> 97, 98
102-3	100	102-18	14, 16	102-47	88, 97
102-4	25	102-20	17	102-48	98
102-5	8, 100	102-22	15	102-49	97, 98
102-6	17	102-23	16	102-50	96
102-7	22, 25, 56	102-26	17	102-51	96
102-8	56	102-33	15	102-52	96
102-9	Detailed information is presented in the annual report of JSC Atomenergomash for 2018 on page 41	102-40	97	102-53	100
102-10	14, 98	102-41	58	102-54	86
102-11	36	102-42	97	102-55	86
102-12	96	102-43	Detailed information is presented in the annual report of JSC Atomenergomash for 2018 on pages 85-87 97	102-56	The Company does not seek independent external professional assurance

Disclosure	Page in the reporting materials / Comments	Disclosure	Page in the reporting materials / Comments	Disclosure	Page in the reporting materials / Comments
102-13	58	102-44	97		
<b>GRI 103. Management Approach (2016)</b>					
103-1	88, 98	103-2	88	103-3	88

Disclosure	Report page	Omission / Comment
<b>GRI 201. Economic Performance (2016)</b>		
201-4	14	In 2019, JSC Atomenergomash and its COs did not receive significant financial assistance from the government
<b>GRI 203. Indirect Economic Impacts (2016)</b>		
203-1	66	
<b>GRI 204. Procurement Practices (2016)</b>		
204-1		In 2019, purchases from Russian suppliers accounted for 95% of the total purchases (87% in 2018)
<b>GRI 205. Anti-Corruption (2016)</b>		
205-3		In 2019, eight employees were disciplined by the heads of organizations
<b>GRI 302. Energy (2016)</b>		
302-1	73	302-4 73
<b>GRI 303. Water (2016)</b>		
303-1	74	
<b>GRI 305. Emissions (2016)</b>		
305-1	75	Data have not been converted to CO <sub>2</sub> equivalent
305-6	76	305-7 76
<b>GRI 306. Effluents and Waste (2016)</b>		
306-1	74	No breakdown by water quality is provided, since the relevant records are not kept
306-2	77	No breakdown into hazardous and non-hazardous waste is provided for waste management
<b>GRI 307. Environmental Compliance (2016)</b>		
307-1		There were no significant fines

Disclosure	Report page	Omission / Comment
<b>GRI 401. Employment (2016)</b>		
401-1	62	No breakdown by region is provided
401-2	58	
<b>GRI 402. Labour/Management Relations (2016)</b>		
402-1	58	
<b>GRI 403. Occupational Health and Safety (2016)</b>		
403-2	59	The injury rate, the lost day rate, the occupational disease rate and the absentee rate, including breakdown by gender, have not been disclosed, since the relevant records are not kept
403-3	61	403-4 60
<b>GRI 404. Training and Education (2016)</b>		
404-3	61	
<b>GRI 416. Customer Health and Safety (2016)</b>		
416-1	20	
<b>GRI 417. Marketing and Labelling (2016)</b>		
417-3		JSC Atomenergomash complies with the current Russian and international legislation on marketing communications, including advertising and product promotion. There were no violations in 2019
<b>GRI 419. Socioeconomic Compliance (2016)</b>		
419-1		In 2019, no significant fines or non-monetary sanctions were imposed on the Division's enterprises

(GRI 102-47, 103-1, 103-2, 103-3)

No.	Topic	Report Chapter
1	Economic performance and financial position (GRI 201. Economic Performance (2016))	3. Key Results and Performance Indicators of the Division
2	Market presence	2. Overview of the Mechanical Engineering Division 8. New Products and Businesses
3	Commercial operations	

No.	Topic	Report Chapter
4	Investment activities	3. Key Results and Performance Indicators of the Division
5	Operating results	8. New Products and Businesses
6	Quality and safety (GRI 416. Customer Health and Safety (2016))	9. Developing the Human Capital
7	Optimization of operations	6. Digital Technologies and Products 7. Innovation and Development of Science
8	Procurement (GRI 204. Procurement Practices (2016))	Detailed information is presented in the annual report of JSC Atomenergomash for 2018 on page 41
9	Innovative development	7. Innovation and Development of Science
10	Scientific research	
11	Emissions and waste (GRI 305. Emissions (2016), GRI 306. Effluents and Waste (2016))	11. Environmental Safety
12.1	Environmental management and compliance (GRI 307. Environmental Compliance (2016))	
12.2	Water consumption (GRI 303. Water (2016))	
12.3	Energy consumption (GRI 302. Energy (2016))	
13	Personnel composition	9. Developing the Human Capital
14	Working conditions and work organization (GRI 402. Labour/Management Relations (2016))	
15	Health and safety in the workplace (GRI 403. Occupational Health and Safety (2016))	
16	Employee performance management	
17	Personnel replacement (GRI 401. Employment (2016), GRI 404. Training and Education (2016))	
18.1	Impact on the regions of operation (GRI 203. Indirect Economic Impacts (2016))	10. Developing the Regions of Operation
18.2	Social investment and charity	

No.	Topic	Report Chapter
19	Anti-corruption practices (GRI 205. Anti-Corruption (2016))	Detailed information is presented in the annual report of JSC Atomenergomash for 2018 on page 51
20	Compliance with laws (GRI 419. Socioeconomic Compliance (2016))	9. Developing the Human Capital 11. Environmental Safety
21	Marketing and PR communications (GRI 417. Marketing and Labelling (2016))	Detailed information is presented in the annual report of JSC Atomenergomash for 2018 on page 85
22	Activities of corporate governance bodies	2. Overview of the Mechanical Engineering Division
23	Internal control, audit and risk management	12. Specific Risks and Management Approaches

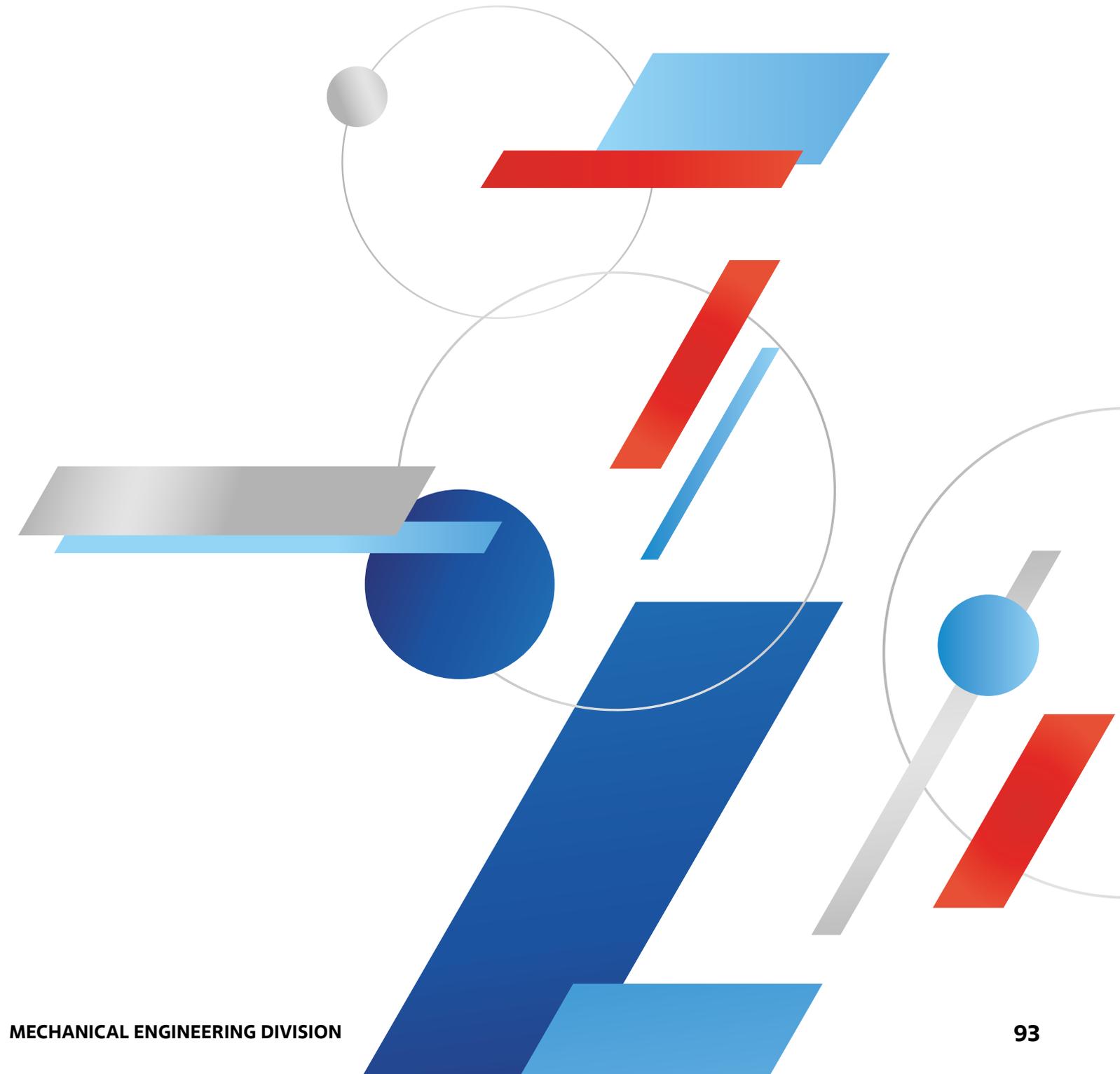
## 13.1. GLOSSARY

<b>CHPP</b>	Combined heat and power plant
<b>CO</b>	Controlled organization
<b>FCS</b>	Federal Customs Service
<b>FNR</b>	Fast neutron reactor
<b>FTS</b>	Federal Tax Service
<b>HPP</b>	Hydraulic piston pump
<b>IP</b>	Intellectual property
<b>IPC</b>	Industrial power complex
<b>JV</b>	Joint venture

<b>KPI</b>	Key performance indicator
<b>KSU TS</b>	Turnkey equipment control system
<b>LNG</b>	Liquefied natural gas
<b>LTIFR</b>	Lost Time Injury Frequency Rate
<b>MCP</b>	Main circulation pump
<b>NPP</b>	Nuclear power plant
<b>NPU</b>	Nuclear power unit
<b>NSGP</b>	Nuclear steam generating plant
<b>QMS</b>	Quality Management System
<b>RPS</b>	ROSATOM Production System
<b>RU</b>	Reactor unit
<b>SIER</b>	Spent ion exchange resin
<b>SMBs</b>	Small and medium-sized businesses
<b>STC</b>	Scientific and Technical Council
<b>TPP</b>	Thermal power plant
<b>VSG</b>	Vertical steam generator
<b>VVER</b>	Water-cooled water-moderated reactor

## TERMS USED IN THE REPORT

<b>Consolidated revenue</b>	the total revenue of organizations included in the consolidated financial statements in accordance with the methodology approved in the Division, less intra-group revenue and other adjustments.
<b>Employee engagement</b>	an emotional and intellectual state that encourages employees to do their jobs effectively.
<b>Incoming control</b>	monitoring the quality and completeness of products delivered to an NPP site and intended for use in the course of its construction and operation.
<b>LTIFR</b>	Lost Time Injury Frequency Rate.
<b>Material topic</b>	a topic that reflects a significant area of the Division's business or impact on stakeholders.
<b>Significant regions of operation</b>	regions where production facilities and key personnel of the enterprise are located.
<b>Stakeholder</b>	an individual, a group of persons or an organization that is affected by the Division and / or can affect it.
<b>Top management (senior management)</b>	employees of the Division who make decisions that have a significant impact on the operations of the enterprise as a whole (from the level of directors in functional areas up to the Chief Executive Officer).



# 14. INFORMATION ON THE REPORTING PROCESS



#### GRI 102-50

In accordance with Russian legislation, the Annual Reporting Standard of JSC Atomenergomash and the GRI Sustainability Reporting Standards (hereinafter referred to as GRI Standards 2016), JSC Atomenergomash publishes these Public Reporting Materials (Reporting Materials), which disclose key performance indicators of the Mechanical Engineering Division of ROSATOM for the period from January 1, 2019 through December 31, 2019 and long-term development prospects.

#### GRI 102-51, 102-52

JSC Atomenergomash traditionally uses an annual reporting cycle; the previous Report covering performance in the 2018 reporting year was released in 2019.

#### GRI 102-12

The reporting materials were prepared taking into account the requirements of the following external regulatory documents (in the current versions):

- Federal Law No. 208-FZ of December 26, 1995 on Joint-Stock Companies;
- Order of ROSATOM No. 1/1481-P dated December 25, 2019 on Approval of the Uniform Industry-Wide Guidelines for Public Reporting of ROSATOM and Its Organizations;
- Order of ROSATOM No. 1/1060-P dated October 7, 2019 on Amendments to the Uniform Industry-Wide Public Reporting Policy of ROSATOM;

- Regulations of the Bank of Russia No. 454-P dated December 30, 2014 on Disclosure of Information by Issuers of Issue-Grade Securities;
- Letter from the Bank of Russia No. 06-52 / 2463 dated April 10, 2014 on the Corporate Governance Code;
- The AA1000 AP AccountAbility Principles Standard (2018);
- The Global Reporting Initiative (GRI) Sustainability Reporting Standards;
- The International Integrated Reporting Framework.

JSC Atomenergomash has approved an internal regulatory document, namely the Public Annual Reporting Standard, updated by order No. 33/72-P of the Chief Executive Officer dated February 4, 2020. It establishes the procedure and requirements for the reporting process, the responsibility of the participants of this process, and the requirements for the Report, including the System of Certified Performance Indicators of JSC Atomenergomash; in addition, requirements for the disclosure of information in the reports of the Division's COs were added for the first time.

Responsibility for the preparation of the Reporting Materials has been assigned to the Strategy and Development Department of the Company.

#### GRI 102-42

The Division recognizes stakeholder engagement as one of the fundamental prerequisites of sustainable development and, together with the enterprises of the Division, consistently promotes constructive engagement. This involves the following:

- Analysing the mutual influence of the Division and its stakeholders with regard to various aspects of activities;
- Defining stakeholder expectations and aspirations;
- Responding to stakeholder expectations and seeking consensus on outstanding issues;
- Building long-term partnerships with key stakeholders.

#### GRI 102-40, 102-43, 102-44, 102-46, 102-47, 102-49

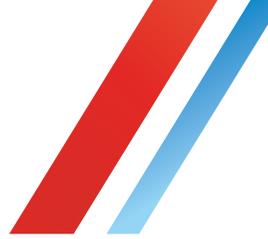
In accordance with the stakeholder engagement practice adopted in the Division, the Division held dialogues in a remote format. Thus, at the beginning of the reporting campaign, a remote questionnaire survey was carried out among stakeholders concerning the content and relevance of the list of material topics to be disclosed and their prioritization, as well as the approval of the concept of the Reporting Materials by the Chief Executive Officer of the Company, including the findings of the questionnaire survey, a list of indicators and main focus areas (January 13, 2020 – January 31, 2020).

### **Members of the Public Reporting Committee of JSC Atomenergomash determine the list of indicators to be disclosed in the Reporting Materials from the Division's System of Performance Indicators.**

During public consultations on the draft Report held remotely (May 13, 2020 – May 22, 2020), a summary of communication in the course of preparation of the Report was provided, and a number of areas for improving future reporting campaigns were identified.

The practice adopted by the Division does not involve updating the stakeholder map on an annual basis: information on stakeholder prioritization was disclosed in previous public annual reports<sup>16</sup>.

<sup>16</sup> <https://ar2014.aem-group.ru/#/ru/1382>



GRI 102-46

The most important stage in the preparation of the Reporting Materials is the definition of their content. For this purpose, the Division applies a procedure for assessing the materiality of topics related to its operations, which has been developed by the Division in accordance with the GRI Standards and has been recognized both in the industry and beyond<sup>17</sup>.

<sup>17</sup> Included in the Integrated Reporting Examples Database of the International Integrated Reporting Council (IIRC).

GRI 101, 102-46

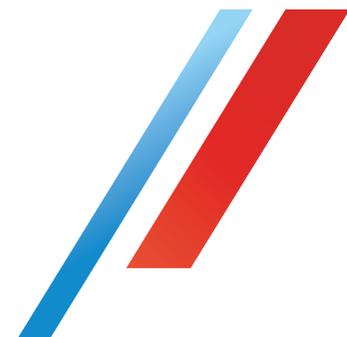
When preparing the Reporting Materials, the Division adhered to the principles established in the GRI Standards

GRI 102-48

There were no restatements of information as compared to the previous year.

GRI 102-10, 102-45, 102-49 and 103-1

Following a survey among the members of the Annual Reporting Committee of JSC Atomenergomash, no changes were made to the list of material topics in the reporting year. In 2019, there were changes in the structure of the Division: JSC Petrozavodskmash Foundry, JSC IFTP and JSC REMCO were excluded from the scope of consolidation. JSC SNIIP was excluded due to the sale of the asset.

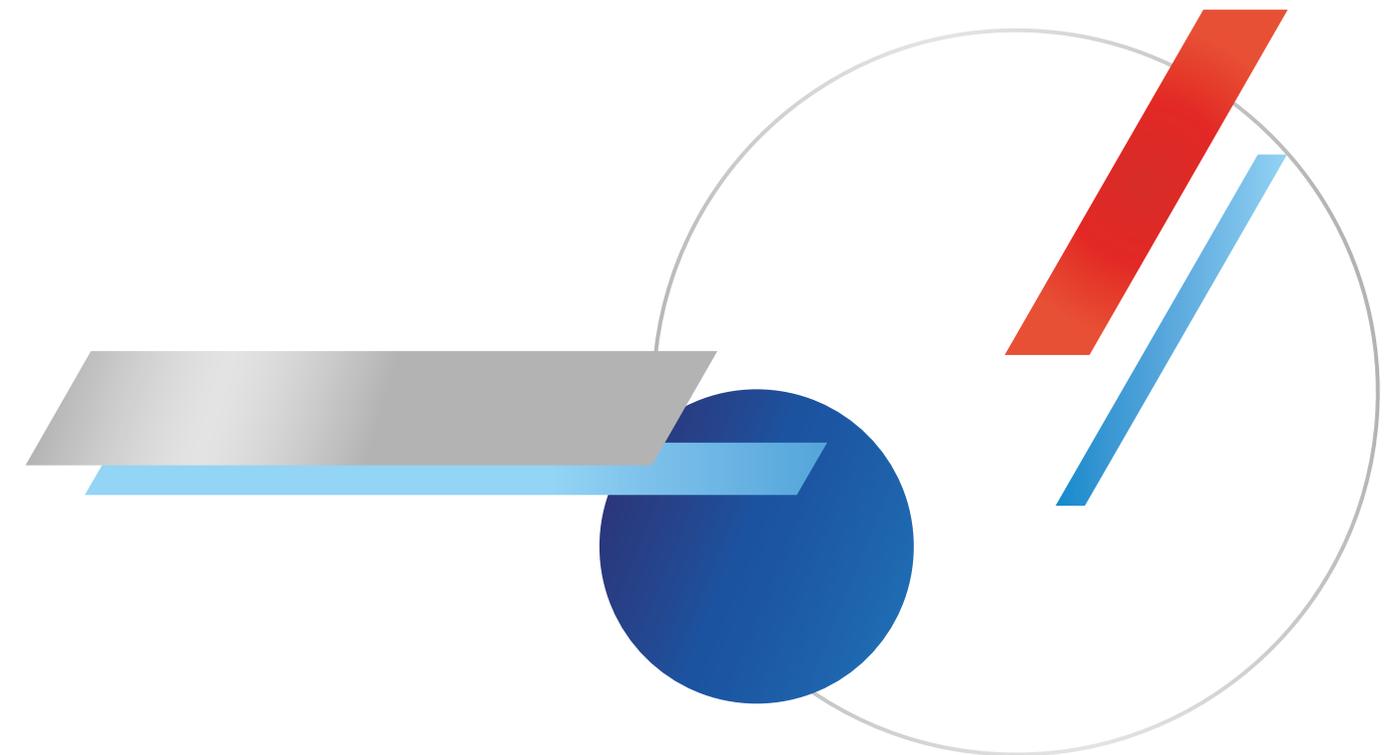


## 14.1. DISCLAIMER

This Report contains a number of forecasts and estimates regarding the future position of the Division on various topics, its plans and projected results.

Due to their nature, forecasts and estimates are associated with inherent risk and uncertainty. The Division's operations and its external environment can be influenced by a number of economic, political, social and other factors of a probabilistic nature.

Accordingly, the Division would like to emphasize that actual results may differ from those stated, directly or indirectly, in the forward-looking statements contained in the Report.



## 14.2. CONTACT DETAILS (GRI 102-3, 102-5, 102-53)

### JOINT-STOCK COMPANY NUCLEAR AND POWER ENGINEERING

#### JSC ATOMENERGOMASH

Primary state registration number (OGRN): 1067746426439,  
registered on March 29, 2006 by Inter-District Inspectorate No. 46 of the Federal Tax Service in Moscow  
Registered office: 24 Bolshaya Ordynka Street, Moscow, 119017  
Postal address: 28, bldg. 3, Ozerkovskaya Embankment, Moscow, 115184  
Form of ownership: other mixed Russian ownership

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Corporate website: [www.aem-group.ru](http://www.aem-group.ru)

Public annual reports: [www.aem-group.ru/about/reports/](http://www.aem-group.ru/about/reports/)

#### JSC Atomenergomash on social media:

Official group on VKontakte: [www.vk.com/atomenergomash](http://www.vk.com/atomenergomash)

Official community page on Facebook: [www.facebook.com/aemgroup](http://www.facebook.com/aemgroup)

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