

Responsible People



What our business partners say about us

About TVEL Fuel Company
Strategy of TVEL Fuel Company
Corporate Governance
Performance Results



Annual Report 2016

New Markets and Business Opportunities



What our business partners say about us



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Message from the Chairman of the Board of Directors of TVEL JSC



Throughout its 20-year history TVEL JSC discharged perfectly its contractual obligations, gaining thereby high international credibility, steady goodwill of reliable supplier of safe and efficient nuclear fuel.

A. M. Lokshin
Chairman of the Board of Directors of TVEL JSC,
First Deputy Director General for Operational Management of ROSATOM

Dear colleagues, friends,

TVEL Fuel Company of ROSATOM is the base division of ROSATOM, the acknowledged world leader of the front end nuclear fuel cycle. Safety and high quality of the products, customer-oriented approach, innovative approach towards production and service support in nuclear fuel operation — these are the attributes associated with the company at all stages of its existence.

Throughout its 20-year history TVEL JSC discharged perfectly its contractual obligations, gaining thereby high international credibility, steady goodwill of reliable supplier of safe and efficient nuclear fuel.

In recent years TVEL JSC considerably expanded the export market, substantially increased its partnership base. At present TVEL Fuel Company of ROSATOM undertakes global activities — Russian nuclear fuel and the components are purchased by the customers in Europe, Asia, North and South America. Along with traditional market of fuel for Russian reactors, TVEL JSC develops fuel for PWR reactors, obtains new competences for further scientific-technological development and production modernization.

The most crucial and promising event 2016 is the market launch of PWR fuel due to the negotiation of new commercial contract on export of TVS-K to Ringhals NPP (Sweden), and establishment of the consortium with Global Nuclear Fuel-Americas (USA) for pilot production of this fuel on reactors of US NPPs. Great work of the whole team of TVEL Fuel Company of Rosatom is at the core of all these milestone events.

TVEL JSC works towards strengthening of competitiveness of its products on the world market, persistently and consistently implements the program for operation efficiency increase. Over the past two years TVEL Fuel Company of ROSATOM contributed RUB 17 billion to reduction of stockpiles, whereas the cumulative effect of all enterprises of nuclear industry was RUB 28 billion.

Fuel Division achieved leadership in the nuclear industry in labor efficiency. Labor efficiency in the Fuel Company is steadily increasing due to extensive restructuring, system-based approach to reductions of costs and expenses.

Ensuring of environmental acceptability is a separate issue. TVEL Fuel Company of ROSATOM achieved tangible results in reduction of nuclear sites at its enterprises, this allowed decrease of the whole volume of radiation hazardous facilities, resulting therefore in decrease of radiation load. The Fuel Company gained unique competences for decommissioning of the nuclear facilities and rehabilitation of the territories to the environmentally acceptable state in VNIINM JSC (Moscow), ChMP JSC (Glazov, Udmurt Republic), AECC JSC (Angarsk, Irkutsk region). Zero-waste technologies were introduced.

Success of TVEL JSC on the foreign and Russian markets of the front end nuclear fuel cycle, development of new businesses, continuous innovative search, building science and technological potential allow forecasting further steady growth of ROSATOM.

I feel confident that TVEL Joint-Stock Company will remain the leader in nuclear industry, and occupy the rightful place in the Russian economy!

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Over the past two years TVEL Fuel Company of ROSATOM contributed RUB 17 billion to reduction of stockpiles

Message from the President of TVEL JSC



This anniversary year was marked by key events and efficient performance. The positions on the external markets were substantially strengthened. Significant progress was made in promotion of Russian nuclear fuel TVS-K for PWR light water reactors of Western design.

Yu. A. Olenin
President of TVEL JSC

Dear colleagues,

In 2016 TVEL — the Fuel Company of ROSATOM — marked the twentieth anniversary. This anniversary year was marked by key events and efficient performance.

The positions on the external markets were substantially strengthened. Significant progress was made in promotion of Russian nuclear fuel TVS-K for PWR light water reactors of Western design. In May 2016 TVEL JSC and Global Nuclear Fuel-Americas (GNF-A) (USA) established a strategic alliance with the purpose of licensing, marketing and fabrication of this type of fuel assemblies.

In December 2016 TVEL JSC and Vattenfall Nuclear Fuel AB (Sweden) signed the contract to supply TVS-K to Ringhals NPP, starting from 2021. This is the first contract for export of TVS-K fuel, it provides opportunities for TVEL JSC to expand its export geography due to the market entry of the fuel for PWR reactors.

Considerable works was done to introduce more efficient types of nuclear fuel on Russian and foreign NPPs. Unit 6 of Kozloduy NPP (Bulgaria) is charged with the first batch of modified fuel TVSA-12; modern nuclear fuel is being successfully introduced on Temelin NPP (Czech Republic). Successful pilot supply of FA with REMIX-fuel to Balakovo NPP. The contract for supply in 2017–2018 of fuel for experimental fast neutron reactor CEFR (PRC) and the first commercial supply of five FA P-20 in Netherlands are of major significance in the segment of the research reactors.

Testing of new updated gas centrifuge and launch of its series production became the next stage towards technological leadership of TVEL Fuel Company on the world market of the front end of nuclear fuel cycle.

TVEL paid considerable attention to development of non-nuclear business lines. Revenue from general industrial activities in 2016 was RUB 10.2 billion, which is by 21% higher than the indicator 2015. ChMP JSC is among the leaders of the products sales, in just one year it managed to conquer more than half of the Russian market of titanium welding wire. NCCP JSC is dynamic in development in this segment, its revenue from

10.2

Revenue from general industrial activities in 2016 was RUB 10.2 billion

non-nuclear business in total revenue structure makes around 30%. In the nearest 3–4 years Novosibirsk Chemical Concentrates Plant intends to increase the revenue to the volume of nuclear production.

TVEL JSC successfully implements the strategic initiatives “Social Responsibility” and “Environmental Responsibility”. TVEL Fuel Company spent RUB 226.1 million on social and charitable programs with the view to develop the territories of presence of its enterprises. Environmental expenses of the enterprises of TVEL JSC made RUB 2.106 billion.

The emphasis was made on staff management issues. Investments into development of competences of the employees made RUB 105 million in 2016. As regards personnel engagement (81%), TVEL Fuel Company is among the top three divisions of ROSATOM.

In 2017 the Company continues cooperation with its foreign and Russian partners. The reserve created in 2016 and the preceding years will open new geography and product markets. In the field of the nuclear industry TVEL JSC will enhance its credibility of innovative Russian company, contributing to development of the fuel and energy complex of Russia, and provision of energy security of its partner countries.

Key results of TVEL Fuel Company

Indicator	2014	2015
Revenue (net) from the sale of products, RUB mln	137,962	189,017
Adjusted free cash flow, RUB bln	33.3	86.6
Net income, RUB mln	20,870	55,734
EBITDA margin, %	35.5	43.5
Dividends paid in the reporting year, RUB mln	16,257	15,296
Foreign orders portfolio for products and services of FE NFC for a 10 year period, USD bln	10.4	10.3
Labor efficiency, RUB mln/person	5.49	8.40
Average staff number, persons	25,169	22,527
Environmental expenses, RUB mln	2,371	2,318
Gross tax liabilities, (actually paid) RUB mln	25,774	31,283

Key Results of TVEL Fuel Company, 2016

180,073

RUB MLN
Revenue (net) from the sale of products*

10.1

USD BLN
Foreign orders portfolio for products and services of FE NFC for a 10 year period

83.9

RUB BLN
Adjusted free cash flow

8.25

RUB MLN/PERSON
Labor efficiency

46,212

RUB MLN
Net income*

22,127

PERSONS
Average staff number

43.0%

EBITDA margin

2,106

RUB MLN
Environmental expenses

28,233

RUB MLN
Dividends paid in the reporting year

29,233

RUB MLN
Gross tax liabilities, (actually paid)

Milestones 2016



January



UEIP JSC became the industrial partner in the project aimed at production of metal 3D printer by the consortium of the leading Russian research institutes, including Giredmet JSC and RPA CNIITMASH JSC, members of ROSATOM. Members of the consortium worked on design and production of the pilot model.

February



As part of the Joint Comprehensive Action Plan of the "six" countries, approved by UNSC resolution 2231, TVEL Fuel Company imported into Russia the **Iranian** enriched nuclear materials. Implementation of this project allowed in February 2016 lifting of the sanction on Iran, imposed in connection with the Iranian nuclear program.

May



TVEL JSC and Global Nuclear Fuel-Americas (GNF-A) signed the agreement on the establishment of a strategic alliance which is aimed at joint activity for licensing, marketing and fabrication of fuel of PWR reactors operators in **USA**.

Within the framework of VIII International Forum "ATOMEXPO 2016" TVEL FC and the National Nuclear Energy Agency of **Indonesia** (BATAN) signed the Roadmap of Development of Bilateral Cooperation in the field of nuclear fuel cycle. The roadmap provides for concrete steps within the interaction of two organizations, including the possibility to supply Russian nuclear fuel for research reactors in Indonesia.

June



The team of TVEL Fuel Company became the absolute team-leader on the I branch championship held by ROSATOM using WorldSkills methods — AtomSkills 2016.

July



TVEL JSC signed the first contract on pre-test assembly program of Russian fuel TVS-K with one of NPP operators in **USA**.

Signing of the contract documents for forward supply of nuclear fuel to Paks NPP (**Hungary**).

August



Signing of the contract for supply in 2016 of fuel for the **Czech** research reactor. Supply was executed in November 2016.

PA ECP JSC developed and supplied the first silicon crystal enriched in silicon-28 isotope for international project for creation of mass standard "Kilogram-3".

September



Signing of the memorandum of intention with **International Scientific Collaboration GERDA** concerning production and supplies by PA ECP JSC of germanium enriched in stable isotope ⁷⁶Ge.

November



Unit 6 of Kozloduy NPP was charged with the first batch of modified fuel TBCA-12 (**Bulgaria**).

December



Signing of the contract with Vattenfall Nuclear Fuel AB for commercial supplies of TVS-K to Ringhals NPP (**Sweden**).

The acceptance board of TVEL Fuel Company approved the structure of more efficient gas centrifuge of new generation, it was recommended for batch production.

ChMP JSC and major European metal trading company Hermith GmbH (**Germany**) signed a five-year contract for the supply of more than thousand tons of titanium mill products with total value more than RUB 2 bln.

TVEL JSC and **China Institute of Atomic Energy** signed the contract for supply of fuel for experimental fast neutron reactor CEFR.

2016



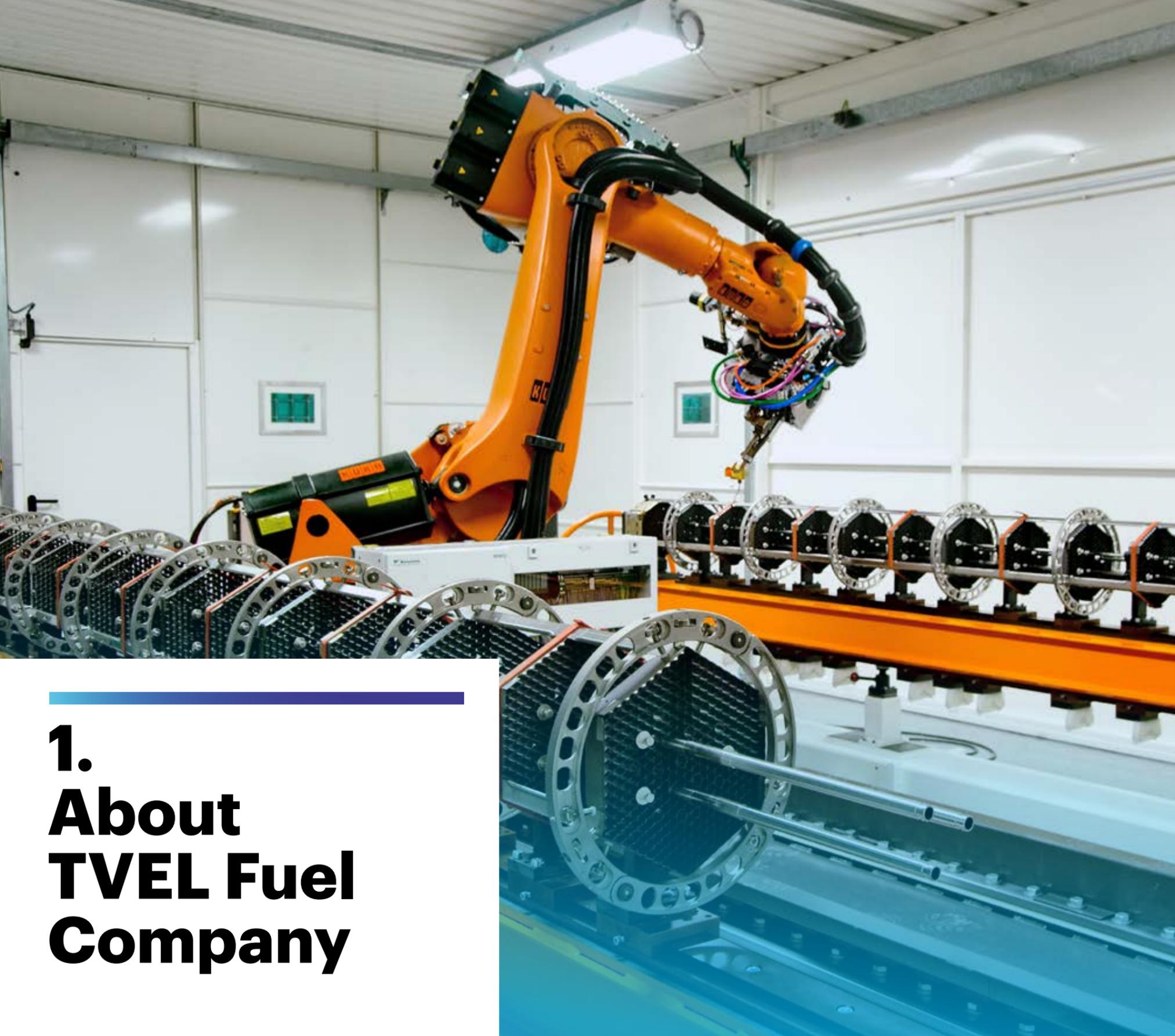
TVEL Fuel Company and **Argentine** company INVAP S.E. concluded the number of contracts for supply of uranium components of nuclear fuel for research reactors.

MSZ JSC (the enterprise of TVEL Fuel Company) enhanced cooperation with the **French** nuclear group AREVA in production of fuel and its components from regenerated uranium using the Russian facilities till 2030.

Signing of the big contract with QSA Global, Inc. for supply of iridium enriched in stable isotope ¹⁹¹Ir, and applied as radiation source.

ChMP JSC mastered the production and supplied to the Customer the first pilot batch of seamless extremely thin-walled titanium tubes of PT-1M alloy.





1. About TVEL Fuel Company

TVEL Fuel Company

TVEL Fuel Company* (hereinafter referred to as TVEL FC, the Company) is one of the major players on the global market of front end nuclear fuel (FE NFC) and the only supplier of nuclear fuel to Russian NPPs.

The core activity of the Company is uranium enrichment, development and production of gas centrifuges and the associated equipment, development, fabrication and sale (including export) of nuclear fuel and related non-nuclear products.

TVEL Fuel Company produces fuel assemblies for all types of operating Russian power units (VVER, RBMK, EGR, FN), research and marine reactors, PWR and BWR reactors in Western Europe in cooperation with AREVA, and proprietary TVS-K fuel for PWR reactors of Western design.

The Company supplies nuclear fuel to 75 power reactors in Russia, European

and Asian countries, Russian and foreign research reactors, and transportation reactors of the Russian Nuclear Powered Fleet. One out of every six power reactors in the world operates with fuel manufactured by TVEL Fuel Company.

TVEL Fuel Company takes a central place in the structure of ROSATOM for the front end nuclear fuel cycle.

Apart from its core products, the Company supplies non-nuclear products to the Russian and global markets in four main directions: Metallurgy, Machine Building, Chemistry and Power Engineering (for further information please refer to “Business Assets and Operational Results”).

All activities are in strict compliance with requirements set to: nuclear and radiation, industrial, fire, environmental, and labor safety, physical protection of nuclear facilities and nuclear materials, and readiness for emergency response.

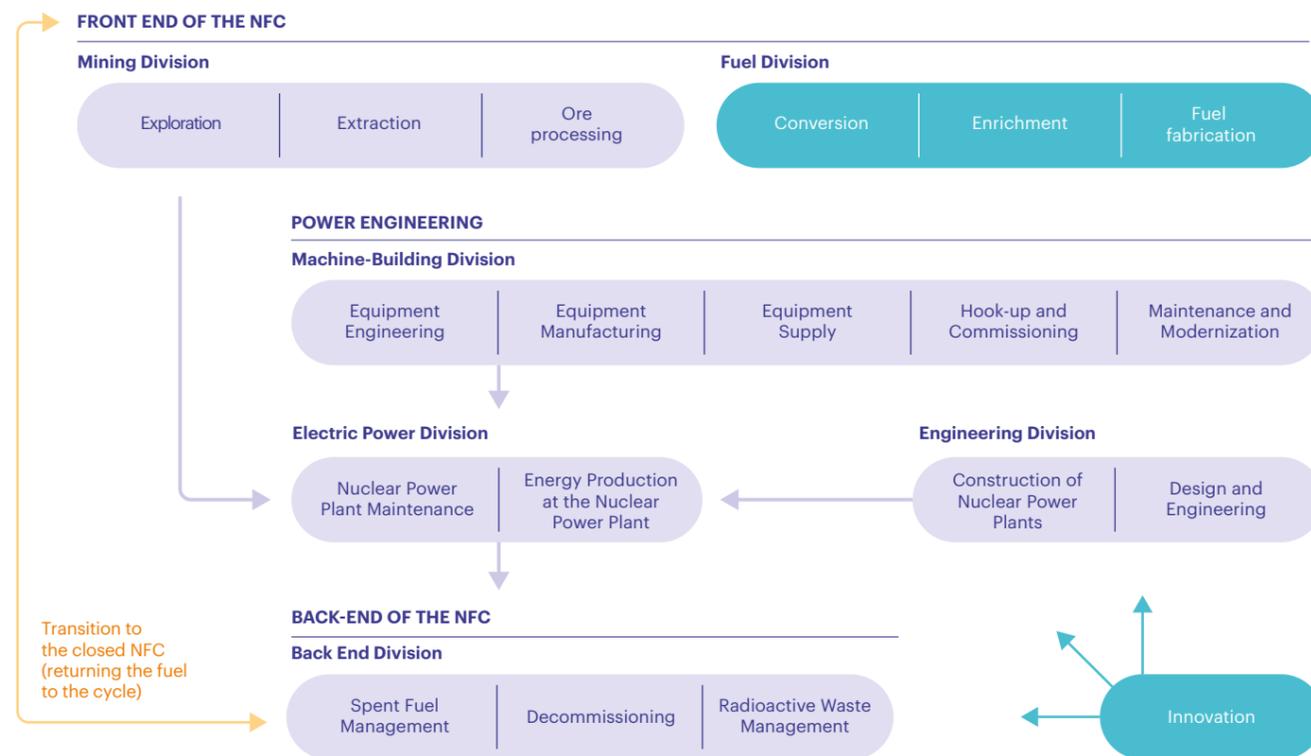
* TVEL Fuel Company is the collective name for TVEL JSC and its subsidiary companies.

Electronic versions of TVEL FC Annual Report 2016 and preceding periods are available at http://tvel.ru/wps/wcm/connect/tvel/tvelsite/finance/annual_report/.

The enterprises of TVEL Fuel Company are located in 10 regions of the Russian Federation. The Company has the number of representative offices abroad*. Specific nature of the social environment of TVEL FC is that three enterprises of the Company are located within Closed Administrative Territorial Units (CATU): Seversk, Novouralsk, Zelenogorsk, and one is located within a mono-town (Glazov). These enterprises are town-forming organizations and major taxpayers.

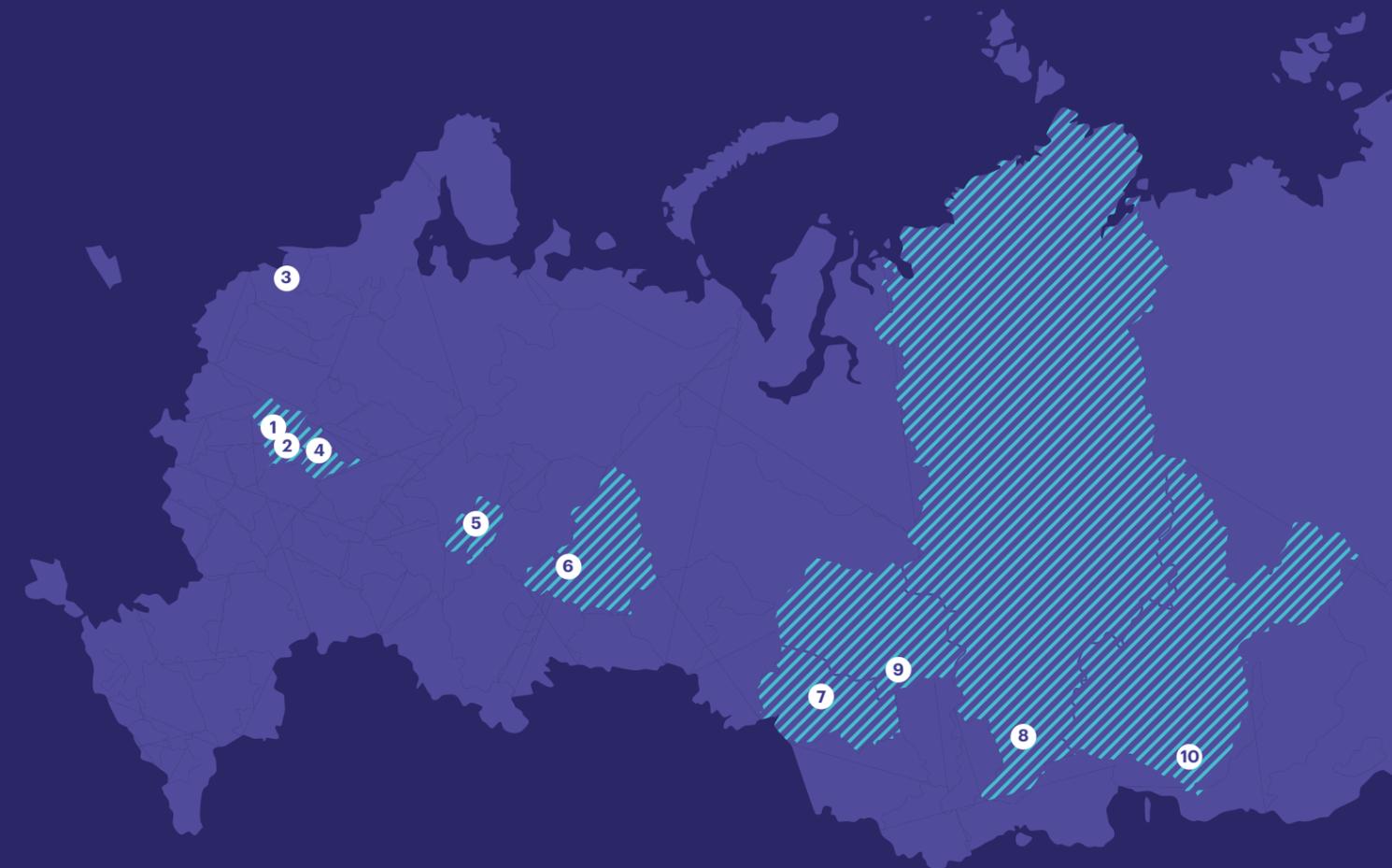
*The information about these offices is available on the website http://tvel.ru/wps/wcm/connect/tvel/tvelsite/about/structure/foreign_offices/.

Position of TVEL Fuel Company in Nuclear Technological Chain



Competencies of TVEL FC

Regions of presence of TVEL Fuel Company

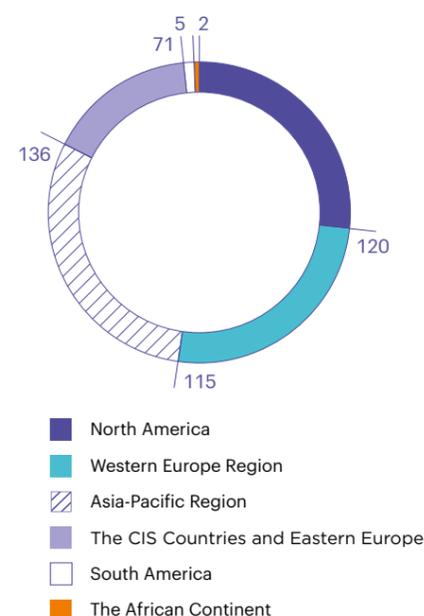


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regions of the Russian Federation

1. **MOSCOW**
TVEL JSC, VNIINM JSC, MZP JSC, CPTI JSC
2. **MOSCOW REGION**
MSZ JSC (Elektrostal)
3. **SAINT PETERSBURG**
Centrotech SPA LLC
4. **VLADIMIR REGION**
Tochmash VPA JSC (Vladimir), KMZ JSC (Kovrov)
5. **UDMURT REPUBLIC**
ChMP JSC (Glazov)
6. **SVERDLOVSK REGION**
UEIP JSC, Centrotech SPA LLC (Novouralsk)
7. **NOVOSIBIRSK REGION**
NCCP JSC (Novosibirsk)
8. **KRASNOYARSK TERRITORY**
PA ECP JSC (Zelenogorsk)
9. **TOMSK REGION**
SGChE JSC (Seversk)
10. **IRKUTSK REGION**
AECC JSC (Angarsk)

Position of TVEL FC in the World Market of the Front End of Nuclear Fuel Cycle

NPP units in operation as of the end of the reporting year



Source: Database of IAEA PRIS³

REVIEW OF FE NFC WORLD MARKET

According to IAEA PRIS as of the end of 2016 there were 449 NPP power units being operated in the world, including 36 in the Russian Federation¹. 75 reactors are running on Russian fuel.

Most operating power units are located in Asia-Pacific region, North America and Western Europe. At the moment 61 power units are under construction in 16 countries², including 7 in Russia.

Fabrication Market

At the moment, more than 80% of the world reactor fleet consists of light water reactors (LWR) segment, including PWR, BWR and VVER reactors. It is expected that LWR will amount to 89% of new reactors put into operation by 2025. The market of PWR reactors is the largest one. At the moment more than 50% of operating reactors in the world are PWR reactors.

Major foreign manufacturers of fuel for light water reactors are located in USA and Western Europe: AREVA (fuel for BWR and PWR reactors), Global Nuclear Fuel (fuel for BWR reactors) and Westinghouse (BWR, PWR and VVER). TVEL Fuel Company is main supplier of fuel for reactors of Russian design.

Main events of the nuclear fuel fabrication market in 2016:

- TVEL JSC and Global Nuclear Fuel-Americas (GNF-A) signed the agreement on the establishment of a strategic alliance with the purpose of joint activities for licensing, marketing and fabrication of fuel for US operators of PWR reactors.

- signing by TVEL JSC and the US NPP operator of the first contract for pilot production of TVS-K on the American market;
- signing of the first commercial contract for supply of TVS-K between TVEL JSC and Vattenfall Nuclear Fuel AB (Sweden);
- in accordance with the restructuring plan of AREVA group, the control over AREVA NP, engaged in fuel fabrication, will pass to the French power production company EDF.

Milestones 2016 in the market of nuclear fuel for reactors of Russian design in Ukraine and countries of EU:

- URENCO and Energoatom National Nuclear Energy Generating Company signed a three-year contract for supply of enriched uranium product to Westinghouse factory in Sweden for production of fuel assemblies (FA) for Ukrainian NPPs;
- Unit 5 of Zaporozhye NPP in Ukraine was loaded with the first batch of the modified fuel by Westinghouse, Unit 3 of South-Ukrainian NPP was loaded with the second reload;
- Czech energy company ČEZ signed the contract with Westinghouse for supply of six pilot fuel assemblies to be operated by Temelin NPP with VVER-1000 reactors.

Uranium Conversion and Enrichment Markets

In 2016 the price for separative work unit (SWU) continued its decline that began in 2011. As of the end of the reporting period the price on the spot



market dropped below USD 50 per SWU. This is due to the surplus capacity that resulted in excess of conversion and enrichment services over the current demand in the market.

Because of the current market conditions most suppliers of conversion and enrichment services do not use the production capacity to the full, and reduce the volume of output. However, in anticipation of greater demand in a medium- and long-term perspective, the companies modify their facilities and replace outdated plants with more modern and efficient:

- Construction of a new conversion plant AREVA Comhurex II in France is in its final stage, a pilot conversion production of UF₄ into UF₆ was launched.
- At year-end 2016 new enrichment plant AREVA Georges Besse II in France reached its project capacity 7.5 million SWU/year.
- In accordance with the restructuring plan of AREVA group, conversion and enrichment facilities that are currently under the control of AREVA NC will be transferred to new company NEW CO, where all FE NFC cycles will be accumulated, except for fabrication.
- URENCO closed the number of technologically outdated sites at its enrichment plants in Europe. Meanwhile, construction of the third stage of the enrichment plant URENCO in USA is going on, it is planned to reach the estimated capacity of 5.7 million SWU/year by 2023.

- Focused on self-sufficiency in products and services throughout the whole nuclear fuel cycle, China expands its conversion and enrichment capacities, and focuses on the development of domestic reactor park.

2016 was remarkable for stronger cooperation of players of different stages of FE NFC, which will allow these companies to offer the package of FE NFC services to their current and prospective customers:

- In April 2016 the company ConverDyn, engaged in promotion and sales of conversion services from the only US conversion plant Metropolis, and NAC Kazatomprom signed the cooperation agreement in the sphere of uranium products marketing. Due to this agreement the companies will offer the package services in conversion and U₃O₈.
- In April 2016 ConverDyn signed the memorandum of understanding with Centrus Energy Corp. (earlier USEC) to study the opportunities

of joint sales of NFC products and services to energy companies in different countries of the world. Such cooperation will give the companies the opportunity to make the package offer UF₆ and SWU to their customers.

TVEL Fuel Company fully implements its comprehensive approach to activities on the world market. The Company possesses the assets for all cycles of nuclear fuel production, which enables offering FE NFC products and services in the form of package supplies. This contributes to flexible contract pricing and optimized transport logistics. With a number of enterprises in each FE NFC cycle, the Company is able to make highly reliable deliveries.

FE NFC market growth outlook

FE NFC market outlook depends on the current state of the reactor fleet and the plans for construction of new units. According to different scenarios in 2030 perspective, the nominal capacity of the world reactor fleet will increase, the only

Customer satisfaction is of highest priority for TVEL Fuel Company. The assets of TVEL FC in all process cycles of nuclear fuel fabrication make it possible to offer the customers comprehensive solutions at NF market with flexible terms and conditions. Location of TVEL FC assets in different regions of Russia renders effective cooperation in a wide range of issues and aspects.

1. As of December 2016 in accordance with IAEA PRIS; power unit 3 of Novovoronezh NPP was also referred to the operating units, it was stopped for decommissioning on December 25, 2016.
 2. Source: Database of IAEA PRIS (61, including Yangjiang-4, that was under construction in 2016 and put into operation in January 2017).
 3. In Asia-Pacific region — excluding Yangjiang-4 that was put into operation in January 2017, and in CIS countries and Western Europe — including Novovoronezh-3, that was decommissioned in the end of 2016.

1.4

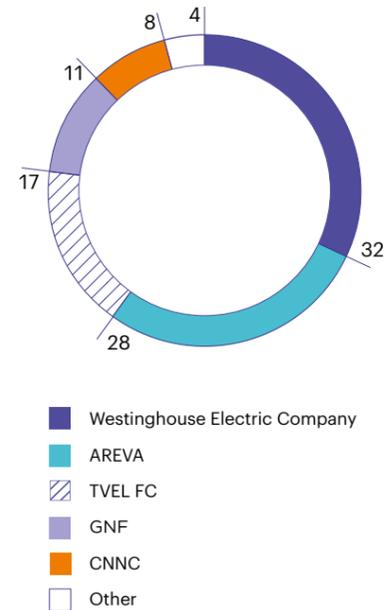
Export proceeds of TVEL FC, USD bln

difference is in growth rate. According to the forecasts by IAEA¹ by the year 2030 the nominal capacity of the world fleet of nuclear reactors may increase from ~390 GW to ~490 GW.

Asia region with many new units under construction is the most promising market. The reduced demand is expected in the FE NFC markets of Europe and North America due to ageing of the reactor park and small quantity of new projects aimed at replacement of the retired capacity.

Taking into account the plans for commissioning of new reactors and fuel reserves kept by different market players, primarily by operators and manufacturers, real growth in demand for all cycles of FE NFC is expected after the year 2020.

Key competitors of the nuclear fuel fabrication market in 2016, %



1. <http://www-pub.iaea.org/MTCD/Publications/PDF/RDS-1-36Web-28008110.pdf>

10.1

Export orders portfolio for products and services of FE NFC for a 10 year period, USD bln

POSITION OF TVEL FC IN THE WORLD MARKET OF THE FRONT END OF NUCLEAR FUEL CYCLE

TVEL Fuel Company is a global leader in nuclear fuel production. The Company's share in the global market of fuel fabrication in 2016 reached 17%. TVEL Fuel Company jointly with Technobexport JSC holds one third of the world market services on uranium enrichment.

TVEL Fuel Company is sufficiently competent to produce and supply fuel and its components for reactors designed in Russia, light-water Western-design reactors (PWR and BWR), and fuel components for Western-design pressurized heavy water reactors (PHWR). The Company successfully manufactures nuclear fuel from reprocessed uranium (in cooperation with AREVA) in compliance with the European regulations for manufacturing technology and the products manufactured. The Fuel Company elaborated the in-house design of FA for PWR reactors — TVS-K.

In recent years alongside with the increasing political pressure on European NPP operators, the message is expressed concerning the necessity to reduce the power dependence on Russia, to diversify supply sources; this can be used as a means of competition restraint.

Due to competition growth in the fuel fabrication market, the initiatives of TVEL JSC on improvement of technical and economic features of the fuel, making its production more attractive for customers both on traditional fuel market for reactors of Russian design, and on fuel market of PWR reactors, are extremely important.



TVEL JSC supplies excellent fuel. Quality, reliability and safety are basic indicators of the Russian fuel. Without lowering the level of stringent safety requirements to the supplied fuel, Paks NPP managed to increase the reactor power and to switch to 15-month fuel campaign. This created an opportunity to increase performance of power units. The success was achieved both owing to Paks NPP and TVEL JSC specialists.

István Hamvas
 Director General, Paks NPP (Hungary)
 (right)

Presence of TVEL Fuel Company in the global market of nuclear fuel for power reactors



■ Current supplies of nuclear fuel for power reactors designed in Russia
 ▨ Current supplies of nuclear fuel and components in cooperation with AREVA

① Number of units ○ Share of NPP

Key indicators of the global nuclear fuel market in 2016

75

Number of reactors running on Russian-made fuel, ea.

449

NPP units in operation, worldwide

61

NPP units under construction, worldwide¹

16

Countries with NPP under construction

1. As of the end of December 2016, according to IAEA PRIS database, including floating nuclear thermoelectric plants (FNTF).

The key to the successful cooperation with traditional and new partners:

- TVEL offers its customers reference fuel;
- TVEL offers package supply of fuel and flexible pricing policy: TVEL FC enterprises cover all NFC cycles (except for natural uranium);
- TVEL uses unique components and raw materials to increase commercial appeal;
- TVEL is customer-oriented, and strives for the fullest possible satisfaction of requirements of the customers;
- TVEL continuously improves the fuel and the strategy of the fuel cycle management with due consideration to changing environment;
- TVEL provides scientific and technical support of the fuel operation;
- TVEL offers the fuel designed to enable power cycling and increase of thermal power of stations.



TVEL Fuel Company will supply nuclear targets required for research and medical purposes. We chose TVEL JSC as the supplier of nuclear targets due to exceptionally attractive offer — the best in terms of price and quality.

Krzysztof Kurek
Director of the National Centre for Nuclear Research of Poland

International Cooperation

COOPERATION WITH TRADITIONAL PARTNERS

TVEL Fuel Company continues further expansion of the positions on the international markets of NFC through promotion of fuel components produced in conformity with the Russian or foreign technologies.

UKRAINE, BULGARIA



- 2003: introduction of TVSA fuel on NPP with VVER-1000 reactors.
- 2016: Unit 6 of Kozloduy NPP was charged with the first batch of modified fuel TVSA-12.

CZECH REPUBLIC



- 2010: introduction of TVSA-T fuel on Temelin NPP.
- 2011: establishment of Joint Venture "Center for Technology Services ALVEL" in cooperation with ALTA Invest a.s.
- 2012: Temelin NPP energy extension to 104%.
- 2016: operation of the improved design TVSA-T mod.1 on Temelin NPP.
- The licensing of the modified TVSA-T mod.2 fuel for Temelin NPP is in accordance with the schedule; licensing is planned to be completed in 2017; first supply of the modified fuel is scheduled for 2018.

CZECH REPUBLIC, UKRAINE, BULGARIA



- 2012: TVEL FC launched the project "Zero Failure" with the involvement of Rosenergatom Corporate Group, Energoatom National Nuclear Energy Generating Company, ČEZ, Kozloduy NPP.
- Within the Project there was analysed the experience of operation of TVSA and TVS-2 and their modifications on 26 power units of NPP with VVER-1000.

ARMENIA, BULGARIA, CZECH REPUBLIC, SLOVAKIA, HUNGARY, FINLAND, UKRAINE



- Continuous improvement of NF for VVER-440 reactors in cooperation with the partners.
- 2014: Start of introduction on power units with VVER-440 reactors of:
 - 1) graded urania-gadolinia nuclear fuel of the second generation within the 15-month fuel cycle with thermal power 108%;
 - 2) nuclear fuel with the increased uranium capacity within the 5-year fuel cycle with thermal power 105%.

FRANCE



- 2016: MSZ JSC enhanced cooperation with the French nuclear group AREVA in production of fuel and its components from regenerated uranium using the Russian facilities till 2030.
- In March 2016 MSZ JSC and AREVA NP signed the package of the documents to supply additional amount of nuclear fuel components for production of TVS PWR for English NPP Sizewell.

CHINA



- 2004: production of TVS and other components of the nuclear reactor core for experimental fast neutron reactor CEFR.
- 2010: specialists of TVEL FC completed qualification of the Yibin Fuel Factory for production of UTVS fuel using Russian components.

- 2013: introduction of TVS-2M design on the units 1-2 of Tianwan NPP in 18-month fuel cycle.
- 2013: signing of the contract for TVS-2M supply for Unit 3 and 4 of Tianwan NPP, and transfer of this technology to the partner.
- 2016: signing of the contract with the China Institute of Atomic Energy for production and supply of the third batch of fuel for the 4th and the 5th charge of the experimental fast neutron reactor CEFR. The contract provides for production in 2017–2018 of two additional reload FA batches that will be supplied to China in 2019. The contract value is more than USD 50 mln.

INDIA



- 2008: the first Russian design Nuclear Power Plant in India, the Kudankulam NPP, received the first batch of fuel for its commissioning.
- 2009: signing of the contracts for supply of fuel pellets for Rajasthan NPP (PHWR) and Tarap NPP (BWR).
- 2016: supply of the fuel pellets.

IRAN



- 2007: first supply of fuel to Buser NPP.
- 2015: within the implementation of the Joint Comprehensive Action Plan to ensure the peaceful nature of Iran's nuclear program, the enriched uranium product was exported in return for the supply of the Russian natural uranium.
- 2016: within the implementation of the Joint Comprehensive Action Plan of the "six" countries, approved by UNSC resolution 2231, TVEL Fuel Company

- imported from Iran into Russia:
- excessive stock of enriched uranium (February);
 - excessive stock of heavy water (September).
- Implementation of this project allowed in February 2016 lifting of the sanction on Iran, imposed in connection with the Iranian nuclear program.

BANGLADESH



- 2016: signing of the supplement to the general contract for supply of fuel for commissioning and further warranty period operation of NPP in Bangladesh which is under construction under the Russian project.

Project "Fabrication Plant in Ukraine"

TVEL JSC performed to the full extent its obligations within the project in accordance with the tender 2010. TVEL JSC remains determined to complete the project under the previously agreed terms.

However, in the reporting period the project "Fabrication Plant in Ukraine" remained actually frozen. Joint venture carried out minimal operating activity, no practical measures were put into effect due to the lack of funding on the part of the Ukrainian partner and due to the lack of the approved strategy of nuclear power development in Ukraine.

"UEC" project

TVEL JSC and NAC Kazatomprom JSC cooperate in implementation of the UEC project, holding the equal shares of the joint venture UEC JSC. This is the unique

project — for the first time the foreign partner obtained the indirect access to Russian enrichment facilities. In 2013 UEC JSC acquired 25% + 1 share of UEIP JSC; in the same year the company performed its first commercial supply.

In 2014 UEC JSC reached the projected sales volume of 5 million SWU/year. Period of the project implementation — till 2043. Implementation of the project creates prerequisites for expansion of bilateral cooperation in other spheres of nuclear fuel cycle in conditions of economic feasibility and the balance of interests of the parties.

In the reporting period successful implementation of Russian-Kazakhstan project continued. The enterprise successfully fulfilled all scheduled activities, including those connected with product supply.

ENTERING NEW MARKETS

TVS-K

Promotion of TVS-K in Western Europe



Goal	2011	2014	2016
Qualification of TVS-K and commercial supplies in other countries of Western Europe operating PWR reactors.	Contract between TVEL JSC and Vattenfall Nuclear Fuel AB (VNF, Sweden) for pilot production of TVS-K.	Start of pilot production of TVS-K on one of power units of NPP Ringhals (Sweden) with PWR reactor.	Contract with the company VNF for commercial supplies of TVS-K to NPP Ringhals after 2020.

Promotion of TVS-K in USA



Goal	May 2016	July 2016
Signing of new contracts for pilot production of TVS-K with other NPP operators in USA.	TVEL JSC and Global Nuclear Fuel-Americas (GNF-A) signed the agreement on the establishment of a strategic alliance with the purpose of joint activity for licensing, marketing and fabrication of fuel for USA operators of PWR reactors.	The first contract was signed with one of American NPP operator for pilot production of TVS-K in USA.
Commercial supplies of TVS-K in USA.		

Training of foreign representatives of regulatory agencies of nuclear and radiation safety

In March 2016 at MSZ JSC, within the IAEA International Cooperation Program, practical training in regulating competences was provided for the representatives of the regulatory agencies of nuclear and radiation safety of the countries developing their national nuclear power programs.

Specialists from Belarus, Bangladesh, Egypt and Pakistan learned the special features of managing and ensuring nuclear and radiation safety at the enterprise at production of nuclear fuels for nuclear power plants.

NF and Components for Research Reactors Designed Abroad

Argentina

In 2015 the Memorandum of Understanding was signed with organizations of nuclear industry in Argentina. In 2016 a number of contracts with INVAP S.E. (Argentina) for supply of uranium components of nuclear fuel for research reactors were signed.

Indonesia

2016 TVEL Fuel Company and the National Nuclear Energy Agency of Indonesia (BATAN) signed the Roadmap of Development of Bilateral Cooperation in the field of nuclear fuel cycle.

The document is aimed at implementation of the Memorandum of Understanding that was signed by the parties on December 14, 2015 in Jakarta, and defines the concrete steps towards interaction of two organizations, including the possibility to supply Russian nuclear fuel for research reactors in Indonesia.

Poland

In 2015 TVEL JSC concluded the contract with the National Centre for Nuclear Research of Poland for supply of new type of fuel with low-enriched uranium (LEU), that was developed by specialists of the enterprises of the Russian nuclear industry for "Maria" reactor.

On May 31, 2016 within the framework of International Forum ATOMEXPO-2016, TVEL JSC and the National Centre for Nuclear Research of Poland concluded the contract for supply of nuclear targets required for research and medical purposes of "Maria" reactor.

MEDIUM-TERM OBJECTIVES AND PLANS

- Expansion of position of TVEL JSC on traditional markets of nuclear fuel for VVER reactors. Strengthening of positions on the market through implementation of the models of strategic cooperation with foreign partners;

- expansion of the Company's positions on the international markets of NFC through promotion of fuel components produced in conformity with the Russian and foreign technologies;
- further development and strengthening of cooperation with companies and organizations interested in TVS-K promotion on target markets;
- further extension of cooperation with foreign partners in fabrication of nuclear fuel and components from reprocessed uranium;
- further cooperation with foreign partners in fuel supplies for research reactors designed in other countries.

TVEL Fuel Company fully complies with the international and Russian legal requirements to the export control.



Fuel assemblies manufactured by TVEL for research reactors are operated by many scientific-research centers all over the world, they proved the highest level of quality, reliability and compliance with all technical requirements set by the consumers.

Bambang Herutomo

Director of the Research Reactor RSG BATAN (Indonesia)

Support of UN Sustainable Development Goals



In September 2015 the Sustainable Development Goals, officially known as “Transforming Our World: the 2030 Agenda for Sustainable Development” were adopted. These 17 goals are aimed to contribute to prosperity while protecting the planet’s environment.

TVEL Fuel Company and its employees support the UN sustainable development goals. To achieve these Goals the joint efforts of the governments, private sector, civil society and the world citizens are required. Being a socially responsible company, TVEL Fuel Company aims to make a positive contribution to achievement of the goals that are closest to its activity.

The goals “Climate Action” and “Affordable and Clean Energy” are the goals where the Company can make best contributions. Nuclear fuel produced by TVEL Fuel Company is operated by NPPs that command a large part in total power balance. Prime cost of electric power generated by NPP may compete with other types of power plants. The most considerable advantage is the absence of emissions of aerosols and greenhouse gases in the atmosphere. This means that products made by TVEL Fuel Company do not contribute negatively to the climate change.

Activity of TVEL Fuel Company in the field of sustainable development also contributes to achievement of other UN Goals. The relevant information in the Report is marked with the pictograms of these goals.

Public integrated report 2016 of TVEL JSC was prepared in accordance with the International Integrated Reporting Framework and GRI Standards.

Konstantin Sokolov

**Vice-President for Communication, Administration and Energy Efficiency
Chairman of the Committee on Public Annual Reporting of TVEL JSC**

SUSTAINABLE DEVELOPMENT GOALS





2. Strategy of TVEL Fuel Company

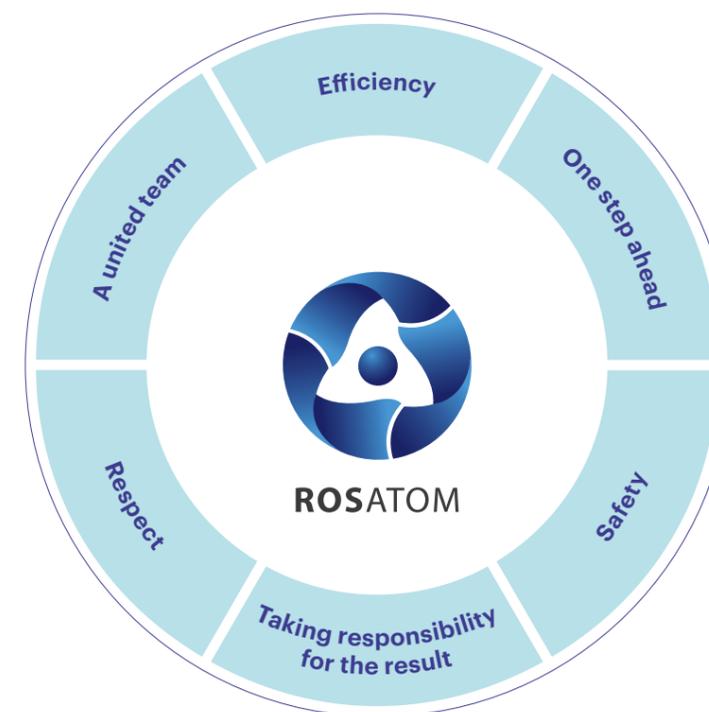
Mission and Values

MISSION OF TVEL FUEL COMPANY. Meeting the requirements of the customers of TVEL Fuel Company both in the sphere of nuclear fuel cycle and in the related sectors, in strict compliance with requirements of safety, security, environmental and social awareness'.

STRATEGIC VISION OF TVEL FUEL COMPANY. Fuel Division TVEL is the global leader in FE NFC and the related spheres.

VALUES. Workers of the Fuel Company are governed by the Values shared by all organizations and enterprises of ROSATOM. These core values were formed throughout the history of development of the nuclear sector in Russia and conform with global approach to determination of the fundamental principles of the sector activity.

Values of TVEL Fuel Company



Efficiency
We always look for the best solution. We are efficient in everything we do. When faced with a task, we use the company's resources as rationally as possible and always seek to improve the work processes. No obstacle can prevent us from finding the most effective solution.

One step ahead
Our ambition is to be a leader in the global markets. We are always one step ahead in terms of technology, knowledge and qualifications of our employees. We can tell what tomorrow will bring and we stand prepared today. We are always learning and developing. Every day we attempt to do better than we did yesterday.

Safety
Safety comes first. In our activities our top priority is to ensure full safety of people and environment. When it comes to safety, every little thing matters — we know our safety rules, strictly follow them and never hesitate to crack down on safety violations.

Taking responsibility for the result
Each of us bears personal responsibility to the state, the industry, the colleagues and the customers for the result and quality of our work. We require excellence in everything we do. We praise the result, not the effort. A good result is the basis of our further progress.

Respect
We respect our customers, partners and suppliers. We always listen to and hear each other regardless of the positions and jobs that we any of us may have. We respect the history and traditions of the industry. The achievements of the past inspire us to new levels of success.

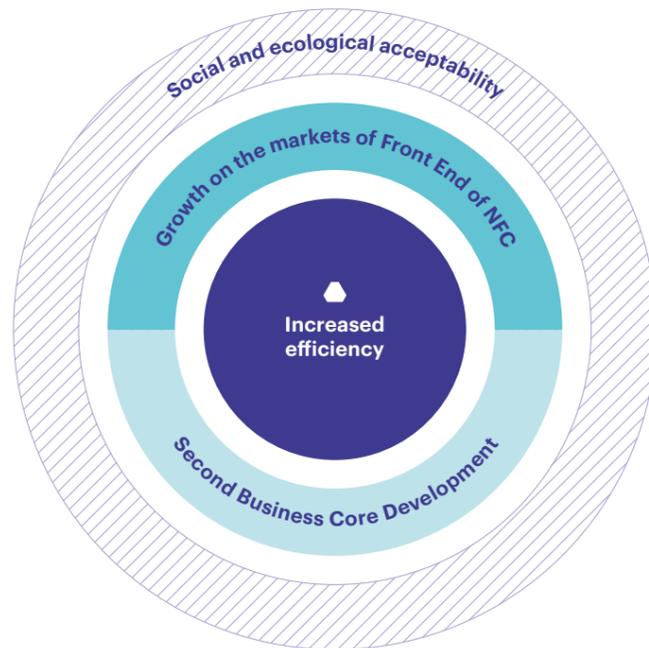
A united team
We are ROSATOM. We have common goals. Working as a team of likeminded colleagues, we can achieve truly extraordinary results. Together we stand stronger and we can meet our most ambitious goals. The achievements of our employees are the achievements of the Company.

1. Mission as a part of Development Strategy of TVEL Fuel Company was approved by the Strategic Board of ROSATOM State Corporation.

Strategy

Strategy and Business Plan of TVEL Fuel Company 2015–2019 were approved by the Strategic Board of ROSATOM. The strategy established core performance indicators for mid-term and long-term periods till 2030.

Strategic targets of TVEL Fuel Company



PRIORITY OPERATION AREAS

Priority fields of activity of TVEL JSC are stipulated by the strategic goals of TVEL Fuel Company.

To meet the objectives of the **Second Business Core Development**, TVEL Fuel Company organizes production in related spheres and successfully operates the accumulated competences in design and production of high-quality and precision prospective products. The strategy of TVEL Fuel Company involves the projects of the Second Core; these projects guarantee exponential growth of the Company earnings in 2030 perspective with consistently high labor productivity. In a longer-term perspective, till 2020, we plan to continue accelerated development, and to reach the revenue from general industrial activities around RUB 20 bln.

Under the current conditions on the FE NFC markets, with the restricted investment recourse, the continuous **efficiency improvement** is a key condition to preserve leadership of TVEL Fuel Company in the international field. Effective execution of research and development (R&D) and realization of production capacities modernization are aimed to ensure multiple growth of the key financial and economic indicators by the year 2030. Adequate management of the enterprises' resources, ensuring flexibility of technological conversions in accordance with the market conditions and continuous increase of labor efficiency contribute to the image of TVEL Fuel Company as the most efficient division of ROSATOM.

Growth in the FE NFC markets implies development of relations with existing and new consumers and retention of the current positions owing to unconditional performance of contractual obligations under executed contracts. TVEL Fuel Company provides its partners with

Target correlation of ROSATOM and TVEL Fuel Company

Strategic goals of ROSATOM State Corporation

Increased share of international markets				
Reduced production costs and lead time				
New products for the domestic and international markets				
Operational environment				

TVEL Fuel Company and ROSATOM State Corporation. Correlation of goals.

	Growth on the markets of Front End of NFC	Second Business Core Development	Increased efficiency	Social and ecological acceptability
Increased share of international markets	●			
Reduced production costs and lead time			●	
New products for the domestic and international markets	●	●		
Operational environment				●

42%

Enrichment global market share gain (including TENEX supplies)

22%

Nuclear fuel fabrication market share gain owing to manufacture of traditional products having good consumer properties, and entry to new nuclear markets

x10

Revenue growth in non-nuclear businesses (including businesses being established) in comparable terms of 2014

the products that combine the best performance characteristics along with the guarantee of safe operation. The Company implements a number of projects for long-term development of nuclear technologies, including the projects providing nuclear fuel cycle closure due to mixed nitride uranium-plutonium fuel fabrication modules (MNUP fuel) development and spent nuclear fuel (SNF) reprocessing.

To provide **social and environmental acceptability**, the strategy of TVEL Fuel Company presupposes strict commitments with respect to the nuclear "heritage" problems, funds allocation to charity and social projects, as well as establishment of substituting high-tech enterprises for qualified personnel discharged during restructuring.

The strategy of TVEL Fuel Company is oriented at achievement of the following indicators by 2030:

- Enrichment market share gain — to 42% (in cooperation with TENEX), nuclear fuel fabrication — to 22% owing to manufacture of traditional products having good consumer properties, and entry to new nuclear markets.
- Twofold growth of the revenue in comparable terms of 2014.

- Tenfold growth of revenue in non-nuclear businesses (including businesses being established) in comparable terms of 2014.
- Threefold growth of labor efficiency in comparable terms of 2014.

DRIVERS OF GROWTH AND ACHIEVEMENT OF OBJECTIVES IN NFC MARKETS

- supplies of NF for new VVER units in the Russian Federation and abroad;
- expansion of presence in the markets of China and India;
- global commercialization of TVS-K;
- application of RS/RT raw materials;
- supplies of NF and components for research reactors of Western and Russian design;
- expansion of supplies of zirconium components.

SWOT-analysis

Strengths

- High quality and reliability of products, verified by its consumers;
- Reference of the products due to cooperation with Russian NPPs within the operation of new types of fuel, possibility to pass fuel qualification in RF;
- Product management on all FE NFC cycles, control over production at all stages;
- Strong technical and scientific cluster that allows continuous improvement of NF characteristics;
- Financial stability due to efficient resource management on all FE NFC cycles;
- Load following and increased fuel cycles due to fuel characteristics;
- Flexible technological and commercial conditions of cooperation;
- Price competitiveness of the products due to cost optimization;
- Support on the part of ROSATOM and the state;
- Recognizable brand.

Opportunities

- Supplies of NF for new VVER units in the Russian Federation and abroad;
- Expansion of PWR markets presence;
- Expansion of cooperation with the South-East Asian countries;
- Supplies of NF and components for research reactors;
- Development of new modifications of NF, improvement of fuel cycles;
- Development of scientific and technological cooperation with foreign partners;
- Application of different types of raw material;
- Expansion of supplies of zirconium components;
- Scientific and technological support of the customer at the fuel operation;
- Development on the markets of general industrial activities and future-oriented products.

Weaknesses

- Need to address the problem of “nuclear heritage” and provision of nuclear and radiation safety;
- Social and ecological commitments in the regions of presence, rehabilitation of sites;
- Insufficient business diversification.

Threats

- Reduction of prices for the products and services of FE NFC;
- Low rate of NPP capacities commissioning on the traditional markets;
- Competition with conventional and alternative power sources;
- Growing tension on external markets, including VVER segment;
- Quantitative restrictions on Russian products on separate markets;
- Efforts made by the market players to improve the efficiency;
- Need for additional efforts to preserve prime cost benefits in conditions of inflation and volatility in currency exchange rates.

Factors of long-term business sustainability and cooperation with the customers

Safety and reliability of fuel

- Fuel safety — strategic priority of TVEL Fuel Company;
- The Company invests in the fuel safety;
- Implementation of the zero failure program.

Creation of zero-waste technologies, and rehabilitation of sites

- Decommissioning:
 - of the nuclear facility in KhMZ to “green lawn”;
 - of the unit B of VNIINM JSC to “green lawn”;
 - of sublimation production at UEIP JSC.
- Processing of depleted uranium hexafluoride at W plant (~10 thousand tons every year).

High quality

- Production automation, minimization of the human errors;
- Technological improvement of instrumentation operations;
- Compliance with the requirements of international quality management.

Development of the Second Business Core

- Increase of the Company stability in conditions of the nuclear business cyclicity;
- Expansion of the Company’s financial stability base.

CONTRIBUTION OF THE RESULTS 2016 IN ACHIEVEMENT OF THE STRATEGIC GOALS OF TVEL FC

Target **Growth on NFC markets**

Project **Creation of conceptually new fuel types**

Goals/Indicators Nuclear fuel for reactor facility BREST-OD-300, reactor facility BN-800, REMIX.
Results 2016 Acceptance testing of REMIX-fuel pellets, FA and CEFA.
Effect Development Prospects.

Project **Construction of pilot demonstration energy complex (PDEC)**

Goals/Indicators Construction of reactor facility BREST-OD-300, MNUP-fuel fabrication modules and SNF reprocessing.
Results 2016 Production and acceptance testing of EFA-12, -13 with MNUP fuels of FN-600 reactor.
Effect Development Prospects.

Project **MOX-fuel production**

Goals/Indicators Establishment at FSUE MCP of MOX-fuel production for reactor facility FN-800.
Results 2016 Start of production of the first delivery batch TVS with MOX-fuel for reactor facility FN-800.
Effect Development Prospects.

Project **TVS-K**

Goals/Indicators Entry to the market of nuclear fuel for Western design reactors.
Results 2016 Signing of agreement with GNF-A with the purpose of licensing and qualification of TVS-K in USA for the future commercial supplies, conclusion of the first contract with the American NPP operator for pilot production of the Russian TVS-K fuel.
 Signing of the contract with Vattenfall Nuclear Fuel AB (Sweden) for supply of TVS-K nuclear fuel for Ringhals NPP.
Effect Market Development.

Project **Fuel for research reactors**

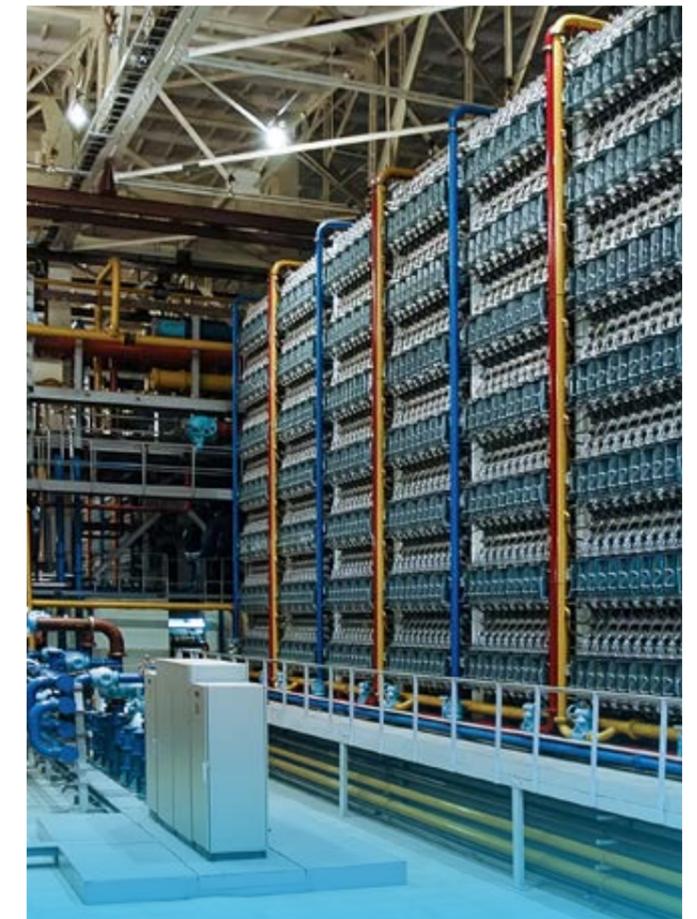
Goals/Indicators Conclusion of new contracts for supply of fuel for research reactors.
Results 2016 Signing of the contract and supply of the fuel for research reactor in Czech Republic.
 Conclusion of the number of contracts for supply of the nuclear fuel components for research reactors in Argentina.
 Signing of the Roadmap for development of bilateral cooperation in the field of nuclear fuel cycle with BATAN (Indonesia) with the view to elaborate the possibility of nuclear fuel supply for research reactors.
Effect Market Development.

Project **Creation of fuel with new consumer properties**

Goals/Indicators VVER-1000: TVSA-12.
Results 2016 Unit 6 of Kozloduy NPP (Bulgaria) was charged with the first batch of fuel TVSA-12.
Effect Market Retention.

Project **Project “Fabrication Plant in Ukraine”**

Goals/Indicators Organization of nuclear fuel production in Ukraine.
Results 2016 No practical measures were put into effect in 2016 due to lack of finances of the Ukrainian partner. TVEL JSC is ready to continue the project implementation under the earlier coordinated conditions.
Effect Market Retention.





Target Second Business Core Development

Project Metallurgy

Goals/Indicators Entry the European titanium products market.
Results 2016 Signing a five-year contract with the metal trading company Hermith GmbH (Germany) for the supply of more than thousand tons of titanium mill products with total value more than RUB 2 billion.
Effect New Markets Entry.

Project New businesses

Goals/Indicators Expansion on the Russian metallurgy market and the international markets entry; Expansion at chemical machinery and products market; Anchoring at precision engineering market.
Results 2016 Establishment of the Scientific-Production Association (SPA) with the view to concentrate the competencies on GC development and to manufacture the 2nd core products Development and approval of SPA development strategy, development and approval of the tactical plans of SPA implementation strategy for 2016–2019.
Effect New Markets Entry.

Target Efficiency improvement

Project ROSATOM Production System

Goals/Indicators Implementation of sectoral, divisional RPS projects, as well as the enterprises' projects; Lead time decline, increase in labor efficiency, manufacture cost reduction, achievement of optimal scale and topology.
Results 2016 Gaining positive economic effect from RPS-projects implementation and implementation of employees' suggestions for process improvement.
Effect Efficiency improvement.

Project Energy performance

Goals/Indicators Optimization of power resources consumption by TVEL FC enterprises.
Results 2016 Reduction of thermal power consumption by 8.8% and electric power consumption by 3.9% as compared to the reference values 2015.
Effect Efficiency improvement.

Project Technological leadership

Goals/Indicators Reduction of prime cost of uranium enrichment.
Results 2016 Production of the pilot batch of gas centrifuge of new generation.
Effect Efficiency improvement.

Target Social and Environmental Acceptability

Project Liquidation of "nuclear heritage"

Goals/Indicators Execution at the sites of TVEL FC the activities related to nuclear radiation safety.
Results 2016 Within the FTP NRS-2: decommissioning of the first NRHF: in the period 2015–2016 EDB-Nizhny Novgorod JSC completed the works on decommissioning of the laboratory of resource tests.
Effect Maintenance of environmental security and social awareness in the cities of TVEL FC presence.

Project Program "Formation and preservation of social accord environment in the regions of presence of TVEL FC"

Goals/Indicators Attraction of private investments; Growth of business support projects; Social infrastructure development in the cities of TVEL FC presence.
Results 2016 Submission of proposals to the Ministry of Economic Development of Russia concerning establishment of the territories of advanced social and economic development in CATU Novouralsk, Seversk, Zelenogorsk and Glazov.
Effect Maintenance of environmental security and social awareness in the cities of TVEL FC presence.

Business Model

The value generated by TVEL Fuel Company involves not only marketable products and increase of profitability of the Company, but also a great variety of economic, social and environmental effects of activities.

TVEL Fuel Company holds an important place in the national economy and has a considerable impact on the regions of its presence. The Company is seeking to maximize positive effects of its activity. The Company activity is marked with a specific uncontaminating environmental impact of its production facilities and indirect environmental impact of its key products, in particular, at the back end of the nuclear fuel cycle.

TVEL Fuel Company activity depends on a great number of external and internal factors; the Company carries out its activity in close cooperation with its stakeholders.

This cooperation is characterized by the fact that tangible and intangible resources used by the Company (financial, environmental, production, human, social and intellectual capitals¹), are controlled both by TVEL Fuel Company and its stakeholders. Conversion of capitals in the course of activities affects both the Company and its stakeholders.



Business model describes the activity of TVEL Fuel Company for integrated value creation as a system where the employed capital circulates, production and business processes are implemented, products are made, services are rendered, and the results are recorded. The business model system is focused on achievement of strategic goals through implementation of competitive advantages. The business model takes into account the risks typical for the activities of TVEL Fuel Company, possibilities and risk management capabilities of the Company.

Business model includes: capitals (resources and relations) used by TVEL Fuel Company, manufactured products and services, as well as results of TVEL Fuel Company operations, providing for capitals changes, including increment of resources being used and consolidation of relations with stakeholders.

Competitive advantages of TVEL Fuel Company:

- strong research cluster and its constant development;
- application of high technologies and best scientific research results;
- implementation of initiatives to improve technical and economical properties of fuel;
- flexible offers and possibility of package deliveries of fuel under the long-term contracts;
- high reliability of supplies guaranteed by presence of several enterprises in every FE NFC cycle.

1. According to the International Integrated Reporting Framework, "capitals" mean resources and relations being the sources and the results of value creation processes.

Business model of TVEL Fuel Company



FINANCIAL CAPITAL

- Undistributed profits and monetary assets
- Accumulated reserves of TVEL FC
- Consolidated investment resources
- Industry reserves
- Means of the Federal target programs
- Loans, credits, subsidies



INTELLECTUAL CAPITAL

- Intellectual property assets of TVEL FC
- Global achievements of science and engineering
- Domestic projects
- National intellectual resources



HUMAN CAPITAL

- Staff
- Joint ventures personnel
- Potential workers
- Youth
- Experts, consultants
- Long-service employees, retirees



MANUFACTURED CAPITAL

- High technology production basis, materials (including regenerated and waste uranium)
- Public infrastructure (roads, communication facilities, etc.)



SOCIAL AND RELATIONSHIP CAPITAL

- Reputation of the TVEL Fuel Company and its enterprises
- Position in the Global Market of FE NFC
- Strong relations with Russian and foreign customers and suppliers
- Competitive and high quality outputs
- Recognisable and reputable brand name
- Internal relations of TVEL FC
- Public image of the country and nuclear industry
- Interrelations in supply chain
- Initiatives of the state, ROSATOM



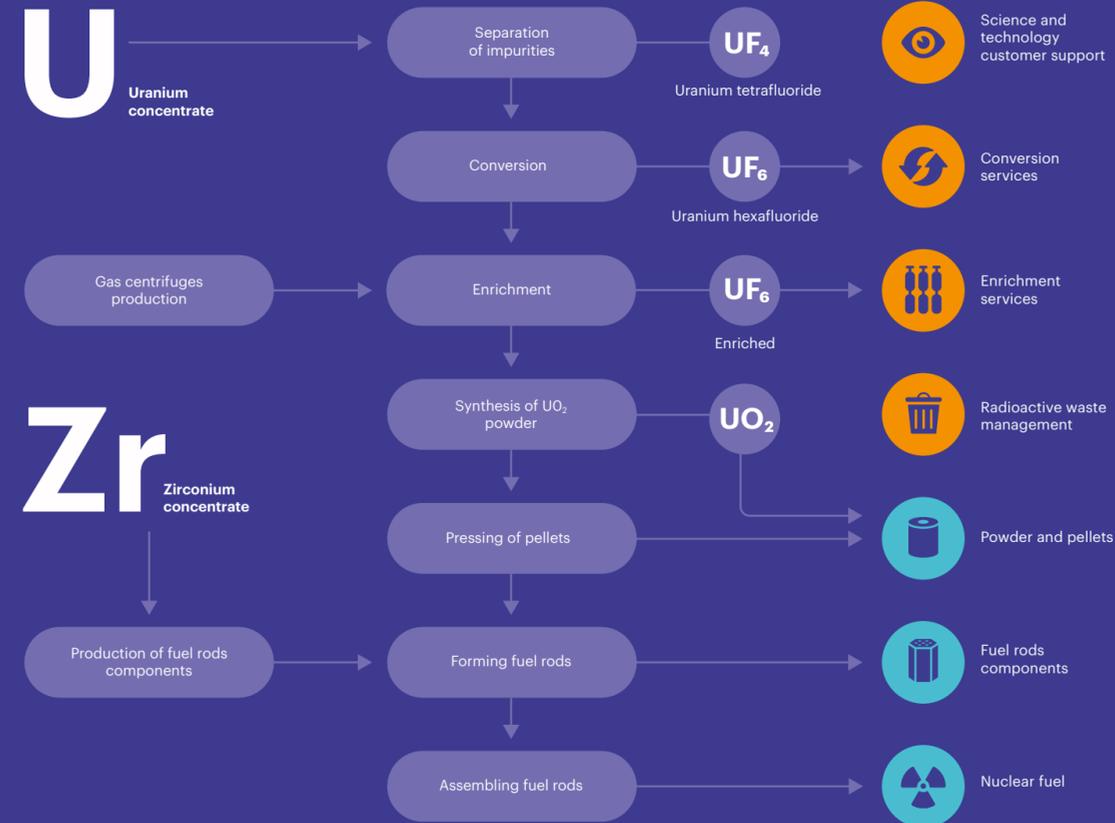
NATURAL CAPITAL

- Proprietary and leasable land resources
- Environment
- Natural raw materials

■ Internal resources

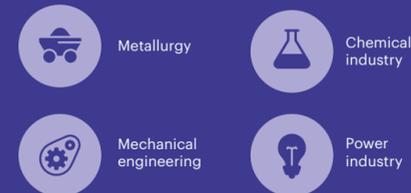
■ External resources

FRONT END NFC PRODUCTION CHAIN



Services and products

Second core



Main products



2016

Annual Results

Financial capital

46.2

RUB bln
Net income

28.2

RUB bln
Paid dividends

■ Internal Resources
■ External Resources

Manufactured capital

651.4

RUB bln
Net assets

Intellectual capital

104

Number of new registered intellectual property objects

Human capital

60.8

RUB thousand
Social programs expenditures per 1 employee

0.09

LTIFR

6.6%

Average salary growth

Social and relationship capital

70%

Information favoured index advance

29.2

RUB bln
Gross tax liabilities

226.1

RUB mln
Charitable contributions

Natural capital

2.1

RUB bln
Environmental expenses

0

New area contaminated with radionuclides

0

INES-rated events

Risk Management

Risk Management of TVEL Fuel Company is based on continuous monitoring of its external and internal environment, complex analysis of threats and opportunities affecting achievement of both economic and social goals of the Company.

Main goal of Risk Management System (RMS) is identification, assessment and minimization of threats that may affect the results of activities of the Company.

Main RMS objectives are the following:

- timely identification of risks that may affect the achievement of the goals of TVEL Fuel Company;
- support of stable financial environment of the companies of TVEL Fuel Company with due consideration of the risks;
- continuous monitoring of risks and control over implementation of the plans of arrangements aimed at reduction of likelihood of risks occurrence and minimization of the consequences of such occurrences.

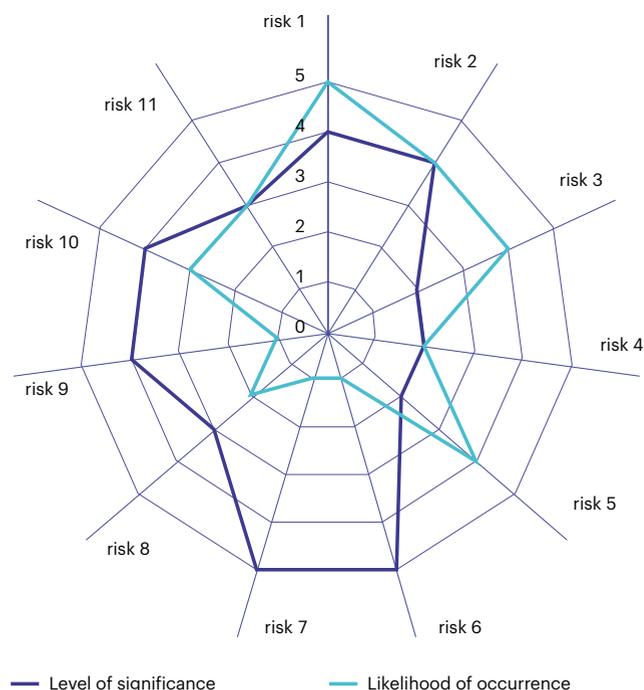
Analysis of the risks affecting achievement of target values of financial and economic activities of TVEL JSC and the companies forming the Fuel Company management system shall be carried out at the stage of development of the budget and medium-term plans, and at the stage of their control and performance forecast.

For the purpose of CRMS development, in 2016 there were approved:

- Methodological guidelines to manage the risks of investment and construction projects of TVEL JSC and the companies forming the management system of TVEL Fuel Company;
- Foreign currency risk management strategy 2017 of TVEL JSC¹.

The key risk management measures listed in the table are planned to neutralize (minimize) the key risk impact on implementation of strategic goals of the Company, and to achieve target values of the main performance indicators within the acceptable deviations set by ROSATOM for 2017–2019.

Risk map of TVEL Fuel Company



Participants of TVEL FC risk management processes and their roles

CRMS Participants

Functions of RMS members in risk management

President of TVEL JSC

- Approval of the risk management policy of the Company;
- Approval of the list of key risks;
- Appointment of key risks holders and distribution of responsibility for risks management;
- Approval of the limits of particular risks, strategies, programs of particular risks management;
- Consideration of the issues related to distribution of authorities and responsibilities for particular risks management.

Risk holders (responsible for risks management)

- Identification and assessment of risks;
- Development and implementation of programs for particular risks management.

Risk Officer of TVEL JSC

- Organisation and methodological support of risks identification;
- Organization and methodological support of the process of development of risk management activity.

1. Approved by the order of TVEL JSC d/d January 19, 2017.

Risk	Risk factors	Risk management mechanisms	Brief summary of the results of risks management in the reporting year	Trends in likelihood of risk occurrence in the reporting year	Trends in risk significance in the reporting year
1. Risk of NFC product/service sale volumes reduction	<p>Delays in commissioning of power units. Transition to NF production with increased long-term performance. Politically motivated decisions on products/services substitution.</p>	<p>Improvement of technical characteristics of fuel and introduction of new types of fuel, improvement of economic characteristics of fuel. Promotion of products in new market segments.</p>	<p>Risk of NFC products/services sale volume reduction is countered by signing additional agreements for supply of Russian nuclear fuel and components for VVER reactors, foreign design reactors and research reactors. Thus, there were improved long-term prospects on the traditional market, and expanded the supplies geography in the sector of foreign design reactors.</p>	↓	○
2. Commodity risk	<p>Reduction of prices for the products and services of the Fuel Company due to changes of market prices for natural uranium and its conversion and enrichment services. Reduction of prices for the products and services of TVEL Fuel Company due to changes of prices deflator indices.</p>	<p>Provision in the contracts of the Fuel Company of the hedging mechanisms aimed to smooth market prices fluctuation. Provision in the contracts of the Fuel Company of the deflator indices basket with account of specific nature of the regional markets of nuclear fuel having independent publication sources.</p>	<p>There has been provided partial hedging of risks of changes in market prices for natural uranium and NFC services.</p>	↓	○
3. Currency risk	<p>Mismatch in assets and liabilities denominated in the same currency. Growth of volatility courses of the main world currencies (euro, dollar).</p>	<p>Development and introduction of the strategy of natural hedging of currency risks.</p>	<p>Maintenance of optimal balance between the assets and liabilities denominated in one currency.</p>	○	○
4. Risk of failure on the part of counterparties (suppliers, customers) to fulfil obligations in full and on time	<p>Decreased financial-economic stability of customers/suppliers.</p>	<p>Provision by the contracts of payment methods and/or methods to secure obligation to reduce the credit risk level, including without limitation: letter of credit, advance payment (100% if possible, but no less than 10%), funds reservation, provision by the counterparty of bank guarantee or guarantee of payment equal to the amount of the granted trade credit under the contracts providing for deferred payment for the delivered products/services. Monitoring of financial standing of the counterparties with the purpose to detect any signs of changes in financial standing, leading to changes in the level of the credit risk and/or the measures of the credit risk management. Qualification of counterparties using non-financial indicators.</p>	<p>Obligations on payment of the rendered services, works, products were fulfilled within the time set by the contracts, thus the risk had no material impact on the performance results of TVEL Fuel Company.</p>	○	○
5. Risk of increase of costs of fabrication, enrichment and conversion services	<p>Changes in service tariffs of natural monopolies, sole suppliers. Reduced equipment loading level. Weak points in production chain. Incorrect information on resource state.</p>	<p>Application of the principles of the Uniform Industrial Procurement Standard of ROSATOM. Implementation of ROSATOM Production System. Implementation of the long-term programs and investment projects aimed at optimization of engineering and production processes. Development and introduction of the programs of efficiency increase at all enterprises of the Company Adoption of production cost management concept in order to personalize the costs. Long-term forecasts of the demands and production capacity balance (together with ROSATOM and relative divisions of ROSATOM). Stock optimization and turnover increase.</p>	<p>Partial compensation of costs escalation due to implementation of the complex of actions.</p>	↓	○
6. Risk of nuclear, radiation safety	<p>Violation of requirements in environment protection and nuclear radiation safety. Insufficient level of emergency preparedness. Lack of resources for decommissioning, safety measures, etc.</p>	<p>Modernization and automation of facilities, safe operation management Decommissioning of nuclear and radiation hazardous facilities of TVEL Fuel Company, and the "nuclear heritage" objects using the funds of FTP NRS-2 and the sectoral reserves. Professional development of personnel. Continuous monitoring of nuclear and radiation safety state. Setting and implementation of tasks and objectives, and elaboration of measures aimed at reduction of risks in the field of NRS. Complex and technical inspections.</p>	<p>No INES-rated events, and events subject to registration and investigation in accordance with the rules and regulations in the sphere of nuclear power application. No excess of the set level of radiation exposure of personnel, population and environment. Non-staff emergency response teams subject to attestation in the reporting year, confirmed their emergency preparedness.</p>	○	↑
7. Risk of environmental safety	<p>Inability to comply with the requirements to environment protection. Insufficient level of emergency preparedness. Lack of resources for safety measures.</p>	<p>Setting of tasks and objectives, and elaboration of measures aimed at reduction of risks in the field of environment protection, operational health and labor safety. Review of draft regulations containing requirements to environment protection. Interpretations of the practical application of the requirements. Implementation of actions aimed at safety improvement using special reserve funds of ROSATOM. Emergency response drills and personnel training, provision of information with the purpose of unscheduled inspections. Comprehensive and technical inspections, audits, ecological monitoring. Improvement of the integrated system of environmental safety management (ISO 14001:2004), and occupational health and industrial safety management (OHSAS 18001:2007).</p>	<p>The impact of environmental risks connected with water consumption, emission of polluting and ozone-depleting substances, production of radioactive and non-radioactive waste was reduced.</p>	○	○

Risk	Risk factors	Risk management mechanisms	Brief summary of the results of risks management in the reporting year	Trends in likelihood of risk occurrence in the reporting year	Trends in risk significance in the reporting year
8. Risk of personnel health and safety	Violations of safety requirements. Hazardous and harmful production factors. Violation of the corporate code of conduct; Failure to comply with work and rest schedule. Lack of resources for safety measures.	Improvement of safety culture, inclusion of operation experience. Implementation of actions to prevent injuries. Promotion of safe labor. Provision of personal and collective protection. Complex and technical inspections, audits. Setting of tasks and objectives, and elaboration of measures aimed at reduction of risks in the field of industrial safety. Planning of costs for labor protection in accordance with the Industrial Agreement. Improvement of the integrated professional (labor safety), industrial and environmental safety management system (ISO 14001: 2004; OHSAS 18001:2007).	LTIFR indicator in 2016 is 0.09, which is lower than the target value 0.3 established in KPI.	○	○
9. Risk of industrial safety	Insufficient level of emergency preparedness. Lack of resources for safety measures.	Emergency response drills; Complex and technical inspections. Performance review of non-staff emergency response teams. Setting of tasks and objectives, and elaboration of measures aimed at reduction of risks in the field of industrial safety. Reservation of funds and resources, public liability insurance. Improvement of the integrated professional (labor safety), industrial and environmental safety management system (ISO 14001: 2004; OHSAS 18001:2007).	No accidents and incidents that are subject to registration in Rostekhnadzor.	○	○
10. Social and political risks	Events (political conflicts and/or mass social protests) resulting in substantial change in the parameters of actions of TVEL Fuel Company and its enterprises, for instance, missed deadlines of commissioning or cancellation of construction, unscheduled termination of operating activity, damage to goodwill of TVEL Fuel Company and its governance.	Implementation of actions aimed to mitigate the risks of social and political tension in the regions of presence. Cooperation with regional and municipal public authorities on issues relating to the territories' development, regional taxes gain and maintenance of social and economic stability. Implementation of charitable social efforts in the cities of TVEL Fuel Company's presence. Formation of the system of multi-level internal and external communications. Holding of social forum-dialogues in the regions of presence of the enterprises of TVEL Fuel Company.	Absence of actual substantial social-political risks in the regions of presence.	○	○

Reputation risk	Large-scale accidents in nuclear sector; Distribution of negative information about ROSATOM, its enterprises. Mass protests against nuclear power engineering. Election campaigns in the regions and the cities of presence. Construction of burial sites for radioactive wastes in the cities of presence of TVEL JSC subsidiaries.	Observance of the industrial regulation concerning organization of delivery of information to the public in case of emergencies constituting a threat to business and social reputation of ROSATOM. Implementation of the project "Publicity capital management" aimed at formation of positive public opinion on development of nuclear technologies, increase of information favoured index of TVEL JSC activity. Implementation of the Uniform information policy of TVEL Fuel Company of ROSATOM. Integrated communications. Implementation of target communication programs to promote products and services of TVEL JSC and its subsidiary companies. Formation of corporate culture values and implementation of the project "Public response to ROSATOM values". Enhanced activity of the information conciliatory committees in municipal districts.	Balance of positive and negative evaluation of the programs of nuclear power development in 2016 was 58%. Dynamics of the activity of the information field is characterized as smooth, without strong outbursts and critical slowdowns. Tonality of the major part of mass media reports was positive and neutral. The Rating Agency "Expert RA" evaluated activity of TVEL JSC and its subsidiaries on formation and accounting of publicity capital as the innovative approach for the Russian annual reporting practice.	○	○
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3. Governance

Corporate Governance

The principal direction for corporate governance improvement is maintenance of rapid decision-making by management bodies along with detailed consideration of the matters which ensures efficient activities of TVEL JSC and its subsidiaries.

In corporate governance TVEL JSC adheres to the policy of compliance with Russian and international standards, as well as with the corporate governance practice of ROSATOM. Improvement of the corporate governance system is aimed at increase of efficiency, reliability, transparency of the Company activities and management.

Measures taken by TVEL JSC to improve the corporate governance system:

- Exclusion to the extent possible of the circulation of paper media applied for convening meetings and for submission to the Board of Directors of materials on the agenda. The decision-making process by the management bodies is implemented through the Uniform industry-specific electronic document management system.
- Local regulatory acts are being amended with the purpose to reduce the time and improve the quality of corporate paperwork.

In the reporting year the system of corporate governance in TVEL `Fuel

Company was focused on improvement of interaction between the governing bodies, and increase of their efficiency. Similar plans have been also determined for the next year.

Implementation of the corporate policy implies coordination and supervision over scientific and research, investment, financial, selling, social and HR activities, and pricing policy of the subsidiaries. Legal relations between TVEL JSC and subsidiary companies in decision making procedures in the process of production economic activity are based on the approved regulations on interaction of the ROSATOM with TVEL JSC and of TVEL JSC with its subsidiaries.

TVEL JSC and its subsidiaries put into practice some provisions of the Corporate Governance Code recommended by the Central Bank of Russia, with due regard to specific character of the legal status of ROSATOM set by legal regulatory acts of the Russian Federation, providing for unity of nuclear industry enterprises management, these provisions were reflected in the number of local regulatory acts.

TVEL JSC is not a public joint-stock company, the Company discloses all the required information on the website <http://www.e-disclosure.ru/portal/company.aspx?id=400> on a voluntary basis, assuming no obligations on regular and required disclosure, namely:

- Articles of Association, amendments and supplements thereto;
- Annual reports;
- Annual financial statements, notices of approval of the annual financial

Corporate Governance Principles

- Ensuring the protection of rights and interests of the shareholders;
- Accountability of the Board of Directors to the shareholders;
- Ensuring transparency of activity;
- Centralization of decision-making.

- statements, explanatory notes to the annual financial statements;
- Audit reports;
 - The list of affiliates, changes made to the list of affiliates, notices of disclosure of the list of affiliates, and other information stipulated by the Regulation Concerning Disclosure of Information by Issuer of Emission Securities.

Main documents regulating activity of the corporate governance system are: the Articles of Association of TVEL JSC and provision on the Board of Directors of TVEL JSC.

SCHEME OF TVEL JSC CORPORATE MANAGEMENT BODIES

TVEL JSC management bodies are formed in accordance with the Articles of Association of TVEL JSC.

Decisions on issues that are referred to the competence of the General Meeting of shareholders are taken by the sole shareholder of TVEL JSC — Atomenergoprom JSC.

No committees and commissions operated with the Board of Directors of the Company during the reporting period.

The Sole Shareholder and the Board of Directors take decisions on approval and update of the Company goals, values and mission, strategy and objectives regarding production-economic, environmental and social impact. The Executive Board approves the Company's policies and activity programs.

Decisions regarding main production and economic, ecological

and social matters are taken by the Sole Shareholder of TVEL JSC — Atomenergoprom JSC. Prior to making relevant decisions the issues must be agreed between TVEL JSC and the profile subdivisions of ROSATOM. The decisions are obligatory for TVEL JSC management bodies.

Functional subdivisions of the Company within their competence control various aspects of financial economic activities including product output, issues of nuclear, radiation and environmental safety, personnel management and social policy implementation, development of the regions of business presence, and others.

The Company adopts no special measures to develop and enhance the highest management body's collective knowledge of economic, environmental and social topics.

In 2016 Atomenergoprom JSC, the Sole Shareholder of TVEL JSC, held five meetings and made the following decisions on:

- approval of the Annual Report 2015;
- approval of the Annual Accounting Statement 2015;
- auditor's approval of the Accounting (financial) statements 2015;
- election of members of the Board of Directors;
- distribution of income for 2015 and payment of dividends following the results 2015 and 9 months of 2016 financial year;
- alterations to the Articles of Association of TVEL JSC.

Board of Directors

The Board of Directors plays a key role in strategic management of TVEL JSC and the Fuel Company in general. The Board of Directors is formed by the Sole Shareholder of TVEL JSC — ATOMENERGOPROM JSC (AEP JSC) with due regard to qualification and expert knowledge that are required to solve the specified problems.

The Board of Directors consists mainly of outside directors (not the employees of the Company), professionals who have wide experience in the industry and understanding of the specifics of the nuclear industry and the Company activities.

From January 1, 2016 till September 11, 2016 the members of the Board of Directors were:

- Komarov Kirill Borisovich, Deputy Director General — Director of the Unit for Development and International Business of ROSATOM;
- Zalimskaya Lyudmila Mikhaylovna, Director General of TENEX;
- Korogodin Vladislav Igorevich, Director for NFC and NPP Lifecycle Management of ROSATOM;
- Lokshin Aleksandr Markovich, First Deputy Director General for Operational Management of ROSATOM, Chairman of the Board of Directors of TVEL JSC;
- Solomon Nikolay Iosifovich, First Deputy Director General for Corporate Affairs — Senior Finance Director of ROSATOM;
- Olenin Yuri Alexandrovich, President of TVEL JSC.



The curriculum vitae of the members of the Board of Directors is available in the interactive version of the Report.

By the decision of the Sole Shareholder of TVEL JSC d/d September 12, 2016 No.34 the Board of Directors was re-elected:

- Oleg Stanislavovich Barabanov, Director for Development and Restructuring of ROSATOM;
- Lyudmila Mikhaylovna Zalimskaya, Director General of TENEX;
- Vladislav Igorevich Korogodin, Director for NFC and NPP Lifecycle Management of ROSATOM;
- Aleksandr Markovich Lokshin, First Deputy Director General for Operational Management of ROSATOM, Chairman of the Board of Directors of TVEL JSC;
- Nikolay Iosifovich Solomon, First Deputy Director General for Corporate Affairs — Senior Finance Director of ROSATOM;
- Yuri Alexandrovich Olenin, President of TVEL JSC.

Members of the Board of Directors are not shareholders of TVEL JSC. Information on TVEL JSC shareholding must be disclosed by the candidates to

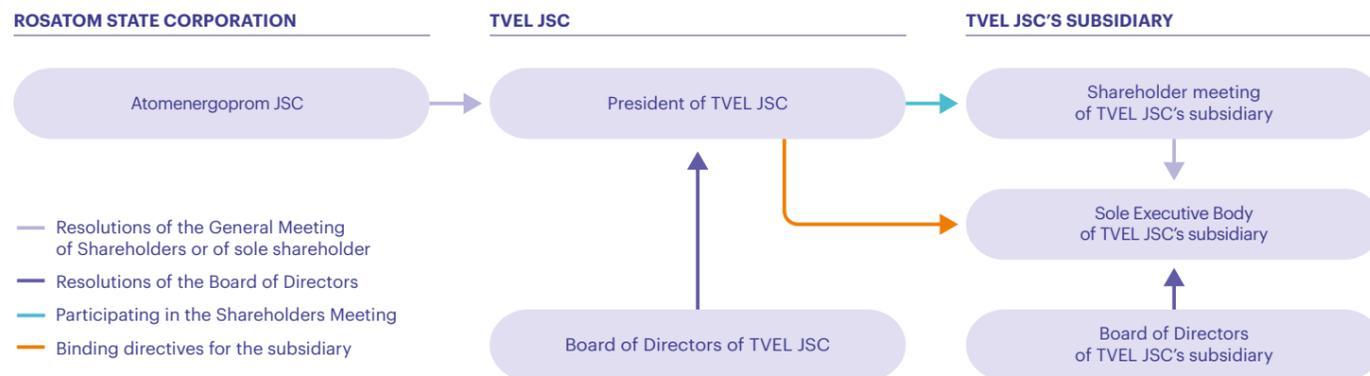
the position of the member of the Board of Directors at the time of filling the consent form for election. The curriculum vitae of the members of the Board of Directors is available in the interactive version of the Report.

There are no independent members in the Board of Directors within the meaning of the Corporate Governance Code of TVEL JSC.

In accordance with the Articles of Association of TVEL JSC the decision on payment of remuneration to the members of the Board of Directors of the Company falls within the competence of the General Meeting of Shareholders (decision of the Sole Shareholder of TVEL JSC — AEP JSC).

No remuneration and compensation of the expenses related to performance of obligations were provided for the members of the Board of Directors of TVEL JSC in 2016. All members of the Board of Directors of the Company get salary according to the place of their primary business. No assessment (including self-assessment) of the activity of the Board of Directors is performed.

Structure of TVEL JSC corporate governance bodies



22,961,670

RUB is the authorized capital of TVEL JSC

Report of the Board of Directors of TVEL JSC on the Results of the Company Development in the Priority Fields

In 2016, the Board of Directors held 13 meetings and made decisions on the most important issues of TVEL FC activity, including:

- approval of the budget and scheduled financial-economical indicators of activity of TVEL JSC;
- approval of recommendations to the Sole Shareholder concerning net income distribution following the results of 2015;
- approval of organizational structure of TVEL JSC;
- approval of recommendations to the Sole Shareholder concerning dividend payment following the results of nine months of financial year 2016;
- termination of membership in PJSC PIMCU and JSC "Atomenergomash";
- approval of recommendations to the Sole Shareholder concerning alterations made to the Articles of Association of TVEL JSC and approval of the restated Articles of Association of TVEL JSC.

Related-party transactions and major transactions

In 2016, TVEL JSC made no transactions classified by the law as major transactions, and interested party transactions, subject to preliminary approval by the Management Bodies of TVEL JSC.

Sole Executive Body

In accordance with the decision of the Sole Shareholder the functions of the Sole Executive Body are imposed on the President of TVEL JSC — Yuri Alexandrovich Olenin.

Yu.A. Olenin does not hold any shares of TVEL JSC.

In accordance with the contract concluded between TVEL JSC and the President of TVEL JSC, the amount of his remuneration following the year results shall be determined by the resolution of the Board of Directors according to the financial-economic performance of the Company and the key performance indicators (KPI) percentage of the President of TVEL JSC. Key Performance Indicator Card of the President of TVEL JSC includes 12 indicators, for information concerning achievement of indicators please refer to the Section "Financial Results".

Detailed information about yearly income of the President of TVEL JSC Yuri Alexandrovich Olenin in 2016 is disclosed on the website of ROSATOM¹.

Share Capital Structure

The authorized capital of TVEL JSC is formed from nominal value of the Company's shares held by the Sole Shareholder — JSC "AEP".

The authorized capital of TVEL JSC amounts to Twenty-two million nine hundred sixty-one thousand six hundred and seventy (22,961,670) rubles.

The Company distributed the registered common shares with nominal value one (1) ruble per each in the

amount of Twenty-two million nine hundred sixty-one thousand six hundred seventy (22,961,670) pieces.

All shares of TVEL JSC are issued in non-documentary form.

No changes were made in the share capital structure in the reporting year.

The System of Actions in TVEL JSC and its Structural Subdivisions to Combat Misconduct and Corruption



8-800-100-07-07, 0707@rosatom.ru — contacts of the corporate hotline of ROSATOM State Corporation for anti-corruption and anti-embezzlement in nuclear sector. For details visit ROSATOM website <http://www.rosatom.ru/partnership/theft/>, and TVEL Fuel Company website <http://tvel.ru/wps/wcm/connect/tvel/tvelsite/about/theft/>.

The management and the workers of TVEL FC fully share the anti-corruption policy implemented by the government of the country. In order to create conditions for reduction of corruption and embezzlement, the enterprises of the Fuel Company adopted a local regulatory document "Concerning implementation of complex program for anti-corruption and anti-embezzlement in TVEL JSC and companies of the management system of the Fuel Company". The document is based on the approved by ROSATOM "Anti-Corruption Plan 2016–2017 of the State Atomic Energy Corporation "Rosatom".

Within the implementation of the Complex program, ROSATOM approved the "Plan for Anti-Corruption Actions Improvement in ROSATOM".

In 2016 TVEL JSC introduced the orders concerning anti-corruption actions:

- "Concerning approval of the Provision on the Ethics Board of TVEL JSC";
- "Concerning approval of the Procedure of registration and consideration of notices from the

employees of TVEL JSC on possible conflicts of interest";

- "Concerning approval of the procedure for reporting on corruption offences by other employees of TVEL JSC, counterparties of the Company and other persons, and the procedure for considering such reports";
- "Concerning enacting Unified industry-specific procedure for checking reports on corruption or other violations that are received by hotline and other channels";
- "Concerning procedure for provision of income certificates and property-related obligation".

To arrange a system for prevention of illegal behavior the following was established in TVEL Fuel Company:

- Security Unit (at the level of TVEL JSC), including department of economic security, commercial secrecy safety department and Group of information and analytical support;
- Assets Protection Subdivisions (at the SC level).

System for combating unlawful behavior in TVEL FC

ROSATOM STATE CORPORATION

Fuel Company



ASSETS PROTECTION DEPARTMENT

Security Unit of TVEL JSC



Subsidiaries

1. <http://www.rosatom.ru/about/protivodeystvie-korrupsii/svedeniya-o-doxodax-rabotnicov/>



Actual number of the employees of Assets Protection Subdivisions of TVEL FC as of December 31, 2016 amounted to 60 persons.

MAIN FIELDS OF STRUCTURAL SUBDIVISIONS' ACTIVITY

- Economic security and protection of assets of TVEL JSC and its subsidiaries in the course of production and financial economic activity;
- Revealing, prevention and localization of threats (risks) to economic interests and business reputation of TVEL JSC and its subsidiaries;
- Information-analytical support of the President of the Company and structural subdivisions of the Company in economic security;
- Maintenance of commercial and business secrecy system in the Company and its subsidiaries;
- Arrangement of personnel security of the Company and its SC;
- Development and implementation of measures aimed at prevention of corrupt behavior.

Structural subdivisions of TVEL FC for prevention of unlawful behavior perform continuous monitoring of assets flow, analysis of factors and terms that contribute to external and internal threats (risks) to assets and economic interests of TVEL JSC and SC, implement measures for prevention, combating and neutralization of their negative consequences. In 2016 the analysis covered all subsidiaries of TVEL Fuel Company.

TVEL JSC implemented the Standard Industry-Specific Instructional Guidelines on Assessment of Corruption Risks in Organizations of ROSATOM. Accordingly, all subdivisions analyzed their business-processes, with specification of critical points and description of probable corruption offences. Based on the analysis the Company elaborated the cards of the corruption risks and developed measures aimed at risks mitigation.

All employees of TVEL Fuel Company must study provisions and regulations on anti-corruption and anti-embezzlement.

This information is communicated to 100% of employees. The Fuel Company holds activities aimed at employees training in the rules of business ethics, anti-corruption and anti-embezzlement. In addition, the external providers hold special briefings for employees of the relevant divisions on actual issues in anti-corruption policy.

Besides, TVEL Fuel Company has its own industry-specific program on anti-embezzlement and anti-fraud; for prompt decision-making the hotline was opened within the framework of this program. The program provides for material remuneration and protection of workers participating in the Program.

All suppliers and contractors are informed on anti-corruption policy and measures through procurement documents and contract provisions.

MAIN RESULTS 2016

474 inspections (476 in 2014) were arranged and performed to prevent damage and loss of assets.

More than 30 appeals to law enforcement agencies, resulting in initiation of more than 20 criminal cases.

Disciplinary actions against 125 employees, seven of whom were dismissed.

90 inspections were carried out with regard to information on irregularities and violations received via specialized communication channels hotline, in 29 cases information was proved (in 2015 there were proved 48 cases of violation out of 118 checked).

The amount of prevented and reimbursed damage resulted from measures for economic safety and assets protection amounted to RUB 941 million.

There are no completed legal actions against the organization or its employees in connection with corruption.

ANTI-CORRUPTION PLAN 2016–2017 OF TVEL JSC

Main anti-corruption objectives are the following:

- formation and improvement of legal and organizational basis of anti-corruption of TVEL JSC in accordance with the requirement of the time;
- execution of legal acts and managerial decisions in anti-corruption sphere aimed to create conditions reducing the possibility of corrupt conduct and providing the decrease of the corruption level;

- intensified anti-corruption education of the employees of the Company;
- ensuring the compliance by the employees of the Company with anti-corruption codes, including the requirements of the Art.13.3 of the Federal Law d/d December 25, 2008 No.273-FZ "Against corruption", providing commitments of organizations to prevent corruption, and the Art.19.28 of the Code of Administrative Offences of the Russian Federation, providing for liability for illegal remuneration on behalf of the legal entity;
- improving efficiency of awareness-raising and educational actions aimed to create the atmosphere of non-tolerance of corruption in the Company;
- enhanced activity of subdivisions for assets protection aimed at prevention of corruption and other violations of law.

To achieve the set objectives, the Plan provides for the following actions:

- improving efficiency of awareness-raising actions aimed to create the atmosphere of non-tolerance of corruption in the Fuel Company;
- timely identification, prevention and settlement of conflicts of interest in activity of the Company's employees;
- prevention of different criminal offences;
- prevention of property damage.

In accordance with the Policy of ROSATOM and TVEL JSC the system of physical protection and security of all enterprises is being continuously improved, the issues related to counter-terrorism security of the facilities of the Fuel Company are being regularly addressed.

Anti-corruption performance results

Indicator	2014	2015	2016	Δ 2016/2015
Number of inspections aimed to prevent damage and loss of assets	476	583	474	-19%
Number of materials submitted to law enforcement agencies	28	75	34	-55%
instituted criminal proceedings	18	27	22	-18%
Disciplinary action against employees	130	146	125	-14%
dismissed	26	22	7	-68%
including along with submission of materials to law enforcement agencies				
Number of inspections made to check information concerning abuses and violations received via specialized communication channels hotline	101	118	87	-26%
confirmed	18	48	29	-40%
The amount of prevented and reimbursed damage resulted from measures for economic safety and assets protection, RUB mln	397	689	941	37%

Internal Control System

Since September 2012 the Arbitration Committee operates in TVEL JSC; the Arbitration Committee is vested with authority to consider complaints against actions (or omission thereof) of any customer, competent authority, procurement manager and/or procurement commission during the implementation of procurement procedures on behalf of organizations of TVEL FC management system.

22

Number of control activities conducted by the specialists of the SDIC of TVEL JSC in 2016

Internal Control System (ICS) of TVEL Fuel Company is an interconnected integral complex of organizational structures, processes, their rules, and characteristics of management system that continuously or from time to time performs internal control function and ensures internal control goal achievement.

Special Department of Internal Control (SDIC) is a subdivision of TVEL Fuel Company's organization engaged in internal control activities with respect to various spheres of business.

SDIC of TVEL JSC (the unit of the Director for Internal Control and Audit) operates in accordance with regulatory legal acts of the Russian Federation, local regulations of TVEL JSC and ROSATOM, and the provisions on these structural subdivisions.

Special department for internal control of TVEL JSC provides functional guidance of 8 SDIC companies forming the management system of TVEL Fuel Company: AECC JSC, VNIINM JSC, KMZ JSC, MSZ JSC, NCCP JSC, SGChE JSC, UEIP JSC, ChMP JSC.

In accordance with ROSATOM Internal Control Development Concept the main purpose of ICS is to promote the achievement of the Fuel Company's strategic goals, to contribute to corporate governance improvement in TVEL JSC and companies forming the management system of the Fuel Company, in compliance with the requirements of the Russian Federation law, regulatory state authorities and international standards.

The purpose of ICS development is to maintain corporate governance mechanisms, primarily the regulatory ones, consistent with changing external and internal conditions.

Priority objective of the Director's Unit for Internal Control and Audit is to maintain governance of ICS functioning and development processes.

Main subjects of the internal control system in the Fuel Company are: the President of TVEL JSC, the Board of Directors of TVEL JSC, TVEL JSC Management, the Director's Unit for Internal Control and Audit, and the

Executive Bodies and SDIC of TVEL JSC subsidiary companies.

Objects of control are: TVEL JSC, subsidiary companies, and their structural subdivisions.

Apart from the scheduled inspections, in 2016 the workers of the Unit of the Director for Internal Control and Audit conducted three unscheduled inspections by the order of the governance, two workers participated in the inspection within the working groups, and one worker was engaged in the audit of ROSATOM.

MAIN RESULTS 2016

Plan 2016 was framed under the principle of special inspections of different business profiles at all SC of the Fuel Company, including with the purpose to achieve strategic goals set by the Company. The practice proved to be efficient as compared to the previous periods, efficiency of the scheduled control activities made 100%.

In accordance with the approved plans of control activities for the next half-year 2016, the workers of the Unit of the Director for Internal Control and Audit conducted 22 control activities, including 7 internal audits. Reduction of the number of scheduled inspections, as compared to the previous period, is connected with the change in the approach to control activities, and introduction of the methods and practice of appraisal and assessment activities.

In 2016 the Arbitration Committee of TVEL JSC received 118 complaints,

Number of control activities conducted by the specialists of the Director's Unit for Internal Control and Audit of TVEL JSC

Indicator	2014	2015*	2016	Δ 2016/2015
Number of control activities in accordance with the plan, including:	52	31	22	71%
with Audit Committees	25	7	0	
audit of financial and economic activities including procurement and personnel record management	21	18	15	83%
internal audit	6	6	7	117%

*Reduction in number of the audits as compared to 2014 is connected with the abolition of the audit commissions as per it.3 art.66.3 of the Federal law d/d May 5, 2014 No.99-FZ.

15 were recognized as reasonable, 2 — partially reasonable, 56 — unreasonable, 13 — withdrawn, 32 — left without consideration.

In accordance with the requirements of professional standards the workers of the Control and Audit Office in 2016 successfully passed independent qualification in compliance with the requirements of the professional standard "Specialist of Internal Control (internal auditor)".

KEY DIRECTIONS OF TVEL FC INTERNAL CONTROL SYSTEM DEVELOPMENT

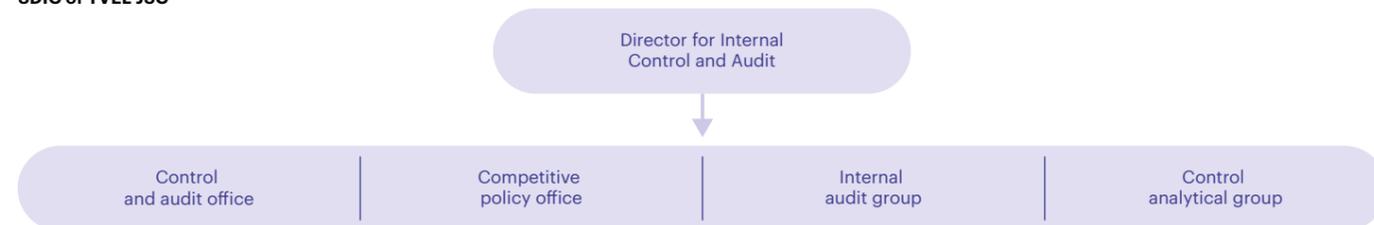
- further integration of adequate control procedures, allocation of duties and responsibilities for the efficiency of internal control;
- development of the mechanisms of stakeholders involvement in internal control;
- ICS reliability and efficiency monitoring development through introduction of various methods to promote continuous and regular assessment of ICS state;

- development of SDIC competence and potential.

PLANS 2017

- timely and full identification of material violations in the activity of the companies of TVEL Fuel Company;
- contribution to strategic goals of the Company with regard to increase of the share in the international market, reduction of prime cost, increase of revenue from new products.

SDIC of TVEL JSC



Plan 2016 was framed under the principle of special inspections of different business profiles at all SC of the Fuel Company. The practice proved to be efficient as compared to the previous periods, efficiency of the scheduled control activities made 100%.

Procurement Management

TVEL Fuel Company supports, respects and protects basic human rights and builds its external business relationship on the principles of honesty, integrity and openness.

Basic documents that regulate the procurement activities and set the supplier and contractor selection criteria in TVEL Fuel Company are the following:

- Federal Law d/d July 18, 2011 No. 223-FZ "On Procurement of Goods and Services by Particular Legal Entities";
- Uniform Industrial Procurement Standard of ROSATOM State Corporation;
- TVEL JSC Corporate Standard Procurement Process.

More than 90% of competitive procurement procedures are carried out through on-line sales platforms. This promotes openness and transparency of the Company, and saves labor and financial resources. Procurement procedures are implemented using the following electronic platforms: JSC "United Electronic Market Place", LLC "Fabrikant" and JSC "Economics Development Center".

Total amount saved by the subsidiaries of the Company in 2016 through the procurement procedures made RUB 2,9 million.

The largest procurement groups are the following: the products and services purchased from the companies of nuclear industry, power supply. These are the largest categories in procurement from sole supplier. Some of the key suppliers and contractors of the Company enjoy monopolist position on the market. Under the provisions of UIPS (Uniform Industrial Procurement Standard of ROSATOM) no tender is provided for such contractors (natural monopoly entities), only the "Procurement from Sole Supplier" procedure.

Basic groups of competitive procedures:

- materials and equipment,
- construction and installation works,

- manufacture of components,
- repair and maintenance of equipment.

In planning and implementation of procurement activity 2016 TVEL Fuel Company afforded priority rights to small and mid-sized businesses in accordance with the Federal Law d/d July 18, 2011 No.223-FZ "On Procurement of Goods and Services by Particular Legal Entities", and in accordance with the Resolution of the Government of the Russian Federation d/d December 11, 2014 No.1352 "Concerning special aspects of participation of small and mid-sized business in procurement of products, works, services by particular legal entities". Share of procurement from small and mid-sized business made from 29.2% to 46.4% for particular enterprises, when the regulatory level is 18%.

In the reporting year the works within the frameworks of the three-year project "Optimization of the Fuel Company Logistics Management System" were completed. Implementation of this project resulted in the following:

- reduction of stock reserves by 41% as compared to the data 2013;
- reduction of costs on stock reserves by 20% as compared to the data 2013;
- 80% of commodities and 50% of works and services are purchased within the category management¹;

- the economic benefit from procurements within the category management in 2016 was RUB 1.4 billion.

In 2016 total volume of warehouse material assets reduction at the enterprises of TVEL Fuel Company amounted to RUB 1.7 billion.

Uniform Industrial Procurement Standard of ROSATOM UIPS prohibits introduction of any requirements (other than those stipulated by the law) to the admission criteria for suppliers and contractors participating in the procurement procedure. The Company has no right to set preferences to the supplier on a local basis.

Local suppliers participate in competitive procedures on a common

basis, specific approaches to local suppliers are not applied. The Company maintains no special records for such suppliers.

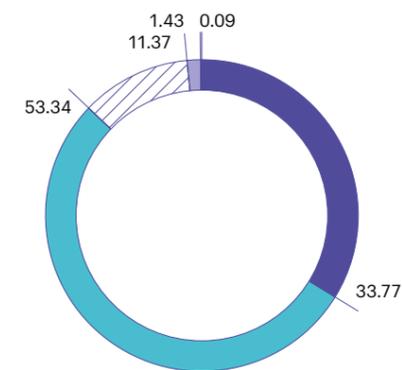
Suppliers and contractors are evaluated using the criteria of labor practices, impact on society and environment subject to availability of all permits and licenses set by the law. Such criteria also include availability of management system certificates as evaluative ones i.e. forming the final evaluation for a member of procurement procedure. The Company does not perform any evaluation study of actual and potential impacts in the supply chain; all concluded contracts are checked for compliance with the Russian legislation.

All scheduled indicators 2016 were achieved.

Dynamics of the key indicators shows the enhanced efficiency of procurement management and transparency of procedures.

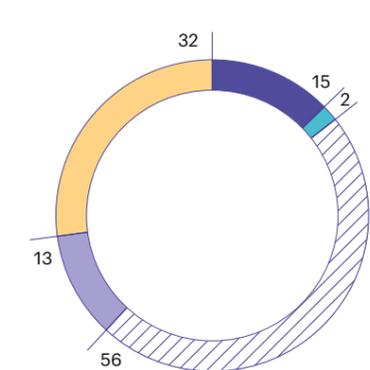
Efficient interaction with suppliers reduces the risk of corruption, fraud and purchase of substandard quality products.

Procurement structure according to cost criterion, %



- under RUB 500 thous.
- RUB 100 mln — 1 bln
- RUB 500 thous. — 10 mln
- above RUB 1 bln
- RUB 10 — 100 mln

Complaints received by the Arbitration Committee of TVEL JSC in 2016



- Recognized as reasonable
- Recognized as partially reasonable
- Recognized as unreasonable
- Withdrawn
- Left without consideration

In 2016 the Arbitration Committee of TVEL JSC received 118 complaints concerning procurements procedures of the Fuel Division. 17 complaints were recognized as reasonable and partially reasonable.

Key indicators of procurement activities of TVEL FC

Indicator	2014	2015	2016 (actual)	2017 (plan)
Share of procurement through public competitive procedures under the UIP, %	95	97	97	95
Total amount of procurement of TVEL FC, RUB mln	168,962	130,632	100,988	60,370
Total amount saved by subsidiaries of TVEL FC from procurement through public competitive procedures, RUB mln	2,601	2,852	2,850	minimum 2,000

1. Category management as it pertains to procurement means the operations plan to promote efficient management of procurement, supplies, stock and interaction with suppliers of each specific category of purchased products. By introducing the category management, TVEL FC intends to minimize involvement of go-between companies and to enter into long-term contracts directly with manufacturers.

4. Performance Results



Financial Capital

Financial Capital is the most vital in the activity of TVEL Fuel Company. Capital gains ensure current operations and promote investments thereby generating growth of other capitals used by the Fuel Company.

FINANCIAL POLICY

Financial management is maintained in accordance with the approved Financial Policy of TVEL Fuel Company subject to agreement with ROSATOM.

Main provisions of the Financial Policy of TVEL Fuel Company:

- TVEL JSC provides overall guidance of relationship between its subsidiaries and financial institutions (base banks, partner banks) regarding the matters of consolidated debt portfolio management, placement of available cash assets, subsidiaries liquidity management, management of payment and cash services for trade finance and currency exchange transactions, hedging and other financial transactions;
- TVEL JSC approves transactions of the subsidiaries regarding attraction and placement of temporary funds. Conclusion of financial transactions (borrowing, except for borrowing from ROSATOM), execution of bank guarantees on the part of the principal, issuing and placement of securities, disposal of derivative financial instruments (under contracts that are concluded outside the exchange business, and that provide for liabilities on products supplies), unsecured letters of credits are executed in accordance with the requirements of the Uniform Industrial Procurement Standard.

The system of borrowings is being implemented with the purpose to optimize the consolidated credit portfolio of TVEL Fuel Company and expenses on attraction of external funding, as well as for central

Basic principles in Financial policy of TVEL Fuel Company:

- conservative approach in selecting financial institutions;
- diversification of funding sources, subject to an acceptable level of financial risks;
- single treasurer's office;
- full disclosure.

funding of operating activity of subsidiaries of the Fuel Company and current liquidity management.

Budgeting in the subsidiaries of TVEL JSC is set in accordance with Unified budgeting procedure and standards of ROSATOM.

Budgets of the subsidiaries of TVEL FC are approved at the meetings of the Board of Directors of SC based on the results of consideration of the consolidated budget of the Company by the budget committees of TVEL JSC and ROSATOM.

TVEL Fuel Company received no state financial backing in the reporting and the previous periods.

INVESTMENT MANAGEMENT

TVEL Fuel Company carries out its investment activities in line with the Uniform Industry-Specific Policy of ROSATOM and its organizations. Investment management system of TVEL Fuel Company is based on the principle of efficiency.

The Investment Committee (further "the Committee") is a permanent collegiate advisory board that acts under the guidance of the Chairman of the Committee and follows the principles of the investment policy of ROSATOM and its organizations.

Annual Results 2016

Amount of financing of the Portfolio components of TVEL Fuel Company made RUB 26,514 million (in 2015 — RUB 29,125 million). Amount of financing tends to yearly fluctuations, as it depends on combination of different stages of life cycle of the Portfolio components available (more than 178) at the same time.

Funding of industrial and technological base of primary production accounts for the biggest share in overall investment outlay.

FINANCIAL RESULTS

In 2016 generally all KPI and target production indicators applied to evaluate performance of TVEL Fuel Company were achieved.

Change in the volume of revenue (-4.7%), gross and net income, EBITDA in the reporting year as compared to the previous year is stipulated by yearly fluctuations of volumes of refuelling of NPP and continuing downward trends of nuclear materials and components prices, as well as by influence of factors beyond control, in particular by foreign exchange losses.

Amount of financing for TVEL FC investment projects by directions, RUB mln

Direction	2014	2015	2016 (plan)	2016 (actual)	2017 (plan)
Nuclear industry	17,295	18,553	19,036	16,347	17,321
Development of general industrial activities	536	1,070	879	529	813
Development of infrastructure	1,245	1,212	2,489	1,987	3,925
Safety and encumbrances	2,645	7,982	7,151	6,520	3,718
Other	7,745	309	1,269	1,131	698
Total for TVEL FC	29,466	29,125	30,824	26,514	26,475

Achievement of major KPI and production indicators of TVEL FC in 2016¹

Indicator	Target	Actual	Deviation, %
AFCF of TVEL FC, RUB bln ²	71.3	83.9	+17.67
Investment activity integrated efficiency indicator ³ , %	100	88.65	-11.35
Semi-fixed costs, RUB bln	40.2	36.88	-8.26
Labor efficiency, RUB mln/person	8.1	8.25	+1.85
Foreign orders portfolio for 10 years, USD mln	9,787	10,088	+3.08
Foreign proceeds, USD mln	1,383	1,415	+2.3
Integral indicator for new products ⁴ , %	100	108.82	8.82 pct
Proceeds on new products beyond and within the profile on a competitive basis, RUB bln	6.8	7.17	+5.44
New products portfolio of FC for 10 years, RUB bln	18.6	20.86	+12.15
Reduction of stock of FE NFC, RUB bln	12.3	15.8	+28.46
LTIFR ⁵	0.34	0.09	-73.5
No INES events level 2 and above	No events	No events	No events
Completion of state orders, including State Defense Orders from other governmental customers and organizations, %	100	100	0.0

1. Financial and economic indicators are given in accordance with consolidated management statements of TVEL Fuel Company.

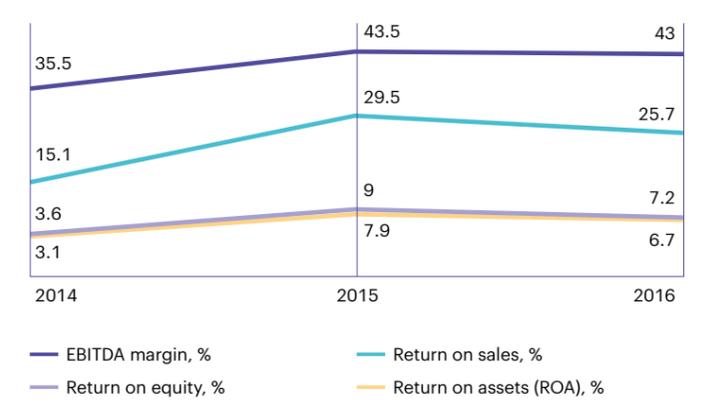
2. Adjusted free cash flow — free cash flow with adjustments.

3. Is determined on the basis of such indicators of investment projects implemented by the Company as net present value, internal rate of return, adjusted in accordance with their volume and other calculation factors.

4. The indicator includes income and new products portfolio for 10 years. List of goods and services classified as new products shall be annually agreed with ROSATOM. In planning 100% target value is determined, this means complete performance of the target values subject to both components of the indicator.

5. Lost time injury frequency rate — number of lost time incidents divided by total hours worked for the reporting year and rated as 1 mln man hours.

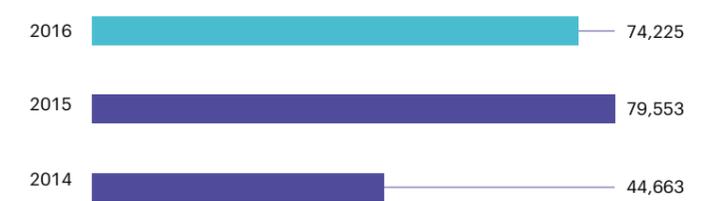
Key profitability indices



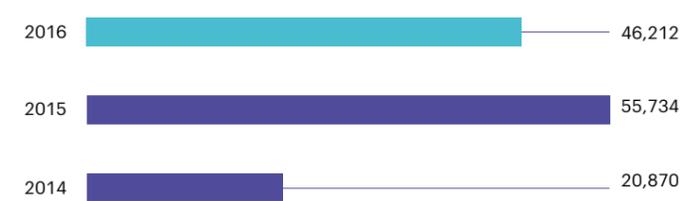
Revenue (net) from sales, RUB mln



Gross profit, RUB mln



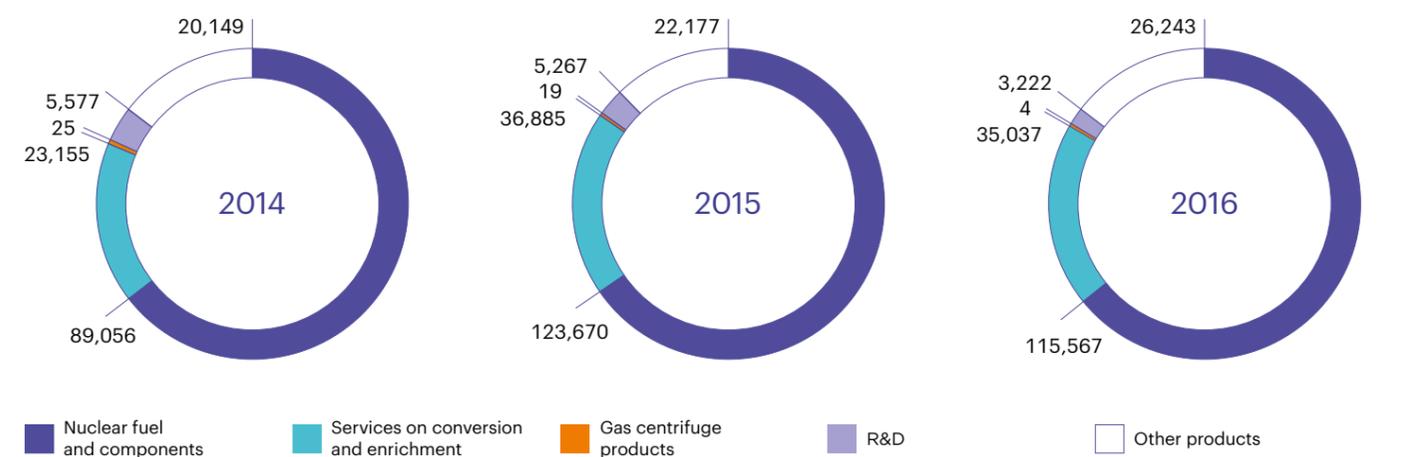
Net income, RUB mln



EBITDA, RUB mln



Distribution of consolidated revenue by types of products, RUB mln



Distribution of export revenue by types of products, USD mln

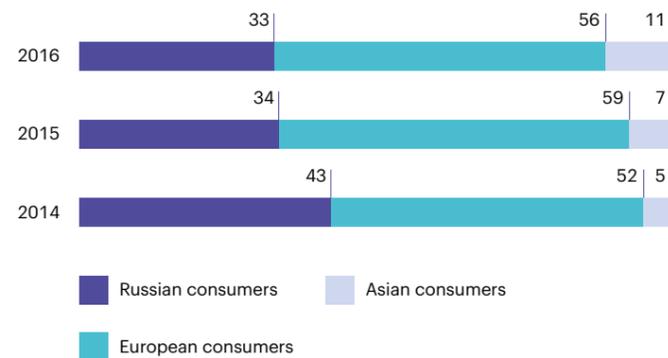
Types of products	Volume of sales			Δ 2016/2015, %
	2014	2015*	2016*	
Nuclear fuel and components	1,452	1,447	1,273	-12.0
Engineering services	12	8	9	10.2
Lithium products	13	18	22	23.7
Calcium, titanium, zirconium	15	11	11	0.0
Isotope products	10	11	14	34.5
Other products	22	37	18	-52.5
Total	1,523	1,532	1,347	-12.1

*The data is presented without adjustments for multiplying factor of the adjusted net foreign exchange position.

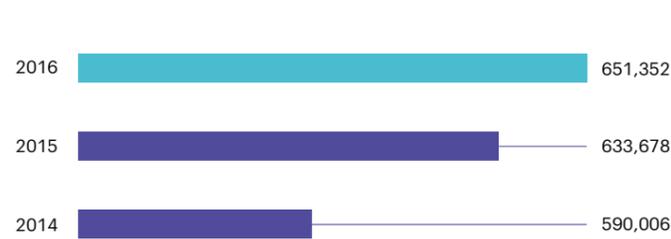
Revenue from FA sales, RUB mln

Indicator	2014	2015	2016	Δ 2016/ 2015, %
Revenue from FA sales	81,055	109,299	104,906	-4.0

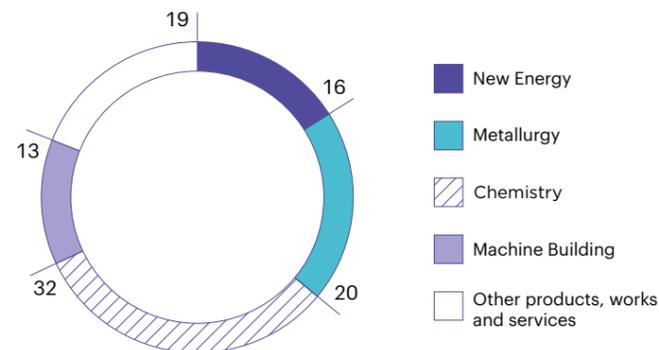
Distribution of revenue from nuclear fuel sales by consumers' geography, %



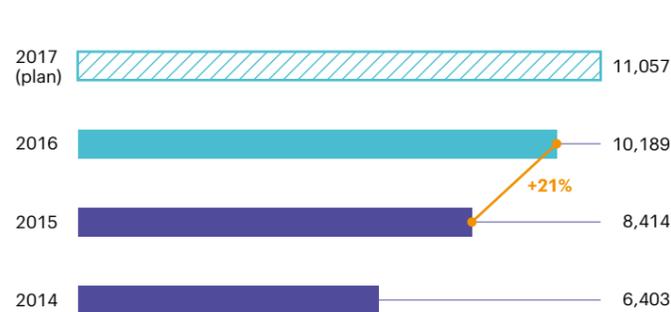
Net assets of TVEL Fuel Company, RUB mln



Structure of revenue from general industrial activities in 2016, %



Revenue from general industrial activities¹, RUB mln



1. Revenue from general industrial activities (w/o energy services, including non-reporting SC with product range included in the list of new products of ROSATOM State Corporation). Data for 2014 and 2015 was adjusted retrospectively in accordance with new calculation methods.

Financial soundness and liquidity indicators of TVEL Fuel Company

Indicator	2014	2015	2016	Δ 2016/2015, %
Ratio of borrowed and own funds	0.15	0.14	0.10	-30.4
Current liquidity ratio	2.95	3.15	4.02	27.8
Return on basic production capacity	0.98	1.31	1.15	-12.1
Receivables turnover period, days	91	80	79	-1.7
Stock turnover period, days	264	188	168	-11.0

Core financial indicators of TVEL FC for 2016, RUB mln

Indicator	Revenue (net) from sales		Net profit
Separation-Sublimation Complex	AECC JSC	5,288	1,860
	PA ECP JSC	13,320	3,446
	SGChE JSC	14,981	1,650
	UEIP JSC	22,908	6,431
Total for SSC		56,497	13,387
Nuclear Fuel Fabrication Complex	MSZ PJSC	22,770	4,598
	NCCP JSC	7,089	1,306
	ChMP JSC	13,922	2,574
	MZP PJSC	191	-250
Total for NFFC		43,972	8,228
Gas Centrifuge Complex	KMP JSC	2,658	17
Total for GCC		2,658	17
UGCMP LLC		1,392	-246
Research Complex	VNIINM JSC	3,520	76
	Tochmash VPA JSC	1,984	-292
TOTAL for Research Complex		5,504	-216

In 2016 the export products were sold to the total amount USD 1,347 million. Sales of nuclear fuel and its components amount to 94.5% — the largest share in the export revenue.

In 2016 share of revenue received from FA sales made 58% in total consolidated revenue. For the period from 2014 till 2016 the revenue from FA sales increased 1.3 times (including all categories of consumers) and made RUB 104,906 million.

Structure of revenue from sales of nuclear fuel (by geography) remains unchanged, main consumers are Russian NPPs and NPPs of Europe, number of consumers from Asian countries is growing.

Following the results 2016, volume of sales from general industrial activities

increased by 21% and achieved RUB 10,189 million, which is equal to 12.3% of the consolidated revenue of TVEL Fuel Company.

Financial soundness and liquidity indicators of the Company are at high level. In 2016 the current liquidity ratio improved considerably, positive dynamics was observed with turnover ratio.



Dividend payout, RUB mln

Indicator	2014	2015	2016	Δ 2016/2015, %
Dividends paid to Atomenergoprom JSC	16,257	15,296	28,233	84.6
Dividends paid to TVEL JSC from subsidiaries	3,036 [*]	1,930	2,820	46.1

*There was a misprint in the report 2015, correct amount of dividends paid to TVEL JSC by subsidiaries in 2014 was RUB 3,036 mln.

Dividend policy of TVEL JSC with regard to subsidiary companies is set with account of need for investment in production, its reconstruction and improvement of technical facilities.

Cost reduction

Share of general and administration costs in revenue in 2016 made 1.7%. Implementation of the Non-Investment Activities Plan resulted in reduction of costs in 2016 by RUB 1,667 million. The most progress was made in the following activities of TVEL JSC subsidiaries:

- decommissioning of main equipment;
- elaboration of target regulations on the Inventory storage and consumption rates;

- optimization of materials and equipment used for technical maintenance and current repair;
- conservation of the process equipment;
- reduction of costs on warehousing;
- stock optimization (sale of unclaimed inventory);
- optimization of the routes and number of personnel transportation trips.

Commercial expenses of TVEL FC, RUB mln



Administrative expenses of TVEL FC, RUB mln



Manufactured Capital

Stable long-term relations with the end-product consumers allow development of long-term production and scientific plans, leading to reliable provision of subsidiaries and research establishments of TVEL Fuel Company with the orders.

BUSINESS ASSETS AND OPERATIONAL RESULTS

TVEL Fuel Company comprises three complexes for type-specific production of the front end nuclear fuel cycle, and scientific and design-engineering assets.

The plans on production and sales of products and services in the reporting year were fulfilled to the full extent, which ensured compliance with all contractual commitments of the Company to Russian and foreign customers.

Separation-Sublimation Complex (SSC)

comprises a group of integrated plants engaged in enrichment and conversion of uranium.

In 2016 the plan of SSC enterprises on EUP production and achievement of the installed capacity utilization factor was accomplished to the full extent.

Milestones 2016:

- implementation of the procedure for the "pooled" transfer of uranium raw materials with the view to reduce unfinished production and to minimize the time of process between TVEL JSC and TENEX JSC, as well as TVEL JSC and UEIP JSC and PA ECP JSC;

- start of removal of the depleted uranium hexafluoride from the site of AECC JSC, and its reprocessing to refined uranium oxide by PA ECP JSC;
- production of uranium tetrafluoride by ChMP JSC was terminated starting from April 1, 2016; conversion program was transferred to SGChE JSC;
- UEIP JSC commissioned the center for integrated servicing of foreign design containers (30B, 48Y);
- start of reprocessing of depleted uranium in ChMP JSC and its removal from the site of the enterprise; test reprocessing (elaboration of technology) of the first batch of materials from ChMP JSC at SGChE JSC;
- commissioning at UEIP JSC of gas centrifuges of new generation;
- completion of works on refining concentration in unit 206 of the radiochemical plant SGChE JSC;
- start of pilot production of the first module of refining gas centrifuges OGC-200 in the chemical workshop of PA ECP JSC.

Main objectives 2017 and in the midterm:

- further modernization of UEIP JSC;

- improvement of conversion cycle efficiency.

In accordance with the decision of ROSATOM, the scheduled shutdown of Chemical-Metallurgical Plant is planned in January 2017, with subsequent decommissioning and transition to site-based management.

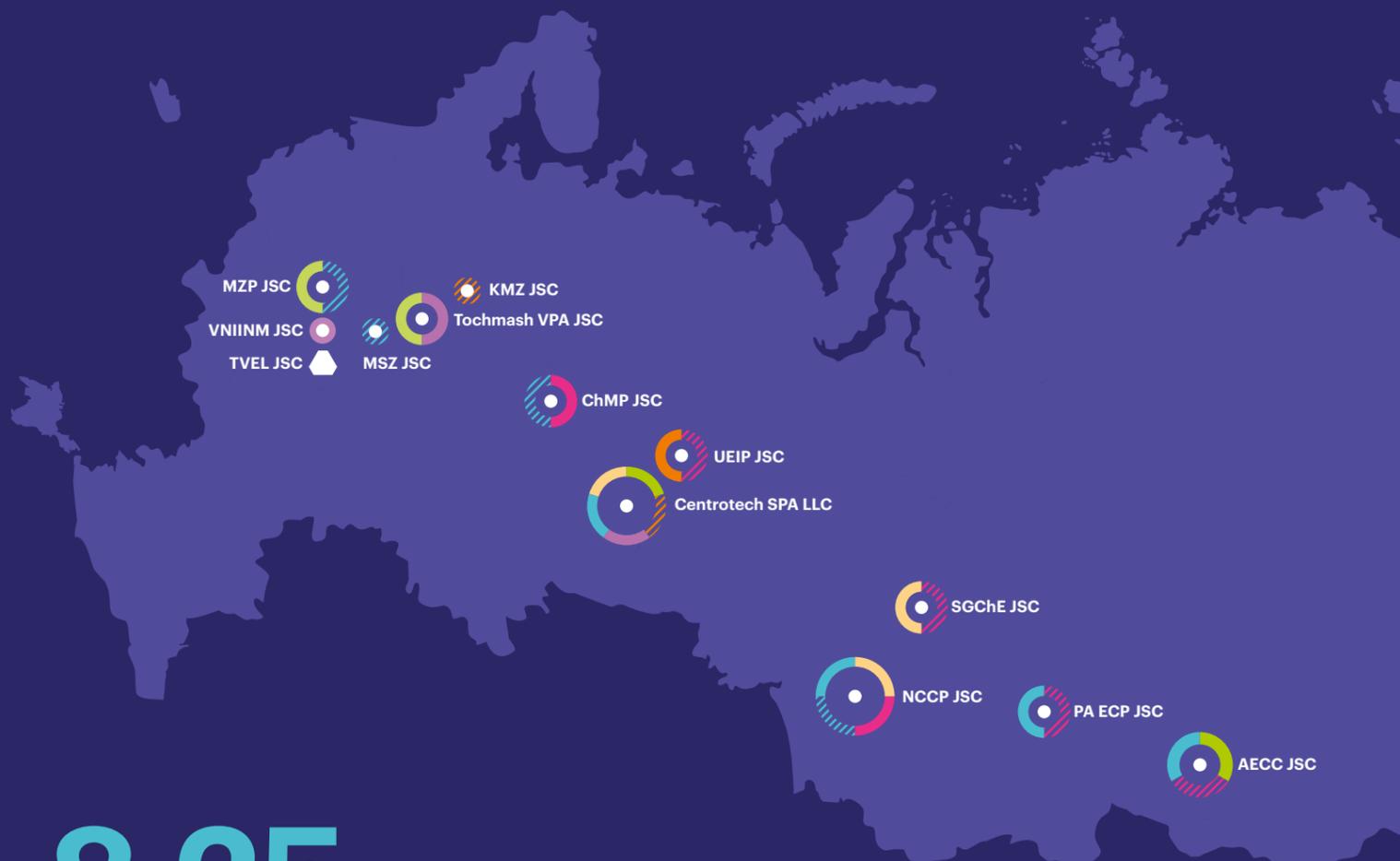
Part of personnel of Chemical-Metallurgical Plant will be engaged in execution of works on production transition to nuclear-safe state. Number of employees will be determined in accordance with the scope of relevant tasks and subject to unconditional compliance with safety requirements and conditions stipulated by licenses.

In Q4 2017 it is planned to transfer the remaining part of the discharged personnel of the Chemical-Metallurgical Plant, who have expertise in work with highly-enriched uranium, plutonium, recycled derivative products and intense radiation waste, to the Experimental Demonstration Energy Complex established at SGChE (for detailed information please refer to the Section "Intellectual Capital").

Labor efficiency dynamics of the separation and sublimation complex, RUB mln/person

Subsidiary companies	2014	2015	2016	Δ 2016/ 2015, %
SGChE JSC	3.41	3.88	4.73	21.9
AECC JSC	3.52	4.54	5.90	29.9
PA ECP JSC	5.52	5.77	6.78	17.5
UEIP JSC	7.78	9.40	10.49	11.5

Competencies of enterprises of TVEL Fuel Company



8.25

RUB mln/person
labor efficiency

- Nuclear Fuel Fabrication Complex
- Gas Centrifuge Complex
- Separation-Sublimation Complex
- Machine Building
- Metallurgy
- New Energy
- R&D
- Chemistry
- Additive Technologies

Center for Integrated Servicing

The first Russian Center for Integrated Servicing of foreign transport and storage containers used for transportation of enriched uranium products was opened at the Urals Integrated Electrochemical Plant.

A container intended for transportation of uranium product has established service life. To get new certificate in accordance with international requirements, every five years one should carry out re-certification, tests, cleaning. Not so long ago, the foreign partners could get such services only abroad.

Center for Integrated Servicing has become the first Russian

international certification Center capable of rendering the whole complex of services for processing the containers — from cleaning to pneumatic testing and non-destructive inspection. This will allow reducing the costs, and increasing in future the efficiency of logistical processes due to rendering of the services at the international market.

The Center complies with the standard ANSI No.14.1, regulating activity of such structures; it is equipped with the state of the art Russian facilities, mostly made by the enterprises of ROSATOM under the special project. Personnel of the Center

is formed out of the workers of UEIP JSC, who received training and got international certificates.

UEIP JSC was not a random choice as the base for the Center for Integrated Servicing: the plant provides execution of more than 80% of export orders on uranium enrichment, placed in Russia. Geographic proximity to North-Western region, through which UEIP JSC forwards the major part of its product, also matters.

Nuclear Fuel Fabrication Complex (NFFC)

is a group of subsidiary industrial enterprises that manufacture nuclear fuel for various reactors.

The main activity of TVEL Fuel Company is production and sales of fuel assemblies for power and research reactors.

In 2016 the plan of TVEL Fuel Company on nuclear fuel production was accomplished to the full extent, production capacities on nuclear fuel fabrication made 1,750 t of heavy metal.

The planned volume of the manufactured fuel products is determined in accordance with preliminary orders made by consumers

based on the plans of primary charging and recharging.

Growth of labor efficiency at MSZ JSC, NCCP JSC and ChMP JSC is stipulated by:

- increase of revenue from conventional products and general industrial activities;
 - reduction of headcount due to implementation of the program of man-loading increase, optimization of production and supporting processes;
 - rebalancing of personnel, including due to optimization of the number of sites without additional staff recruitment.
- Milestones 2016:
- under the international agreements for reduction of stocks of nuclear

materials in Islamic Republic of Iran: execution of contracts for exportation of Iranian enriched nuclear materials and heavy water, and equivalent supply of natural uranium in Iran;

- first batch of nuclear materials was removed from the site of VNIINM JSC as the part of work for removal of nuclear materials from the site;
- on-time production and supply of highly-enriched uranium metal for European research reactor;
- first commercial supply of five FAs P-20 for research reactor HFR (the Netherlands);
- production and supply of VVER-1000 FA with experimental uranium

Production volume of the fabrication complex enterprises, ea

Product	2014	2015	2016	2017 (plan)
FA VVER-1000	1,174	1,343	1,269	1,551
FA VVER-1200	165	-	-	232
FA VVER-440	1,487	1,756	1,846	1,470
FA RBMK-1000	3,221	3,220	3,290	3,490
FA FN-600, FN-800	291	286	406	404
FA EGR-6	144	144	144	144
FA PWR and other	352	104	32	40
TOTAL FA	6,834	6,949	7,050	7,344
Uranium metal ingots, kg U	-	-	335	325
Ceramic fuel pellets, t U	1,508	1,605	1,400	1,420

Labor efficiency dynamics of the fabrication complex, RUB mln/person

Subsidiary companies	2014	2015	2016	Δ 2016/2015
MSZ JSC	4.49	5.20	5.46	5.0%
NCCP JSC	3.18	4.83	4.92	1.9%
ChMP JSC	3.34	4.02	4.58	13.7%
MZP JSC	3.21	1.56	0.97	-38.0%



MSZ JSC Quality Management System fully complies with the requirements of ČEZ, a.s. Previous audit of QMS on MSZ JSC was conducted in 2013. It bears mentioning that ever since the Quality Management System has undergone certain positive changes. They have happened not only on MSZ JSC, but overall the TVEL Fuel Company. And these improvements are clearly visible.

Roman Kubin
ALTA a.s. Project leader (Czech Republic)
(left)

- plutonium REMIX-fuel to Balakovo NPP Unit 3;
 - under the conditions of unstable payments in 2016, provision of on-time supply of nuclear fuel for NPP in Ukraine;
 - production and shipment of priming fuel set for Unit 3 of Tianwan NPP (China);
 - under conditions of scheduling constraints, repacking into the certified shipping packaging sets and shipment of 5 NF reload sets for Kudankulam NPP (India);
 - completion of works in MSZ JSC on stage-by-stage introduction and adoption of equipment and "dry" process of fuel pellets production out of uranium dioxide;
 - MSZ JSC completed modernization of TVS production for EGR-6 reactor, established and commissioned new TVS assembly section, started routine production;
 - using the facilities of newly established section there was produced and accepted the pilot FA batch for space-based gas-cooled nuclear reactor. The adopted process provides a pathway to production of new types of products, having no analogues in the world practice.
- Main objectives 2017 of the Nuclear Fuel Fabrication Complex of TVEL FC:
- production of 3 startup zones of initial fuel charge for unit 4 of Rostov NPP, unit 1 of Belorussian NPP, and unit 4 of Tianwan NPP (China);
 - production, acceptance and supply to Beloyarsk NPP of the first reload of MOX-TVS;
 - development of bimetal tube stocks production technology, and preparation to qualification as the suppliers of these products to foreign markets;
 - production of plant equipment for zirconium chloride and hafnium separation under the project "Creation of chloride technology" of metal zirconium sponge production.
- Gas Centrifuge Complex (GCC)** — the complex produces gas centrifuges (GC) and accessories for enterprises of the Separation-Sublimation Complex.
- The only consumers of the products of the Gas Centrifuge Complex are companies of the separation and sublimation complex.
- GCC fulfilled the production program for manufacturing and supply of gas centrifuges in full and within the time frame.
- Milestones 2016:
- the acceptance board of TVEL Fuel Company approved the structure of more efficient gas centrifuge of new generation, it was recommended for batch production.
- Main objectives 2017:
- mastering of batch production of the new model of gas centrifuge.
- Research and Engineering Complex**
Scientific-production association
- With the purpose to improve research and design activity and to provide full life cycle of the products (from

Labor efficiency dynamics of the Gas Centrifuge Complex, RUB mln/person

Subsidiary companies	2014	2015	2016	Δ 2016/2015
KMZ JSC	2.42	2.33	2.58	10.7%

+10.7%

increase in labor efficiency of Gas Centrifuge Complex in 2016



SPA holds all required licenses to carry out production activity of the consolidated enterprises.

marketing to disposal) in 2015 the Fuel Company implemented the first stage of establishment of Scientific and Production Association (SPA). Three scientific-design and technological competencies of three design bureaus (NRDC LLC, OKB-Nizhny Novgorod JSC, Centrotech-SPb JSC) were united.

In 2016 consolidation of their main activity with production enterprises Uralpribor LLC and ZEP LLC was completed. SAP organizational structure was established at UGCMP LLC (CATU Novouralsk) with responsibility subdivision to the section of new businesses development, section of gas centrifuges development, and section of operational activity. The detailed analysis was carried out with subsequent transfer of the required assets of the enterprises consolidated into SPA to provide production activity of SPA, execution of current contractual obligations

and future orders related with general industrial activities and prospective products. In January 2017 the company was officially renamed into Centrotech SPA LLC¹.

- During restructuring of enterprises:
- engineering and design competencies were preserved,
 - main professional competencies of workers were preserved,
 - efficiency of working functions was increased through improvement of processes and reduction of the lead time.

Brand name SPA Centrotech was accepted for future use in development and promotion of the brand of Scientific and Production Association. Centrotech-SPb JSC (Saint Petersburg) is the leading design bureau established in 1945, with huge experience and rich history. Taking into account that Centrotech-SPb JSC joined the developing SPA, the continuity

Labor efficiency of UGCMP LLC, RUB mln/person

2014	2015	2016	Δ 2016/2015
3.48	2.99	1.91	-36.0%

1. Financial performance and data on the personnel 2016 are given in the Report on UGCMP LLC.

in history and the best traditions of the consolidated enterprises became an important argument to choose the name and logo "Centrotech".

In 2016 there were worked out and approved the development strategy and the tactical plans to implement SPA development strategy; there were also developed the sales plan, the contraction plan 2017–2019, and the roadmaps for implementation of the tactical plans. New concept of space optimization was developed; its integral part involves the project aimed at replacement of the worn out utilities, modernization and optimization of engineering infrastructure of UGCMP LLC, increase of reliability and safety, reduction of basic production and auxiliary space.

SPA combined the gained experience in development, design and production of high technology products. This association created additional foundation for growth of non-nuclear business due to consolidation of competencies, acceleration of development and production launch of new non-nuclear products.

General Industrial Activities

TVEL Fuel Company develops production of competitive, high-tech products for nuclear and other industries. Development of general industrial activities (production of non-nuclear products and rendering of non-nuclear services) is based not only on the need to develop new markets outside NFC, but also the need to create substituting high-tech production to employ the personnel dismissed in the process of reorganization. For detailed information about innovations in the sphere of general industrial activities please refer to the Section 4.3.2 "Second Business Core Development".

In order to create new and innovative industries aimed at development of the second core business of TVEL Fuel Company, the projects are implemented on four programs of innovative development: New Energy, Machine Building, Metallurgy, Chemistry.



Key areas of new businesses development in TVEL FC

Metallurgy



Chemistry



Machine building



New Energy



Metallurgy

New businesses	Products	Basic enterprises	Scope	Supplies
Special metallurgy	Zirconium alloys	ChMP JSC	Electric Power, Machine Building, Medicine, Metallurgy	Russian Federation
	Titanium alloys			Russian Federation/foreign countries
	Hafnium			Russian Federation/foreign countries
	Calcium metal and calcium injection wire			Russian Federation/foreign countries
Special tube rolling	Titanium alloys rolling (tubes, rods, wire)	ChMP JSC	Machine Building, Medicine	Russian Federation/foreign countries
Nanometallurgy	Superwire and DMA-based wire	ChMP JSC	Electric Power, Medicine, Transportation, Telecommunication, Systems	Russian Federation
	Nickel filtering elements, powders	Centrotech SPA LLC	Production sector	Russian Federation

Full cycle of titanium wire production — from the ingot to the end product — makes it possible to control the quality of products on every production cycle. Titanium welding wire achieved the international recognition of experts at Weldex 2016 (Rossvarka): CHMP JSC was awarded the diploma “The best titanium welding wire of Russia”. CHMP JSC was awarded for the titanium welding wire at the Russian competition “100 Best Russian Products”.

Titanium Production. The record revenue was gained from general industrial activities (more than RUB 10 billion in 2016) due to the market launch of new titanium products: cold-rolled tubes with spiral finning, welding and spring wire.

Experience and competence of ChMP JSC in the field of production of another high-melting-point material — zirconium products — served as foundation for establishment and development of titanium products manufacture.

In the past three years volume of titanium production at ChMP JSC increased almost 2.5 times. More than RUB 1 billion was invested in the launch of titanium production. Funds were allocated to modernization of operating and acquisition of new equipment, R&D, personnel training.

At present time the enterprise sets up production of more than 200 products of titanium and its alloys both within the import substitution program, and within the existing demand in Russia and abroad. Titanium produced by ChMP JSC is applied in the fields where high-tech solutions are required — the enterprise focuses on development of special purpose tube rolling, manufacture of products out of special alloys, and development of materials for additive technologies.

Products of titanium-based intermetallic alloys manufactured by ChMP JSC seem to have great potential. These are the products from new alloys with unique combination of features, in 2019 the aircraft industry is expected to become the main consumer of products made of these alloys.

ChMP JSC also offers high-technology materials of titanium and its alloys to the European car manufacturers for car components production. Products of the

enterprise have features complying with the modern market trends, and make it possible to implement complex engineering solutions. Application of lightweight and hard metal in car manufacturing, instead of conventional steel, allows increasing the efficiency of vehicle design.

ChMP JSC offered to its potential customers a product which is new for the Russian market — titanium wire in the form of electrodes. The production of titanium welding wire was launched by ChMP JSC in 2015. In 2016 more than 50% of titanium welding wire sold in the Russian market, was produced by ChMP JSC. The plant sets up production of titanium wire, thus it is planned to expand geography of supplies and attract consumers from new segments of the market.

Titanium wire produced by ChMP JSC is a new generation product. Availability of up-to-date equipment stock made it possible to achieve unique characteristics of the products. Its main feature and competitive advantage is low hydrogen content (less than 0.001%), which excludes any possibility of cracks of weld joint and ensures high quality of welded surface. This keeps our wire in great demand.

>50%

of titanium welding wire sold in the Russian market in 2016 was produced by ChMP JSC



There are many titanium manufacturers in Europe, but only together with ChMP we are able to secure supplies of hightech products to the leading manufacturers of Western Europe. In automobile industry these are Maserati, Mercedes-Benz, BMW, Ferrari and many others. In electric power industry — Siemens, in aviation — Italian company Leonardo, we have already started supplies of titanium products made by ChMP to these companies.

Alexey Rasskazov
Director General of Hermith (Germany)
(left)

In December 2016, collaborative efforts of TVEL JSC and ChMP JSC resulted in signing of a five-year contract with Hermith GmbH, the European distributor of titanium products, for supply of the major batch of titanium roll stock.

During the term of the contract it is planned to deliver to the European market more than 1 thousand tons of different titanium products made by ChMP JSC. The contract provides for annual manyfold increase of the scope of supply, and the peak will fall

on 2021. Total contract value exceeds RUB 2 billion.

Under the contract the specialists of ChMP JSC shall elaborate the range of products, most demanded on the European market, in compliance with technical requirements of foreign standards. The approved “trending up” supply schedule will allow to increase the product output and expand the current production.

The first batch, comprising mostly the pilot samples, was sent to the customer for control tests.

Results 2016:

- signing of a five-year contract for RUB 2 billion with European metal trading company (Hermith GmbH) for supply of titanium products manufactured by ChMP JSC;
- launching of production of extremely thin-walled cold-worked tubes of titanium alloy PT-1M to satisfy demands of Russian power engineering;
- initiation of the project on manufacturing of semi-finished products (rods and wires) of complex alloyed high-impact titanium alloy with specified structure and properties for application in aircraft engineering.

Plans 2017 and in the midterm:

- completion of re-equipment of titanium production;
- increase of the long-term orders portfolio and expansion of sales of

titanium products for ship-building and aircraft industries.

Development of Calcium Production

ChMP JSC on the basis of the existing calcium metal production mastered the production of new high-tech product — calcium injection wire for metallurgical melts treatment. Application of calcium injection wire HighMet makes it possible to reduce 5 times consumption of calcium per ton of processed steel, and to improve its non-metallic impurities cleanliness. Specialists of the plant develop range of calcium injection wire taking into account the individual demand of the customer and specific process conditions of steel production.

Consumers of HighMet wire are major Russian metal manufactures: Severstal PJSC, Magnitogorsk Iron & Steel Works JSC, Novolipetsk Steel PJSC.

Results 2016:

- orders portfolio for the first half of 2017;
- pilot lots were shipped to Europe and India;
- development of the project aimed to launch production of calcium injection wire, the production will be organized based on RPS principles.

Plans 2017 and in the midterm:

- expansion and strengthening of cooperation with major Russian metal manufacturers;
- entry into foreign markets, including India and South-East Asia;
- twofold increase of the production yield due to expansion of production capacities.

ChMP JSC for the first time presented its products with HighMet brand on the international forum “MMMM-2016” in August 2016 in New Delhi (India).

The bobbin with winding wire became the emblem of the new brand. ChMP JSC positions the range of metallurgic products HighMet as the resulting mix of science and development of the advanced technologies.

The core product of HighMet range is calcium injection wire for

liquid steel processing (Calcium solid wire), providing high quality of metal along with reduced processing costs. HighMet brand also includes base bullions, products of alkali metals, titanium and zirconium. In 2016 there were sold more than 1,700 tons of HighMet products.



95

PA ECP JSC manufactures 95 isotopes of 19 chemical elements

Chemistry

Stable Isotopes. PA ECP JSC is the major manufacturer of stable isotopes using gas centrifuge method. The enterprise is in top five of the world manufacturers of isotopes. PA ECP JSC manufactures 95 isotopes of 19 chemical elements. The plant exports isotope products to more than 25 countries, from Australia to USA and European countries.

Results 2016:

- supply of the first batch of molybdenum-100 isotope for international project on investigation

of neutrino properties with AMoRE scientific collaboration;

- development and supply of the first silicon crystal enriched in silicon-28 isotope for international project for creation of mass standard “Kilogram-3”;
- conclusion of the contract for supply in 2017 of germanium-76 isotope for the international project GERDA;
- approval of quality conformance of disks made of iridium-191, start of export supplies.

Plans 2017 and in the midterm:

- commissioning of pilot plant for iridium isotopes production;
- production and delivery of 20 kg of Germanium-76 isotope for GERDA project;
- production of 6 kg of polycrystalline silicon-28 for “Kilogram-30” project.

New businesses	Products	Basic enterprises	Scope	Supplies
Production of stable isotopes	Production of 95 isotopes of 19 chemical elements: Ar, W, Ge, Fe, Ir, Cd, Si, Kr, Xe, Mo, Ni, Sn, Os, Pb, Se, S, Te, C, Zn	PA ECP JSC SGChE JSC	Production Sector, medicine Research in the sphere of properties of elementary particles of new generation, agriculture, precision and accuracy, research in geology, biology, oceanology, etc.	Russian Federation/ foreign countries
Catalysts	Autocatalysts	Ecoalliance LLC (UEIP JSC subsidiary)	Production Sector	Russian Federation
	Zeolite catalysts for petroleum chemistry	NCCP JSC	Production Sector	Russian Federation/ foreign countries
Fluorine compounds	Extra pure fluorine hydrogen	ECP JSC, SGChE JSC	Nuclear, oil-producing and chemical industry, transport	Russian Federation
	Trifluoromethanesulfonic anhydride (triflic anhydride)	AECC JSC	Pharmaceutical, chemical industry, agricultural chemistry	Russian Federation/ foreign countries

In recent years the sector of catalysts production for oil and chemistry industry is being actively developed. In 2015 the Company organized supplies in South-East Asian countries. In 2016 the contract was signed with the Sweden company for catalysts supply. We negotiate with European companies, offer our services in the African continent.

Catalysts. Starting from 2011, Ecoalliance LLC, subsidiary of UEIP JSC, is the active business-unit of Novouralsk industrial cluster. Due to availability of the research laboratory, Ecoalliance LLC can develop any kind of a catalyst, both for the cars with diesel engine, and natural gas and gasoline engines. Ecoalliance LLC is the only Russian manufacturer of catalysts systems for neutralization of exhaust gases. The enterprise covers full technological cycle: from catalyst development to batch production of exhaust gases neutralizers.

Key competences of Ecoalliance:

- design development and modelling of catalytic collectors of the cars with gasoline and diesel engines, complying with the international standards Euro 3, Euro 4, Euro 5, Euro 5+, Euro 6;
- prototype production;
- development of catalysts for purification of industrial emissions;
- services on comprehensive testing to confirm compliance with environmental requirements of automobile transport.

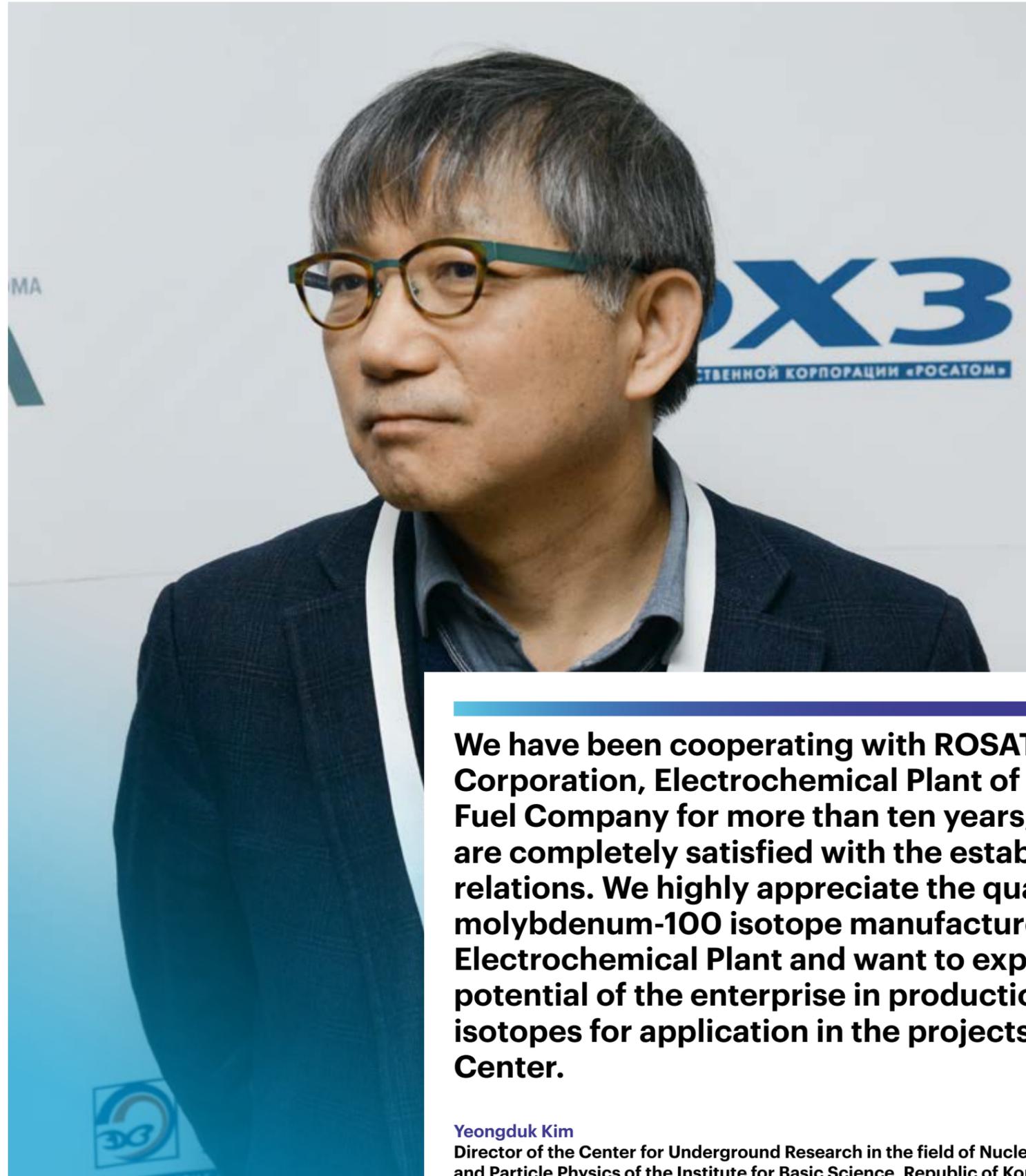
Catalyst units and elements of exhaust gas withdrawal system (neutralizers) supplied to Russian automobile manufacturers form the greater part of the manufactured products (more than 90% of revenue).

Main objective of the enterprise — new markets entry. In particular, one of the promising trend is the production catalysts, that will be installed on all heat and gas supply facilities. Production of automobile catalysts and catalyst units is also one of the key directions.

In 2015–2016 Ecoalliance LLC launched new products: catalysts under the ecological standard Euro-5/5+, and for new car models (including LADA Vest and X-Ray). This resulted in almost 2 times increase (up to RUB 1.9 billion) of revenue from sales of automobile catalysts in 2016. Thus, there was created a growth area for development of production of ecological catalysts. We plan to tap new market segments, enter the foreign markets, develop new types of products, including catalysts for industrial gas purifying systems.

x2

increase of revenue from sales of automobile catalysts in 2016



We have been cooperating with ROSATOM State Corporation, Electrochemical Plant of TVEL Fuel Company for more than ten years, and we are completely satisfied with the established relations. We highly appreciate the quality of molybdenum-100 isotope manufactured by Electrochemical Plant and want to explore the potential of the enterprise in production of other isotopes for application in the projects of our Center.

Yeongduk Kim
 Director of the Center for Underground Research in the field of Nuclear Physics and Particle Physics of the Institute for Basic Science, Republic of Korea

Machine Building

New businesses	Products	Basic enterprises	Scope	Supplies
Instrumentation	Car electrical equipment	Tochmash VPA JSC	• Electric power • Production sector • Transportation	Russian Federation
	• Static frequency converters • Dosimeters, radiation meters • Controllers • Printed circuit boards • Connector boxes	Centrotech SPA LLC	• Electric power • Production sector	Russian Federation
Equipment for nuclear fuel cycle	• Ball- and screw-type plugs • Stop valves • Units and components for gas centrifuges	Tochmash VPA JSC	• Electric power • Production sector	Russian Federation
Mining industry equipment	Oil-fields equipment	Centrotech SPA LLC	Geological exploration, mining and processing of minerals	Russian Federation

New Energy

New businesses	Products	Basic enterprises	Scope	Supplies
Lithium and lithium-based materials	Lithium hydroxide-7, lithium metal, lithium chloride	NCCP JSC	• Transportation • Electric Power • Metallurgy	Russian Federation/ foreign countries
Materials for Li-Ion cells	• Lithium ferrophosphate • Lithium cobaltate	NCCP JSC / Katodnye Materialy (Cathode Materials) LLC (NCCP JSC subsidiary)	• Aircraft • Production sector • Telecommunication Systems	Russian Federation
	• Lithium tetrafluoroborate • Electrolyte fluid for lithium batteries	SGChE JSC		
Accumulators and generators, fuel elements	• Special purpose (military and space machinery) electrochemical power sources (alkaline fuel cells) • Electrochemical power sources on solid oxide fuel cells	Centrotech SPA LLC	• Electric Power • Telecommunication Systems	Russian Federation

Results 2016:

- production and delivery of lithium cobaltate-based cathode material for Russian Li-ion cells for space industry;
- in cooperation with the leading specialized institutes, start of development of new precious-metal-free technology of production of independent current sources based on solid oxide fuel cells for infrastructure facilities;
- mastering of production of lithium tetrafluoroborate and electrolyte fluid on its base.

Plans 2017 and in the midterm:

- implementation of the pilot projects for introduction of Li-ion cells;
- elaboration and implementation of suggestions for development of competencies in the sphere of active materials for Li-ion cells, and technologies aimed at production of Li-ion cells;
- production of pilot runs of independent current sources based on solid oxide fuel cells for gas transportation infrastructure.

80%

TVEL FC share of the worlds market of lithium hydroxide enriched in 7 (Li-7)



Cathode Materials. Cathode Materials LLC, the subsidiary of NCCP JSC, is engaged in development of this direction. The Company makes products for Russian consumers. Following the results of market survey, it is suggested to expand the range of products, to add the products that will be in demand in the immediate future.

Lithium Production. TVEL Fuel Company manufactures two sorts of lithium metal — battery and catalytic. Lithium hydroxide enriched in 7 (Li-7) isotope is applied in nuclear power industry as the additive to heat carrier of PWR primary cycle for water chemistry adjustment. The Company enjoys 80% of the world market.

In 2016 the Company for the first time produced lithium hydroxide-7 with purity 99.99% on an industrial scale. This product is in demand in nuclear reactors with thorium-based fuel cycle and in medicine for diagnostics and treatment of oncology diseases.

Results 2016:

- signing of a five-year contract with American company Rockwood Lithium (Albermarle Company) for annual supply of lithium metal manufactured by NCCP JSC;
- start of implementation of the investment projects aimed to increase efficiency of lithium compounds enriched in lithium-7 isotope and

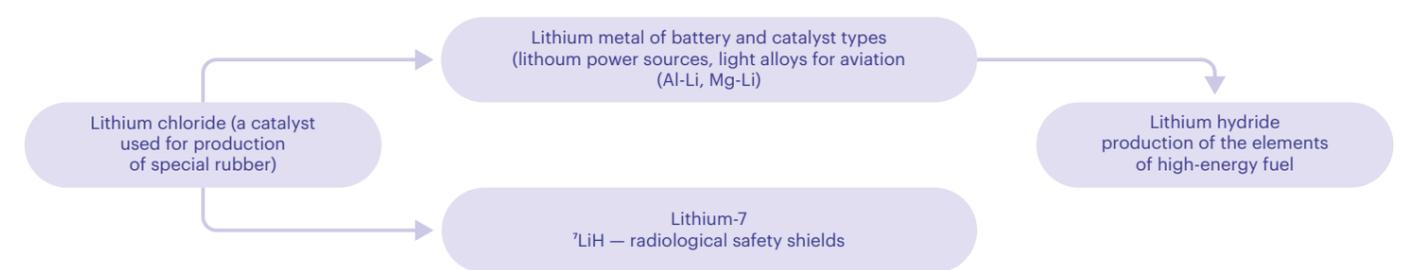
lithium metal with natural isotopic abundance;

- activity on expansion of lithium products sales markets due to expansion of the range of products. Significant work was undertaken to promote the lithium products made by NCCP JSC on foreign markets.

Plans 2017 and in the midterm:

- expansion of the sales markets;
- launch of the projects for diversification of the products range and production capacity.

Lithium products of NCCP JSC



378

RUB mln
Economic benefit in 2016 from rationalization proposals and suggestions for improvement

PRODUCTION MANAGEMENT

The need to expand an order portfolio to achieve strategic objectives, as well as severe and ever-growing competition in global markets always has required special approaches to production and management processes and development of performance efficiency management system.

ROSATOM Production System

ROSATOM Production System (RPS) means culture of lean manufacturing and continuous improvement of processes to ensure a competitive advantage on a global scale.

RPS is based on five principles which encourage the employees:

- to be attentive to customer's requirements;
- to respond the issues as they emerge;
- to incorporate quality into the process and produce no defective products;
- to identify and eliminate any loss (excess inventory, decoupling stocks, downtime, unnecessary movements, etc.);
- to set an example to colleagues.

These principles were formulated on the basis of the best examples of domestic and foreign experience, especially, the system of scientific organization of labor, production and management of the USSR Ministry of Medium Machine Building and Toyota Production System of Toyota, the Japanese automobile company.

RPS is aimed at strategic targets of ROSATOM, and RPS projects are focused on productivity growth, cost reduction

and increased quality of production. Knowledge of RPS tools and ability to apply such tools are obligatory for professional growth of employees engaged in nuclear industry.

Starting from 2015, ROSATOM applies the system-based approach to deploy RPS on the pilot enterprises of the industry.

In case of system-based deploying of RPS, the company, included into ROSATOM management system, receives the status of RPS enterprise. According to the concept of RPS development, all RPS-enterprises implement the integrated package of RPS-measures, and are subdivided as follows:

- RPS Leaders,
- RPS Candidates,
- RPS Reserve.

The integrated package of RPS measures means:

- setting clear objectives to the level of small group leaders based on definition of the objectives of the enterprise, division, sector;
- training the managers of the enterprises, participants of the projects in RPS methodology;
- development of the product flow of the enterprise;
- implementation of RPS-projects in office and at production site on a single methodology;
- incentive and development programs for employees of different levels.

In 2016 three enterprises of TVEL Fuel Company (MSZ JSC, UEIP JSC, KMZ JSC), who received the status "RPS Leader

2015", confirmed the achieved level and continued systematic development of RPS-flows, training and motivating the personnel to improve efficiency of processes. In 2016 four more enterprises of TVEL Fuel Company — SGChE JSC, PA ECP JSC, ChMP JSC, NCCP JSC — were also included in the list of the pilot enterprises of the industry. The purpose of these enterprises is to get the status "RPS Leader 2016".

Enterprises — RPS Leaders receive the package of privileges including the following: visits of a business coach to the enterprise, possibility to share experience with Russian and foreign advanced enterprises, family tickets, certificates for training in ROSATOM Corporate Academy, participation in Workspace Design project, etc.

In the reporting period the Company opened and implemented more than 1,300 RPS projects aimed at addressing the issues in the product flows and improving efficiency of all business processes. More than 80% of the managers of TVEL FC enterprises were involved in the project activity. The impact of all RPS projects on business-goals of the enterprise is being evaluated on a regular basis.

Suggestions for Improvement

The Company provides regulated payments for suggestions for improvement (SFI):

- SFIs adopted: payments equal to RUB 300 / 700 / 1,000 for submitting SFIs of various categories and economic value;

Semi-annually TVEL Fuel Company makes the rating of the enterprises in the team RPS efforts. Following the result of the first half year 2016 the leader was SGChE JSC.

The contest of RPS projects and SFI was held on the annual industrial forum "RPS Leaders". On the part of TVEL Fuel Company the contest winners were:

- In "SFI for improvement of the equipment efficiency" — Dmitry Sergeevich Sevostianov, the head of department 1, workshop 48 of MSZ JSC;
- In "The best RPS-project aimed at cost reduction" — Mikhail Anatolievich Balykov, the head of UEC PA ECP JSC;
- The most active worker of the industry in SFI submission was Andrey Vladislavovich Medvedev, operator of processing, separation and purification of chemical compounds of SGChE JSC.

- SFIs implemented with economic effect: payment upon introduction of a percent of the resulting economic effect;
- promoting implementation of SFIs with technical solutions (rationalization proposals): up to 30% of the amount paid to the authors.

In 2016 there were filed more than 142 thousand SFIs, 93.1% were accepted for realization and 91.6% — implemented. Efficiency indicator of SFIs process is the quality indicator; it is calculated as the ratio of the adopted SFIs to the submitted ones. SFIs' quality becomes better from year to year.

In average, 6.6 SFI from one worker are submitted in TVEL Fuel Company. 80% of personnel of the Company participate in the improvement process through SFI submission.

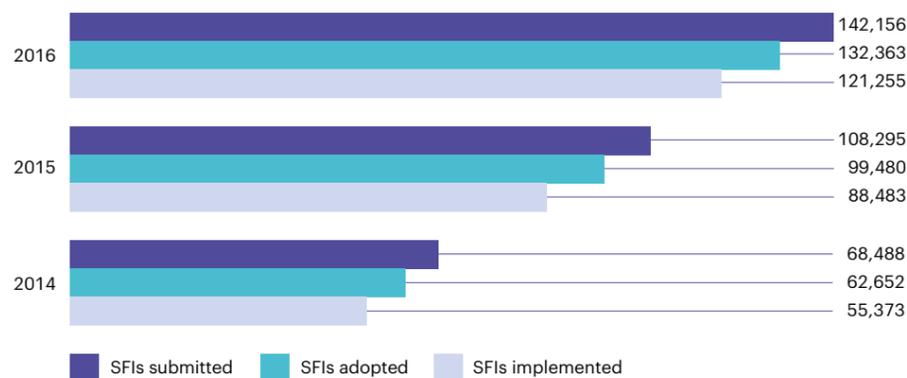
Economic benefit in 2016 from rationalization proposals and suggestions for improvement made RUB 378 million.

Amount of the paid personal bonuses for the benefit from rationalization proposals and SFI — RUB 56.8 million, amount of the operating bonuses paid to minor groups for contribution to efficiency improvement — RUB 30.2 million.

RPS enterprises in 2016:

- MSZ JSC
- KMP JSC
- UEIP JSC
- NCCP JSC
- SGChE JSC
- ChMP JSC
- PA ECP JSC

Work with suggestions for improvement in TVEL Fuel Company



13,146

persons received training in efficiency management

56.8

RUB mln personal bonuses paid for the benefits from rationalization proposals and SFI

30.2

RUB mln operating bonuses paid to minor groups for contribution made to efficiency improvement

80%

workers submit SFI

6.6

SFI per 1 worker

92%

SFI was introduced

We continuously improve the product quality through technical upgrade of production, improvement of the process automation, and implementation of the number of investment and RPS projects aimed at efficiency improvement.

QUALITY MANAGEMENT

The Company's Quality Management is based on the principles specified in international standards ISO 9000.

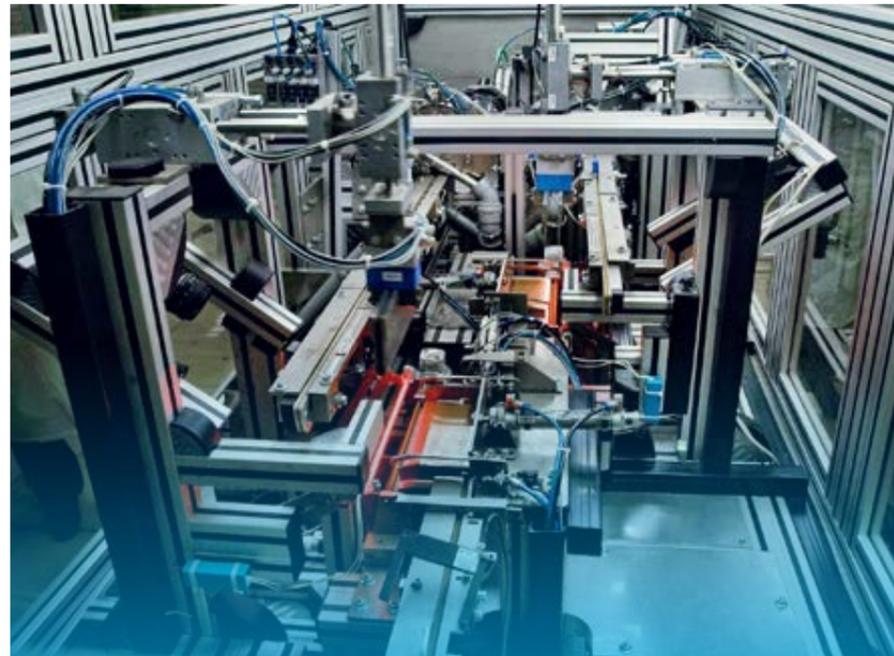
TVEL Fuel Company uses the Integrated Quality Management System (QMS), certified in accordance with the requirements of international standard ISO 9001:2008, ISO 14001:2004, ISO 50001:2011 and BS OHSAS 18001:2007 in TUV International Certification.

The main strategic goal of TVEL Fuel Company in terms of quality is permanent increase of the product quality and operational safety, aimed at maximum satisfaction of customers, and allowing to expand the markets, ensure sustainable development of subsidiary companies. There was elaborated and introduced the set of measures and procedures focused on effective operation of the quality management

system, customer feedback is provided to develop and improve the activity of the Company, customers' satisfaction assessment is carried out annually.

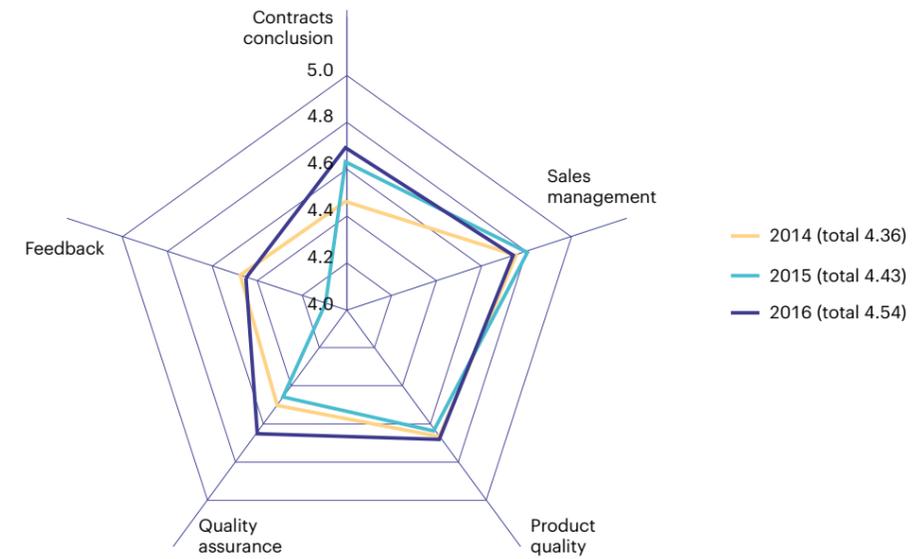
The system covers complete cycle of design, development, production, storage, delivery and scientific and technical assistance in work with FA and components of nuclear reactor cores, as well as with materials and accessories to thereto.

To improve the Integrated Management System (IMS) of TVEL Fuel Company, there was introduced and is being improved the culture of safe production — the priority objective identifying occupational activity of the workers and the business processes of the organization. The required documents were worked out to comply with the requirements of IAEA and the customers' preferences.



In 2005 TVEL JSC implemented, certified and distributed in all its subsidiary companies (within the framework of an integrated management system) four management systems (ISO 9001:2008, ISO 14001:2004, ISO 50001:2011 and BS OHSAS 18001:2007).

Customers' satisfaction assessment, points (five-point scale)



Results 2016:

In 2016 TVEL JSC and its subsidiaries successfully passed the first witness audit under ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007, ISO 50001:2011 in the international certifying authority TÜV Thüringen e.V. (representatives of Intercertifica TÜV LLC together with TÜV Thüringen). The certificate of the Integrated Management System was extended for a year.

No events of non-compliance with regulations and voluntary certification concerning impact of the products and services on health and safety were revealed in the reporting year.

In the reporting year no penalties were charged for non-compliance with laws and regulations concerning the provision and use of products and services.

There were no claims or complaints filed by the customers in 2016.

Number of NF and GC nonconformities revealed by the Quality Control Department and representative of the customer at the manufacturing plant in 2014–2016 was reduced thrice.

In the reporting year the Company successfully passed the audit on the part of Fennovoima company (Finland). The

audit confirmed considerable progress in development of IMS documentation and programs ensuring quality of fuel contract, and displayed the evidence of the measures aimed at improvement of safety culture. It was noted that nuclear safety culture is the object of continuous improvement.

In 2016 the customers' satisfaction assessment was conducted. The List of main customers of TVEL involved in the customers' satisfaction assessment:

- Russia (Rosenergoatom Concern JSC),
- Hungary (MVM Paks NPP CJSC),
- Czech Republic (ČEZ JSC),
- Slovakia (Slovenské elektrárne JS),
- Bulgaria (Kozloduy NPP),
- Finland (Fortum Power and Heat Oy), etc.

Plans 2017:

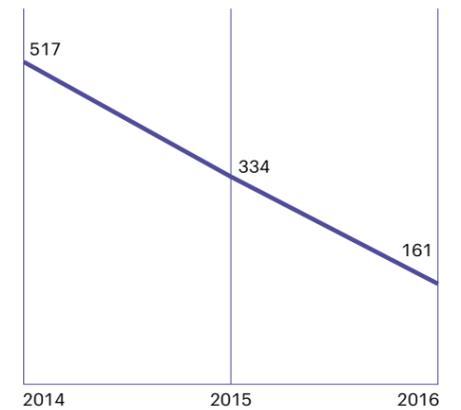
Scheduled works on transition of TVEL JSC and its subsidiaries to new versions of ISO 9001:2015 and ISO 14001:2015 for subsequent certification in 2018.

Works on improvement of the Integrated Management System, introduction of risk-oriented management model to achieve sustainable success of TVEL Fuel Company are scheduled.

Audit of NPP in the field of nuclear fuel operation

In 2016 by the decision of ROSATOM State Corporation there was conducted the audit of Kolsk, Kalinin, Balakovo, Kursk and Rostov NPPs in the field of nuclear fuel operation on the part of FA supplier and manufacturer. The purpose of the audit is to assess compliance of activity with the requirements. The final report was sent to Rosenergoatom Concern JSC; remedial actions are being elaborated based on the findings and recommendations.

Number of revealed nonconformities



Intellectual Capital



The main goal of the scientific and technical work is to ensure competitiveness of the products and safety of production and operation.

Main provisions of scientific and technical activities of TVEL Fuel Company:

- improvement of nuclear fuel properties, and properties and production technologies;
- design and technological development of Separation-Sublimation Complex;
- innovative activities in the non-nuclear industry.

INNOVATIVE ACTIVITIES IN THE NUCLEAR INDUSTRY

Services and products of FE NFC form the basis of subsidiaries' activities of TVEL Fuel Company (more than 85% of revenue following the results 2016) and that is why innovative activities in nuclear industry are essential to ensure long-term competitiveness and sustainability of the Company.

Main R&D issues:

- design and improvement of nuclear fuel and reactor cores of Russian design (primarily VVER-1000/1200/1300);
- increased burnup fraction of unloaded fuel;
- increased service life of FA, improved operating efficiency of nuclear fuel;
- proving FA operating efficiency under the conditions of the increased capacity of power units (for VVER-1000 to 107% from Nnom) subject to safety assurance;
- creation of new types of gas centrifuges;
- optimization of TVS-K design for Western reactors (PWR);
- design of nuclear fuel for low-capacity nuclear power stations, floating power units of research reactors, and new cores for nuclear-powered icebreaker (NPIB).

Results of Implementation of the Project "Moving towards Zero Failure" in 2016

- Within the Project "Zero Failure" it was noted twofold decrease in number of leaking FA revealed in 2016 on 28 power units of Russian, Czech, Bulgarian and Ukrainian NPPs with

VVER-1000 reactors, as compared to 2015.

- The analysis of design processes of the Russian nuclear fuel by the experts of Russian, Czech, Bulgarian and Ukrainian operators, made with the designers of nuclear fuel for NPPs with VVER-1000, proved no connection of "design factors" with the known cases of NF failure at NPP.
- Results of factor analysis of the processes of nuclear fuel production for NPP with VVER-1000 by TVEL JSC enterprises, revealed no system production factors that may cause FA failure.

Results of activities on improvement of nuclear fuel properties and manufacturing processes in 2016

Design and introduction of nuclear fuel and cores for Russian power reactors

- Start of operation of the first power unit of NPP-2006 project — unit 1 of Novovoronezh NPP-2 (city of Novovoronezh). The power unit reached full production.
- Completion of the state expertise of the project of TVSA-12 introduction for Kozloduy NPP (Bulgaria). In 2016, start of operation of new fuel on the unit 6.
- Temelin NPP (Czech Republic) started operation of the improved assembly TVSA-T mod.1 (optimization of spring cartridge, support grid and first spacer grid).
- Completion of pilot production of TVS-2M with anti-debris filter (ADF). Approval of the certificate of transfer



of TVS-2M with anti-debris filter to full-scale commercial operation.

- Production and supply to the Kolsk NPP of the batch of third generation fuel assemblies (RK-3) with the purpose to expand the pilot operation.
- Acceptance testing of REMIX-fuel pellets, fuel elements and CEFA intended for operation at Balakovo NPP. Start of operation of CEFA as a component of the core. Successful pilot supply of FA with REMIX-fuel to Balakovo NPP.
- Acquisition of three patents in the field of equipment for separation plant and structure of fuel assemblies for VVER-1000.
- There was elaborated and approved the "Decision on choice following the test results of the final unified design of ADF-2 for TVS-2M and TVSA-PLUS".
- SGChE JSC made experimental fuel assemblies (EFA) with dense nitride fuel for fast neutrons reactors. EFA were sent to Beloyarsk NPP for reactor research and after preliminary

operations were installed in the BN-600 reactor core.

Design of nuclear fuel for low-capacity nuclear power stations, research reactors and nuclear-powered icebreakers

- Acceptance testing of FA MR with LEU-fuel for "Maria" research reactor in Poland.
- Resource tests of 2 experimental FA IRT-3M with low-enriched uranium-molybdenum fuel were carried out in MIR research reactor.
- Acceptance testing of the first core 14-15-1 for nuclear-powered icebreaker 22220 with RU RITM-200.

Results of implementation of the project "Creation of new types of gas centrifuges" in 2016

- Design of more efficient gas centrifuge of new generation was approved by the acceptance board of TVEL Fuel Company and recommended for batch production.

TVS-K

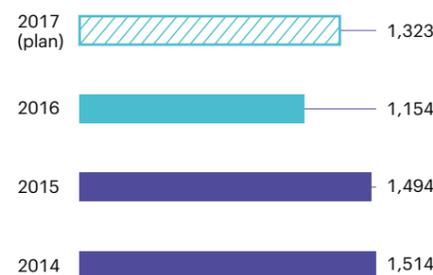
- Was developed by TVEL Fuel Company for operation in 3 and 4 loop reactors PWR.
- Design was adopted from operating experience of VVER-1000 reactors.
- Thermal performance corresponds to the level of FE of modern design.
- Low radiation growth of cladding material.
- Alloy is based on zirconium sponge.
- Rigid frame with spacer grids attached to guide channels.
- Anti-debris filters are integrated in bottom nozzle.

Plans for nuclear fuel design and improvement in 2017:

Introduction of the improved and new nuclear fuel and cores of NPP with VVER-1000/1200/1300 and VVER-440 reactors

- Development of justification for operation of the cores VVER-1000 with TVS-2M with mixing grid at the capacity level 107%.
- Implementation of R&D program on computational-experimental justification of the cores VVER-1200 and VVER-TOI (safety limits, radioactive GFP, controllability, etc.).
- Development of TVSO2996 design with the improved thermomechanical characteristics (including without fuel assembly fixation in support grid).
- Preparation of materials for justification of pilot production of TVS-4 on Unit 3 of Rostov NPP.
- Implementation of the "Program of experimental and design-theoretical research for justification of dry storage of new type FA".

Investments into R&D by TVEL JSC, RUB mln*



* Reduction of investment is connected with the decision of ROSATOM State Corporation on completion of works under the project "Design and Improvement of Nuclear Fuel and Reactor Cores and LNPS".

Development of non-nuclear business is a real opportunity to employ personnel dismissed due to optimization of main nuclear production to ensure social stability in the regions of presence.

Moreover, new businesses mean additional revenue, and consequently additional budget revenue that may be allocated to address different issues in the regions of presence of TVEL Fuel Company.

- Post-irradiation studies of reference TVS-2M VVER-1000 No.434407433 operated up to a burn-up of 51.17 MW day/kg U, and neutron-absorbing rod No.081527 with poison pellet after operation for 2.5 year in automatic control mode on Unit 4 of Balakovo NPP.
- Introduction of vibration-proof RK with fuel of regenerated uranium on Unit 4 of Novovoronezh NPP and Unit 1 of Kolsk NPP.
- Development and justification of the improved mode of capacity limitation of reactor facility of Unit 3 of Kolsk NPP based on control of the local parameters of the core, equipped with jackets.
- Completion of the pilot operation of the third generation cartridges on power unit 4 of Kolsk NPP within seven years. Development of documentation to justify the expansion of pilot production of the third generation cartridges and implementation of control on the local parameters. Decision preparation on possibility of full make-up on Unit 4 of Kolsk NPP.

Development of nuclear fuel for Western reactors (PWR)

- Study of TVS-K within the program of pilot production on the Power Unit 3 of Ringhals NPP.
- Development in cooperation with the American companies of supporting materials to ensure pilot production of fuel assemblies TVS-K in USA.
- Certification of TYK TK-C69 to comply with NRC requirements.
- Development of equipment for inspection of TVS-K in NPP conditions.

Development of fuel for fast reactors FN-600 and FN-800

- Implementation of R&D programs, developed and approved by ROSATOM.
- Increased fuel life of FN reactors.
- Formation of FN-800 core with full loading with MOX-fuel.

1,154

RUB mln
Investments into R&D by TVEL JSC in 2016



Collaboration between Bulgarian nuclear plant and TVEL Fuel Company is a huge mutually beneficial background strengthened by years of accident-free service. High production practices, automation, product quality control of TVEL JSC enterprises — all this supports our reliable cooperation.

Ivan Andreev
Deputy CEO at Kozloduy NPP (Bulgaria)

“Proryv” Project



>50%

of construction and installation works are completed on FRM

The Strategic Investment Project “Proryv” (“Breakthrough”) of ROSATOM State Corporation is carried out under the Federal Target Program “Nuclear power technologies of a new generation for 2010–2015 and for the future till 2020”; it is aimed at creation of the closed nuclear fuel cycle that allows generating energy without irradiated fuel disposal problems. Within the project SGChE JSC creates pilot demonstration energy complex.

PDEC includes the fabrication/refabrication module (FRM), power unit with BREST-OD-300 reactor facility, and SNF BREST-OD-300 reprocessing module, including the facilities to handle high-activity wastes from reprocessing module (RM), fabrication/refabrication modules and reactor facility BREST-OD-300.

FRM is intended for production of mixed nitride uranium plutonium fuel for start load and reload of the BREST-OD-300 reactor. Spent mixed nitride uranium plutonium fuel is transferred to the SNF SNF RM for extraction of 99.9% of nuclear materials which will be used for MNUP fuel production. Construction of three facilities — FRM, BREST-OD-300

and SNF RM — will provide the opportunity to master the technology and demonstrate the closure of the nuclear fuel cycle; no other country has ever managed to do this. It is planned to create more than 1,200 jobs at the PDEC.

At the present, more than 50% of construction and installation works are completed on FRM, the work construction documentation for the main process equipment has already been developed, and main process equipment of the module is under construction.

Project documentation for the reactor facility BREST-OD-300 is approved, construction is scheduled for 2018.

In 2016 there was issued the project documentation for construction of the module for spent nuclear fuel reprocessing, the project was reviewed by internal experts.

Main results 2016:

- Completion of the work on the project documentation for FRM.
- 6 sites of main process equipment for FRM were prepared and accepted.
- 69.5 thousand m³ of walls and overlaps were constructed, more than 2.5 thousand tons of metalworks were

mounted, more than 10 km of roads were built.

- The refining test facility of SGChE JSC was used to check the process flows of SNF reprocessing with application of nuclear materials and fission products simulator.
- SGChE JSC successfully completed the works on production of experimental FA within the “Comprehensive program of computational-experimental justification of the mixed nitride fuel”. In 2016 there were manufactured 4 experimental TVS for testing in FN-600 reactor of Beloyarsk NPP.
- There was suggested the project on establishment of the Center of competences in research and development of technology solutions for production and reprocessing of MNUP-fuel for fabrication/refabrication modules and PDEC reprocessing module.

Total amount of investments in construction of PDEC objects in 2016 made nearly RUB 4 billion.

Center of Technological Competencies “Polymeric Composite Materials”

In 2016 there was established the Center of technological competencies “Polymeric Composite Materials” at Centrotech SPA LLC Main task of the Center, that represents new innovative line in development and production of future-oriented non-nuclear products, is development and production of high-technology articles out of polymeric composite materials that are in demand by the enterprises of oil and gas industry, civil aircraft and aeroengine-building sectors.

The offered technologies may be used to substitute heavy metal structures with modern structures of polymeric composite materials, comparable in terms of strength, and

sometimes even out-performing the articles made of metal. Polymeric composite materials are more durable, are not prone to corrosion, light-weighted, which means they are easy to install and more efficient in use.

Specialists of the center developed the design documentation for the number of articles, in particular, for production of major units for gas transmission stations. Prospect for further development of the Center is stipulated by SPA strategy; this, along with mastering of new technologies, will create in future additional high-tech jobs with increase of production output.

SECOND BUSINESS CORE DEVELOPMENT

Development of non-nuclear business is one of priority tasks set by ROSATOM to the enterprises of nuclear industry.

The basis used for determination of new businesses development is as follows: competences accumulated for the years of nuclear production development, and availability of highly skilled personnel.

It is also important that new products manufactured at the newly established productions must be in demand on out-of-the-industry markets, new for TVEL Fuel Company, outside the limits of nuclear fuel cycle. This is ensured due to application of modern and efficient technologies, obtained owing to successful work in the traditional nuclear field.

By establishing new high-technology business, TVEL Fuel Company addresses the range of inter-related issues. New technologies in nuclear production provide advantages in technological process, in particular: increase of equipment capacity, rise of degree of automation. All this results in reduction

of workforce requirements in nuclear production.

Innovative Areas of New Businesses Development

Additive Technologies

In 2015 UEIP JSC became the winner of the contest organized by the Ministry of Education and Science of the Russian Federation, and secured the status of the industrial partner in activity aimed at creation of the first Russian plant of layer-by-layer powder synthesis (metal 3D printer) together with RPA CNIITMASH JSC. The projected cost of the home-produced printer will be by 20–30% lower than that of foreign printers.

UEIP JSC together with the enterprises of Novouralsk industrial cluster of TVEL Fuel Company plans to implement within the consortium the project on creation of the first Russian plant of layer-by-layer powder synthesis and organization of production of special granulated powder materials.

Possibilities offered by 3D-technologies:

- manufacturing of products of any configuration and form, with complex inner structure (inside passages, etc.);

- considerable weight-saving (by 50% and more, due to removal of passive sections);
- material saving (use of more than 95% material, while the conventional machine processing provides for use of less than 30% of material);
- savings in production mastering (twofold reduced lead time);
- savings in labor costs (labor intensity is reduced 3–8 times);
- creation of the articles with unique and improved technical parameters;
- unique combination of materials (creation of composite using materials that cannot be interfused by any other way, ceramics-metal, etc.).

Results 2016:

- Start of work on design and production of the pilot model.

Plans 2017:

- establishment of production of granulated powder materials for metal 3D-printers;
- completion of design, development and production of the pilot model of the home-made metal powder 3D printer.



Potential consumers of 3D-printer

Military-industrial complex



Production of geometrically-complex elements of special-purpose devices

Aircraft industry



Production of elements of aircraft engines

Power



Production of turbine blades

Machine building



Production of geometrically-complex elements of different structures



Endoprosthesis

To create the stems of hip joint endoprosthesis, VNIINM JSC and TREK-E Composite LLC apply own technology of blank production out of high-quality Russian titanium manufactured by TVEL JSC, this provides reliability and physiological compatibility of medical articles.

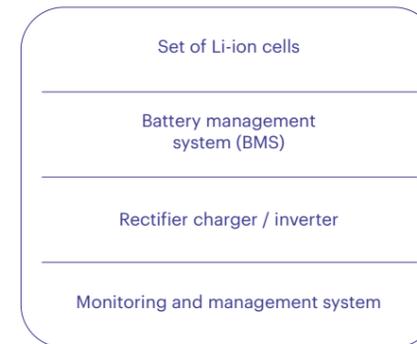
Russian endoprostheses with variable porosity titanium coating developed and manufactured by VNIINM JSC ensure reliable osteointegration, and guarantee new quality of life for the patients.

By establishing ready-to-operate large scale production of endoprostheses TVEL Fuel Company makes it possible to bring down the price without loss of the product quality. This will make surgeries affordable and take the standards of healthcare in the field of traumatology and orthopedics to the level of the advanced countries.

Triflates

Under the project of Trifluoromethanesulphonic acid anhydride (substance used in production of pharmaceutical drugs and in fine organic synthesis), AECC JSC performed works on reactivation of former

Lithium-ion energy storage systems of various purposes



Prospective lines of development of AECC JSC

AECC JSC is the base for the number of new investment projects: establishment of production of lithium hydroxide, silicon carbide, production of SF6 gas with application of new fluorinating agents.

All these lines are considered prospective.

SF6 gas is used for production of modern power supply equipment (converters, connectors, etc.), in demand on nuclear power stations.

Lithium hydroxide is widely applied in production of cells and accumulators, and the market of chemical energy sources is a fast-growing market.

Silicon carbide is actively applied in metallurgy for production of abrasive materials, and in solar power it serves as a base for diodes production.

production with capacity 22.2 tons/year. By now the integrated testing of the process unit is completed, within the testing there was produced the qualification batch of products (1,000 kg) for attestation with European customers and arrangement of future market entry.

Sorbent Agents

AECC JSC develops the project on establishment of sorbent agents production. Based on technology developed by NIIGRAFIT JSC, sectoral research institute of ROSATOM, it is planned to establish production of special carbon-based sorbent agents for purification and separation of gases.

Raw materials made by AECC JSC were applied to produce first samples of products with qualitative characteristics compared to the level of their foreign alternatives, but at lower prices. Such benefit is ensured by application of innovative solution in the field of foamed materials formation and also due to application of the base of the raw material widespread in the project location region.

Launch of production is scheduled for 2019, projected revenue under the project is more than RUB 100 million annually.

Mini Oil Refinery

Production of catalysts opened one more direction — production of mini refineries, where such catalysts are applied. TVEL Fuel Company intends to involve the competences of its subsidiaries, and offers “ready-to-operate” services: development and production of equipment, installation, service maintenance, catalysts supply, etc. Analysis and study of this market are currently underway, and then the decision will be made concerning launch of production.

Lithium-ion Cells

Implementation of the pilot project at the enterprises of ROSATOM proved technical and economic efficiency of introduction of Li-ion cells on the interfactory transport.

Centrotech SPA LLC offers the bundled service on transition of the interfactory transport to lithium-ion energy storage systems.

Electrochemical Generators on the Fuel Cells

The works are underway at Centrotech SPA LLC to establish production of application-specific electrochemical generators on alkaline fuel cells. The

leading scientific institutions of the Russian Federation with involvement of Novouralsk site are engaged in development of technology of electrochemical generators on solid oxide fuel cells for the facilities of distribution generation.

The electrochemical generators are characterized by efficiency, minimum maintenance, and high reliability.

Potential consumers: Ministry of Defence of the Russian Federation, aerospace, aircraft industries.

Results 2016:

- production and life tests of the pilot sample of electrochemical generator on solid oxide fuel cells for cathodic protection station (the assured resource is 10 thousand hours);
- production and tests of the brassboard of application-specific electrochemical generator on alkaline fuel cells.

In 2016 VNIINM JSC patented the environmentally-friendly method of ceramics brittleness elimination.

The invention is referred to the process of production of high-temperature materials that can be applied in production of ceramic pipes for FA claddings, and other units of fuel assemblies.

With the invention it is possible to eliminate the main weak point of the products made of ceramics — its brittleness. Besides, the production is considered as environmentally-friendly due to application of chlorine-free components.



1,836

items of intellectual property are owned by TVEL FC as of the end of 2016

INTELLECTUAL PROPERTY

TVEL Fuel Company owns 1,836 items of intellectual property as of the end of 2016. Among the objects protected by the law there are inventions, utility models, production secrets (know-how), software for electronic computing machines, databases, trademarks and industrial designs.

The System for identification and legal protection of intellectual property created by the Company's enterprises is operated in accordance with the applicable laws of the Russian Federation, Standard Industry Methodological Recommendations and by local regulations.

Functions of identification and legal protection of the items of intellectual property are assigned to the Patent and Licensing Department of TVEL JSC, as well as to technical departments, development design offices, intellectual property protection teams and patent-information departments of the Company's enterprises.

In 2016 there were registered 104 intellectual property items.

As of December 31, 2016 TVEL Fuel Company owns 44 patents of foreign countries (countries of the European Union, USA, Japan, etc.) for items of intellectual activity.

Number of registered inventions, utility models, industrial designs and production secrets (know-how)

Items of intellectual property	2014	2015	2016
Russian Inventions	52	53	40
Foreign Inventions	4	3	2
Russian Utility Models	9	6	1
Foreign Utility Models	0	1	0
Russian Industrial Designs	0	0	0
Foreign Industrial Designs	0	0	0
Production Secrets (Know-How)	83	96	61

CORPORATE SCIENCE

Modernization and Technical Upgrade of Research and Development Complex

The essential condition for innovative development of the science and technology complex of the Fuel Company is continuous improvement and modernization of scientific and technical infrastructure.

Modernization and development of infrastructure is performed within the framework of the projects of technical upgrade of the enterprises comprising the complex and in accordance with Federal Target Program "New Age Nuclear Energy Technologies 2010–2015 and through 2020".

Under the investment project of technical re-equipment in 2016 there was acquired state of the art research and process equipment that will allow to carry out research activity at high technological level and to address the issues more effectively. In particular, technical upgrade will allow to increase the level of safe operation of equipment, engineering systems and to increase the performance on contractual obligations associated with improved technical parameters and upgraded equipment of scientific and engineering units.

Personnel Training

Annually the workers of TVEL Fuel Company take part in the international and Russian scientific conferences, seminars and exhibitions, besides, within execution of foreign trade contracts, the Company's specialists visit foreign firms and scientific centers.

VNIINM JSC provides training of research and scientific-pedagogical personnel (on-the-job training) in

accordance with the license to educational activities.

In order to develop scientific competencies of young specialists and to adjust the specialist training programs to the demands of TVEL Fuel Company, VNIINM JSC organized the work of the branch of department 9 of National Research Nuclear University MEPhI on the adjusted training programs in the following disciplines: "Construction materials of nuclear reactors", "Special issues of material science", "Science of superconducting materials".

For more efficient training of the students:

- the leading specialists of the organization (candidates and doctors of sciences) are involved in the training;
- teaching aids are prepared;
- time-schedule of classroom studies (lectures and practical trainings) and laboratory classes are worked out;
- control is maintained over the training process, including preparation of the course papers.

For detailed information on the personnel training please refer to the Section "HR Development".

Involvement of Universities in Implementation of Investment Projects

VNIINM JSC carries out R&D in cooperation with the leading educational institutions: D.I. Mendeleev University of Chemical Technology of Russia, I. Kant Baltic Federal University, National Research Nuclear University MEPhI, National Research Tomsk Polytechnic University, etc.

Amount of investment for R&D in higher education institutions was RUB 15 million.

In 2016 there were registered 104 intellectual property items. As of December 31, 2016 TVEL Fuel Company owns 44 patents of foreign countries.

15

RUB mln amount of investment for R&D in higher education institutions

In CATU Seversk the master program will be opened to train the specialists under the sectorial "Proryv" Project.

In 2016 Seversk Institute of Technology received the license of the Federal Education and Science Supervision Service to carry out educational activity under the master program "Nuclear Physics and Technology".

The master program will provide training of high qualification specialists of the enterprises of ROSATOM State Corporation, and primarily for the "Proryv" Project, implemented at SGChE JSC.

In 2016 the Government of the Russian Federation approved the list of scientific organizations with the status of state research centers (SRC) of the Russian Federation. VNIINM JSC was also included in the list.

SRC status is assigned following the results of competitive and expert selection to a scientific organization that holds experimental equipment, has highly qualified specialists, and whose scientific and technological activity is internationally recognized.

SRC status supposes priority processing of developments of VNIINM JSC, applications to participate in tenders of the Ministry of Science and Education. SRC status offers advantages to the specialists of the company, including to R&D activity, for a period of three years.

INFORMATION TECHNOLOGIES

With the view to increase the efficiency and optimize business processes, TVEL Fuel Company uses up-to-date information technologies (IT) and solutions.

Department of Information Technologies develops and introduces new information systems in accordance with Information Technologies Transformation Program of ROSATOM, and with due regard to the needs of TVEL JSC Management in compliance with the development plans of TVEL Fuel Company.

Results 2016:

Approval of IT-strategy 2030 of TVEL Fuel Company.

Successful completion of the rollout projects of the Standard for resource planning system for TVEL Fuel Company's enterprises on SAP ERP base in "Industrial Innovations" JSC and in MZP JSC.

Introduction of SAP ERP FC in these enterprises allowed:

- reduction of decision-making time due to reduction of information receipt time;
- increase of information reliability degree;
- decrease of risks of errors and negative impact of human factor;
- operating activity standardization;
- unification and optimization of business-processes;
- formation of the single data base for all management levels (Enterprise — TVEL JSC — ROSATOM).

In addition to the results of the rollout project SAP ERP FC, into the system of "Industrial Innovations" JSC there was also transferred the centralized TVEL FC logistics solution — the integrated procurement management process, from a yearly plan of procurements to a contract with application of the encrypted and certified digital signature for approval of procurement documents. Access to this functionality allowed to reduce labor costs for applications handling, to increase data quality, and to reduce cost of the process maintenance.

Successful implementation of the project of synchronization of contract data between the unified industrial

records system and the enterprise resource planning system (SAP ERP FC) allowed to reduce labor costs associated with double entry of the contract data, and to reduce number of errors made during manual data entry.

Successful completion of the project "Introduction of the automated control system for design engineering preproduction" in Tochmash JSC. The system was put into operation in October, 2016.

Plans 2017 and in the midterm:

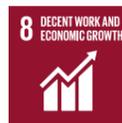
- creation of the system for planning/modelling/prediction (including business-planning, mid-term planning);
- creation of budgeting system (rolling planning, division-enterprise);
- creation of data warehouse of TVEL Fuel Company;
- implementation of the program of projects and activities on development of ACS DEP of TVEL Fuel Company;
- creation of the system of experimental and engineering data management of VNIINM JSC;
- development of the Integrated Design Management System at CPTI JSC;
- introduction of the base functionality of MES;
- introduction of the laboratory information system;
- introduction of the system for client relationship management;
- creation of the system for capital construction management;
- pilot introduction of the system for planning and optimization of logistic flows;
- implementation of the project of legally valid electronic document management on the enterprises of TVEL Fuel Company.



With TVEL Fuel Company of ROSATOM we have established long-standing and fruitful business relations. For our company TVEL is the major partner delivering reliable and safe nuclear fuel. Today we work on efficiency increase of the utilized nuclear fuel assemblies. Based on the long-term experience, I can responsibly tell: for many years of cooperation the Slovak experts had no negative reviews on quality of the Russian fuel. I can't even imagine a situation when we stop cooperation with TVEL Fuel Company.

Bohumil Kratochvil
General Director JSC Slovenské elektrárne

Human Capital



HR Policy of TVEL FC is focused on achieving balance between the interests of its employees and the employer, and efficient development of professional and management capabilities in accordance with the long-term development strategy of the Company.

HR principles that ensure achieving strategic goals



Concern for people



Partnership



Safety

Key long-term milestones of TVEL FC HR policy

Increase of personnel engagement to promote the company's sustainability

Sustained growth of labor efficiency

Personnel adhering to corporate values

Development of strategically important competencies and skills in order to comply with requirements to the personnel stated by international global companies

Engagement of each employee in solving the problems of strategic development and appealing to "collective intelligence"

Ensuring social acceptability of the changes made

Priority of "results culture" and continuous improvements

Systematic training, development and progress of the employees

All HR management activities, which are undertaken to achieve the goals, are focused on provision of the long-term personnel stability of TVEL Fuel Company.

Plans for HR policy development in the midterm:

- promotion of the employer brand,
- development of professional qualifications system,
- provision of incentive tools' efficiency,
- development of the corporate culture,
- development and further improvement of safety culture.

STAFF COMPOSITION

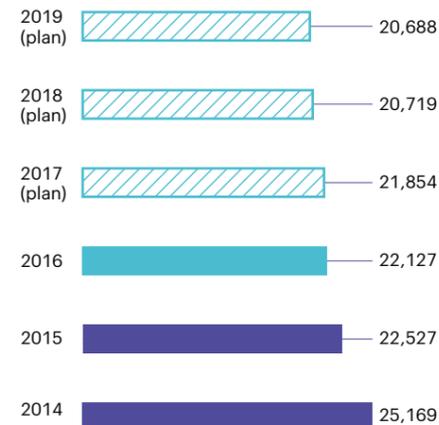
Steady decrease in headcount in 2011–2014 was caused by restructuring processes, centralization of management functions and personnel outsourcing.

The ultimate goal of these processes with regard to HR management is to enhance labor efficiency in TVEL FC subsidiaries to match major foreign competitors. At the same time the Company creates new jobs through development of general industrial activities (refer to the section "Manufactured Assets and Results"). Furthermore, creation of more than 8 thousand jobs is envisaged due to the attribution of the status of territory of the advanced social and economic development to CATU Zelenogorsk, Novouralsk, Seversk and Glazov town (refer to the section "Social Partnership in the Territories of Presence").

The greatest part of the employees are men (64.7%). Average age of employees of the Company is 44.2. The employees under 35 years old comprise 23.6% of total staff.

TVEL Fuel Company hires mainly the local residents, and attracts specialists from other regions only if and when no properly qualified candidates to the vacancy are available at the local labor market.

Headcount of TVEL FC, persons

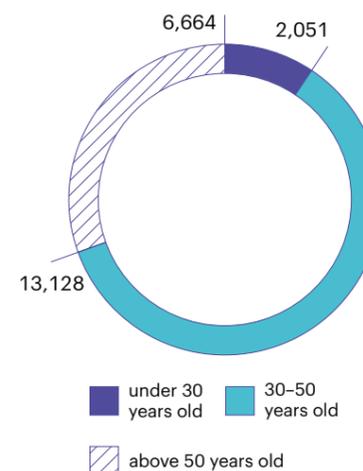


Jobs creation in TVEL FC*

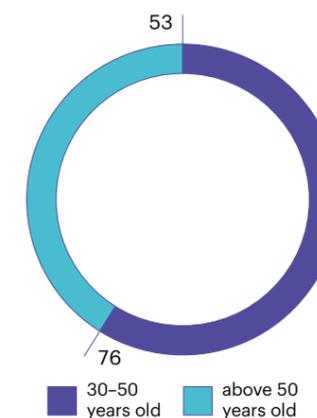


*Creation of new staffing positions on TVEL FC enterprises for actual and new projects is indicated.

TVEL FC total staff headcount by age, 2016, persons.



TVEL FC total top managers headcount by age, 2016, persons.



Average headcount in key production enterprises of TVEL FC in 2016, persons

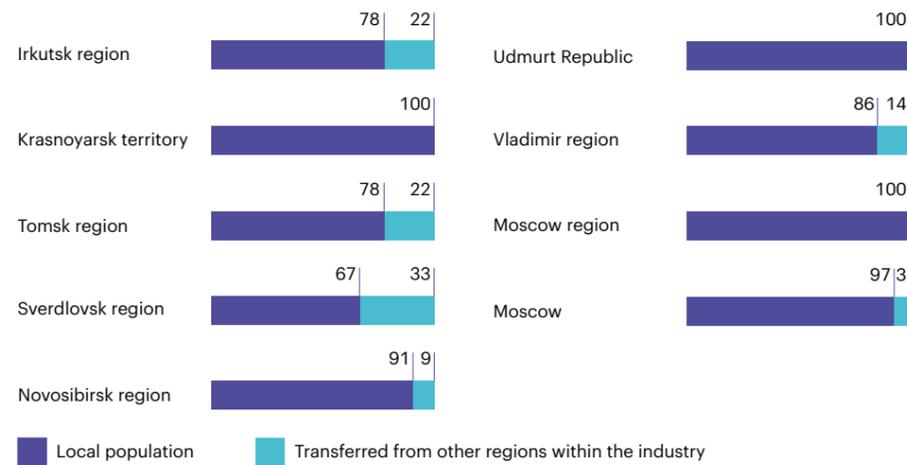
Enterprise	Headcount
AECC JSC	937
PA ECP JSC	1,981
SGChE JSC	3,529
UEIP JSC	2,185
Total per SSC	8,632
MSZ PJSC	4,211
NCCP JSC	1,453
ChMP JSC	3,070
Total per NFFC	8,734
KMP JSC	1,090
Total per GCC	1,090
UGCMP LLC	728
VNIINM JSC	944
Tochmash VPA JSC	1,314
TOTAL for research complex	2,258

Within the development of general industrial activities of the Company there were created and preserved 2.4 thousand jobs.

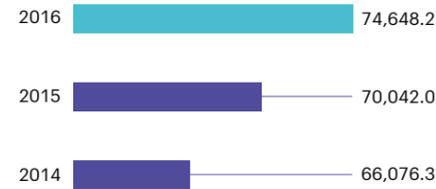
Key indicators

Indicator	2014	2015	2016	Δ 2016/2015%	2017 (plan)
TVEL FC headcount at the year-end, persons	23,717	22,724	21,843	-3.9%	-
Headcount of TVEL FC, persons	25,169	22,527	22,127	-1.8%	21,854
Candidates and Doctors of Science, persons	281	235	260	+10.6%	233
Holders of MBA degree, persons	16	15	17	+13.3%	16
Employees that were employed by TVEL FC more than 5 years	81	82	84	+1.0%	84

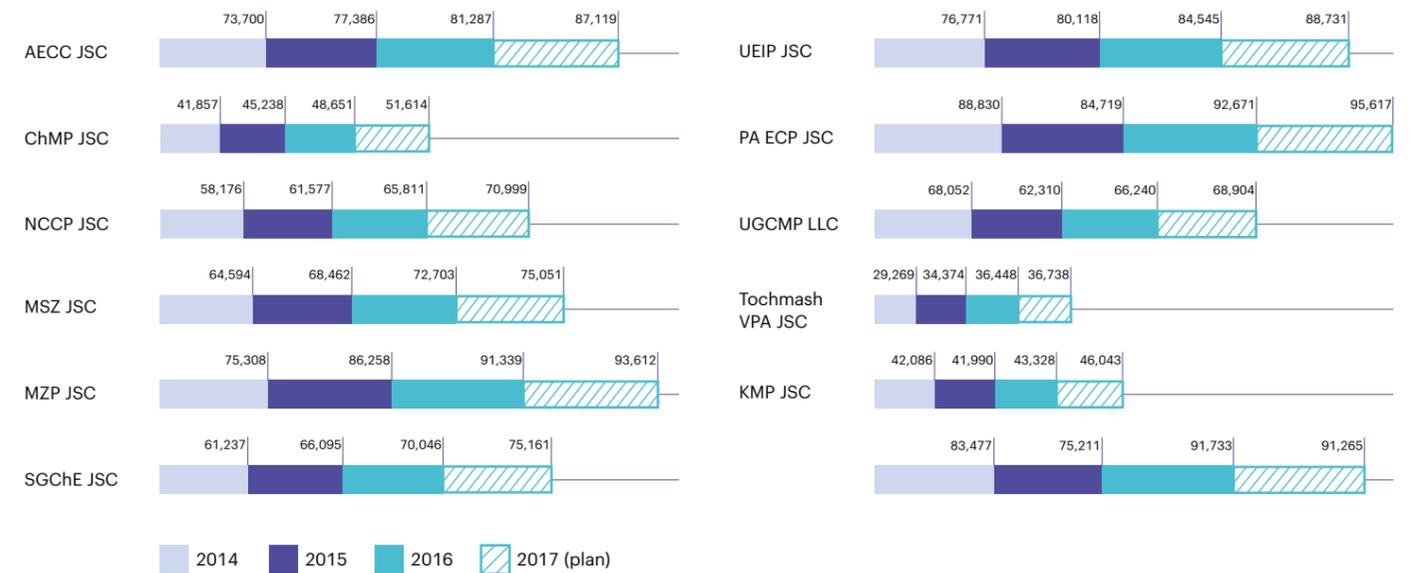
Composition of top management in TVEL FC subsidiaries by residence in the reporting year, %



Average salary in TVEL FC (TVEL JSC not included)



Average pay in TVEL FC subsidiaries, RUB



PERSONNEL ENGAGEMENT

Personnel engagement, personal interest in business and success of the Company have direct effect on business performance and efficiency. The Company implements a set of arrangements aimed at increase of personnel engagement, encourages the employees to progress from formal performance of obligations under the duty regulations towards professional improvement.

Engagement is analysed under the unified industrial slogan: "ROSATOM cares about your opinion". Plans

of actions, aimed at increase and retention of personnel engagement, are approved and implemented at the annual management meetings. In general, annual surveys allow to estimate the employee satisfaction with work conditions according to 19 factors, as well as to determine the share of employees who:

- recommend their company as a good employer to their relatives and friends;
- attempt to perform their duties to the best of their abilities, to improve enterprise processes and come up with improving proposals;

- intend to keep being employed by the Company in future.

Comprehensive efforts within the year research project are made both through local plans of activities implemented by the subsidiaries, and through execution of the unified divisional projects.

INCENTIVE AND REWARD SYSTEM

Incentive and reward policy in TVEL Fuel Company is aimed at maintenance of salary competitiveness. More than RUB 1 billion was allocated to salary increase and indexation in the reporting period.

The average salary level in TVEL Fuel Company (TVEL JSC not included) made RUB 74,648, which is 6.6% higher than in the previous year.

Ratio of standard entry level wage of the Company to minimum wage in some regions varies from 1 to 1.3 times (maximum — 1.3 times in Novosibirsk region).

Arrangements 2016:

- salary indexation at all enterprises of the Company, except for TVEL JSC;
- increase of annual premium rate in certain subsidiaries (increase by per cent corresponding to salary indexation per cent);
- selective reconsideration of the employees' personal additional incentive following the results of the annual assessment;
- review of remuneration system and benefits efficiency in the Company's enterprises; receipt of the employees' proposals for alteration of salary disclosure documents.

proposals for alteration of salary disclosure documents.

Plans 2017:

- payment of up to 50% of annual premium in advance (in order to increase the employees' social security level due to volatile economic environment and rise in inflation);
- salary indexation at all enterprises of TVEL Fuel Company, except for TVEL JSC;
- possible increase of annual premium rate in certain enterprises (increase by per cent corresponding to salary indexation per cent);
- selective reconsideration of the employees' personal additional incentive following the results of the annual assessment;
- updating of local salary and benefits disclosure documents in order to improve their efficiency (reconsideration of annual premium calculation, approaches to PAI identification following the results of the assessment, etc.);
- elaboration and implementation of measures aimed at increase of variable part of total remuneration depending on personal and collective labor efficiency.

KPI System for Top Executive and Inferior Management

Business performance management system applied by TVEL Fuel Company is based on generating of KPI list for top-management, ensuring comprehensive development of the Company. Maximum preference is given to such spheres as nuclear, radiation, industrial safety and ecology; operational efficiency; increase of share on the markets of nuclear products and on general industrial activities markets, where the Company improves its performance by introduction of new products.

Personnel engagement

Enterprise	2014	2015	2016
TVEL JSC	82%	87%	85%
AECC JSC	74%	93%	96%
VNIINM JSC	75%	83%	84%
KMZ JSC	89%	91%	89%
Tochmash VPA JSC	84%	85%	-
UGCMP LLC	88%	66%	64%
PA ECP JSC	93%	92%	91%

Enterprise	2014	2015	2016
UEIP JSC	74%	78%	92%
SGChE JSC	-	78%	66%
MSZ JSC	77%	80%	80%
NCCP JSC	75%	75%	85%
ChMP JSC	84%	83%	67%
Average for TVEL FC	81%	83%	82%

Ratio of average pay in the subsidiaries of TVEL Fuel Company to average pay in regions of operations*

Region	2014	2015	2016	Average pay in the region in the reporting year
Moscow	2.6	2.6	2.3	68,647
Moscow region	1.7	1.7	1.7	42,487
Vladimir region	1.5	1.6	1.6	25,317
Udmurt Republic	1.8	1.8	1.9	26,135
Novosibirsk region	2.1	2.2	2.3	29,118
Sverdlovsk region	2.4	2.3	2.5	31,981
Tomsk region	1.9	2.0	2.0	34,658
Krasnoyarsk territory	2.6	2.4	2.5	37,236
Irkutsk region	2.4	2.4	2.4	34,168

*Including TVEL JSC.

Basic KPI for TVEL FC management

Basic KPI of Top Management

- AFCF of TVEL FC;
- investment activity integrated efficiency indicator;
- semi-fixed costs;
- labor efficiency;
- foreign orders portfolio for 10 years;
- foreign proceeds;
- integral indicator for new products;
- proceeds on new products beyond and within the profile on a competitive basis;
- new products portfolio of FC for 10 years;
- reduction of stock of FE NFC;
- lost time injury frequency rate (LTIFR);
- no INES events level 2 and above;
- completion of state orders.

Basic KPI

of Vice-Presidents

- cost of products manufacture;
- operating efficiency;
- labor efficiency;
- proceeds and foreign orders portfolio, and new products of the Company.

Basic KPI of Directors of subsidiaries

- investment activity integrating efficiency indicator;
- LTIFR;
- fulfilment of government contracts, investment projects;
- full cost of unit sold.

Non-Material Benefits

System of non-material benefits for the employees of TVEL Fuel Company is aimed to encourage professional growth, increase in efficiency and performance, attainment of the goals and the best final results of activities, enhancement of the work quality and arrangement of conditions for creative activity.

Achievements of the employees of the Company are marked with state awards, awards of ROSATOM and TVEL JSC in accordance with the Uniform Industry-Specific Award Policy.

During the year 2016 in celebration of commemorative days and anniversaries, including the twentieth anniversary of TVEL JSC, more than 2.3 thousand workers and veterans received rewards and bonuses for work achievements, contribution to development of enterprises, TVEL Fuel Company and nuclear industry, in particular:

- national awards — 17 employees;
- awards of ROSATOM — more than 1.1 thousand persons, including merit badges — 123 workers and veterans, labor merit badges “Veteran of Nuclear Power and Industry” — 204 persons;
- awards of TVEL JSC — more than 1.1 thousand persons.

For conscientious work, significant contribution to development of the nuclear power and high performance TVEL JSC staff was awarded with the Note of Acknowledgement of the Government of the Russian Federation and the Note of Acknowledgement of the President of the Russian Federation.



We are very proud of MSZ JSC: quality of labor, science and wages are at high level. We are interested in ROSATOM building plans for development of the enterprise in Moscow Region. We will provide comfortable conditions for them.

Andrey Vorobyov
Governor of Moscow Region
(center)



DEVELOPMENT OF STAFF CAPACITIES

Traditionally, HR development and training is in the focus and it is one of the top priorities of HR policy of TVEL Fuel Company.

The development and training mission is focused on creation of an environment for employees to achieve the business goals while increasing the level of their professionalism, corporate culture and personnel management technologies.

The purpose of HR development program is to support business priorities of ROSATOM.

Priority development programs at the Company's enterprises:

- Program of Succession Pool Formation and Development: "ROSATOM Assets", "ROSATOM Capital" and "ROSATOM Talents".
- creation of teaching resource centers for further training of the personnel to manage the improvements;
- development of internal coaches institute;
- development of professional societies as the points of growth for the Company leadership in the market, technology, efficiency growth rates;
- safety culture development.

Personnel Training

Within HR Development and Training Provisions, the Company's enterprises regularly provide training to enhance competencies of their workers. Amount of investment training in 2016 made RUB 101 million.

Total number of TVEL FC employees, who underwent training in during the reporting year was 36 thousand (increase of 34% over 2015). Average training hours per each employee of the Company was 64.9 hours in 2016.

Educational events, that contribute to development of skills, are implemented by efforts of the internal coaches, as well as the external providers of training services.

Formation and Development of Succession Pool and Succession Plans

TTVEL FC pays great attention to development of succession pool and training of managers.

Training in this sphere is built on the following principles:

- correlation with business strategy and industry development;
- focus on the most advanced international leadership development practices;
- analysis of the uniform industry-specific development system for managers.

Formation of succession plans, formation and development of managerial succession pool are in

Average training hours per employee



accordance with the Uniform Industry-Specific Guidelines to Create and Develop Managerial Succession Pool (MPS) in ROSATOM and its organizations.

The succession planning and MPS formation are based on the results of Annual Performance Assessment "RECORD". The prime tool used to form and approve the managerial succession plans of TVEL Fuel Company is the review of personnel capacity by holding the round tables at all levels of management. The decision to include an employee in the MPS list is taken following the results of independent evaluation, which contains the assessment of potential, motivation and compliance with corporate values. An employee may be included into the succession plans on the basis of his/her manager's decision taken with due regard to his/her achievements in the past period.

Preparation of reservists of senior, middle and entry-level managers to career development is carried out in accordance with industry-specific development MPS programs "ROSATOM

73

internal coaches on improvements

6

process works

90

workers mobile team for dealing with complicated technical problems

10

trainings in improvement tools

11

leader-forums held

300

solutions to 74 production problems (~30% of solutions are being implemented)

13,146

persons trained

341

engineers trained TRIZ

>390

RUB mln total economic benefit

Professional Associations

The project "Professional associations of TVEL Fuel Company" is focused on incorporation and interaction of the industry experts with the purpose to exchange the best practices, to roll out these practices, to accumulate the experience.



5

professional associations were established in 2016

The goal of professional associations is to develop strategically valuable organizational knowledge, involve workers into solution of tasks and problems, roll out the best practices. Their functions will include collection and systematization of knowledge, experience, monitoring of competitors development, innovations in similar and related technologies, trend analysis, etc.

In 2016 five professional associations were established:

- "Technologies of Separation-Sublimation Complex" (SSC Technologies),
- "Additive technologies",
- "Polymeric Composite Materials",

- "Machine Building",
- "Electrochemical and Industrial Products".

New association will become a sort of "centers of competencies" with activities aimed at improvement of quality, safety and competitive power of the enterprises. They will contribute to the process of continuous self-training of the Company, and will become the efficient tool of prompt mobilization of intellectual capital of TVEL Fuel Company to solve the critical tasks.

Within the project implementation there was launched the pilot mode of the "Portal of professional associations

of the Fuel Company", the heads of the enterprises and the key specialists are being notified there of.

Establishment of professional associations in TVEL Fuel Company will have positive effect on the increase of competences, determination of new promising products, will attract young specialists and will allow to transfer and preserve the accumulated experience and knowledge.

Professional Standards

TVEL JSC is the member of the Council for professional qualifications in the sphere of nuclear power, responsible for reviewing the professional standards elaborated for the industry. In 2016 the specialists of the nuclear industry developed and approved 12 draft professional standards.

Besides, TVEL JSC acted as the co-author in development of the professional standard "Operator of processing, separation and purification of chemical metal compounds in nuclear power", developed by National Research Nuclear University MEPhI.

Assets", "ROSATOM Capital" and "ROSATOM Talents". The development programs are focused on raising the level of corporate and managerial competencies of the MPS participants.

Professional Competitions

Professional competitions of TVEL Fuel Company among the workers of most common trades, being held for 9 years, in 2016 were scaled-up in number of tasks and were oriented to WorkSkills standards.

1st industrial ROSATOM Championship AtomSkills 2016 (by WorldSkills methods) was held in Ekaterinburg on June 20-23, 2016 at the site of "Ekaterinburg-Expo"; 201 persons from ROSATOM participated in the Championship, including 30 workers from TVEL Fuel Company (22 workers under 27 years old, 8 specialists — from 28 to 35 years old). 22 specialists of the Company were engaged in the expert activities within the project.

With the purpose to win in the Championship there was organized the complex of organizational, motivational-psychological, communicative activities that allowed in a relatively short time frame to generate the energy of competitive strengths accumulation and to provide the team winning mindset.

The team of TVEL Fuel Company became the total winner (gold winner). In 6 competences out of 9 there were earned 7 golden, 2 silver and 1 bronze medals. TVEL Fuel Company was awarded with the commemorative cup for the first team place.

PARTNERSHIP WITH EDUCATIONAL INSTITUTIONS

Recruitment of promising young people is one of the top priorities in HR

policy of TVEL Fuel Company. By hiring young specialists the Company intends to preserve and strengthen its position in the sphere of science and advanced technologies in the years ahead.

Cooperation with educational institutions is carried out on the basis of the communication plan on work with universities and graduates; the plan that is being continuously updated on an annual basis.

For the purpose of occupational guidance for schoolchildren the Company's enterprises organize excursions, meetings with young specialists, various information and educational activities.

The major areas of cooperation with educational establishments of higher and secondary education are the following:

- long-term planning of demand for specialists in terms of industry-specific training (for 2017–2027);
- raising awareness among students and graduates on possibilities of professional growth in the enterprises of TVEL Fuel Company, as well as TVEL FC and ROSATOM brand promotion;
- arrangement of educational and on-the-job trainings at the premises of the Company's enterprises;
- implementation of joint educational programs, special courses within the sphere of main departments:
 - Branch of the 9th Department of MEPhI NRNU and complex branch of the Department of D.I. Mendeleev University of Chemical Technology of Russia and M.V. Lomonosov Moscow State University of Fine Chemical Technologies at VNIINM JSC;
 - Specialized Department of "Design and Engineering Support of

Mechanical Facilities" of Stoletovskh Vladimir State University at Tochmash VPA JSC";

– Specialized Department of Seversk Institute of Technology of MEPhI NRNU "Radiochemistry" at the premises of SGChE JSC ("Proryv" Project);

- special competitions for recruiting young specialists with advanced capabilities:
 - Young Professionals Tournament "TeMP" (7 enterprises are involved);
 - Rosatom Career Days (4 events);
 - annual participation of young specialists in industry-specific and national contests of professional skills: AtomSkills (first position in AtomSkills) and Worldkills Hi-Tech (2 golden awards).

- Establishment of professional competencies centers at the Company enterprises:

– Joint-Stock Company Mashinostroitelny Zavod + Moscow regional Polytechnic College, the branch of National Research Nuclear University MEPhI; Competence: chemical laboratory analysis;

– Tochmash VPA JSC + State Budgetary Professional Education Institution of Vladimir Region "Vladimir Polytechnic College"; Competence: CAD Engineering Graphics.

In 2016 the enterprises of the Company offered practical training to 559 students of higher educational institutions and vocational secondary schools, 58 of them were employed by TVEL Fuel Company. In 2017, the Company expects 527 students to take their practical training.

Over the reporting period the Company employed 99 graduates of

the higher educational institutions and vocational secondary schools, 12 of which took target preparation classes for employment by TVEL Fuel Company. Diploma point average of the employed graduates is over 4.2.

UNIFIED YOUTH POLICY

The youth as the most active part of the staff has always been the indicator of changes and driver of the Company development.

On December 22, 2016 the constituting meeting on establishment of the Joint Youth Council of TVEL JSC and its subsidiaries approved the Concept of the Unified Youth Policy.

The following priority issues were defined:

- promotion of vision and Values of ROSATOM, strategic objectives of TVEL Fuel Company;
- strengthening of business reputation of TVEL JSC;
- implementation of social ideology.

The Unified Youth Policy suggests participation of young specialists in historical work, development of corporate science, establishment of new production units in order to provide the flow of workforce into the cities of presence, increase of personnel engagement, in implementation of the strategic initiatives of TVEL JSC "Social Responsibility", "Environmental Responsibility", etc.

SOCIAL GUARANTEES

In addition to mandatory social guarantees, benefits and privileges envisaged by the labor laws, the enterprises of the Company prepared for the employees working on a full-time basis the following corporate social programs:

46

representatives of TVEL took part in the International forum of young power engineers and industrialists "Forsage-2016". Ruslan Aliev, the young scientist from VNIINM JSC, ranked second in the final contest of the projects "The Innovation Leader of the Nuclear Industry". Dmitry Redozubov and Aleksandr Gorbovskiy, the young industrialists of ChMP JSC, became the laureates in RPS group nomination for "the best team work".



TVEL FC succession pool and succession plans*

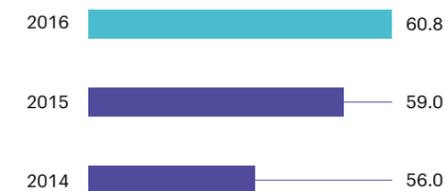
Indicator	2014	2015	2016	2017 (plan)
Number of employees included to succession pool	151	215	162	190
Number of employees included to succession pool and running for major posts	106	139	162	190
Number of employees included to succession pool and transferred to major posts	50	89	80	27

*Until 2015 requirement for next career move was not obligatory for getting into succession pool, from 2015 this requirement is obligatory for succession pool candidates.

Expenses of TVEL FC on social programs, RUB mln



Expenses of TVEL FC on social programs per one worker, RUB thous.



- non-state pension benefits;
- voluntary health and industrial injuries insurance;
- assistance in housing programs;
- sanitary and resort treatment, and recreation of employees and their children;
- arrangement of catering for employees;
- assistance to non-working pensioners;
- organization of sports and cultural events;
- benefits to employees in difficult situations.

TVEL FC social programs represent a strong motivating factor. Total amount spent by the Company on its social programs in 2016 made RUB 1,346 million, or RUB 60.8 thousand per worker.

Interaction with Trade Unions

Primary trade unions function in all enterprises of TVEL Fuel Company. Each employee may join a trade union that represents the interests of the workers. Management of ROSATOM and TVEL FC supports self-organization of the

employees. The share of employees-members of trade unions reaches 98% in some subsidiaries.

TVEL Fuel Company interacts with trade unions under the social partnership program. The management acknowledges the important role of trade union in implementation of corporate social programs and in employees awareness raising. Social stability at the enterprises and in the cities of presence of TVEL Fuel Company is the result of cooperation between TVEL JSC and the Russian Trade Union of Nuclear Power and Industry (RTUNPIW), subsidiaries of the Company and primary trade unions, veteran councils and other workers' associations.

Association of primary trade union organizations of the Company's subsidiaries operates in TVEL Fuel Company. Management of TVEL JSC and RTUNPIW holds regular meetings with participation of the chairmen of primary trade unions and HR directors (3 meetings were held in 2016), as well as the meetings of the Company's expert

working group and the trade union (5 meetings were held in 2016).

Interaction with the branch trade union is of major significance for the Company. The institution of public representatives responsible for labor protection is continuously improved from year to year — these are representatives of the working team, who in addition to their main duties perform supervisory functions on labor protection, record violations of labor protection requirements, submit proposals for elimination of violations and improve working conditions, participate in days of labor protection, etc. Following the results of such assessment the Company organized moral and material incentives for their activities.

OCCUPATIONAL HEALTH AND SAFETY

Occupational Safety and Health Management System

The main directions, directives and commitments in the sphere of occupational safety and health of TVEL

Fuel Company workers are stipulated in the TVEL JSC Health and Labor Protection Policy.

System-based application of the guiding principles of the policy, unified methods for identification and assessment of risks in Health and Labor Protection allows to allocate funds to solve most crucial tasks in the sphere of occupational safety.

High-priority goals and objectives aimed at risks mitigation in Health and Labor Protection are the constituent elements of planning, they are included in the annual Programs of actions to achieve the goals and objectives at the level of TVEL Fuel Company.

Development and improvement of safety culture is the priority direction within the corporate Integrated Management System. In 2016 there was initiated the process of incorporation of safety culture into the Management System of TVEL JSC. Functional organizational structure and the core elements of development and improvement of safety culture in TVEL

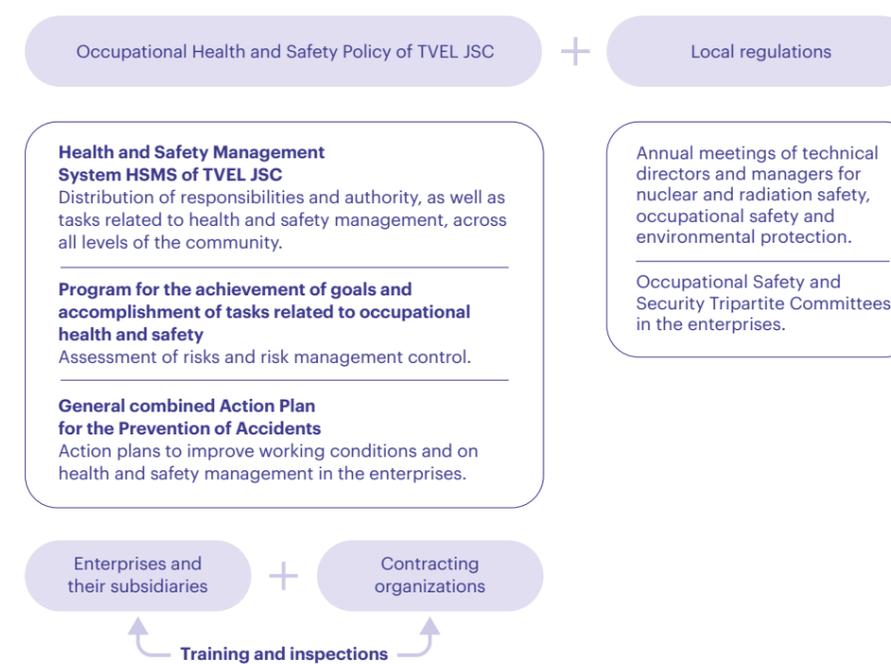


Implementation of major corporate social programs in 2016

Corporate social program	Funds allocated under the program in 2016, RUB mln	Basic facts
Voluntary health insurance (VHI)	183.0	100% of TVEL FC employees are insured under VHI policy ¹ .
Accident and health insurance	10.6	87% of TVEL FC employees are covered by accident and sickness insurance.
Sanitary and resort treatment, recreation of children	160.1	3,711 employees got vouchers to sanitary and rehabilitation resorts in 2016, where 1,065 persons work in harmful conditions, and 1,783 children. Maximum amount of each voucher in 2016 was RUB 54.6 thous. for a 21-days leave.
Assistance in improvement of housing conditions	91.4	1,027 employees improved their housing conditions under the program, and 536 out of them are young specialists up to 35.
Benefits to employees in difficult situations	59.3	3,859 workers received welfare assistance in 2016. Average welfare amount was RUB 15.4 thous. The amount of benefit does not depend on the official position. Types and criteria of benefit provision are unified.
Sports and cultural events	117.4	The enterprises of TVEL FC held more than 480 corporate and sports competitions in 2016. Total number of participants — over 27 thous. of workers and members of their families.
Assistance to non-working pensioners	483.6	There are over 37 thousand non-working pensioners registered in the organizations (personnel service, veterans' council, trade unions) of TVEL Fuel Company. Average amount of assistance per 1 pensioner is RUB 13 thous. per year. 1,268 pensioners got vouchers to sanitary resorts.
Non-state pension provision	132.9	By the end 2016, 19% of TVEL FC workers were involved in the non-state pension provision program; the highest rate was achieved at PA ECP JSC (34.6%), ChMP JSC (29%), MSZ JSC (25.8%), and UEIP JSC (25%). The major part of pension accruals under the NPO program were accumulated at Non-State Pension Fund "Atomgarant".
Total	1,238.4	-

¹ New workers are included in VHI program after successful completion of the probation period, accordingly at a time there may be less than 100% workers insured under VHI.

Occupational Health and Safety Management in TVEL Fuel Company



Dynamics of the indicators of occupational health and industrial safety in TVEL FC*

Indicator	2014	2015	2016
Average Industrial Injuries Frequency Rate (IIFR)	0.12	0.23	0.16
Injury Rate (IR)	0.01	0.03	0.02
Occupational Disease Rate (ODR)	0.00	0.00	0.00
Absentee Rate (AR)	2.76	2.03	2.88
Lost Day Rate (LDR)	0.11	1.90	0.40

* Data on CFR-3 contour.

Fuel Company were developed and introduced.

Responsibilities of managers, specialists and other workers pertaining to occupational safety are regulated by "Occupational safety management system in TVEL JSC". Local regulatory documents on labor protection include instructions, lists, logs. The company organizes trainings and assessment of knowledge, inspections, briefings, including for representatives of contracting organizations.

TVEL JSC holds annually the meetings of technical directors and managers for nuclear and radiation safety, occupational safety and environmental protection. During such meetings participants exchange their thoughts, share best practices with the colleagues and report on the measures taken to address the problems. All participants are notified about the occurred accidents, causes of such accidents, and organizational and technical actions taken. Following the results

of the meeting the participants adopt the respective decision including the instructions for further reduction of injury rates and the measures to improve working conditions

The complex and special-purpose inspections on security assurance are held to assess the functioning of OSH management system and implementation of measures. The inspections also cover subsidiaries of the enterprises and contracting organizations rendering their services in the territory of the enterprises included into the management system of TVEL Fuel Company.

In the subsidiaries of TVEL JSC there have been established and are functioning the Tripartite Committees on Occupational Safety and Security, composed of representatives of management, workers and unions (such committees cover 98.5% of the total number of TVEL Fuel Company, including CFR-3 and CFR-4 workers).

Starting from September 1, 2016 within the improvement of the Integrated

Management System TVEL JSC introduced new Standard of the Fuel Company "Procedure for Development and Improvement of Safety Culture". The standard represents the single document regulating development of safety culture in TVEL JSC and subsidiaries. Introduction of the Standard includes working out of documentation for development and improvement of safety culture, training of personnel, self-evaluation and external evaluation of the safety culture level. In accordance with the Standard the Company undertakes to develop and implement the single comprehensive plan of actions for improvement of the safety culture.

The Company spent grand total RUB 1.97 billion or RUB 56 thousand per each employee on labor protection arrangements in 2016.

More than 112 thousand SFI submitted in 2016 were aimed at safety culture improvement.

The average occupational injury rate in TVEL Fuel Company in 2016 was 0.16,

and the injuries were registered only at three enterprises out of 13.

Most industrial injuries occurred due to organizational faults, such as failure of managers and specialists to ensure labor safety in accordance with the requirements of the regulating documents, as well as failure of the injured persons to observe labor and production discipline, labor protection rules and regulations.

No emergencies at hazardous facilities or mass accidents occurred.

Within the Occupational Safety and Health Objective Achievement Program for 2016 the following actions were fulfilled: technology and equipment modernization, improvements in working conditions, awareness and competence of personnel, development and improvements of the safety culture focusing on reduction of injuries.

The results of occupational hazards evaluation outlined the priority goals and objectives for operational health and safety to be included into the 2017 Program.

In each TVEL Fuel Company's organization, operating hazardous production facilities, there were adopted industrial safety measures in 2016. The basic industrial safety measure include the following: industrial safety expertise, schedules and maintenance of technical devices, buildings and structures of hazardous industrial facilities, ensuring functionality of the production control and supervision. Implementation of such measures allowed to reduce volumes of hazardous chemicals, thus lowering the hazard class of the production facilities.

No violations of safety parameters or limits of the effective and equivalent doses set by the nuclear and radiation safety regulations were registered at the subsidiaries of the Company in 2016.

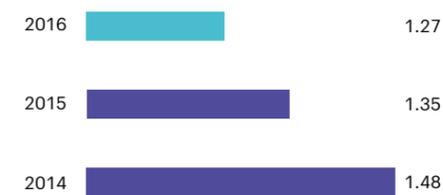
All production enterprises of the Fuel Company operate within the approved effective dose limits applicable to the personnel, no Group A personnel is available (individuals exposed to the effective dose of 100+ mSv and more¹ over a period of five successive years, or effective dose of 50+ mSv and more during any one year).

In 2016, the Department of Nuclear, Radiation, Industrial and Environmental Safety of TVEL JSC together with the Inspectorate for Control over Safety of Nuclear and Radiation Hazard Facilities of TVEL JSC carried out 20 inspections, including 7 unscheduled inspections by the orders of the TVEL JSC management. The inspections revealed 676 violations (532 violations were revealed in 2015). Increase in the number of the revealed violations is connected with additional unscheduled inspections.

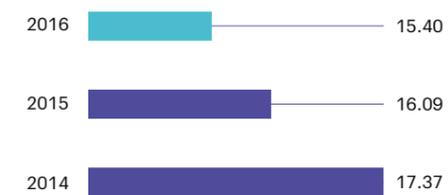
For the purposes of prevention and mitigation of the impact of hazardous and harmful production factors during the operations in hazardous and harmful conditions, the workers are provided with special and properly certified clothing, footwear and individual protection means for free. Average cost of individual protection equipment per each worker exposed to hazardous or harmful labor conditions in 2016 amounted to RUB 11.6 thousand.

In accordance with provisions of federal laws, TVEL Fuel Company organizes regular medical examination

Average annual effective dose, mSv



Maximum effective dose for personnel, mSv



0.09

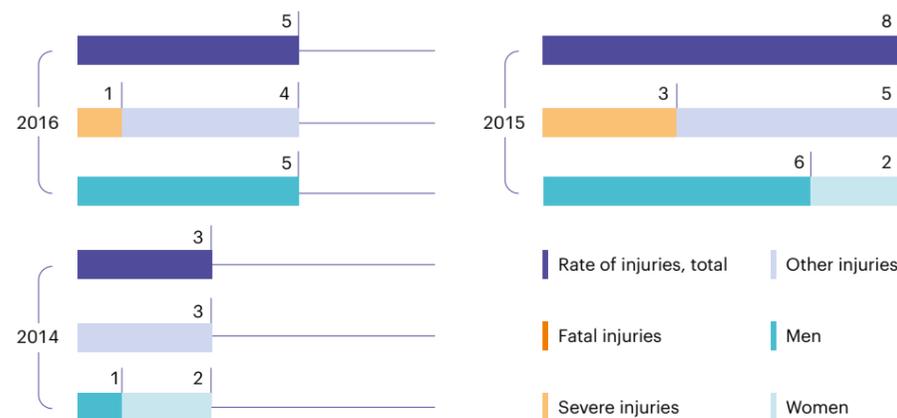
LTIFR indicator for TVEL Fuel Company in 2016 decreased by 35,7% to 0.09.

Average industrial injuries frequency rate (IIFR) in TVEL FC subsidiaries*



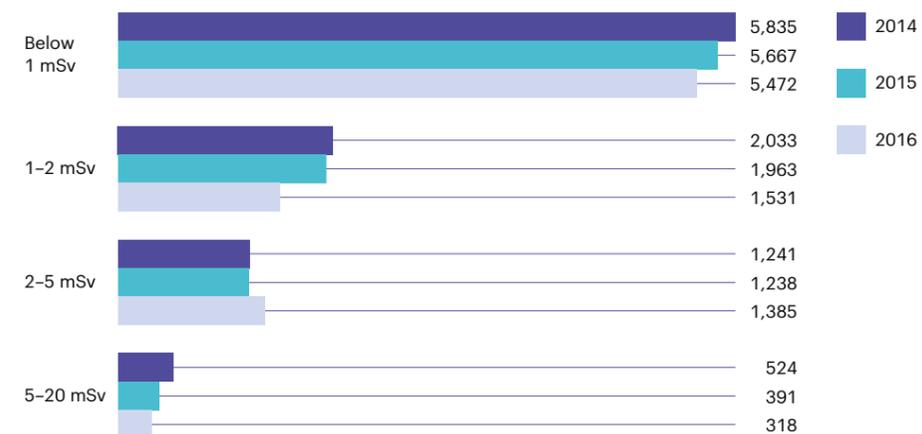
* Accidents per 1,000 employees per year.

Industrial injuries at TVEL FC enterprises, persons*



*Data for 2015-2016 are given on CFR-4 contour.

Group A personnel distribution by individual exposure dose, persons



1. The following limits of the efficient dose are set in accordance with the Radiation Safety Standards 99/2009: Group A personnel — 20 mSv a year (on the average) over any 5 successive years, but not more than 50 mSv a year; population — 1 mSv a year (on the average) over any 5 successive years, but not more than 5 mSv a year.



Structure of revealed violations:

- did not register any INES events at level 2 and above;
- did not exceed limits of the annual effective radiation doses of the personnel;
- had no Group A personnel exposed to effective radiation dose 100 mSv and above over any successive 5 years.

of its workers involved in operations with hazardous and harmful factors. Workers involved in operations in harmful conditions are entitled to privileges and bonuses in accordance with applicable laws of the Russian Federation and the "List of Occupations and Positions of Workers and MSE Entitled to the Early Retirement and Benefits for Working in Unfavorable Labor Conditions", including: medical and preventive meals, compensations, extra leaves, etc.

Industrial sites of the Company's subsidiaries are subject to regular control over the contents of harmful chemicals in waste water, exhaust from ventilation systems, radiation and chemical status monitoring, organization and performance of all kinds of supervision in accordance with the Production Control Programs.

Special assessment of working conditions is intended to assess the conditions and labor safety at the work places, determine the extent of deviation from the parameters of the production environment and work process; following the results of such assessment

the arrangements are scheduled for improvement of the labor conditions. All subsidiaries provide regular labor safety training in accordance with GOST 12.0.004-90 and fire safety training in accordance with the Federal Law No. 69-FZ "On Fire Safety", as well as all types of briefings and tests with respect to the above mentioned spheres. The Company takes preventive measures to mitigate industrial injuries and occupational illness.

In 2016, the average number of training hours per one worker of the Company involving functioning and maintenance of nuclear and radiation-hazard facilities, standards of nuclear and radiation safety made 54 hours (total number of training hours in TVEL Fuel Company was 25,373).

Social and Relationship Capital

Publicity capital allows TVEL Fuel Company to position itself as a global technology leader, global player in the Front End of Nuclear Fuel Cycle, powerful competitive and deversified company of engineering and nuclear industries and as a socially responsible business.

PUBLICITY CAPITAL

Publicity capital growth was favored in 2016 by the integrated communications model implemented by the Company, the adopted in 2015 Uniform Information Policy, the target communications-supported global-scale promotion of a wide range of non-nuclear products, the new PR strategy "TVEL-Progress" (conceptual core: technological achievements and foreign-economic gains).

In 2016 the organizations of TVEL Fuel Company applied a systematic approach to enhance the communicative function (public relations) with the view of improving the efficiency of its impact on business results and ensuring the publicity capital growth:

- Audit of "mass and internal communications management" function (integrated communications) and analysis of engagement of all employees involved in the communication sphere (total — 101 persons).
- Reorganization of the Public Relations Department in TVEL JSC into Information Policy and Communications Department was substantiated and performed, proposals were submitted for centralization of communication functions (formation of competence centers in the sphere of communications), transfer of public relations departments in the subsidiaries (totally — 12) into

Publicity Capital

(image property, reputation capital) is qualitative and quantitative totality of all information related to TVEL JSC and known within public communications space. Growth of the publicity capital volume means increase public confidence, strengthening of a positive image, formation of increasingly favorable public opinion, escalation of political weight, etc.



TVEL JSC was the third in "Development of multi-sectoral partnership to address social issues of the territories" at the All-Russian contest "Russian Business Leaders: Dynamics and Responsibility 2016"

immediate subordination of director general.

- The Uniform Information Policy of TVEL Fuel Company is implemented with the purpose of coordinated delivery to the media and target audiences the information concerning the activities of TVEL JSC and its subsidiaries, provision of public acceptance and transparency, the fundamental principles thereof are:
 - regularity,
 - promptitude,
 - availability,
 - reliability,
 - completeness,
 - balance,
 - equal rights,
 - security of corporate information resources;
- The technology of target communications support of specific business objectives and commercial projects has been introduced. Totally TVEL Fuel Company enterprises elaborated and implemented more than 20 transient target communication programs, including 7 ones on non-nuclear products;
- Timplimenting the decisions of the strategic sessions of top management of TVEL Fuel Company, the Department for Information Policy and Communications has been developing an independent objective "Increase of Publicity Capital", adopting the metrics in the form of target communication strategy for

the period up to 2020 and further on, and aligning with the "information favored index" (IFI) (the indicator was measured in a pilot mode, IFI monitoring and index calculation on a permanent basis is assumed to begin from 2017);¹

- The target communication program was realized to confirm by the international and Russian public attitudes the reputation of TVEL as the "company of continuous improvement" and the "company of advanced technological development", according to which program there were published more than 1.7 thousand information materials in foreign and domestic media. The balance of positive and negative assessments of the programs of nuclear power industry development, that were formed by the RF population under the information influence, increased in 2016 by 58%², thus ensuring preservation and the growth of the publicity capital of the Russian nuclear power industry and proving the operating efficiency of communication subdivisions of TVEL Fuel Company.

References to TVEL JSC and TVEL Fuel Company in the Russian Media

Totally 12,949 references to TVEL JSC and enterprises of TVEL Fuel Company were recorded in the Russian media in 2016. Dynamics of the activity of the information field is characterized as

smooth, without strong outbursts and critical slowdowns.

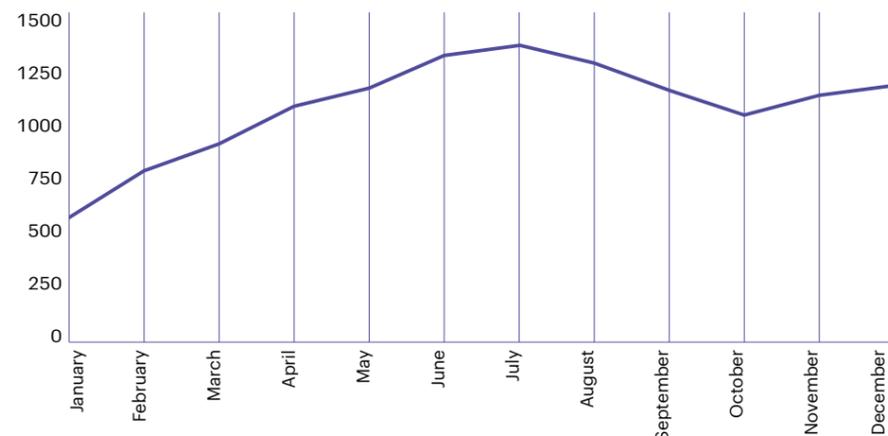
The following tendencies were revealed: regardless of the number and specificity of the newsworthy information the most popular format of information presentation was news, and while in distribution by media types in the leading role took federal web-based media and the sectoral media. Tonality of the major number of messages was positive and neutral. Some publications raised issues related to changes in regular staffing of some enterprises of TVEL Fuel Company in the process of restructuring and optimization.

The growth of public (information) popularity of the Company in 2016 is directly dependent on the Uniform Information Policy adopted by TVEL JSC, according to which standards for information generation and promotion were introduced; the course of

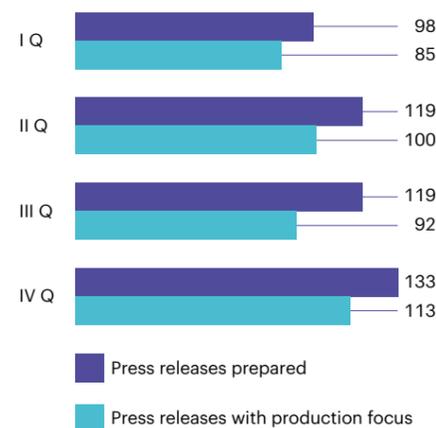
1. Estimated index was developed by the specialists of the Russian company "Medialogia". Information favored index reflects not only qualitative but also qualitative presence of a person in the information field. IFI depends on the media forcefulness and influence, visibility of the message, brightness of the object reference, citation, conflict nature, nature of reference in the media and other parameters.

2. Data of Levada Center that were provided by the Communication Department of ROSATOM State Corporation.

Media references to TVEL Fuel Company in 2016



Dynamics of information content production, number of press-releases



Exhibition activities of TVEL Fuel Company in 2016

Event	Date	Place
NDExpo international exhibition — Nuclear Energy for sustainable development 2016	April 5–7	Moscow, Russia
The International Forum Atomexpo — Belarus 2016	April 19–21	Minsk, Belarus
International Forum ATOMEXPO 2016	May 31 — June 2	Moscow, Russia
The World Nuclear Exhibition	June 28–30	Paris, France
The International Industrial Trade Fair INNOPROM 2016	July 11–14	Ekaterinburg, Russia
ARMY 2-16 International Military-Technical Forum	September 6–11	Kubinka, Russia
The exhibition of industrial products and advanced developments of the enterprises of Novouralsk industrial site within the framework of industrial Information Day in UEIP JSC with the participation of the Director General of Rosatom SC S.V. Kirienko	September 12	Novouralsk, Russia
Annual symposium of the World Nuclear Association WNA 2016	September 14–16	London, UK
Exhibition within the IAEA General Conference	September 26–30	Vienna, Austria
Forum of Nuclear Power Industry Suppliers ATOMEX 2016	October 19–20	Moscow, Russia
ATOMEX-Region	October 20–22	Krasnoyarsk, Russia
VVER 2016 International Scientific and Technical Conference	October 31 — November 2	Prague, the Czech Republic
Scientific and Technical Conference New-Generation Nuclear Fuel for NPP. Development outcomes, operational experience and development trends	November 16–17	Moscow, Russia
Exhibition-presentation of TVEL Fuel Company enterprises within the meeting of the Plenipotentiary Presidential Envoy to the Siberian Federal District of Russia S.I. Meniyailo with the President of TVEL JSC Yu.A. Olenin.	December 6	Seversk, Russia

increasing the share of production news in the structure of the information content was defined, all information messages were tagged by values of ROSATOM, which in its turn had a positive effect on references to TVEL JSC and its subsidiaries in the mass media.

Over the year 2016 there were produced totally 469 press releases, out of which 51 information messages (11%) were prepared by the press service of TVEL JSC. Every third press release of the Company contains in its title an indication to the brand of TVEL JSC. Production news in the content structure take about 83%. At least 20% of the posts covering the production theme are devoted to non-nuclear production, thereby making possible for the target audiences and the wide public to consider the TVEL Fuel Company not only as the global leader for front-end part of the nuclear fuel cycle, but also as an exclusive developer and manufacturer of a wide range of high-tech non-nuclear products. Every third message contains an expert's quote and 80% of such information, bearing expert opinion shall be subject to an external evaluation, which contributes to the growth of publicity and reputation capital, increase

of reliance toward the information provided by TVEL Fuel Company.

SOCIAL PARTNERSHIP IN THE TERRITORIES OF PRESENCE

Achievement of strategic objectives by TVEL Fuel Company is impossible without social accord in the territories of presence or compliance with social and environmental acceptability requirements. Social strain in regions and on territories of presence may cause reputation damage to TVEL JSC which has the image of a reliable supplier of nuclear fuel and uranium enrichment services, and therefore may cause re-orientation by foreign partners towards the Company's competitors (see also Section Risk Management).

The Company developed strategic initiatives and target projects on social and economic development of the regions / territories of presence and ensuring their social stability. The "TVEL JSC Program for Regional Work and Social Projects" is being implemented, systematizing the experience in this area and including three groups of projects:

- formation and preservation of social accord environment in the regions of presence of TVEL FC;

- cooperation with local and regional public authorities with respect to the concept of the territories' development, the growth of regional taxes and maintenance of social and economic stability;
- enhancement of social programs efficiency and social partnership development.

Regional and Social Projects Program monitors the performance and efficiency of regional development programs implementation.

Social and political situation in the cities of presence of TVEL Fuel company is monitored monthly since 2011. Social and political situation in CATU (Zelenogorsk, Seversk, Novouralsk) and Glazov providing for 29 scenarios of social and political crises and their relevant indicators is monitored weekly since 2014:

- inter-elite conflicts;
- emergency situations;
- growth of social strain.

Monitoring purpose: reduction of social strain risks and possible impact of protest moods. The findings are used to develop and to correct plans



Nuclear industry and its flagship — our SGChE JSC — play a major role in Tomsk Region life. You boost the regional economy, give confidence in the future for thousands of specialists and workers, residents of the biggest CATU in the country — Seversk. You extend ties of academic and industrial sectors by demonstrating what the innovative production should look like. I take pride in unique global projects of our nuclear experts.

Sergey Zhvachkin
Governor of Tomsk Region

of joint activities with local authorities on preservation of social cohesion environment in regions of presence of the Fuel Company.

In order to minimize socio-political and socio-economic risks in the territories of the presence of enterprises of TVEL Fuel Company, agreements were signed in 2016 with local authorities of CATU Zelenogorsk, Seversk, Novouralsk and Glazov on supplying monitoring information.

Monitoring purpose: reduction of social strain risks and possible impact of protest moods, development and correction of social and economic development programs in territories of presence.

Continuous monitoring of:

- implementation of Agreements between ROSATOM and entities of the Russian Federation on cooperation;
- implementation of activities within the framework of charitable and social projects in the cities of presence;
- works on establishment of TASED in CATU and in Glazov.

Such comprehensive monitoring allows TVEL Fuel Company to participate effectively and in a timely manner in the development and implementation of social and economic development programs for the cities of presence in order to improve the living standards of the population, attract highly qualified specialists and carry out activities to damp the risks of political and social tension in order to maintain social stability.

Agreements on Cooperation with the Regions

In 2012 TVEL JSC initiated the drawing up and signing of Agreements on Cooperation between ROSATOM and public authorities of the territorial entities of the Russian Federation.

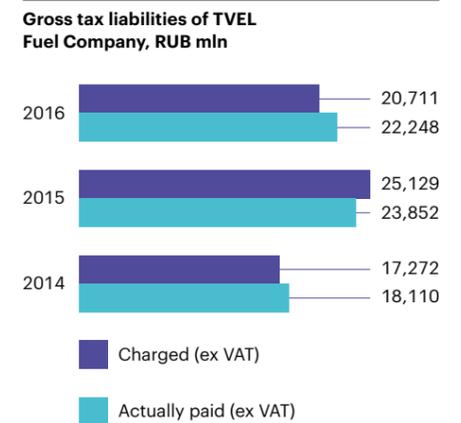
Presently there are agreements with Sverdlovsk region, Irkutsk region, Tomsk region, Krasnoyarsk territory and the Udmurt Republic.

Annually under the concluded agreements, local government bodies, regional government agencies and TVEL Fuel Company develop and implement joint program of social and economic development of cities of presence of the Company's enterprises.

Such agreements result from effective interaction with public authorities and provide for the implementation of a whole range of activities aimed at the social and economic development of regions and cities of presence of the Fuel Company. These agreements determine the following key aspects:

- co-financing of programs for social and economic development of nuclear cities;
- the terms of co-funding of Entrepreneurial Development and Supporting Fund;
- the terms of joint participation in establishment of Physical and Mathematical Lyceums.

TVEL Fuel Company is a major taxpayer in the budgets of various regions of the Russian Federation. Gross tax liabilities (actually paid) made RUB 22.2' bln in 2016.



1. Additionally, VAT paid by TVEL Fuel Company amounted to RUB 7.1 bln. Thus actually paid gross tax liabilities were RUB 29.3 bln.

Indicators of social and political monitoring in the cities of TVEL Fuel Company's presence

Social sphere

Recorded unemployment level

Events held by employment center

Acute social problems of city

Hazards related with the Company strategy

Political sphere

Influential figures in city and in region

Situation in the city

Possible scenarios

Major decisions taken at local and regional levels

Mass media monitoring

Character and availability of publications about Rosatom State Corporation

Financing of the Program for social and economic development of the cities of TVEL Fuel Company's presence, 2016

City	Scope of finance, RUB mln	Events
CATU Novouralsk	209.5	<ul style="list-style-type: none"> • construction of a dwelling house for young specialists, an exhibition and marketing center of the NCED; • reconstruction of the Central stadium; • major overhaul of the pool of the MAEI "Secondary General School No.48"; major repair of buildings 8b and 8c of Samotsvety Children resting camp; • modernization and repair of social facilities, repair and re-equipment of the Neiva Cinema Center; • small and midsized business support; • "Safe city" Project.
CATU Seversk	30.0	<ul style="list-style-type: none"> • activities aimed at small and midsized business support (increase of business microfinancing).
Glazov	222.4	<ul style="list-style-type: none"> • construction of an ice hall; • construction of a gym hall and workshops for Physics and Mathematics Lyceum; • city's sports clubs supporting.
TOTAL	461.9	

Direct economic value generated and distributed¹, RUB mln

Indicator	2014	2015	2016
Direct economic value generated	159,539	222,908	198,858
Economic value distributed, including:	142,142	173,489	177,749
– operating costs ²	89,224	106,200	104,066
– employee wages and benefits ³	20,632	26,000	26,934
– payments to providers of capital	17,021	16,021	30,019
– community investments (investments into associations and charities)	1,337	1,800	1,719
– payments to government (gross tax payments ⁴)	15,021	23,468	15,010
Economic value retained	17,640	49,419	21,109

1. The data from the Consolidated Financial Statement of the Fuel Company prepared under the Russian Accounting Standards were used for estimations. IFRS reporting shall be prepared later.
2. Miscellaneous expenses and income were used for estimates in full. Operational costs exclude amortization.
3. Social expenses and insurance fees are included in calculation since 2015.
4. Amount of main tax liabilities due and payable to the budgets of different levels for the reporting period, including: taxes included in expenses, payments to extra-budgetary funds, corporate profit tax.

In recent years public organizations play an increasingly important role in the life of the country and urban community. Social partnership policy makes it possible to address the most complicated issues by negotiations, dialogue, search of a balance of interests of different population groups. The idea of social partnership is to reach the compromise.

TVEL JSC is a member of All-Russian Industrial Association of Employers "Association of the Employers of the Nuclear Industry, Energy and Science of Russia" (President of the Company is a member of the Board), and National Association of Procurement Institutes (NAPI).

Working-age population employed by subsidiaries of TVEL FC

City (enterprise)	Region	% of working-age population employed by subsidiaries of TVEL FC
Angarsk (AECC JSC)	Irkutsk Region	0.7
Vladimir (Tochmash VPA JSC)	Vladimir region	0.7
Kovrov (KMP PJSC)	Vladimir region	1.3
Glazov (ChMP JSC)	the Udmurt republic	5.9
Zelenogorsk (PA ECP JSC)	Krasnoyarsk territory	6.0
Novouralsk (UEIP JSC)	Sverdlovsk region	4.8
Seversk (SGChE JSC)	Tomsk region	5.4
Elektrostal (MSZ PJSC)	Moscow region	4.5

Civil Forum-dialogues

In 2016 the Fuel Company in cooperation with local authorities and non-commercial organizations conducted municipal civil forum-dialogues in Glazov, CATU Zelenogorsk, Novouralsk, Seversk.

The purpose of these events was to reduce social strain, to create the platform for consolidation of sound social force, to strengthen relations between different participants of social processes, and to reach a new level in the work of non-commercial organizations.

The agenda of the dialogue forum in Glazov "Start to the Future" had economic nature, performance of TVEL Fuel Company in 2015 was discussed, as well as the situation in export markets, the prospects for the development of the city-forming enterprise ChMP JSC,

creation and development of the territory of advanced social and economic development in Glazov.

The agenda of the forum "Social Partnership for Development" in Zelenogorsk was socially oriented, the audience raised issues of big business participation in the development of the city, interaction of government and public organizations.

The main theme of the dialogue forum in Seversk "The way to a successful future through agreement" was the position of TVEL Fuel Company in the nuclear fuel markets and the development of PDEC project.

The second civil dialogue forum "Social Initiatives of Novouralsk and Civil Support Mechanisms" in Novouralsk had several different discussion platforms devoted to business, youth, science,

Forum-dialogues held in the territories of presence of TVEL FC in 2016

City	Number of participants	Date	Number of city public organizations – participants of the Forum-dialogue
Glazov	150	19.04.2016	9
Zelenogorsk	700	14.05.2016	38
Novouralsk	900	25.08.2016	7
Seversk	470	24.06.2016	7
Total	2,220		61

sports, the older generation and communications, the participants met at strategic session after the discussion.

Representatives of the authorities, deputy corps, business and community attended the events.

In 2017 it is planned to hold at least 4 forum-dialogues in the cities of presence of TVEL Fuel Company.

TASED Creation

Federal Law No.473-FZ d/d December 29, 2014 "About the territories of advanced social and economic development in the Russian Federation" provides for possibility of establishment, starting from June 1, 2016, of the territories of advanced social and economic development in the territories of closed administrative territorial units in order to create additional conditions for support of citizens residing and working in CATU, attraction of investments and creation of additional jobs.

Establishment of TASED in CATU is aimed at creation of new jobs, increase of investment attractiveness of CATU and level of development as compared to the average level of social and economic development of the entities of the Russian Federation.

At the stage of the concepts formation, the declared projects assume creation of more than 8 thousand jobs, the investments will amount to more than RUB 70 bln. The third part of the declared projects – are the projects of ROSATOM and TVEL Fuel Company.

2014

- in 2016 the enterprises of TVEL Fuel Company have formed task groups;
- drew up CATU passports for CATU Integrated Development Programs;
- CATU Integrated Development Programs were developed and

approved by local and regional authorities, and submitted for inspection and approval to the Government of RF.

2015

- Basing on EDP working teams with the involvement of developers formed the concept of the territory of advanced social and economic development in nuclear industry CATU.

2016

- the concepts of TASED creation were considered at the level of territorial entity of the Russian Federation.
- concepts were sent to the Ministry of Economic Development of the Russian Federation and to the Ministry of Finance of the Russian Federation;
- ROSATOM SC working team on issues of TASED property in CATU was formed;
- proposals (applications) for TASED creation were sent to authorized federal executive bodies / the Ministry of Economic Development of the Russian Federation:
 - CATU Seversk (July 2016),
 - CATU Zelenogorsk (August 2016),
 - CATU Novouralsk (August 2016);
- The concept of TASED in Glazov was approved at the level of territorial entity of the Russian Federation.

2017 (planned)

- formation of TASED Managing company (Rosatom SC performs Shareholder rights):
 - formation of property complex,
 - formation of subsidiary managing,
 - companies,
- creation of TASED in nuclear industry CATU:
 - issue of Russian Federation Government Regulations,

- conclusion of agreements between the Ministry of Economic Development, the government of a constituent entity of the Russian Federation, municipal authority),
- registration of first residents:
 - formation of marketing strategy.

TASED (territory of the advanced social and economic development) is the part of a territorial entity of the Russian Federation with the special legal regime for entrepreneurial and other activities.

New production launched at vacant facilities of UEIP JSC (CATU Novouralsk)

In August 2016, Penotherm Company LLC opened a new enterprise for production of insulating and packaging materials made of expanded polypropylene and polyethylene.

The maximum annual capacity of the plant will be 28.5 million square meters of finished products of different nomenclature. Advanced technologies

of the enterprise allow to process waste products into secondary raw materials and put them into use.

Penotherm Company LLC concluded an agreement with UEHK JSC on long-term lease of vacant production site. Jointly the partners have formed appropriate technical, organizational

and corporate solutions for the project. It is planned to create 100 new jobs.

For TVEL Fuel Company and Novouralsk this project is socially significant, it will perform one of the key objectives: open new production in CATU in order to create jobs and increase tax payments, including to the local budget.

The projected effect of TASED creation

City	Zelenogorsk	Seversk	Novouralsk	Glazov
Number of new jobs, including:	1,616	2,181	2,633	1,448
• under the project of ROSATOM and TVEL FC	242	740	979	142
• under the projects of CATU and the entity of the Russian Federation	1,374	1,441	1,654	1,306
Amount of investment, RUB mln, including:	10,895	26,037	19,659	10,318
• under the project of ROSATOM and TVEL FC	1,520	4,971	3,598	635
• under the projects of CATU and the entity of the Russian Federation	9,375	21,066	16,061	9,683

1,500

Due to activities of Entrepreneurship Support and Development Funds more than 1.5 thousand jobs were created in 2013–2016 in Glazov, CATU Zelenogorsk, Novouralsk, Seversk.



SOCIAL AND CHARITABLE ACTIVITY

TVEL Fuel Company's contribution to social and economic development of the regions of presence implies both participation in the regional and local budgets income base, and realization of the whole body of social and charity programs.

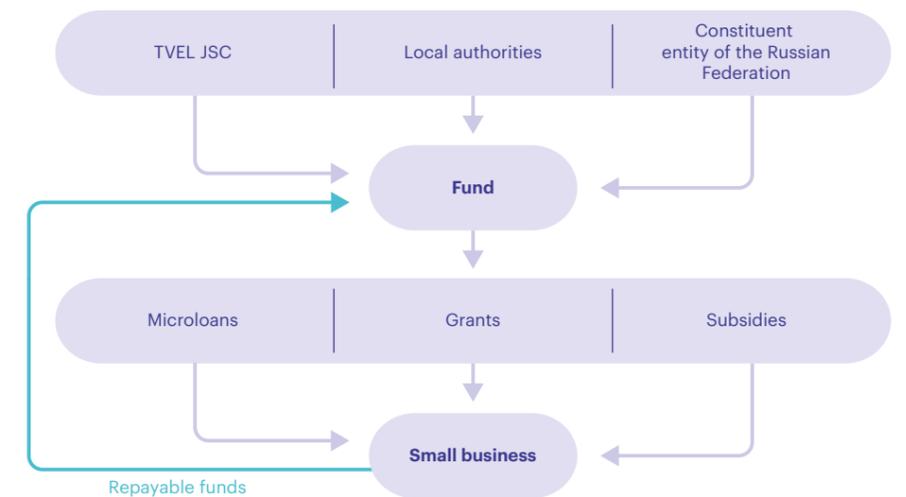
Since 2012 the Charity Council has been working within TVEL JSC; its functions include determination of purposes and priority areas of charitable activity, approval of the budget and charity events, assessment of charitable activity efficiency in TVEL Fuel Company, etc.

The Charity Council comprises managers of TVEL JSC in charge of economics, finance, HR, regional and social work, public relations. Scheduled meetings of Charity Council are held on a monthly basis and consider appeals on financial assistance from individuals and organizations. In 2016 the Council held 19 meetings.

The principles of charitable activity:

- support for charitable programs and projects in the cities of the Company's subsidiaries presence (social projects contests);
- backing-up common values (promotion of business environment, creation of new jobs, development of the educational, health-care, culture and sports infrastructure);
- co-funding of charitable programs jointly with the local authorities and central government bodies of the Russian constituent entities.

Operating pattern of entrepreneurs Support and development funds



Entrepreneurship Support and Development Funds supporting is another tool for new jobs formation. Due to their activities more than 1.5 thousand jobs were created in 2013–2016 in Glazov, CATU Zelenogorsk, Novouralsk, Seversk.

In 2016 the Fuel Company spent RUB 226.1 million on social and charitable programs with the view to develop the territories of presence of its enterprises. The amount equal to RUB 106.4 million was taken out of the funds of TVEL JSC, and RUB 119.7 million — out of the funds of the Fuel Company.

PJSC "KMZ" was recognized as Patron of the Year-2016 among large enterprises in Kovrov.

Performance of entrepreneurship support and development funds in 2012–2016

City	Funds allocated to the Fund, RUB mln	Including financing by TVEL JSC, RUB mln	Volume of support rendered by the Fund, RUB mln	Number of implemented projects	Number of created jobs
Glazov	88.5	43.5 ¹	218.3 ²	249	492 ³
Zelenogorsk	50	25	45.5	21	142
Novouralsk	145	64.7 ⁴	145	200	800 ⁵
Seversk	50	25	47.5	15	138
Total	333.5	158.2	456.3	485	1,572

1. Including due to performance of agreements on cooperation between ROSATOM State Corporation and constituent entities of the Russian Federation.
2. Including repayable funds.
3. Including self-employed.
4. Including due to performance of agreements on cooperation between ROSATOM State Corporation and constituent entities of the Russian Federation.
5. Including self-employed.

Funds allocated for charity and social projects in 2016

Nº	Major directions	Amount, RUB mln
1	Installation of outdoor fitness and work out in the cities of presence	59.2
2	Support to the activities of the nuclear industry information centers in the regions of presence	20.44
3	Creation of School Technoparks in the cities of the presence of FC enterprises	16.8
4	Atomclasses opening and support in the cities of the presence	2.45
5	Participation and holding of a contest "Businessman of the year" in the cities of presence	1.8
6	Provision of gratuitous assistance in organizing and holding sports events for nuclear industry workers	7.51
7	Organization and holding of social projects contest in the cities of presence	9.75
8	ROSATOM social projects, including activities on organization and establishment of TASED in cities of CATU and Glazov, as well as activities to damp social risks in the cities of presence	48.52
9	Gratuitous aid to veteran organizations, orphanages, disabled persons, retirees, persons in hardship, in the cities of presence	8.52
10	Organization and holding of municipal and regional social and cultural, gratuitous aid to cultural institutions (including support of the IV Okudzhava bard song festival, the contest of brass and jazz bands in Novouralsk, organization of the Sodruzhestvo children's recreation and education camp at Baikal, visits to ATOMEXPO of children from the cities of presence	19.36
11	Gratuitous aid to amateur, children's and mass sports in the cities of presence	10.93
12	Gratuitous aid to municipal organizations, societies and institutions, including land improvement activities in the cities of presence and memorial works	7.4
13	Supporting educational projects in the cities of presence, including activities aimed at children's research and technical development (robotics)	4.37
14	Other activities aimed at developing the cities of the presence of enterprises, raising the living standards of the population, creating an attractive social environment (environmental measures, support of the parishes of the ROC, work with unscheduled appeals, etc.)	9.08
TOTAL		226.13



Support of Schoolchildren

Atomclasses

There are organized so called "Atomclasses" in the cities of the Company's presence (Angarsk, Glazov, Zelenogorsk, Kovrov, Novouralsk, Seversk, Elektrostal). The Atomclasses are specialized classes in the best schools of the cities with advanced teaching of physics and mathematics. The specific feature of such classes is the profound study of nuclear physics and nuclear technologies. The important part of the project is procurement of the advanced laboratory equipment for teachers to demonstrate innovative physical presentations, and for students of Atomclasses to have their training laboratory courses and to carry out research works. Such advanced training will help the students to

succeed at academic competitions, contests, school children's academic achievements festivals. Further on the Atomclasses graduates will be able to continue their education in relevant technical universities.

To implement the project RUB 2.5 million were allocated in 2016.

Physics and Mathematics Lyceums

One of the primary areas of TVEL Fuel Company's charitable activity is creation and development of Physics and Mathematics Lyceums for training of future skilled specialists for the nuclear industry.

This project is designed to create conditions for children's self-expression, to reveal and support talented schoolchildren, bring up the prospective scientists.

The project is being implemented in four cities: CATU Seversk, Zelenogorsk and Glazov under the terms of co-funding with the local authorities and government bodies of the Russian constituent entities.

The Coordination Board for Physics and Mathematics lyceums development coordinates their work and serves a site where teaching staff and managers of TVEL Fuel Company can exchange ideas. Meeting of intra-extramural All-Russian training conference for Physics and Mathematics Lyceums is held on a quarterly basis, where teachers discuss essential problems of education in the sphere of physics and mathematics and possible ways to solve them in an actual teaching practice.

In June 2016 heads of MEPhI NNRU and schools-members of the Association of Physics and Mathematics lyceums of TVEL Fuel Company have signed agreements on cooperation in the sphere of remote training.

Within the framework of agreements, the MEPhI will provide students and teachers of Physics and Mathematics lyceums an access to its remote training courses and e-library. Annually MEPhI will allocate up to 15 quotas for training in its network school to lyceums. Besides,



teachers of schools will be able to take refresher courses at MEPhI.

School Technoparks

In continuation and development of the existing project aimed at support of Physics and Mathematics Lyceums, TVEL Fuel Company in 2016 launched the project on creation of polyvariant education environment "School Technopark" in Glazov, CATU Zelenogorsk, Novouralsk, Seversk. School technoparks are established in partnership between the enterprises of TVEL Fuel Company and the schools in the cities of presence.

Agreements between enterprises and schools determine the main priorities of cooperation within the framework of this project:

- education quality improvement under joint project activities;
- professional self-determination of high school students, creation of optimal conditions for revealing creative potential and early development of students' abilities;
- sharing experience between enterprises and general educational institution in design and engineering sphere.

New Generation — Resource of the Future

TVEL Fuel Company was the partner of the II All-Russia Educational Forum-Contest "New Generation — Resource of the Future", held in September 2016 in CATU Seversk. 150 students of 9-10 classes and 30 teachers of schools and lyceums from 10 municipalities, delegated by Sverdlovsk, Tomsk, Chelyabinsk regions, Krasnoyarsk territory and the Udmurt Republic participated in the forum.

The forum was held in the format of "Open Foresight Laboratory of High School Students" in order to support and develop the intellectual elite of the cities of presence of Rosatom, the formation of educational self-determination and the professional orientation of talented high school students in various areas of high tech development.

In the process of work, high school students analyzed modern trends in the development of science and technology, developed versions of their own professional and educational priorities as the basis for making personal decisions about individual educational trajectories. The program included lectures of scientists of RI TSU, RI TPU, TSUAB, Tomsk State University of Control Systems and Radioelectronics, Seversk Institute of Technology of MEPhI NNRU, intellectual debates, expert sessions, visits to laboratories and university creativity centers.

Key indicators of the project "School Technopark"

Nº	City	Number of laboratories	Specialization profile
1	Glazov	3	Physics, robotechics, computer based simulation
2	Zelenogorsk	3 (lyceum) 8 (schools)	Process technology, design engineering, robotechics
3	Novouralsk	4	Computer based simulation, practical modelling using machinery equipment
4	Seversk	5	Robotechics, ecological monitoring, chemical-biological research, materials treatment, 3D modeling and prototyping



Workout

amateur sports including exercises on horizontal bars, P-bars, wall-mounted ladders and other structures installed on outdoor sports grounds.

Establishment of the centers for innovative technical creative work will contribute to retention in Russia of motivated staff with a taste for design, inventive activity, and to involvement of talented school age youth in solution of design and engineering problems in favour of the nuclear industry.

The areas of technoparks operation were determined under the project, the methodology of the educational process was developed, gifted students search system was created, the material base of technoparks was formed and necessary equipment was procured and supplied.

The starting point of the project was an agreement on staff training concluded by municipal authorities and enterprises. The projects of technoparks creation were presented at the VIII ATOMEXPO International Forum in June 2016 and were widely covered by the media.

The final event of the project in 2016 was opening of technoparks with the participation of representatives of local authorities and the management of TVEL Fuel Company enterprises.

To implement the project RUB 20 million were allocated in 2016.

Objectives 2017:

- development and approval by Coordination Council of Physics and Mathematics lyceums of the cities of the Company presence of the industry educational standard — a list of educational programs, evaluation criteria for graduates and teachers of technoparks;
- development and implementation of network model of interaction of technoparks students and teachers, integration of this model in the Russian and global educational space;
- conclusion of agreements with the main technical universities about expertise of technopark students' projects;
- approval of cooperation programs for school technoparks with the subsidiaries of TVEL JSC in the cities of presence, including approval of supervisors and the council of experts;
- organization and holding of the contest "Brand of TVEL Fuel Company School Technopark" among the students of Physics and Mathematics lyceums of the cities of presence;

- organization and holding of school, municipal and interregional competitions in educational robotics;
- organization and holding of school, municipal and interregional competitions in computer modeling;
- formation of local youth communities on the basis of school technoparks in the cities of presence.

Healthy Lifestyle

Social project "My house. My yard. My family"

In 2011 the project "My yard. My house. My family" was initiated. During three years 240 playgrounds for children were installed in eight cities of presence of TVEL Fuel Company enterprises.

In continuation of the project, in-district and adjacent territories were improved there in 2016, courts with sport equipment and Workout complexes were erected. Places for sport areas were determined by local authorities taking in account public opinion, within participatory budgeting and with account of the playgrounds that were installed earlier.

Work out playgrounds set in 2016

City	Number of playgrounds/ number of playground elements
CATU Seversk	50/7
CATU Zelenogorsk	50/7
CATU Novouralsk	34/11
Glazov	50/7
Kovrov	25/2
Elektrostal	4/8
Angarsk	25/2
Vladimir	9/7
Total	247

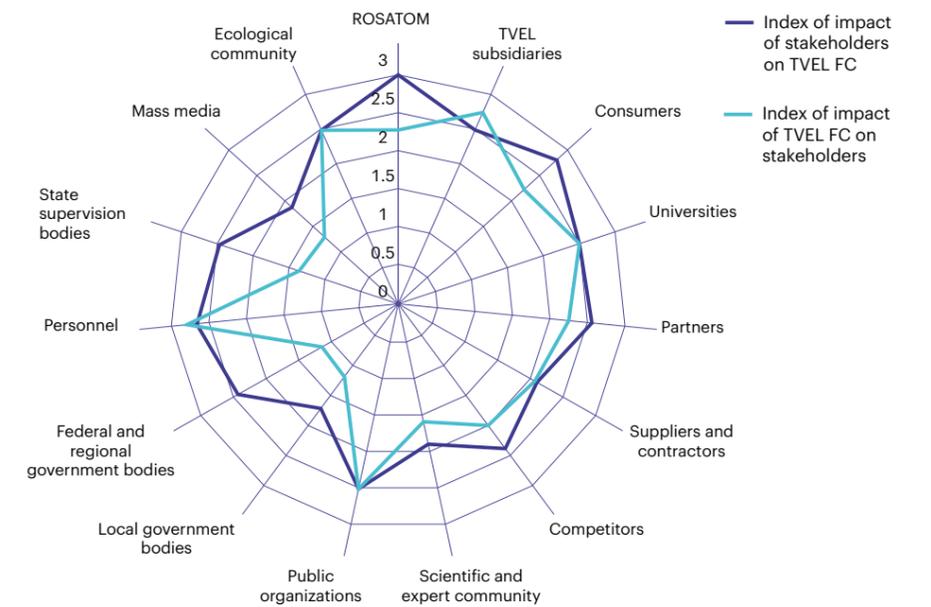
Launch of playgrounds for residents of the territories of the presence, "The Yard Day" involving young athletes. Souvenirs were presented to participants of contests. All events were covered by local and corporate media.

This project is the continuation of the strategic social initiative of TVEL JSC for development of the cities of presence and creation of comfortable living conditions. Residents of cities made proposals on further development of yards, culture and sports.

Plans 2017:

- proceed with installation of work out and street fitness facilities;
- organize and hold work out district, municipal and interregional festivals;
- involve official organizations (Workout Federation) and significant popular communities in holding workout festivals in the territories of presence of TVEL Fuel Company;
- form local youth communities on the basis of out-of-door sports grounds in the cities of presence.

TVEL JSC stakeholders rank chart



STAKEHOLDER ENGAGEMENT

TVEL FC always applies the principles of transparency¹, and constantly interacts with stakeholders, systematizes, analyses and takes into consideration their requests. This approach allows to respond quickly to potential risks related with stakeholders relations, in particular with those of social and reputational nature.

System of relationships with each group of stakeholders influences and will influence the operations of TVEL Fuel Company, that's why due consideration of their interests in planning and in the course of daily operations is the most important condition of sustainable development. Analysis of the key events, major financial and production outcomes and the Company's performance in the sphere of sustainable development demonstrates that social capital is among the major sources of business stability. Position of the Company in the sphere of sustainable development is shown in Annual Report of TVEL JSC for 2014 http://www.tvel2014.ru/ru/section_3/#section_3_2.

1. Taking into account objective industry-specific limitations.

TVEL JSC Annual Report 2015 Awards

- Four-time Gold winner in the **International Competition MarCom Awards 2016 (USA)** in the following categories:
 - “Best Annual Report of the StateCompany”;
 - “Best Annual Report on Corporate Social Responsibility”;
 - “Best Integrated Annual Report of the State Company”;
 - “Best Annual Report (Design and Printwork)”.
- For the first time it was awarded by League of American Communications Professionals, having won the “silver title” in **LACP 2016 Spotlight Awards Global Communications Competition** in the category “Print version of the Annual Report of Companies with a Turnover USD 1–10 bln”, and is in TOP-50 world’s best annual reports.
- Award in the nomination “Comprehensive Information Disclosure on the Company’s Development Strategy” in **Expert RA contest of annual reports (RAEX)**; Joined the 5 stars group — the highest quality of annual reports.
- The title “Leader of Corporate Transparency among State-Owned Companies” (3d place) in the rating **“Corporate Transparency of the Largest Russian Companies-2016”**, formed by the Russian Regional Networks on Integrated Reporting.
- 3d place in the category “Best Public Annual Report of ROSATOM State Corporation Division” in the **industry-specific contest of annual public reporting of ROSATOM**.



Natural Capital



AEEC JSC territory of presence, Irkutsk Region, Lake Baikal

2,106

RUB mln
operating expenses of the Company enterprises for environment protection in 2016

Stakeholder Engagement During the Preparation of the Report 2016

While preparing the Report the principles of Standard AA1000APS were adhered to, in particular, the compliance of the information published with the requests of stakeholders involved was ensured. Two dialogues with stakeholders (live and off-site dialogue) were conducted to implement this principle, as well as public consultations on draft Report.

Participants of these dialogues were the representatives of ROSATOM, industry partner organizations, subsidiaries, environmental, public, trade union organizations, higher educational institutions, local governmental authorities, mass media, consultants and auditors.

In November 2016 TVEL JSC organized the off-site dialogue on the concept of the Annual Report for 2016. The Report concept developed by the Company with account of the proposals of stakeholders commission was presented; the participants advanced recommendations which allowed finalizing and specifying the concept of the Report.

In the course of the dialogue on February 28, 2017, the matters of preparation of TVEL FC Public Annual Report 2016 were discussed, some outcomes 2016 were summarized, priority issues to be disclosed in the Report have been touched:

New markets and partners of TVEL Fuel Company.

The draft annual report of TVEL JSC for 2016, which was prepared in accordance with recommendations of stakeholders introduced in the course of the dialogues, was presented during the public consultations on April 18, 2017. Following the event, the proposals were made by stakeholders on information disclosure in the Report.

The table specifying the stakeholders’ comments is given in an interactive version of the Report. The minutes of dialogues are available at: http://tvel.ru/wps/wcm/connect/tvel/tvelsite/finance/annual_report/dialog/.

ECOLOGICAL POLICY

TVEL Fuel Company in its environmental activities is committed to promotion of environmental, nuclear and radiation safety, as well as implementation of strategic objective of the Company to provide social and ecological acceptability.

TVEL Fuel Company activities aimed at reduction of adverse environmental effects are characterized by branch specificity and shall be performed in two directions:

Removal of the environmental “heritage” of the first nuclear project, created as a result of execution of the military state programs on enterprises included into the management system of the Company, which implies execution of large scale works connected with decommissioning of the nuclear industry facilities and rehabilitation of the contaminated territories;

Reduction of the impact by the enterprises on the environment connected with current production operations. Within this activity framework the system of ecological management has been developed, modern resource saving technologies of production are

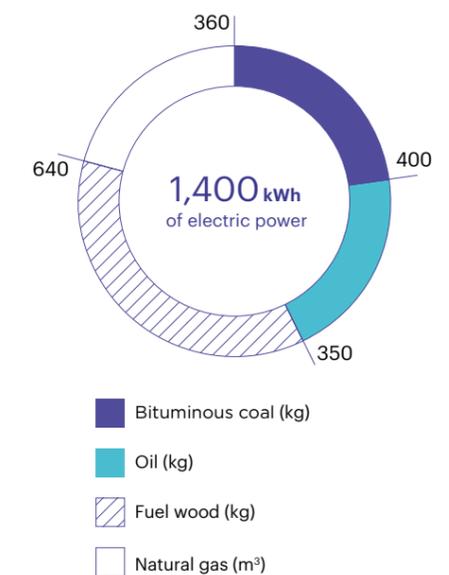
implemented, current environmental protection measures are executed and constant monitoring of environment condition is executed.

In accordance with the above directions aimed at reduction of adverse environmental effects, the enterprises of TVEL Fuel Company form annual plans of measures aimed at environment protection. The Environmental Policy Implementation Plan of TVEL Fuel Company for 2010–2015 was first developed in 2010, including organizational, social and educational, information, production and technical measures aimed at environmental protection. In 2015 the Environmental Policy Implementation Plan of TVEL Fuel Company for 2016–2018 was formed.

One of the priority directions of the Fuel Company in the field of environmental protection and ecological safety is its involvement in the functioning of the Integrated Management System, where a Corporate Environmental Management System is a constituent.

The main objective of the corporate IMS is to identify the environmental aspects and potential environmental

One pellet of nuclear fuel weighing 4.5 g substitutes



risks that affect the environment, safety and health of employees, with the aim to identify targets to improve these activities and develop programs to address them with the implementation of permanent control.

System-based application of guiding principles of the Policy, the unified methodology of environmental aspect identification and environmental risk evaluation allows to allocate funds to solve the most important problems, which leads to improved performance in the field of ecology. Priority goals and objectives aimed at reducing environmental risks are an integral part of the planning process; they are included in TVEL Fuel Company's Environmental Objective Achievement Program and Environmental Policy Implementation Plan.

Environmentally important enterprises of TVEL FC issue annual public reports on environmental safety to inform the stakeholders, partners, local government bodies, public at large, and publish them on Websites of the enterprises.

TVEL Fuel Company is guided by precautionary principle by forecasting and assessing environmental risks, which allows to avoid, minimize or control emission or discharge of any pollutant or generation of waste, thereby excluding or reducing the possibility of adverse impact of production activities on the

environment, staff and population of regions of the Company's presence.

The enterprises of TVEL Fuel Company continuously implements measures to improve the existing and introduce advanced environmental technologies and monitoring technologies of adverse impact on the environment, staff and population of the regions of the enterprises' presence. Special attention is paid to environmental safety in the modernization of existing nuclear fuel production technologies.

Employees of TVEL JSC and its subsidiaries take an active part in the development of scientific and technical reference books on the best available technologies, to be used at enterprises included into the management system of TVEL Fuel Company.

In 2016 in the course of the implementation of the Environmental Policy by the companies included in TVEL Fuel Company's management system, the production and technical activities aimed at environmental protection and ecological safety were implemented. Planning of funding for the said activities is a part of scheduling the Environmental Policy Implementation Plan, TVEL Fuel Company's Environmental Objective Achievement Program and the investment and project activities of the Company and ROSATOM. Prior to inclusion into investment projects, every

PA ECP JSC

won the XII All-Russian contest "Russia's Leader in Environmental Compliance 2016"

event shall be subject to feasibility and efficiency estimation of final outcomes by Investment Committee of TVEL JSC.

In 2017 AECC JSC, PA ECP JSC, SGChE JSC, NCCP PJSC, UEIP JSC, ChMP JSC, MSZ PJSC will implement the Plan of TVEL Fuel Company and environmentally important organizations of TVEL Fuel Company in terms of Ecology Year 2017.

ENVIRONMENTAL IMPACT¹

Energy Saving and Efficiency Improvement Program

The project on energy consumption reduction and energy efficiency improvement in industrial companies of ROSATOM is one of the major projects aimed to improve competitiveness in the specific industry.

TVEL Fuel Company is one of the leaders in introduction of automated systems for accounting of energy resources and methods to improve energy efficiency in the nuclear industry, including processes of energy inspections, formation of long-term investment, organizational and technical programs and specific activities for energy efficiency. The Company's organizations are being involved in Energy Saving and Efficiency Improvement Program (further "the Program") as pilot participants since 2011.

The Program was approved subject to the results of energy and thermovisional inspections held at the Company's organizations.

The first five-year period of implementation the Program events ended in 2015. Following the results of the repeated inspection performed by Center of Energy Efficiency INTER RAO UES LLC in 2015, the enterprises of TVEL Fuel Company developed the activities aimed at reduction of power resources consumption.

Witness Audit of Energy Management Corporate System (EMCS) was performed at TVEL JSC and Fuel Company enterprises in 2016 by representatives of TUV International Certification LLC. No deviations and discrepancies were found due to audit findings. In 2016 Fuel Company enterprises also performed internal audits of EMCS.

The Program established target values for reduction of energy consumption (as compared to the reference year 2015) in monetary terms. The target indicator of energy resources consumption set for the year 2016 was 3%. As a result of the implemented activities these values were achieved and even surpassed. In 2016 electric energy consumption by the Company's enterprises was reduced by 3.91%, heating energy — by 8.8% as compared to the reference values of 2015 under comparable conditions².

575.9

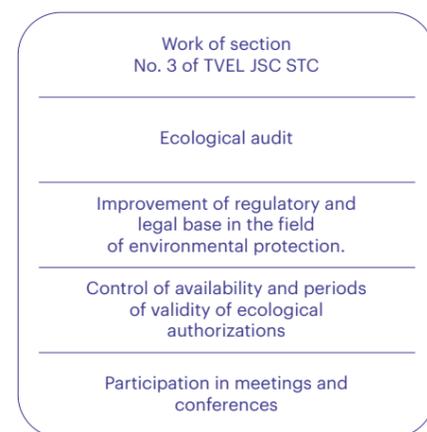
The reduction in energy resources consumption (as compared to 2015) in monetary terms was 5.79% (RUB 575.9 million) with the target indicator — 3%

1. The Report contains consolidated data on TVEL Fuel Company, in particular cases, when material, data is presented by business facilities.

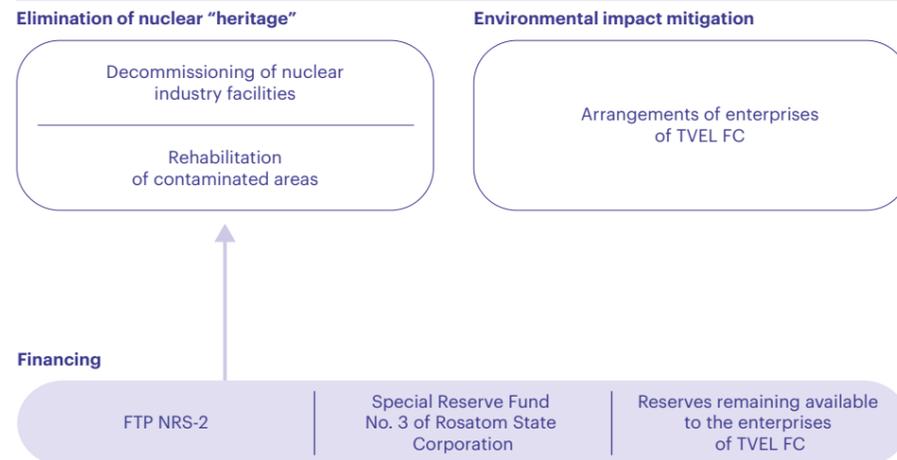
2. Calculation of saving is carried out in accordance with the approved by the order of ROSATOM State Corporation Methods for calculation of cost saving gained from reducing the energy consumption, and the own methods for TVEL FC companies, approved by TVEL JSC and coordinated with ROSATOM.

TVEL FC Environmental Policy Implementation Scheme for 2016–2018

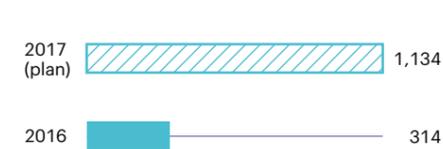
ORGANIZATIONAL ARRANGEMENTS



PRODUCTION TECHNOLOGY ARRANGEMENTS

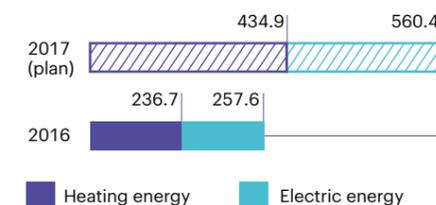


Amount of financing for energy saving and efficiency improvement program, RUB mln

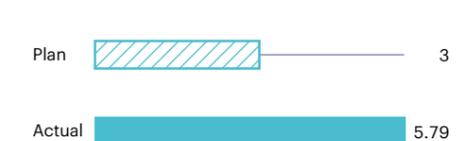


*Planned growth of financing is due to including all TVEL Fuel Company enterprises in the program as of 2017.

Total amount of energy saved by efforts to reduce energy consumption and improve energy efficiency, in money terms under comparable conditions, RUB mln



Reduction of energy consumption at the enterprises of TVEL FC in 2016 (as compared to 2015) in monetary terms, %



In December 2016, the team comprising representatives of TVEL JSC and UEHK JSC took the 2nd place in the RPS Leaders Forum in the nomination "The best RPS-project aimed at cost reduction". Their RPS-project allowed to optimize the process of power transportation and reduce energy costs.

300

Economic effect of the project on cost reduction was about RUB 300 mln

Realization of Energy Saving Program ensured annual decrease in energy consumption. In 2017 the enterprises of TVEL Fuel Company used 28,5 million GJ of primary energy sources, which is 36.5% less as compared to 2015. Amount of consumption of electric and heating energy in monetary terms made RUB 6,055.9 million and RUB 2,201.3 million respectively.

The reduction in energy resources consumption (as compared to 2015) in monetary terms was 5.79% (RUB 575.9 million) with the target indicator — 3%. Reduction of energy consumption is not related to reduction in the production program volumes of TVEL Fuel Company; it was achieved through implementation of the activities under the Program.

Results 2016:

- formation/modernization of Automated Information and Measuring System of Electric Energy Commercial Accounting of NCCP PJSC;
- reconstruction of external sanitary sewage at the industrial site of NCCP PJSC;

- decommissioning of power transformers with low utilization rate at Tochmash VPA JSC;
- heat insulating of pipelines and water supply valves of MZP JSC;
- winterization of enclosure structures of buildings and facilities at ChMPChMP JSC;
- installation of energy-saving electric lighting devices in production and administrative premises of ChMPChMP JSC;
- modernization of frequency converters SPCHS-180 of AECC JSC;
- reconstruction of traffic lighting of AECC JSC.

Plans 2017:

- reduction of energy consumption by the Company's enterprises (as compared to 2015) by 5%;
- decentralization of the compressed air supply system at MSZ PJSC;
- replacement of old power transformers with modern (new) ones at MSZ PJSC;
- conversion to gas heating of hulls and stoves SH-1 at ChMPChMP JSC;

- creation of the circulating water supply system at AECC JSC;
- technical re-equipment of ventilation systems with the use of a frequency-controlled drive at SGChE JSC.

Use and Processing of Materials

The quantity of materials necessary for the manufacture of products at enterprises of the Company is determined by the production program. Enterprises of Separation-Sublimation Complex use uranium and synthetic materials for products manufacturing. Enterprises of fabrication block use raw materials represented by enriched uranium product obtained at the enterprises of Separation-Sublimation Complex. Synthetic materials, ferrous and non-ferrous metals are basically used in the manufacture of gas centrifuges. All raw materials used by TVEL Fuel Company enterprises are purchased. No renewable materials are used in production. Examples of the used materials are shown in Table below.

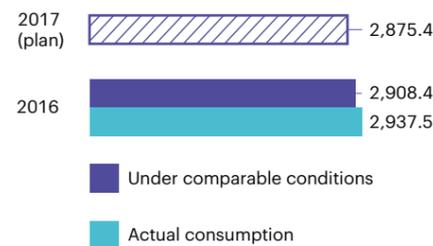


Three-fold energy saving at PA ECP JSC due to pump station modernization

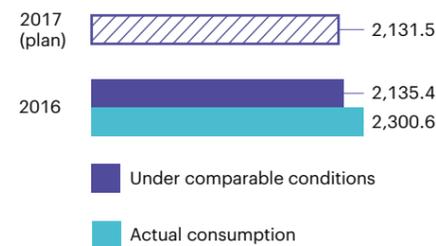
Modernization of industrial pump station (IPS) of PA ECP JSC located on the bank of the Kan river was completed under the enterprise's Energy Saving and Energy Efficiency Improvement Program. New pumps are more efficient and have higher performance index. The high-voltage frequency converter allows choosing the optimal operating mode for both the pump unit and the industrial pump station as a whole,

accurately regulating such parameters as water flow and pressure in the plant's industrial water supply network in accordance with the current production needs. As a result, facility water feed rates were changed, which resulted in saving of industrial water and electricity consumed by the pumping equipment of the station. Savings amounted to 2.232 million kWh.

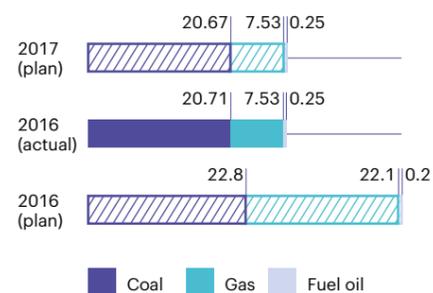
Electric energy consumption, mln kWh



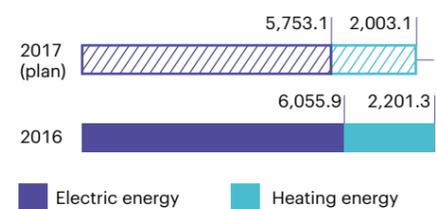
Heating energy consumption, thous. Gcal



Primary energy sources consumption*, mln GJ



Electric and heating energy consumption by TVEL FC enterprises in money terms under comparable conditions, RUB mln



* Including generation of electricity and thermal energy by SC HPP of TVEL Fuel Company.

Dynamics of energy saving by the enterprises of TVEL FC under comparable conditions as compared to 2015 on an accrual basis as a result of efforts to reduce energy consumption and energy efficiency increase

Indicator	2016	2017 (plan)
Total amount of saved electric power, mln kWh	118.4	151.3
Total amount of heat energy, thous. Gcal	206.9	210.8
Total amount of electric power and heat energy, thous. GJ	1,291.7	1,426.6

Use of materials for main production by TVEL FC enterprises*, tons

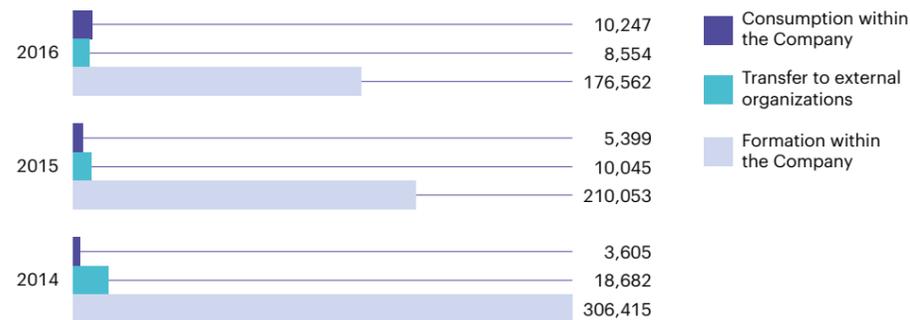
Material	2014	2015	2016
Sulfuric acid	1,868	1,166	690
Technical sulfuric acid (oleum)	10,091	1,218	10,364
Nitric acid	13,532	11,970	16,824
Hydrochloric acid	7,664	7,296	5,599
Ferrous metals	3,825	3,139	2,370
Non-ferrous metals	937	795	834

* Data was retrospectively adjusted due to the changed approach to data collection of the companies included in management system of TVEL Fuel Company.

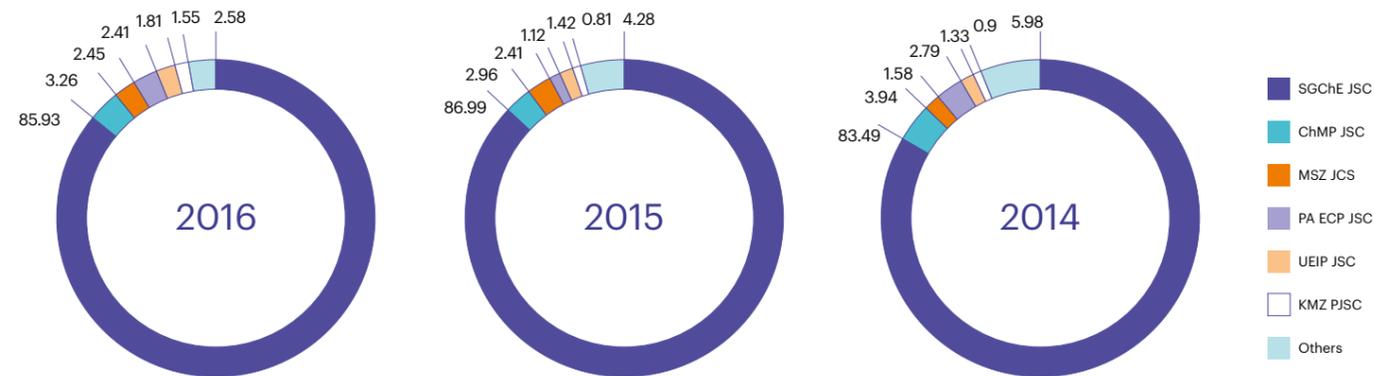
Share of used waste to the extent of their formation per year, %

Enterprise	2014	2015	2016
MSZ PJSC	31	66	56
ChMP JSC	16	32	135
NCCP JSC	6	1	0
AECC JSC	0	1	1
Tochmash VPA JSC	1	1	1
Total for TVEL FC	1.2	2.6	5.8

Waste generation and recycling, tons



Structure of waste generation at TVEL FC enterprises, %



Industrial and Consumer Waste Disposal

In 2016 the total amount of industrial and consumer waste of the Company was decreased by 16% as compared to 2015 and made nearly 176.6 thousand tons.

Main reasons of waste formation decrease in 2016:

- reduction of Hazard Class 5 (slightly hazardous) waste (ashes and slag) generation due to reduction of coal burning by HPP at SGChE JSC; this HPP also generates thermal and electrical energy for the population of nearby settlements and is managed by OTEK JSC.
- change of the process flow scheme in ChMP JSC, reclassification of some waste to the by-products to be used as reagents in technological processes of the enterprise.
- reduction of road construction works in MSZ JSC.

In 2016 10.3 thousand tons of wastes were recycled or reused by the enterprises of the Company. Wastes management is organized mainly at MSZ JSC and ChMP JSC; in 2016 they used 56.3% and 135.4%¹ of their wastes in production, respectively.

The bulk of waste (94.6%) was represented by Hazard Class 5 (slightly hazardous) waste, such as ash slag resulting from solid fuel burning at the TPPs. Ash slags are dumped by the TPP and the bulk of other wastes is delivered to specialized organizations.

The Company is not engaged in waste transportation across international borders.

1. Until mid-2016 ChMP JSC had a current licence for using construction waste (Hazard Class V) therefore it used these waste accumulated in 2015 for tailings dam filling.

Reduction of water consumption at SGChE JSC

Non-investment measures based on organizational and technical solutions were developed and implemented in 2016 within measures developed to reduce resources consumption at SGChE JSC. All measures were implemented by the plant's own forces.

Activities related to the reduction of drinking and household and industrial water consumption, included:

- conversion of utility appliances (bathrooms) to industrial water;
- optimization of consumption: reduction of the number (water-off) of drinking fountains;

- shutdown of air conditioners due to lack of necessity;
- daily monitoring of water consumption at plants, with rolling blockouts on holidays and weekends, with the implementation of the required regulatory procedures to search for unauthorized consumption of domestic and drinking water;
- control valves installation in water supply schemes.

- Economic effects:
- optimization of domestic and drinking water consumption at the isotope separation plant — achieved effect: RUB 84.9 thousand;
 - optimization of industrial, domestic and drinking water consumption and sewage — achieved effect: RUB 250 thousand;
 - installation of control valves in water consumption schemes of sublimate plant — achieved affect: RUB 800 thousand.

Wastes generated at TVEL FC enterprises by hazard class, tons

Indicator	2014	2015	2016	Δ2015/ 2016, %
Wastes in total, including:	306,415	210,053	176,562	-15.9
Hazard Class I	53	210	94	-55.4
Hazard Class II	5,854	4,079	50	-98.8
Hazard Class II	1,048	495	426	-13.8
Hazard Class IV	20,736	10,801	8,919	-17.4
Hazard Class V	278,724	194,469	167,074	-14.1



16%

Decrease in total amount of industrial and consumer waste of the Company



Water Consumption and Water Disposal

In 2016 withdrawal of water by the enterprises of the Company decreased by 4.0% to 416 million m³ as compared to the previous year, water consumption for own needs decreased by 5.1% to 374 million m³.

Reasons for decrease in volumes of water withdrawal and consumption:

- Reduction of water consumption by ChMP JSC is related with operating mode of the ChMP JSC TPP;
- Installation of the industrial pump station of PA ECP JSC frequency control device (FCD), which allowed to optimize the technological mode of heat exchange machinery operation, resulting in water consumption reduction;
- Implementation of measures for the energy saving and energy efficiency program of PA ECP JSC;
- Operations aimed at water consumption reduction by AECC JSC.

The main source of water withdrawal is represented by natural sources 93,6%

(390 million m³). Water withdrawal from public and other water supply systems was 26 mln million m³.

In 2016 the standard of water withdrawal was set at 710 million m³, the actual volume of withdrawal was 58.6% of the set standard.

Actual consumption method is mainly used in calculation of water consumption indicators at the Company's enterprises. Water withdrawal from natural sources is executed by the enterprises in accordance with the set standards.

In 2016, the volume of return water was 254 million m³. The share of return water of the total amount of withdrawn water was 61.1%, the share of reused water in the total volume of withdrawn water was 11.6%. Water consumption in the systems of return water has small fluctuations in recent years about 1–3%

In the reporting year, 319 million m³ of water were disposed by the Company's enterprises (55.2% of the standard). All water was disposed into natural water bodies. The volume of water disposal directly depends on the water consumption.

In 2016 the volume of disposal of polluted waste water by the Company's enterprises decreased by 7%, which is directly connected to decrease in water withdrawal.

Difference in percent decrease as compared to 2015 of water withdrawal volume and polluted waste water volume is conditioned by the fact that a range of TVEL Fuel Company enterprises execute acceptance of waste water from outside organizations.

Pollutant Emissions

In 2016 total pollutant emissions into the atmosphere by the Company's enterprises amounted to 14.4 thousand tons (21.4% of the set standard).

Reduction of emissions by 12.5% as compared to 2015 is due to:

- reduction of burned coal fuel at the HPP of SGChE JSC;
- conservation of boiler equipment at NCCP JSC;
- production area optimization and dismantling of equipment at Tochmash VPA JSC.



The largest volumes of emissions reported at the enterprises of the Fuel Company are directly related to the emissions generated in the production of electricity and heat power at the HPPs of SGChE JSC and ChMP JSC. It should be noted that these HPPs supply heat and electricity to the settlements in areas of location of the enterprises.

Emissions of ozone-depleting substances¹ at the enterprises of the Company in 2016 decreased by 0.1% to 259 thousand tons due to the equipment modernization.

Decrease of nitrogen and sulphur oxide emissions by 3.8% and 11.5% is stipulated by overall emissions decrease in TVEL Fuel Company.

Carbon monoxide emitted into the atmosphere from anthropogenic sources is oxidized to carbon dioxide. Decrease of carbon dioxide emission in 2016 by 0.01% is connected with the parameters of the facilities work on the HPP of SGChE JSC.

For determination of greenhouse gases emission the carbon dioxide emissions were taken into consideration,

SGChE JSC

The volume of river water withdrawn by SGChE JSC for the needs of production, decreased by 44% from 2010 to 2016. This is the result of program implementation aimed at natural resources saving, energy saving and reduction of energy intensity of production.

The major consumer of river water is Heat and power plant, which also produces heat and electricity for the needs of the population of the Tomsk region.

SGChE JSC uses technologies of multi- and re-using of river water. In particular, reuse of water is implemented in ash pumping system of the HPP. Repeated successive water use is also introduced in the water supply scheme of the isotope separation plant and HPP.

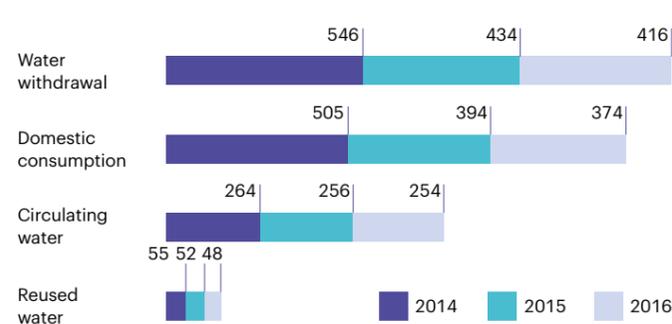
In 2016, 32.3% of the total consumed water at the enterprise was multi- or re-used.

because carbon oxide emitted into the atmosphere from anthropogenic sources is oxidized to carbon dioxide.

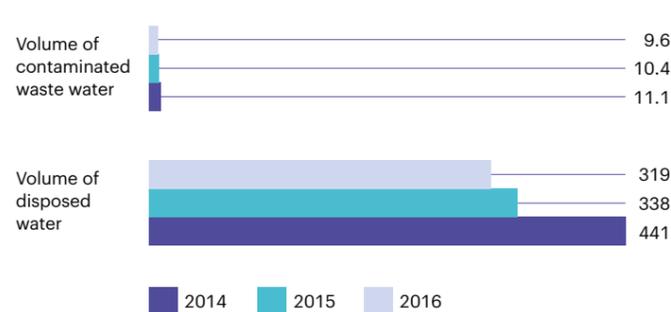
In 2016 greenhouse gas emission intensity amounted to 5.12 tons/RUB mln of revenue (in 2015 — 88 tons/RUB mln). The bulk of greenhouse gas emissions is caused by energy facilities (HPP, boiler houses) and transport.

The largest volumes of emissions reported at the enterprises of the Fuel Company are directly related to the emissions generated in the production of electricity and heat power at the HPPs of SGChE JSC and ChMP JSC. The said HPPs supply heat and electricity to settlements in the areas of location of enterprises and are managed by OTEK JSC.

Water consumption in 2014–2016, mln m³



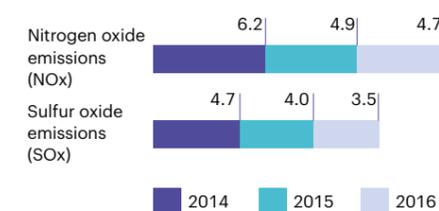
Water disposal by enterprises of TVEL FC in 2014–2016, mln m³



Total emission of pollutants, thous. tons



Emission of specific pollutants, thous. tons²



Emission of ozone-depleting substances, tons



Carbon dioxide emissions, tons³



1. The computational method is used for the calculation of emissions of ozone-depleting substances.

2. Determined by computational method, along with instrumental verification.

3. The indicators were determined by computational method and recalculated in accordance with Methodological guidelines for quantifying of greenhouse gas emissions by organizations performing economic and other activities in the Russian Federation approved by order No. 300 of the Ministry of Natural Resources as of June 30, 2015, namely:
 – Formula No. 2 of Methodological guidelines was used in computation.
 – The amount of CO₂ emissions was calculated by conversion from CO (multiplied by factor 1.57).
 – Emissions of CH₄ (methane) of UEIP JSC and emissions of perfluoromethane (freon 14) of ChMP JSC, subject to GWP specified in Appendix No. 3 of the Methodological Guidelines, were also taken into account in calculating the total amount of greenhouse gas emissions at TVEL FC.

ChMP JSC

ChMP JSC completely gave up solid-fuel combustion due to conservation of the coal equipment of the plant HPP.

According to monitoring data of atmospheric conditions at the industrial site and on the border of the plant's sanitary protection zone, the monitored indicators of the environmental objects are much lower than the hygienic standards.

Due to co-development of central research laboratory specialists and the chemicommetallurgical shop for uranium production at ChMP, nitrogen oxides discharge has been minimized. The team of authors has improved the process of uranium raw material leaching. By introducing the innovation, it became possible to abandon the purchase of expensive equipment and neutralize formation of pollutants in production due to solutions available in the technological chain.

The economic effect development application amounted to RUB 27.6 million, and the project won the traditional annual competition of TVEL JSC in the nomination "The Best Solution for Environmental Safety Assuring".

No emergencies and incidents resulting in negative environmental impact occurred in 2016 at the enterprises of TVEL Fuel Company.

Environment Protection Expenses

In 2016 operating expenses of the Company enterprises for environment protection amounted to RUB 2,106 million. Target funds allocated in the framework of the investment and project activities of TVEL Fuel Company and ROSATOM, were used to finance both technical and organizational measures.

Planning of production and technical measures aimed at ensuring of environment protection by enterprises included in the management system of the Fuel Company is carried out in the framework of TVEL Fuel Company's Environmental Objective Achievement Program and Environmental Policy Implementation Plan, the investment and project activities of TVEL Fuel Company and ROSATOM

Prior to inclusion into investment projects, every event shall be subject to feasibility and efficiency estimation of

final outcomes by Investment Committee of TVEL JSC.

The share of expenses is related to the activities for environment radiation safety assurance (RUB 726 million). Considerable expenses are related to collection and treatment of waste water (RUB 473 million).

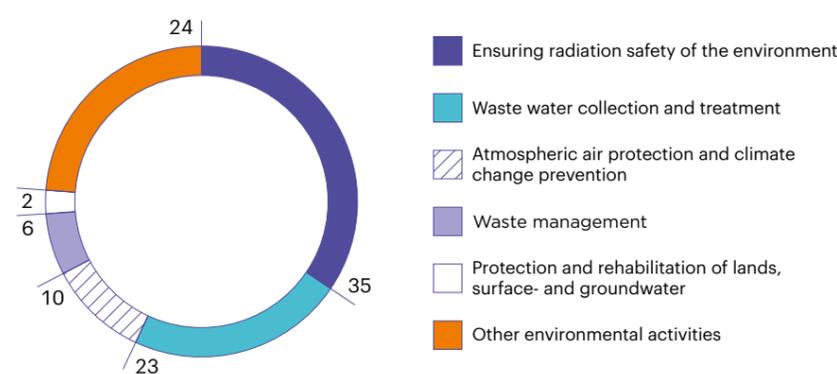
The share of environment protection expenses of TVEL Fuel Company falls on SGChE JSC, UEIP JSC and ChMP JSC.

Environmental protection cost saving is caused by planning and allocation of major environmental activities funding.

In 2016 total amount of payments for negative impact on the environment increased by 20.8% as compared to the previous year and amounted to RUB 36.8 million.

In the reporting year there were no nonfinancial fines and penalties for negative environmental impact of subsidiaries included in the management system of TVEL FC, no damage was caused to the environment.

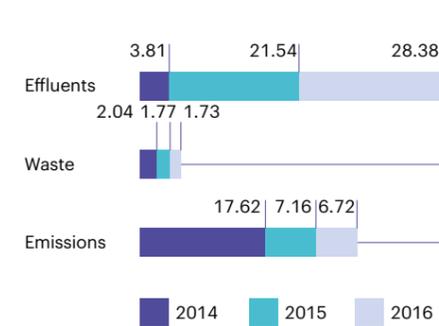
Environment protection costs outlay of TVEL FC in 2016, %



Expenses of TVEL FC related to environment protection, RUB mln

Expenditure item	2014	2015	2016	2017 (plan)
Radiation safety assurance	1,123	817	726	750
Collection and treatment of waste water	374	512	473	480
Atmosphere air protection and prevention of climate change	178	283	219	230
Waste disposal	153	172	135	150
Protection and rehabilitation of lands, surface and ground water	60	61	51	55
Other activities in the sphere of environment protection	482	474	502	510
Total	2,371	2,318	2,106	2,175

Structure of payments for negative environmental impact, RUB mln



Fines and penalties as compensation for negative environmental impact, RUB mln



The main program documents providing for realization of activities in the area of NRS are as follows:

- "Fundamentals of State Policy in the Sphere of Nuclear and Radiation Safety of the Russian Federation for the period till 2025".
- Federal Target Program "Nuclear and Radiation Safety Assurance for 2016–2020 and for the Period up to 2030".

Nuclear and Radiation Safety

Assurance of nuclear and radiation safety (NRS) of facilities of the Fuel Company enterprises, prevention and exclusion of any possibility of inadmissible exposure of the personnel, population and environment to radiation are among the priority activities of TVEL Fuel Company.

Activities of TVEL Fuel Company are carried out in accordance with the laws of the Russian Federation pertaining to the use of nuclear power with due account to IAEA requirements.

The Company subsidiaries perform systematic work for prevention and exclusion of radiation accidents, improvement of the stability of hazardous production facilities, training of personnel and special formations for accidents and emergencies.

Prevention of radiation accidents requires the constant monitoring of compliance with the rules, regulations, instructions, observance of technological discipline.

General management of the works ensuring the NRS in the Company's

enterprises are imposed on Technical Directors (Chief Engineers).

KPI for heads of subsidiaries departments using the ionizing radiation sources is established as "No cases of excess of effective individual dose exceeding 20 mSv".

Lists of nuclear hazardous sections are elaborated for all nuclear-hazardous facilities having the conclusions on the nuclear safety issued by the Department of Nuclear Safety of IPPE RF SSC FSUE. All nuclear hazardous sections are equipped with emergency alarm systems in the case of self-sustaining fission chain reaction.

Units of the enterprises for processing, storage, manufacturing using nuclear materials and radioactive substances, radioactive wastes treatment have sanitary-epidemiological conclusions on compliance of conditions of work with sources of radiation with sanitary rules.

According to the conclusions made by the territorial departments of the State Sanitary and Epidemiological Service of the Russian Federation, the radiation situation at the Company's enterprises, within their sanitary protection areas

TVEL FC nuclear and radiation safety principles





MSZ JSC territory of presence, Electrostal

and control areas (areas of professional responsibility) is estimated as satisfactory.

Federal Target Program “Nuclear and Radiation Safety for 2016–2020 and until 2030”

Within the strategic initiative “Environmental Responsibility” of TVEL Fuel Company, the works are ongoing for liquidation of “nuclear heritage”, including rehabilitation of contaminated areas.

In November 2015 in continuation of Federal Target Program “Nuclear and

Radiation Safety for 2008 and up to 2015” that is considered successfully completed, the Government of the Russian Federation approved the Federal Target Program “Nuclear and Radiation Safety for 2016–2020 and until 2030” (FTP NRS-2, <http://фцп-япб2030.рф>).

At the stage of FTP NRS-2 formation, TVEL Fuel Company determined the number of objectives for decommissioning of nuclear and radiation hazardous facilities (NRHF); to implement these objectives the funding requests to the total amount of RUB 116.5 billion were formed.

Within the adopted FTP NRS-2, there was approved 33% of funding requested by TVEL Fuel Company — 17 events to the total amount RUB 38.9 billion, including RUB 35.3 billion out of the federal budget. The said actions will be performed at facilities of SGChE JSC, AECC JSC, UEIP JSC, NCCP JSC, MSZ PJSC, VNIINM JSC and EDB-Nizhny Novgorod JSC. Six of them are descending actions, which have been implemented within FTP NRS in 2008–2015. The rest 11 are new decommissioning projects.

Apart from decommissioning of NRHF and rehabilitation of the contaminated territories of FTP NRS-2, decision was taken on decommissioning of sublimation production at SGChE JSC, production of uranium tetrafluoride at ChMP JSC and Chemical-Metallurgical Plant of SGChE JSC. The above measures shall be implemented partially at the expense of the special reserve fund No. 3 (Decommissioning and R&D).

One of the key objectives facing the industry is to reduce expenses and production costs to ensure competitiveness in the world market. In this regard, it is planned to complete decommissioning of NRHF by 2030, to rehabilitate 470 thousand m2 of contaminated with radionuclides territories. This will significantly reduce the cost of products manufactured by enterprises of TVEL Fuel Company due to reduction of contaminated areas and subsequent production compaction. This will allow to save significant means spent annually for safe maintenance of NRHF of TVEL Fuel Company.

Five year plans:

Decommissioning:

- Unit U-5, building G, building 53, beyond-design disposal No 9 of VNIINM JSC. Liquidation of the said NRHF will improve the ecological situation in Moscow, clean up the territories;
- Production for uranium-graphite production reactor, building 18 and warehouses “Models” of NCCP JSC.

This will allow the reduce areas for production compaction;

- Radiation sources in Centrotech-SPb JSC;
- Reprocessing facility of HEU-LEU M2079 of SGChE JSC.

To perform:

- Conservation of basins B-1, B-25, ground-based SRW storage facilities at site 16 of SGChE JSC. The implementation of conservation measures for the B-1 and B-25 basins is extremely important, since they are open-type liquid radioactive waste (LRW) storage facilities and are radiation-hazardous objects with a high potential hazard. On completion of the measures, the basins will be transferred to a safe status;
- Reconstruction of facility 13 of the radiochemical plant of SChC JSC will allow to stop the discharge of liquid radioactive waste into open storage facilities — slurry storages SS-1, SS-2 and proceed with their conservation. Open slurry storages will be excluded from SChC JSC technological chain.

Plans until 2030:

Completion of decommissioning of:

- nuclear facility of VNIINM JSC;
- unit 2 (building 802) and unit 4 (building 804), sublimation production of AECC JSC;
- radioactive waste storage facilities of buildings 310 at AECC JSC;
- unit 242 of MSZ JSC;
- facilities for processing of irradiated standard uranium slugs of site 3;

These activities will result in the improved environmental situation and social acceptance in the regions of presence, and the increased competitiveness of TVEL Fuel Company, including on the international markets.

- production of uranium tetrafluoride and depleted uranium at ChMP JSC;
- Conservation of:
- pulp dumps PKh-1, PKh-2 at SGChE JSC;
- tailing dumps at NCCP JSC.

Results 2016:

EDB-Nizhny Novgorod JSC completed ahead of schedule the item of FTP NRS-2 “Decommissioning of radiation sources in the laboratory of resource tests of EDB-Nizhny Novgorod JSC”. This activity was scheduled for 2017–2018. The works were performed at the expense of the special-purpose reserve fund of ROSATOM in the amount of RUB 13.2 million, and at the expense of own funds of the enterprise in the amount of RUB 76.07 million.

Uralpribor LLC executed the whole scope of works for decommissioning of the radiation source in the laboratory 1 of Special Design-Engineering Department of Uralpribor LLC. The works were performed using own funds in the amount of RUB 5.41 million.

The key operation stages after conversion of the object to final shutdown mode

Preparation for decommissioning

Removal of NM, RW, decontamination in the amount necessary to prepare for the decommissioning of the nuclear fuel cycle nuclear facilities, etc.

The main source of funding is special reserve fund No. 1 (Safety) of ROSATOM

Preparation for decommissioning

Complex engineering and radiation inspection, DED development, licensing of decommissioning or changes in licensing terms, etc.

The main source of funding is special reserve fund No. 3 (Decommissioning and R&D) of ROSATOM

NRHF decommissioning operations

The main sources of funding are FTP NRS-2 and special reserve fund No. 3 (Decommissioning and R&D) of ROSATOM

Plan of the activities under the FTP “Nuclear and Radiation Safety for the period of 2016–2020 and until 2030” at the sites of the Company’s subsidiaries at the expense of the federal budget

Subsidiary	Name of enterprise	Scope of finance, RUB mln		
		2016 (plan)	2016 (actual)	2017 (plan)
SGChE JSC	Reconstruction of facility 13 of radiochemical plant	170.0	170.0	100.0
	Conservation of B-1 storage bay	30.0	30.0	100.0
	Conservation of B-25 storage bay	194.2	194.2	157.7
AECC JSC	Decommissioning of structure No. 2 (Building 802) and structure No. 4 (Building No. 804)	785.5	501.0	725.5
NCCP JSC	Decommissioning of production for uranium-graphite production reactor	398.3	311.2	446.1
TOTAL at the Company sites		1,551.0	1,206.4	1,556.3

Taking into account gains based on the results of tendering procedures.

Sources of financing for liquidation of the “nuclear heritage” in 2016

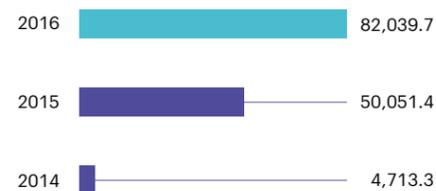
Sources	Number of activities	Scope of Financing, RUB mln	List of major activities
The Federal Budget within the Federal Target Program “Nuclear and Radiation Safety for 2016–2020 and until 2030” (FTP)	5	1,206.4	<ul style="list-style-type: none"> Decommissioning of structure No. 2 (Building 802) and structure No. 4 (Building No. 804) of AECC JSC Preservation of B-1 and B-25 basins of SGChE JSC; Reconstruction of the site No.13 in SGChE JSC; Decommissioning of production for uranium-graphite production reactor of NCCP JSC.
The Special Reserve Fund No. 3 “Decommissioning and R&D” of ROSATOM	28	453.65*	<ul style="list-style-type: none"> Decommissioning of IR of EDB-Nizhny Novgorod JSC; Preservation of terrestrial solid radioactive waste storage of site 16 of SGChE JSC; Preservation of the tailings pond No. 1 of ChMP JSC; Decommissioning of structure 220 of ChMP JSC; Preparation for decommissioning of structures G, A of NIINM JSC.
The Reserve No. 3 “Decommissioning and R&D” remaining at the disposal of the organization	8	29.23	<ul style="list-style-type: none"> Creation of a contact-arc cutting unit for radiation-contaminated metal structures; Creation of a laser decontamination unit; Creation of an experimental complex for testing the efficiency of deactivating solutions and compositions based on them using a device with a pulsed reciprocating motion of agent flow of VNIINM JSC.

* Taking into account gains based on the results of tendering procedures.

Federal Target Program “Nuclear and Radiation Safety Assurance for 2016–2020 and for the Period up to 2030”

Indicator	Unit	Planned	Actual	Notes
Number of violations of level 2 and higher as per INES	units	0	0	
Commissioning of spent nuclear fuel repositories	thous. tons	-	-	
Commissioning of spent radioactive waste repositories	thous. m ³	-	-	
Preparation for decommissioning of nuclear and radiation-hazard facilities	units	-	-	
Number of decommissioned nuclear and radiation-hazard facilities	units	0	1	The work on decommissioning of IR of EDB-Nizhny Novgorod JSC was completed in 2016 ahead of scheduled 2017–2018.

Investments into the development of radioactive waste and spent nuclear fuel treatment technologies, RUB thous.



In the stages of preparation for decommissioning:

- a change was made in nuclear facility operating license terms (LT) of AECC JSC permitting decommissioning of structures 2 and 4 (buildings No. 802, 804) of AECC JSC;
- a change was obtained in nuclear facility operating LT permitting decommissioning of storage facility 310;
- a favourable conclusion of state ecological expertise of materials for validation of a license “Decommissioning of the U-5 facility” of VNIINM JSC” was obtained;
- 844 tons of nuclear materials, radioactive media and harmful chemicals from gas ducts of

sublimation production of AECC JSC were disposed.

- In terms of improvement of the government control and coordination of the works in the sphere of nuclear power safe use (including the issues of organizing transportation of nuclear materials), TVEL Fuel Company obtained in 2016 the following documentation:
- 47 certificates authorizing the shipping packaging sets with radioactive materials;
 - 12 additions to the certificates;
 - 7 special requirements to air transportation of the shipping packaging sets;
 - 3 special conditions for transportation of radioactive materials.



Rehabilitation of the Areas Contaminated by Radionuclides

The areas contaminated with radionuclides are within the area of professional responsibility of MSZ PJSC, NCCP JSC, ChMP JSC and SGChE JSC.

In 2016, within the scope of remedial actions aimed at improvement of radiation situation in the territory of MSZ PJSC industrial site, radiation survey of contaminated sites (source SRF No. 3 — RUB 14.0 million) was completed and studies were performed of the impact of radioactive contaminated areas on groundwater and the environment in the northern part of industrial site (source

SRF No. 3 — RUB 8.5 million). The studies performed allow evaluation of the radiation situation in the examined area. To eliminate the negative environmental consequences of economic activities, a program of remedial actions in the contaminated area will be implemented as part of a comprehensive decommissioning of NRHF of MSZ PJSC.

The emissions of all subsidiaries of TVEL Fuel Company are within the permissible limits.

As of the end of 2016 the total area of territories contaminated with radionuclides subject to rehabilitation amounted to 5,967.2 thousand m².

No contamination of new areas occurred resulting from activities of TVEL FC subsidiaries in 2016. All identified contaminated areas are consequence of activities of the enterprises focusing on improving the defensive ability of the country during the period of the “nuclear shield” creation.

Pollution of the environment with radionuclides (RN)

Indicator	2014	2015	2016
Emission of RN into the atmosphere, Bq	9.49*10 ⁹	8.72*10 ⁹	8.74*10 ⁹
Presence of areas contaminated with RN, thous. m ²	16,081.4	16,081.4	16,081.4
Discharge of waste water containing RN, Bq	1.56*10 ⁹	2.09*10 ⁹	3.22*10 ⁹

Areas contaminated with radionuclides as of the end of 2016, thous. m²

Subsidiary	Total	Sanitary protection zone	including:	
			Area of professional responsibility	Industrial site
MSZ PJSC	788.2	0	740.1	48.1
NCCP JSC	372.3	0	210	162.3
ChMP JSC	210	0	0	202.5
SGChE JSC	14,604.2	333	0	14,271.2
Total	15,967.2	333	950.1	14,684.1



97%

of RW on the sites of the TVEL FC subsidiaries fall into low and very low levels of radioactivity

SGChE JSC has Improved the Technology of Radioactive Wastes Preparation for Geological Repository

New technology allowed to halve the amount of liquid radioactive waste. Besides, expensive agents used earlier were excluded from technological process, and the building where the outdated equipment was located was decommissioned. Total savings on chemicals and building maintenance amounted to RUB 31 million.

Pilot tests of the technology of LRW preparation for disposal have been completed in 2016. In 2017 the enterprise intends to proceed to the industrial operation of a new technological scheme.

New technological solutions will improve environmental and industrial safety both at the waste preparation site and at geological repository.

Change in technology of LRW preparation for underground disposal and reduction of liquid RW at SGChE JSC won the 3rd place and a commemorative medal in TVEL Fuel Company contest for the Best Solution / Development 2016 in the nomination "the Best Solution for Environmental Safety".

According to the conclusions of regulatory authorities on the results of inspections, it was noted that the radiation and nuclear safety in the Company, in general, conforms with the regulations and rules in the field of use of nuclear power. TVEL Fuel Company registered no cases of cancellation of any license related to nuclear energy application.

The Company implements the concept of defense-in-depth, based on physical barriers to ionizing radiation

proliferation at all stages of nuclear facilities life cycle.

During product transportation TVEL JSC ensures compliance with national Regulations for the Safe Transport of Radioactive Materials and IAEA Regulations for the Safe Transport of Radioactive Materials and other international documents on transport, modes of transport for international transportation.

In 2016, the first batch of RW of UEIP JSC was placed for final isolation at the subsurface RW repository (SRWR)

of 3 and 4 class (CATU Novouralsk, the Sverdlovsk region). RW repository, designed and financed by UEIP JSC is today the only Russian facility able to assure safety and reliable final isolation of low and extremely low-level radioactive waste.

A large portion of RW located at the sites of TVEL JSC subsidiaries is placed in RW special disposal sites (51% of the total volume in m³) and long-term RW storage facilities (45.3%). In the reporting year, 415.8 thousand m³ of RW were delivered to specialized organization for disposal.

Presence of RW on the sites of the TVEL FC subsidiaries as per level of radioactivity as of 31.12.2016

Indicator	Unit	Level of radioactivity			
		high	medium	low	very low
Presence of RW on the sites of the Fuel Company subsidiaries at the year end, total	m ³	13,000	291,267	4,255,688	5,869,710
	Bq	8.50*10 ¹⁶	2.00*10 ¹⁸	7.22*10 ¹⁴	2.13*10 ¹⁴
accumulated before July 15, 2011 ("heritage")*	m ³	13,000	291,261	3,865,385	5,816,078
	Bq	8.50*10 ¹⁶	2.00*10 ¹⁸	7.02*10 ¹⁴	2.08*10 ¹⁴
produced after July 15, 2011, total	m ³	190	976	410,290	27,249
	Bq	1.10*10 ¹⁴	8.10*10 ¹⁵	2.01*10 ¹³	4.33*10 ¹²
of which produced in the reporting year	m ³	39	45.6	22,072	5,213
	Bq	4.60*10 ¹²	3.50*10 ¹³	1.86*10 ¹²	3.99*10 ¹¹

*Date of entry into force of the Federal Law of the Russian Federation d/d July 11, 2011 No. 190-FZ "About Radioactive Waste Management and Modifications to Certain Legislative Acts of the Russian Federation. In accordance with this Law, there was a distinction of ownership between the Russian Federation and the companies that produce new radioactive waste.

Construction of RW Repository will Commence in 2019 in the Territory of Industrial Site of SGChE JSC

Construction of subsurface RW repository (SRWR) of 3 and 4 class (medium-level SL and LL waste) is planned in the territory of industrial site of SGChE JSC.

Commence of RW repository construction is scheduled for 2019. Design engineering of RW repository will be performed by the Central Design and Technological Institute of

Rosatom SC. The scheduled operation of the facility shall begin in 2021 and complete in 2035.

Spent nuclear fuel will not be placed in RW repository of Seversk. This refers to industrial waste: rags, metal structures, personal protective equipment which must also be kept in repository under the current legislation.

FIRE AND DISASTER PREVENTION

Readiness for Emergency Response

All enterprises of the Company worked out the required documents concerning actions of the management, emergency services, response forces and employees in emergency situations of natural and technogenic nature, and created the reserves of financial and material resources to eliminate such situations.

Work to ensure emergency preparedness and response of the Fuel Company subsidiaries is carried out in the following key areas.

The services that perform everyday control over the Emergency Management System (Facility Level) of the Fuel Company enterprises are responsible for ongoing collection and analysis of the information about the state of natural and technogenic environment in the areas where nuclear and radiation hazardous facilities and sites are located.

Outside emergency response teams were formed at the Company's enterprises. The teams were certified by the industry certification commission of TVEL JSC, they have the necessary material and human resources to eliminate emergency situations and are maintained in continuous readiness.

Key works on ensuring emergency preparedness and response by TVEL JSC subsidiaries

1. Development of radiation, chemical and environmental situation monitoring systems and local warning systems

2. Continuous readiness of emergency rescue teams

3. Updating of emergency response plans at major industrial facilities

4. Emergency response drills on accident and emergency plans

5. Setting up and maintaining the readiness of emergency response packages at hazardous industrial facilities

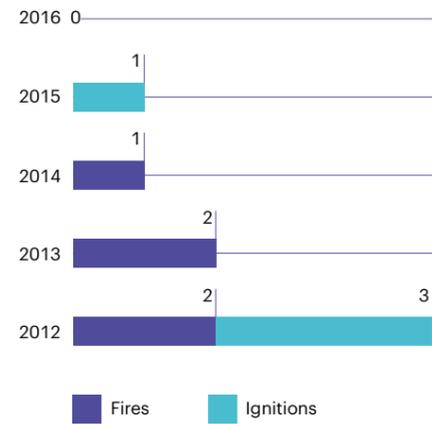
6. Introduction of corrective and compensatory measures, eliminating the occurrence of industrial accidents, to production processes

7. Interaction with Emergency Center SPb and its affiliates to ensure emergency preparedness in transportation of dangerous goods and industrial safety

8. Maintenance of on-duty dispatching service system in readiness



Number of fires and ignitions in TVEL FC.



Results 2016

In the reporting period, the Fuel Company has made considerable efforts to improve fire safety by carrying out organizational and technical measures, which allowed:

- to reduce the number of violations identified by the State Fire Supervision bodies of the EMERCOM of Russia by 52% in comparison with 2015;
- to improve the timeliness of compliance with the proposed instructions up to 99%;
- to improve the quality of training of managers and specialists responsible for fire safety in specialized training centers, and to upgrade the system of fire safety briefing of employees;
- to ensure continuous monitoring of the fire situation in forests on industrial sites and surrounding areas and the complex of preventive measures that would prevent wildfires;
- to ensure the further development of the volunteer fire-fighter movement with engaging them in contests and competitions.

Preventive measures taken in 2016 made it possible to avoid fires and ignitions for the first time since establishment of TVEL Fuel Company.

The Unified State Automated Radiation Monitoring System of the Russian Federation

The enterprises of TVEL Fuel Company (MSZ PJSC, ChMP JSC, VNIINM JSC, SGChE JSC, UEIP JSC, AECC JSC, PA ECP JSC) created the Automated radiation monitoring systems (ARMS) which are constantly operated and updated.

The ARMS of the Fuel Company enterprises are included into the Sector ARMS (SARMS) of ROSATOM, which in its turn is related with the Unified State Automated Radiation Monitoring System (USARMS).

USARMS is meant for continuous radiation and meteorological control in production facilities of enterprises and in residential areas of the territories of presence. The outcomes are transmitted to the Situation and Crisis Management Center of ROSATOM, after that they are available at www.russianatom.ru. Modernization will allow to monitor

Due to the focused efforts there was no recorded emergency situation of natural and technogenic nature, including ignition and fire events, at the industrial site of TVEL FC during the reporting period.

automatically all fixed control stations and hourly transmit obtained information to the Situation and Crisis Management Center.

Within 2013–2016 the ARMS Modernization investment project has been implemented by UEIP JSC, aimed at ensuring compliance of the ARMS of UEIP JSC with the requirements of the Regulations of the SARMS of ROSATOM.

Physical Protection of Nuclear Facilities

The state of physical protection in subsidiaries of TVEL Fuel Company is assessed as complying with the rules and departmental normative documents.

In 2016, no stealing and sabotages in relation to physical protection objects were registered, there were no cases of non-suppression of unauthorized actions, the deficiencies identified in departmental and technical inspections were eliminated completely and promptly, performance of technical equipment and readiness of personnel and guard force were at acceptable level.

Physical protection systems were improved in accordance with the approved plans. Works were financed

mainly at the expense of the funds of reserve No. 2 of ROSATOM and own funds of the subsidiaries of TVEL FC. All activities were performed in a timely manner.

In terms of nuclear terrorism threat countermeasures, anti-terrorism security certificates were developed at all nuclear hazardous facilities and approved in the prescribed manner. The facilities are subject to departmental inspections and inspections by the State Regulatory Authorities.

Anti-terrorism security of the facilities is regulated by:

- Decree of the President of the Russian Federation dated February 27, 2015 No. 104s,
- Resolution of the RF Government d/d December 25, 2013 No. 1244 "About anti-terrorism security of the facilities (territories)",
- Resolution of the RF Government d/d December 25, 2013 No. 1244 "About anti-terrorism security of the facilities (territories)".



In 2016 no fires or ignitions were registered in TVEL Fuel Company

About the Report

Report Profile	TVEL JSC, AECC JSC, SGChE JSC, UEIP JSC, PA ECP JSC, KMZ JSC, UGCMP LLC, Tochmash VPA JSC, MSZ PJSC, ChMP JSC, MZP JSC, NCCP PJSC, VNIINM JSC, CPTI JSC, Centrotech-SPb JSC, EDB-Nizhniy Novgorod JSC, Uralpribor LLC, NRDC LLC, OK "RSK" JSC, EC "RGC" JSC, "Industrial Innovation" JSC, CFR-3, CFR-4*
Priority theme of the Report	New markets and partners of TVEL Fuel Company
GRI Disclosure Level	GRI Standards Comprehensive Option**
Date of the previous Report publication	June 2016

*Topic borders are presented in the interactive version of the Report.

**Performance indicators and standard elements are generated and presented in the Report in accordance with Russian Accounting Standards. Financial report data pursuant to the International Financial Reporting Standards (IFRS) are not presented due to later date of generation thereof.

This Public Annual Report of TVEL JSC (hereinafter referred to as "the Report") is the Company's ninth integrated report and covers performance of TVEL JSC and its subsidiary companies (hereinafter together referred to as TVEL Fuel Company, TVEL FC, the Company) in 2016.

The purpose of this Report is to present comprehensive account of:

- performance of TVEL Fuel Company over the reporting year;
- strategic directions and development potential;
- the inherent risks and risk mitigation procedures;
- management philosophy.

This Report is prepared in compliance with the following regulatory documents:

- Federal Law No. 208-FZ d/d December 26, 1995 "On Joint-Stock Companies";
- Federal Law No. 402-FZ d/d December 6, 2012 "On Accounting";

RF Government Regulation No. 1214 d/d December 31, 2010 (as revised on November 10, 2015) "On improving management procedure of open joint-stock companies, the shares of which are under federal ownership and owned by federal state unitary enterprises".

The Policy of ROSATOM applicable to public reporting and Public Annual Reporting Standard of the Key Organizations included into ROSATOM; Provision of the Bank of Russia No. 454-P d/d December 30, 2014 "On Disclosure of Information by the Issuers of Equity Securities"; Corporate Governance Code (recommended by letter of the Central Bank of the Russian Federation d/d April 10, 2014);

Sustainability Reporting Guidelines of The Global Reporting Initiative; Standard AA1000 APS 2015 of Accountability; International Integrated Reporting Framework, version 1.0.

The integrated format of the Report provides detailed description of the Company's performance in the context of the environment and shows the impact it makes on the stakeholders.

The Report discloses the **essential information** which is important to those who use this Report to assess the performance of the Company. Survey of internal and external stakeholders was held; material issues matrix was drawn up while preparing this Report.

Topic boundaries and content of the Report were determined by the Committee on Public Annual Reporting involving the Committee of Stakeholders, and agreed on by TVEL JSC subdivisions. Disclosed matters are material for all subsidiary companies from the Report profile, unless otherwise is specified herein. "Occupational Health and Safety" is material not only for the Company, but also for contractor organizations rendering capital construction services at the Company's facilities.

Material Topics matrix*

significant impact		<ul style="list-style-type: none"> • Territories of presence, • Pollutant emissions, • Pollutant Discharge in Water Sources, • Waste 	<ul style="list-style-type: none"> • Economic Performance, • Product Quality, • Business Continuity, • Position in the world market, • New business directions, • International Cooperation, • Occupational health, • Environment protection, • Nuclear and Radiation Safety, • Radiation Environmental Impact, • RW and SNF Treatment, Rehabilitation of Contaminated Areas, • Decommissioning of Nuclear Facilities, • Innovation Activity
median impact	<ul style="list-style-type: none"> • Customer Health and Safety, • Human Rights 	<ul style="list-style-type: none"> • Indirect Economic Impacts, • Procurement Practices, • Water consumption, • Supply chain, • Intellectual Property, • Information transparency increasing 	<ul style="list-style-type: none"> • Social Welfare of Workers, • Employment, • Reward, • Demand for Qualified Staff, • Workers training, • Labor/Management Relations, • Compliance, • Energy Efficiency, • Anti-corruption, • Investment Activities
no impact	<i>Biodiversity</i>	<ul style="list-style-type: none"> • Materials used in production, • Climate change 	
	no impact	median impact	significant impact

* The issues of GRI Standards are given in italics.

The scope of issues has changed from previous periods due to adoption of GRI Standards and definition of materiality while preparing this Report: Market Presence and Anti-competitive Behavior were excluded from the list of material issues, no significant reformulations of indicators given in previous reports were done.

Materiality Determination Process

Under conceptual development of the Report 2016, the materiality analysis was carried out in November 2016 in accordance with new GRI Standards. Representatives of the Company and its key stakeholders were invited to evaluate both the GRI and TVEL Fuel Company-specific themes, which complies with GRI Standards recommendations. Materiality matrix was prepared based on the survey result.

The matrix has been prepared in axes of "The significance of the Company's impact on economics, environment and society" (average assessment made by

managers of the Fuel Company, who took part in survey) and "Influence on stakeholder assessments and decisions" (external stakeholders' assessments). The most essential issues were highlighted in dark blue.

Rationale for Choosing Priority Issues of the Report

Priority issue of the Report is: New Markets and Partnerships of TVEL Fuel Company. In 2016 we launched new geographical and product markets, strengthened relations with our traditional partners and new ones. In the Report we disclose information on international markets promotion, diversification within the framework of general industrial activities and social partnerships.

Stakeholder Engagement

Stakeholders engagement is an integral element of public reports preparation and day-to-day activity of the Fuel Company. The Stakeholders

Commission was established by the Company in 2013 to promote regular feedback on the matters pertaining to the activity of the Company and its public position on specific matters.

Stakeholders' suggestions were taken into account while preparing the Report, as well as the analysis of the best Russian and international practices of disclosure in annual reports. For more see "Stakeholder engagement" section.

Following the 2016 reporting campaign 44 suggestions of stakeholders were received: 26 of them have been taken into account while preparing the Report, 5 — partially considered, 8 — will be taken into account while preparing the next reports; 1 suggestion pertaining to the Company's activities is submitted to the department in charge.

Reliability of the information contained in the Report has been confirmed by:

- The Statement of the Director for Internal Control and Audit of TVEL JSC (with respect to efficiency of the

The significance of the Company's impact on economics, environment and society

Material topic of TVEL JSC	Compliance with GRI topics
Economic Performance	Economic Performance
Occupational Health and Safety	Occupational Health and Safety
Social Welfare of Workers	Employment
Employment	
Workers training	Training and Education
Labor/Management Relations	Labor/Management Relations
Compliance	Environmental Compliance, Socioeconomic Compliance
Energy Efficiency	Energy
Anti-corruption	Anti-corruption
Territories of presence	Local Communities
Pollutant Emissions	Emissions
Pollutant Discharge in Water Sources	Effluents and Waste
Waste	
Product Quality	-
Business Continuity	-
Position in the world market	-
New business directions	-
International Cooperation	-
Environment protection	-
Nuclear and Radiation Safety	-
Radiation environmental impact	-
RW and SNF Treatment, Rehabilitation of Contaminated Areas	-
Decommissioning of Nuclear Facilities	-
Innovation Activity	-
Remuneration	-
Demand for Qualified Staff	-
Investment Activities	-

internal control system applicable to generation of the Report and compliance of the generation procedure with the requirements of laws, internal regulations of ROSATOM and TVEL JSC in the sphere of public reporting);

- The Statement of the audit organization FAC LLC, confirming reliability of 2016 Financial Statement of TVEL JSC;
- The Statement of the audit organization confirming reliability of non-financial data published in the Report.

The Organization that renders services of independent assurance of non-financial data of the Report was selected

through competitive procurement practices.

The Report was approved by the Board of Directors of TVEL JSC.

This Report covers the year of 2016. All prior and future periods are mentioned herein in description of corporate strategy, collation of performance indicators and results, forecasts and risk assessments. In addition to factual information, this Report describes and assesses potential and probable events. Any statements herein other than statement of facts shall be construed as forecasts. Forecasts of this kind are relevant only at the time of publishing. TVEL JSC (unless otherwise specifically provided for by applicable legislation) is not obliged to review or update the said

forecasts or factors in any new pieces of information. Actual performance may differ from the forecasted ones.

The Company appreciates all employees who took part in preparation of this Report, and all participants of public consultations and dialogues. We hope you will find this Report interesting and informative in terms of the new information about TVEL Fuel Company. Our working team is open to your feedback and suggestions on the matters and the issues that you would like to see in the next annual report. Feedback form is available in the interactive version of the Report on the site http://tvel.ru/wps/wcm/connect/tvel/tvelsite/finance/annual_report/.

Terms and Definitions

A–F

Ash and Slag — Waste generated from solid fuel burning.

Background Radiation — Ionizing radiation composed of space radiation and ionizing radiation of naturally distributed natural radionuclides (on Earth surface, in the air, foodstuffs, water, human organism, etc.).

Becquerel (bq) — A unit of radionuclide activity in the radiation source, equal to nuclide activity where one nucleus decays per second.

Burnup Fraction — Fraction of an initial quantity of a given nuclide that has undergone burnup in reactor under the neutrons influence.

Business Model — According to the International Integrated Reporting Framework, business model is a system of transforming the capitals through business activity aiming to fulfil strategic purposes and create value over the short-, medium- and long term.

Capital — According to the International Integrated Reporting Framework, resources and relations being the source and the results of value (integrated value) creation processes.

Circulating (Return) Water — Water that is used in the processing cycle; after cooling or purification it is used for the same purposes.

Closed Nuclear Fuel Cycle — Nuclear fuel cycle where spent nuclear fuel is processed for uranium and plutonium extraction for nuclear fuel remanufacturing.

Decommissioning — Decommissioning of a reactor facility and follow-up activity to ensure its safe dismantling, equipment disposal and further use of the site.

Depleted Uranium — Uranium depleted through extraction of U-235, which is economically unfeasible to use; stored at a disposal site (dump).

Dump of Radioactive Material — Controlled entry of radionuclides into water bodies with liquid waste of a nuclear facility.

Enrichment (isotopic) — a) the content of atoms of a certain isotope in the isotopic mixture of the same element, if this exceeds the share of the given isotope in a naturally occurring mixture (expressed as a percentage); b) process resulting in an increased content of a certain isotope in the isotopic mixture.

Enriched Nuclear Fuel — Nuclear fuel where the content of fissionable nuclides is higher than in natural raw material.

Enriched Uranium — Uranium which contains more U-235 isotope than natural uranium. Reactor quality uranium is usually enriched approximately to 3.5% U-235, and the content of U-235 in weapon-grade uranium is over 90%.

Fast Neutrons — Neutrons with kinetic energy higher than certain definite value. In Nuclear Reactor Physics fast neutrons are those with energies above 0.1 MeV.

Financial Capital — According to the International Integrated Reporting Framework, the pool of funds that is:

- available to an organization for use in the production of goods or the provision of services;
- obtained through borrowings, equity or grants, or generated through operations or investments.

F-L

Fuel Assembly — A package of fuel elements (rods, bars, plates and others) held together with the aid of spacer grids and other structural elements, which are integral during transportation and in-pile irradiation. Assemblies are loaded into the nuclear reactor core.

Fuel Pellet — A pellet of compacted uranium dioxide is the basis of nuclear fuel and is contained inside fuel elements.

Fuel-Element Cladding — Metal tubes in the active zone of the reactor containing oxide fuel pellets.

Fuel Production — Nuclear fuel production, generally in the form of ceramic pellets enclosed in metal tubes (fuel elements), which are subsequently assembled in fuel assemblies (FA).

Fuel Recharging — Operations by material-handling machines to replace the spent fuel; the fuel exposure degree required for recharging depends on the fuel composition after exposure, allowable work duration and on the reactivity change.

Gas Centrifuge — Equipment intended to obtaining enriched uranium required for operation of nuclear reactors of nuclear power plants.

Gas Diffusion Technology — Gas-diffusion method for separating uranium isotopes, based on phenomenon of molecular diffusion through the micropores in a membrane (barrier).

Global Reporting Initiative, GRI — An international reporting system concerning economic, environmental and social performance, based on the Sustainability Reporting Standards.

Heat Carrier — Liquid or gas used for heat transfer from the active zone of the reactor to steam generators or directly to the turbines.

Highly Enriched Uranium — Uranium with uranium-235 isotope equal or higher than 20%.

Human Capital — According to the International Integrated Reporting Framework, people's competencies, capabilities and experience, and their motivations, including:

- alignment with and support for an organization's governance framework, risk management approach, and ethical values;
- ability to understand, develop and implement an organization's strategy;
- loyalties and motivations for improving processes, including their ability to lead, manage and collaborate.

Integrated Report — Integrated report represents brief overview that reveals how strategy, corporate management, activities and prospects in the context of the environment lead to value creation over the short, medium and long-term periods.

Intellectual Capital — According to the International Integrated Reporting Framework, organizational knowledge-based intangibles.

ISAE 3000 International Standard on Assurance Engagements — The Standard of the International Federation of Accountants "The performance of assurance engagements other than audits and reviews of historical financial information".

Low-Enriched Uranium — Uranium that contains the isotope U-235 in a concentration of less than 20%.

M-O

Manufactured Capital — According to the International Integrated Reporting Framework, manufactured physical objects (as distinct from natural physical objects) that are available to an organization for use in the production of goods or the provision of services, including:

- buildings and structures;
- equipment;
- infrastructure.

Maximum Permissible Dose — The maximum value of the individual equivalent radiation dose per year, which does not cause unfavorable changes in health after 50 years of uniform exposure.

Natural Capital — According to the International Integrated Reporting Framework, these are:

- renewable and non-renewable environmental resources and processes, including air, water, land, minerals and forests;
- biodiversity and eco-system health.

Neutron — An elementary particle with no net electric charge; can be found in each atomic nucleus except for hydrogen. Single neutrons moving with different speeds are released during the fission reaction. Slow (thermal) neutrons, in their turn, can easily cause fission of nuclei of "fissionable" isotopes, e.g., U-235, Pu-239, U-233; fast neutrons can cause fission of "fertile" isotope nuclei, e.g. U-238. Sometimes atomic nuclei can capture neutrons.

Nuclear Fuel Depletion — Reduction of any nuclide concentration in nuclear fuel due to nuclear transformations of this nuclide during the reactor operation.

Nuclear Energy — Internal energy of atomic nuclei released by nuclear fission or nuclear reactions.

Nuclear Facility — Any facility that generates, processes or handles radioactive or fissionable materials.

Nuclear Fuel — A material containing fissionable nuclides which, being placed in the nuclear reactor, makes it possible to sustain a nuclear chain reaction.

Nuclear Fuel Cycle — The sequence of manufacturing processes for ensuring the operation of nuclear reactors from uranium production to the disposal of radioactive waste.

Nuclear Power — Branch of power engineering that uses nuclear energy for electricity and heat supply purposes.

Nuclear Reactor — A unit wherein a controlled chain nuclear reaction with energy release takes place. Reactors are classified according to their purpose, carrier type, design and other characteristics.

Nuclear Waste — Radioactive materials generated on various stages of the nuclear fuel cycle, including development of uranium deposits, enrichment, fuel production, reactor operation, fuel processing, etc.

Nuclide — Type of atom with a definite number of protons and neutrons in the nucleus characterized by an atomic mass and atomic (order) number.

Ozone-Depleting Substances — Any substance with an ozone-depleting potential higher than 0 that can deplete the stratospheric ozone layer. Most of ozone-depleting substances, including chlorofluorocarbons, halons and methylbromide, fall under the Montreal protocol as amended.

P-R

Phase Gate Approach to Investment — The principle of planning and carrying out investment activities applied to divide investment processes into phases, where each phase is preceded by Gate Review of the results achieved and the further project implementation plans and risk, and a decision is made on the further project implementation phase to be proceeded to.

Pilot Production — A stage in the nuclear plant commissioning from the power start-up to the plant's acceptance for commercial operation.

Primary Energy Sources — Initial form of energy used to satisfy energy requirements of the reporting organization. Examples of primary sources include non-renewable energy sources, e.g. coal, natural gas, oil and nuclear energy. They also include such renewable sources as biomass, sun and wind energy, geothermal and hydraulic energy.

Power Unit — One of the NPP reactors with necessary additional equipment.

Production Localization — Organization of production outside the Russian Federation.

Production Placement Topology — Plan of territorial location of production facilities.

Publicity Capital (image property, reputation capital) — Qualitative and quantitative totality of all information related to TVEL JSC and known within public communications space. Growth of the publicity capital volume means increase of public confidence, strengthening of a positive image, formation of increasingly favorable public opinion, escalation of political weight, etc.

Radiation Exposure — The total of individual exposure doses received or planned in the operations on decommissioning, maintenance, repair, replacement or dismantling of nuclear facility components.

Radiation Monitoring — Acquisition of information on the radiological conditions in the organisation and in the environment and on human exposure levels (includes dose control and radiometric monitoring).

Radioactive Discharge — Radionuclide emission into the atmosphere resulting from operation of a nuclear facility.

Radioactive Isotopes — Isotopes with unstable nuclei undergoing radioactive decay.

Radioactive Waste — Nuclear materials and radioactive substances that cannot be used any longer.

Radioactive Waste Processing — Technological operations aimed at altering the aggregative state and/or physic-chemical properties of radioactive waste and their transformation into forms suitable for transportation, storage and/or disposal.

Radioactive Waste Treatment — General term that covers all activities related to the processing, conditioning, transportation, storage and burial of radioactive waste.

Radiation Safety — A set of arrangements seeking to limit the exposure of personnel and the public to the lowest possible radiation dose values in a socially acceptable way, as well as to avoid the early effects of exposure and keep the delayed radiation effects within tolerable limits.

R-V

Radionuclides — General name for radioactive atoms. They pose a great danger to environment.

Regenerated Uranium — Uranium separated from spent nuclear fuel in the process of radio-chemical reprocessing for repeated use in nuclear fuel (regenerated fuel).

Rehabilitation of Contaminated Areas — Reduction of the extent of radioactive contamination to the level ensuring the maximum protection of population and recovery of all elements of the ecosystem (water, soil, air) to the applicable normative level.

Research Reactor — A nuclear reactor designed to be used as research object with a view to obtain data on reactor physics and technology required for design and development of a reactor of the same type or of components thereof.

Social (Relationship) Capital — According to the International Integrated Reporting Framework, the institutions and the relationships within the Company and between the Company and different groups of stakeholders and other communities aimed to enhance collective well-being.

Social Partnership — A system of institutes and mechanisms of coordination of the interests of the production process participants (workers, employers, state authorities, local self-government) based on equal cooperation.

Spent Nuclear Fuel Reprocessing — Complex of chemical processes intended to remove fission products from spent nuclear fuel and fissile material recovery for reuse.

Sublimation Production — Uranium hexafluoride production.

Tailing Dump — Complex of special structures and equipment intended for storage or burial of radioactive, toxic and other tailing materials called tails.

Top Management — Directors General, Deputies Director General.

Triflate Production Waste — Waste of salts of hazard class III (precipitated sulphate and barium fluoride).

Uranium Conversion — Chemical engineering process of uranium-containing materials transformation into uranium hexafluoride.

Uranium Hexafluoride — Chemical compound of uranium and fluorine (UF₆). This is the only highly volatile uranium-fluorine compound (when heated to 53°C, uranium hexafluoride passes from solid into gas); it is used as raw material for separation of uranium-238 and uranium-235 isotopes using a gas-diffusion technology or a gas-centrifuge technology, and for production of enriched uranium.

Uranium Ore Enrichment — Combination of processes for the primary treatment of uranium-bearing mineral raw material to separate uranium from other minerals contained in the ore. This does not involve any changes in the content of minerals, but only mechanical separation thereof with the resultant production of an ore concentrate.

VVER — Water-water energetic reactor with water used as heat carrier and decelerator. The most common type of Russian NPP reactors has two modifications: VVER-440 and VVER-1000.

Abbreviations

JSC — Joint-Stock Company.
ARMS — Automated Radiation Monitoring System.
ACS DEP — Automated Control System for Design Engineering Pre-Production.
Emergency Center SPb FSUE — Federal State Unitary Enterprise “Emergency Center of the Ministry of Nuclear Energy of Russia” (Saint Petersburg).
NPP — Nuclear power plant, industrial facility for electric power production.
DB — Database.
FN — Fast neutron reactor where the heat carrier within the first and second loop consists of sodium, while the third loop carries water and steam. .
In Russia it is applied at Beloyarsk NPP.
VVER — Water-to-water power reactor.
HEU — Highly Enriched Uranium.
GOST — State Standard.
HHCS — Hyper heat-conductive sections.
GC — Gas Centrifuge.
GCC — Gas Centrifuge Complex.
VHI — Voluntary Health Insurance.
SC — Subsidiary Company.
UIPS — Uniform Industrial Procurement Standard of ROSATOM.
SWU — Separative work unit.
CATU — Closed Administrative And Territorial Unit.
IFI — Information favoured index.
IMS — Integrated Management System for Quality, Environment and Safety.
IT — Information Technologies.
ITER — International Thermonuclear Experimental Reactor built on basis of tokamak by international group of scientists under the aegis of IAEA. It is supposed to be a pilot version of the world’s first DEMO thermonuclear power plant.
KPI — Key Performance Indicators.
CRMS — Corporate Risk Management System.
CEFA — Combined Experimental Fuel Assembly.
LWS — Local Warning Systems.

IAEA — International Atomic Energy Agency — international regulatory body that monitors nuclear safety performance and non-proliferation of nuclear weapons in the world.
MW — Megawatt — unit of power equal to 10⁶ watts. MW(e) relates to electric power of a generator; MW(t) relates to thermal power of a reactor or heat source (e.g., full thermal power of the reactor itself is generally three times higher than the electric power).
MOX-fuel — Mixed Oxide Nuclear Fuel (generally on basis of uranium and plutonium).
IFRS — International Financial Reporting Standards.
FRM — Fabrication / Refabrication Module.
EMERCOM — The Ministry of the Russian Federation for Affairs of Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters.
VAT — Value added tax.
R&D — Research and Development.
LEU — Low-enriched uranium.
SPA — Scientific-Production Association.
FE NFC — Front End of Nuclear Fuel Cycle.
STC — Scientific and Technical Council.
LLC — Limited Liability Company.
EUP — Enriched uranium product.
SNF — Spent nuclear fuel.
PJSC — Public Joint-Stock Company.
SFI — Suggestions for Improvement.
RPS — ROSATOM Production System.
RW — Radioactive waste.
RBMK — High-power channel-type reactor — type of single-cycle energetic reactor with water as heat carrier, and graphite as decelerator.
RN — Radionuclide.
RUNPIW — Russian Union of Nuclear Power and Industry Workers.
SSC — Separation and Sublimation Complex.
RUEI — Russian Union of Entrepreneurs and Industrialists.
MSE — Managers, specialists, employees.
ICS — Internal Control System.

MNUP — Mixed nitride uranium-plutonium.
SDIC — Special Department for Internal Control.
JV — Joint Venture.
AFCF — Adjusted free cash flow.
EMS — Emergency Management System (Facility Level).
EFA — Experimental Fuel Assembly.
TVSA (FAAD) — Fuel assembly of alternative design.
TVS-KVADRAT — Name of fuel assembly for PWR reactors developed in Russia.
TVEL FC, TVEL Fuel Company — TVEL JSC and subsidiary companies included into the management system of the Company and consolidation perimeter used for the reporting.
TASED — Territory of Advancing Social and Economic Development.
HPP — Heat and Power Plant.
NPIB — Nuclear-powered icebreaker.
MPS — Managerial Personnel Reserve.
FSUE — Federal State Unitary Enterprise.
FMBA — Federal Medical and Biological Agency.
FTP — Federal Target Program.
UEC — Russian-Kazakhstan Project “Uranium Enrichment Center”.
CFR — Center of Functional Responsibility.
EGR — Energy channel-type graphite reactor with steam overheat, used on Bilibino NPP.
NRS — Nuclear radiation safety.
NF — Nuclear fuel.
NRHF — Nuclear and radiation hazardous facilities.
NFC — Nuclear fuel cycle, set of arrangements aimed at operation of nuclear power industry, including production and processing of uranium ore, fuel production, its transportation to NPP, storage and treatment of SNF. In case of SNF burial NFC is called opened, if fuel reprocessing and repeated use are provided — it is called closed.
BWR — Boiling water reactor — a reactor that uses boiling water as heat carrier.

EBITDA — Earnings before interest, taxes, depreciation and amortization — an analytical indicator, used to define a company’s profit before taxes, interest, depreciation and amortizations costs are subtracted.
HR — Human resources.
INES — International Nuclear Event Scale.
LTIFR — Lost time injury frequency rate — number of lost time incidents divided by total hours worked for the reporting year and rated as 1 mln man hours.
PR — Public relations.
PHWR — Pressurised heavy water reactor — type of foreign reactors with heavy water (D₂O) as reactor coolant.
PWR — Pressurized water reactor — type of foreign reactors with pressurized water, analogue of VVER reactor.
WNA — World Nuclear Association.

Events dedicated to TVEL JSC 20th anniversary



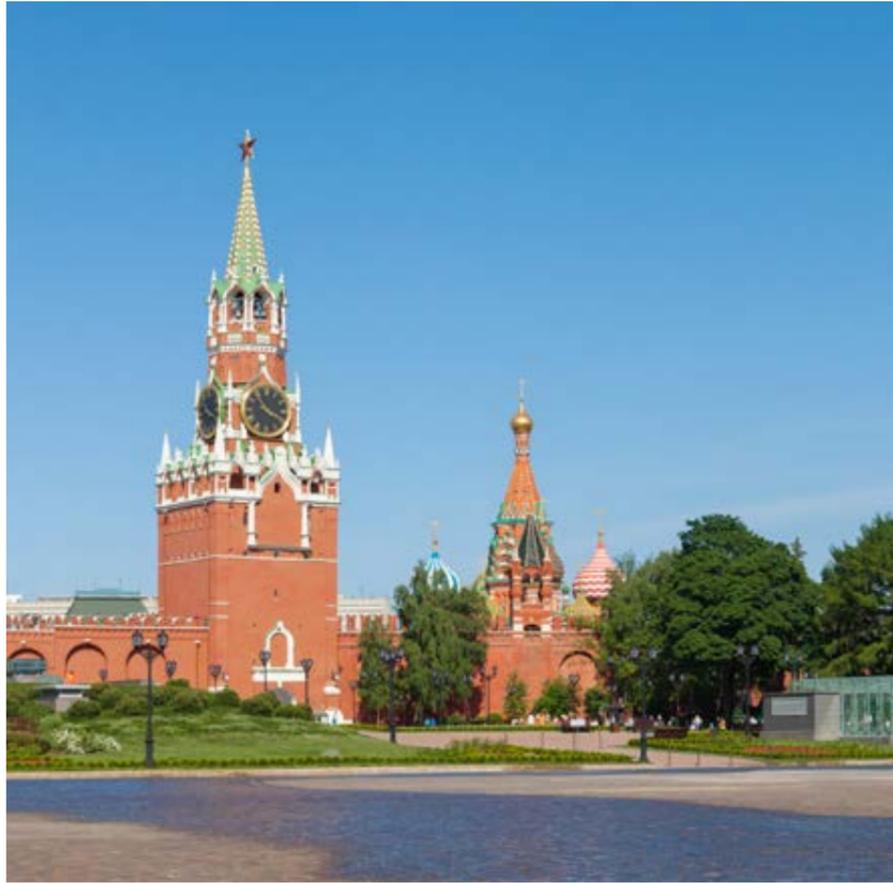
Welcome reception of
TVEL JSC President for
foreign partners in Petroff
Palace, May 31, 2016





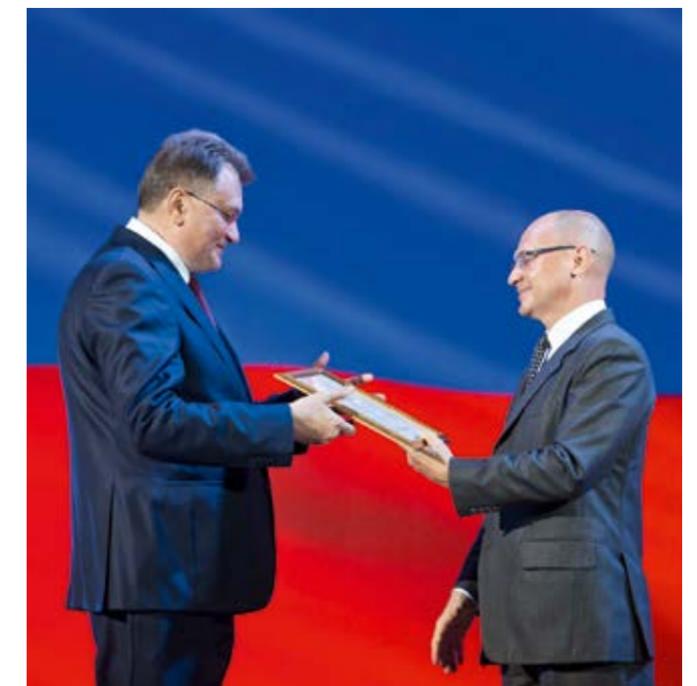
Events dedicated to TVEL JSC 20th anniversary

Social programme
for TVEL JSC foreign
partners in the museums
of Moscow Kremlin



Events dedicated to TVEL JSC 20th anniversary

Business meeting
with TVEL JSC Russian
partners in "President-
Hotel", September 21,
2016



Events dedicated to TVEL JSC 20th anniversary

Team play “Technology of leadership” for TVEL JSC employees at the 20th anniversary day, September 12, 2016



Appendices

Appendix 1. Auditor's Report on Financial Statements for the Year 2016

THE AUDITED ENTITY

Name:
Joint-Stock Company "TVEL" (hereinafter referred to as JSC "TVEL").

Location:
49 Kashirskoe shosse, Moscow 115409, Russian Federation.

State registration:
Registered by Moscow Registration Chamber on September 12, 1996, certificate No. 061.775. Registered in the Unified State Register of Legal Entities under Unified State Number 1027739121475.

THE AUDITOR

Name:
Financial and Accounting Consultants Limited Liability Company (FBK LLC).

Location:
44/1 Myasnikskaya St, Building 2A5, Moscow 101990.

State registration:
Registered by Moscow Registration Chamber on November 15, 1993, certificate: series IO3 3 No 484.583 PF. Registered in the Unified State Register of Legal Entities on July 24, 2002 under Unified State Number 1027700058286.

Membership in Self-Regulating Organization of Auditors:
Audit Chamber of Russia Non-profit Partnership.

Number in the audit organizations register of the self-regulating organization of auditors:
Certificate of membership in Audit Chamber of Russia Non-profit Partnership No. 5353, PRNE — 10201039470.

We have performed the audit of the attached financial statements of JSC "TVEL" consisting of the Balance sheet as of December 31, 2016, Profit and Loss Statement, Capital Statement and Cash Flow Statement for the year 2016, other appendices to the Balance sheet and Profit and Loss Statement.

LIABILITY OF THE AUDITED ENTITY FOR FINANCIAL STATEMENTS

The Management of the Audited Entity shall be liable for execution and reliability of the mentioned financial statements in accordance with the Russian regulations on preparation of the financial statements, as well as for internal control system required for preparation of the financial statements free from material misstatements due to unfair practices or errors.

AUDITOR'S RESPONSIBILITY

Our liability lies in expression of opinion on reliability of annual financial statements on the basis of conducted audit. We have conducted audit in accordance with the Federal Auditing Standards. These standards require compliance with applicable ethical practices, as well as planning and conduction of audit in such a way to get reasonable assurance that financial statements contain no material misstatements.

The audit included auditing procedures aimed at obtaining of audit evidence to confirm index numbers in financial statements and disclosure of information therein. Choice of audit procedures is the subject of our judgement which is based on assessment of risk of material misstatements due to unfair actions or errors. In the course of this risk assessment we have considered internal control system ensuring execution and reliability of financial statements with the view to select appropriate audit procedures, but with no view to express opinion on efficiency of internal control system.

The audit also included assessment of appropriate applicable accounting policy and validity of estimated figures obtained by management of the Audited Entity, as well as assessment of financial reporting in whole.

We believe that audit evidence obtained in the course of the audit provides reasons enough to offer an opinion on reliability of the financial statements.

OPINION

In our opinion the financial statements give true and fair to all intents view of the financial situation of JSC "TVEL" as of December 31, 2015; its business and financial performance and cash flow for the year 2016 are in accordance with Russian regulations on financial reporting.

President of FAC LLC

**Shapiguzov S. M.**

On the grounds of the Articles of Association
Auditor qualification certificate
01-001230, PRNE 21606043397

Date of the auditor's report
March 1, 2017

Appendix 2. Financial Statements for the Year 2016

BALANCE SHEET AS AT DECEMBER 31, 2016

		Codes
Organization	Joint-Stock Company "TVEL"	Form under OKUD 0710001
Taxpayer Identification Number	7706123550	Date (day, month, year) 31.12.2016
Type of business	Production of nuclear fuel	under OKPO 45046040
Form of incorporation / form of ownership	Joint-Stock Company	under OKVED 24.46
Measurement unit	in thous. RUB	under OKOPF / OKFS 12267/16
Location (address)	Bld. 24, Bolshaya Ordynka st., Moscow, 119017	under OKEI 384

Index description	Code	As on December 31, 2016	As on December 31, 2015	As on December 31, 2014
ASSETS				
I. NON-CURRENT ASSETS				
Intangible assets	1110	1,055,754	1,329,604	1,230,846
Results of research and development	1120	470,339	511,917	740,754
Intangible development assets	1130			-
Tangible development assets	1140			-
Fixed assets	1150	114,382	205,058	274,047
Buildings, vehicles, equipment etc.	1151	114,382	200,808	273,996
Capital investments in progress	1152	-	-	51
Advances to suppliers	1153		4,250	-
Income-bearing investments in tangibles	1160	456,569	467,682	485,646
Financial investments	1170	209,655,354	223,589,430	227,032,338
Deferred tax assets	1180	4,042,626	1,480,598	805,569
Other non-current assets	1190	3,310,529	2,867,665	3,621,900
Total I	1100	219,105,553	230,451,954	234,191,100
II. CURRENT ASSETS				
Stock	1210	68,750,309	84,916,423	93,806,971
Raw, materials and other similar assets	1211	8,578,293	8,581,245	6,884,676
Work in progress expenditures	1212	48,957,800	61,716,761	70,817,625
Finished products and goods for resale	1213	11,214,216	14,618,417	16,100,094
Shipped goods	1214		-	4,576
Other stock and expenses	1219		-	-
Value added tax on purchased assets	1220	8,575,202	13,017,390	12,250,848
Accounts receivable	1230	30,104,703	20,641,223	19,644,302
Settlements with buyers and customers	1231	18,387,786	14,927,726	8,435,974
Advances made	1232	611,518	2,151,253	4,596,807
Other debtors	1233	11,105,399	3,562,244	6,611,521
Unpresented for payment accrued revenue	1234		-	-
Financial investments (excluding cash)	1240	27,797,237	1,640,000	1,437,730
Cash	1250	9,435,365	42,826,542	5,651,930

BALANCE SHEET AS AT DECEMBER 31, 2016 (CONTINUE)

Index description	Code	As on December 31, 2016	As on December 31, 2015	As on December 31, 2014
Other current assets	1260	454,658	863,924	327,915
Total II	1200	145,117,474	163,905,502	133,119,696
BALANCE	1600	364,223,027	394,357,456	367,310,796
LIABILITIES				
III. CAPITAL AND RESERVES				
Equity capital (pooled capital, collective capital, contribution of partners)	1310	22,962	22,962	22,962
Own shares redeemed from shareholders	1320	(-)	(-)	(-)
Received contributions from stockholders to share capital before registration of changes in constituent documents	1330		-	-
Revaluation of non-current assets	1340		-	-
Additional capital (without revaluation)	1350	181,731,834	181,732,335	181,734,382
Reserve capital	1360	258,255	125,886	103,393
Reserves formed in accordance with legislation	1361	257,107	124,738	102,245
Reserves formed in accordance with founding documents	1362	1,148	1,148	1,148
Undistributed profit (uncovered loss)	1370	97,246,595	105,197,731	82,458,042
Total III	1300	279,259,646	287,078,914	264,318,779
IV. LONG-TERM LIABILITIES				
Borrowed funds	1410		-	12,751,384
Deferred tax liabilities	1420		-	-
Estimated liabilities	1430		-	-
Other liabilities	1450	1,062,434	925,753	901,345
Total IV	1400	1,062,434	925,753	13,652,729
V. SHORT-TERM LIABILITIES				
Borrowed funds	1510	40,181,112	63,008,851	48,464,746
Accounts payable	1520	42,507,215	42,253,983	40,051,361
Suppliers and contractors	1521	25,586,785	20,874,830	22,127,329
Advances received	1522	12,434,174	18,249,393	15,487,422
Accounts payable to employees	1523	1,496	1,356	1,369
Accounts payable to state non-budget bodies	1524		70	68
Accounts payable in respect of taxes and levies	1525	3,318	17,472	7,440
Other creditors	1526	4,481,442	3,110,862	2,427,733
Deferred income	1530	369,039	912	863
Estimated liabilities	1540	843,581	1,089,043	817,560
Provisions	1546		-	4,758
Accounts payable to customers	1547		-	-
Other liabilities	1550			
Total V	1500	83,900,947	106,352,789	89,339,288
BALANCE	1700	364,223,027	394,357,456	367,310,796

Director



Y. A. Olenin
(signature) (name)

Chief accountant



M. N. Guseva
(signature) (name)



"01" March 2017

PROFIT AND LOSS STATEMENT FOR THE YEAR 2016

Organization	Joint-Stock Company "TVEL"	Form under OKUD	0710002
Taxpayer Identification Number	7706123550	Date (day, month, year)	31.12.2016
Type of business	Production of nuclear fuel	under OKPO	45046040
Form of incorporation / form of ownership	Joint-Stock Company	under OKVED	24.46
Measurement unit	in thous. RUB	under OKOPF / OKFS	12267/16
Location (address)	Bld. 24, Bolshaya Ordynka st., Moscow, 119017	under OKEI	384

Index description	Code	Over 12 months of 2016	Over 12 months of 2015
Proceeds, including	2110	147,245,526	150,708,146
proceeds from sale of own products		129,289,163	133,942,423
proceeds from sale of goods	2112	-	-
proceeds from carrying out work, rendering services		14,426,701	15,721,972
Prime cost of sales, including	2120	(94,636,751)	(93,740,391)
prime cost of sales of own products		(83,008,951)	(80,966,383)
prime cost of sales of goods		-	-
prime cost of carrying out work, rendering services		(10,236,737)	(12,169,479)
Gross profit (loss)	2100	52,608,775	56,967,755
Commercial expenses	2210	(2,142,985)	(2,171,015)
Management expenses	2220	(8,167,555)	(6,717,281)
Sales profit (loss)	2200	42,298,234	48,079,459
Income from participation in other entities	2310	2,816,603	1,929,684
Interest receivable	2320	1,589,293	595,691
Interest payable	2330	(4,181,471)	(4,893,493)
Other income, including:	2340	2,661,314	5,296,603
Income from parcels sales in main company and subsidiaries		-	462,000
Income from raw material, supplies and unmarketable goods (net)		350,381	-
Income from courses margin of imputations and assets in foreign currency		-	4,146,927
Income from reevaluating of capital issues according to market value		-	-
Income from foreign currency sales or purchases		774,039	-
Income from reversal of provision for depreciation of investment/contribution to legal capital of associated company			
Income from sales of fixed assets (net)		-	1,062
Income from lease out of fixed assets (net) movable assets		-	24,091
Income from lease out of fixed assets (net) properties		-	-
Income from granting rights of using the results of intellectual activity		205,221	-
Other income (net)		-	-
Income from inventory surplus and other property as a result of inventory check		-	-
Other expenses, including:	2350	(21,352,489)	(4,587,357)
Income from parcels sales in main company and subsidiaries		-	-
Expenses from currency differences on liabilities and assets in foreign currency		(6,171,144)	-
Worth from commodities and materials sales		-	-
Amortization of intangible assets		-	-

PROFIT AND LOSS STATEMENT FOR THE YEAR 2016 (CONTINUE)

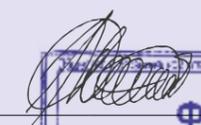
Index description	Code	Over 12 months of 2016	Over 12 months of 2015
Amortization of leased out fixed assets, lease		-	-
Expense from reevaluating of capital issues according to market value		-	-
Expenses for provisions for financial investments impairment		-	(3,241,305)
Expense for reversal of provision for tax claims		-	(283,420)
Expenses for bank service besides percental expenses		-	-
Expense for reserve of investment depreciation/contribution to legal capital of other companies purchased for other purposes		(12,709,792)	-
Depreciable value from fixed assets sales		-	-
Expenses of leased out fixed assets, lease		-	-
Penalty and charges to the budget		-	-
Expenses for charity purposes and voluntary contributions		-	(244,605)
Income (loss) before tax	2300	23,831,484	46,420,587
Current profit tax	2410	(6,978,752)	(9,710,855)
including permanent tax liabilities (assets)	2421	(218,385)	(119,631)
Variation of deferred tax liabilities	2430	8,959	41,631
Variation of deferred tax assets	2450	2,548,432	651,412
Other	2460	(65,867)	(24,260)
Redistribution of profit tax within consolidated group of taxpayers	2465	2,237,544	657,254
Net profit (loss)	2400	21,581,800	38,035,769
For reference only			
Result of revaluation of non-current assets not to be included in net profit (loss) of the period	2510	-	-
Result of other operations not to be included in net profit (loss) of the period	2520	(501)	(2,047)
Cumulative financial result for the period	2500	21,581,299	38,033,722
Basic earnings (loss) per share	2900	0.94	1.60
Diluted earnings (loss) per share	2910	-	-

Director




Y. A. Olenin
(signature) (name)

Chief accountant




M. N. Guseva
(signature) (name)

"02" March 2016

CAPITAL STATEMENT FOR THE YEAR 2016

		Codes
Organization	Joint-Stock Company "TVEL"	Form under OKUD 0710003
Taxpayer Identification Number	7706123550	Date (day, month, year) 31.12.2016
Type of business	Production of nuclear fuel	under OKPO 45046040
Form of incorporation / form of ownership	Joint-Stock Company	under OKVED 24.46
Measurement unit	in thous. RUB	under OKOPF / OKFS 12267/16
Location (address)	Bld. 24, Bolshaya Ordynka st., Moscow, 119017	under OKEI 384

1. Flow of capital

Index description	Code	Equity capital	Own shares redeemed from shareholders	Additional capital	Reserve capital	Undistributed profit (uncovered loss)	Total
Value of the capital as of December 31, 2014	3100	22,962		181,734,382	103,393	82,458,042	264,318,779
FOR THE YEAR 2015							
Increase of capital — total	3210	-	-	814	3,067,705	38,035,769	41,104,288
including:							
net profit	3211	X	X	X	X	38,035,769	38,035,769
revaluation of property	3212	X	X	X	X	-	-
income charged directly to increase of capital	3213	X	X	X	814	3,067,705	3,068,519
additional emission of shares	3214				X	-	-
increase in the par value of shares	3215				X	-	-
reorganization of the legal entity	3216					-	-
use of industry-based reserves for investment purposes	3217	X	X	X	X	-	-
share capital payment before changes in constituent documents were recorded	3218	X	X	X	X	X	-
Reduction of the capital — total:	3220	-	-	(2,861)	(3,045,212)	(15,296,080)	(18,344,153)
including:							
loss	3221	X	X	X	X	-	-
revaluation of property	3222	X	X		X	-	-
expenses charged directly to reduction of the capital	3223	X	X	(2,861)	(3,045,212)		(3,048,073)
decrease in the par value of shares	3224				X	-	-
decrease in the number of shares	3225				X	-	-
reorganization of the legal entity	3226					-	-
dividends	3227	X	X	X	X	(15,296,080)	(15,296,080)
share capital payment before changes in constituent documents were recorded	3228	X	X	X	X	X	-
Change in the additional capital	3230	X	X	X			X
Change in the reserve capital	3240	X	X	X	X		X
Value of the capital as on December 31, 2015	3200	22,962	-	-	181,732,335	125,886	105,197,731
							287,078,914

CAPITAL STATEMENT FOR THE YEAR 2016 (CONTINUE)

Index description	Code	Equity capital	Own shares redeemed from shareholders		Additional capital	Reserve capital	Undistributed profit (uncovered loss)	Total
FOR THE YEAR 2016								
Increase of the capital — total:	3310	-	-	-	278	4,699,894	21,581,800	26,281,972
including:								
net profit	3311	X	X	X	X	X	21,581,800	21,581,800
revaluation of property	3312	X	X	X		X		-
income charged directly to increase of capital	3313	X	X	X	278	4,699,894		4,700,172
additional emission of shares	3314					X		-
increase in the par value of shares	3315					X		-
reorganization of the legal entity	3316							-
use of industry-based reserves for investment purposes	3317	X	X	X	X	X		-
share capital payment before changes in constituent documents were recorded	3318	X	X		X	X	X	-
Reduction of the capital — total:	3320	-	-	-	(779)	(4,567,525)	(29,532,936)	(34,101,240)
including:								
loss	3321	X	X		X	X		-
revaluation of property	3322	X	X			X		-
expenses charged directly to reduction of the capital	3223	X	X		(779)	(4,567,525)		(4,568,304)
decrease in the par value of shares	3324					X		-
decrease in the number of shares	3325					X		-
reorganization of the legal entity	3326							-
dividends	3327	X	X		X	X	(29,532,936)	(29,532,936)
share capital payment before changes in constituent documents were recorded	3328	X	X		X	X	X	-
Change in the additional capital	3330	X	X	X				X
Change in the reserve capital	3340	X	X	X	X			X
Liability on December 31, 2016	3300	22,962	-	-	181,731,834	258,255	97,246,595	279,259,646

CAPITAL STATEMENT FOR THE YEAR 2016 (CONTINUE)
2. Corrections due to change in the accounting policy and elimination of errors

Index description	Code	As of December 31, 2015	Changes in the capital for 2016		As of December 31, 2016
			on account of the net profit (loss)	based on other factors	
Capital — total					
before corrections	3400	-	-	-	-
correction due to:					
change in the accounting policy	3410	-	-	-	-
elimination of errors	3420	-	-	-	-
after corrections	3500	-	-	-	-
including:					
undistributed profit (uncovered loss):					
before corrections	3401	-	-	-	-
correction due to:					
change in the accounting policy	3411	-	-	-	-
elimination of errors	3421	-	-	-	-
after corrections	3501	-	-	-	-
other capital items, where corrections were made:					
before corrections	3402	-	-	-	-
correction due to:					
change in the accounting policy	3412	-	-	-	-
elimination of errors	3422	-	-	-	-
after corrections	3502	-	-	-	-

3. Net assets

Index description	Code	As of December 31, 2016	As of December 31, 2015	As of December 31, 2014
Net assets	3600	279,261,955	287,079,734	264,319,192

Director




Y. A. Olenin

(name)

Chief accountant




M. N. Guseva

(name)

"02" March 2016

CASH FLOW STATEMENT FOR THE YEAR 2014

			Codes
Organization	Joint-Stock Company "TVEL"	Form under OKUD	0710003
Taxpayer Identification Number	7706123550	Date (day, month, year)	31.12.2016
Type of business	Production of nuclear fuel	under OKPO	45046040
Form of incorporation / form of ownership	Joint-Stock Company	under OKVED	24.46
Measurement unit	in thous. RUB	under OKOPF / OKFS	12267/16
Location (address)	Bld. 24, Bolshaya Ordynka st., Moscow, 119017	under OKEI	384

Index description	Code	Over 12 months of 2016	Over 12 months of 2015
CASH FLOW ASSOCIATED WITH DAY-TO-DAY OPERATIONS			
Receipts — total	4110	139,075,345	150,720,783
including:			
from sale of products, goods, works and services	4111	137,008,106	146,923,729
from lease payments, license payments, royalty and other similar payments	4112	446,160	199,936
from re-sale of financial investments	4113		
other receipts	4119	1,621,079	3,597,118
Payments — total	4120	(94,644,551)	(105,307,854)
including:			
поставщикам (подрядчикам) за сырье, материалы, работы, услуги	4121	(77,250,914)	(86,456,357)
associated with remuneration of employees labor	4122	(2,130,913)	(2,274,553)
interest on debt obligations	4123	(3,984,701)	(4,893,835)
corporate profit tax	4124	(6,406,575)	(6,369,643)
other payments	4129	(4,871,448)	(5,313,466)
Balance of cash flow associated with day-to-day operations	4100	44,430,794	45,412,929
CASH FLOW ASSOCIATED WITH INVESTMENT ACTIVITIES			
Receipts — total	4210	121,234,156	40,493,140
including:			
from sale of non-current assets (except for financial investments)	4211	115,855	2,526
from sale of shares (participation shares) in other organizations	4212	916,442	371,593
from return of loans granted, from sale of debt securities (rights of funds claim from third parties)	4213	114,942,600	37,772,446
dividends, interest from long-term financial investments and similar revenues from share interests in other companies	4214	4,230,926	2,346,575
other receipts	4219	1,028,333	
Payments — total	4220	(142,314,916)	(38,693,172)
including:			
associated with acquisition, creation, modernization, reconstruction and preparation for current assets operation	4221	(1,100,888)	(1,139,878)
associated with acquisition of shares (participation shares) in other organizations	4222		-
associated with acquisition of debt securities (rights of funds claim from third parties), loans provision to third parties	4223	(141,214,028)	(37,553,283)
interest on debt obligations included in the value of investment asset	4224	-	
other payments	4229		(11)
Balance of cash flow associated with investment activities	4200	(21,080,760)	1,799,968

Index description	Code	Over 12 months of 2016	Over 12 months of 2015
CASH FLOW ASSOCIATED WITH FINANCIAL ACTIVITIES			
Receipts — total	4310	58,507,400	37,548,499
including:			
getting credits and loans	4311	58,507,400	37,548,499
owners' (participants') money deposits	4312		
from issue of shares, increase in participation shares	4313		
from issue of bonds, promissory notes and other debt securities and etc.	4314		
budgetary provisions and other target financing	4315		
other receipts	4319		
Payments — total	4320	(107,197,008)	(53,266,652)
including:			
to owners (participants) due to repurchase their shares or their resignation	4321		-
for payment of dividends and other payments under distribution of profit in favour of owners (participants)	4322	(28,232,936)	(15,296,080)
associated with payment (repurchase) of promissory notes and other debt securities, repayment of credits and loans	4323	(78,964,072)	(37,970,572)
other payments	4329		-
Balance of cash flow associated with financial operations	4300	(48,689,608)	(15,718,153)
Balance of cash flow for the reporting period	4400	(25,339,574)	31,494,744
Balance of cash and cash equivalents as of reporting period beginning	4450	42,826,542	5,651,930
Balance of cash and cash equivalents as of reporting period end	4500	9,435,365	42,826,542
Effect of exchange rate changes to ruble	4490	(8,051,603)	5,679,868

Director



 Y. A. Olenin
 (signature) (name)

Chief accountant



 M. N. Guseva
 (signature) (name)

"02" March 2016

Appendix 3. Report of the Internal Control and Audit Department of TVEL JSC following the Results of “Public Annual Reporting Preparation” Audit Process

The internal audit of the process of preparing the public annual report of TVEL JSC (further — the Report) was executed in compliance with “The Procedure for Planning and Conducting Internal Audits of Business Processes Carried out by TVEL JSC and the Companies Included in the Management System of the Fuel Company”, to be approved by the Order No.271 of the President TVEL JSC dated December 14, 2011.

In conformity with the Regulation of Public Annual Reports (Order of the President d/d February 10, 2016 No. 4/32-P), TVEL JSC approved the order d/d November 23, 2016 No. 4/393-P “Concerning preparation of Annual Report of TVEL JSC for 2016”, which defines the basic stages and dates of the Report generation, including preparation of the Concept for the Report, information accumulation, the draft Report, obtaining the conclusions from the permanent technical commission, expertise of the draft Report of the public reporting working group of ROSATOM, conducting public events (dialogues, public consultations) with the stakeholders, ensuring public approval of the Report by the Board of Directors of TVEL JSC and the annual meeting of shareholders.

The auditing covered the following:

- Assessment of efficiency of the internal control system for the process of rendering the public annual reporting (including the analysis of regulations and formalization of the key processes related to generation of the public annual report; analysis of effective implementation of key control procedures ensuring the accuracy of the public annual reports);
- Assessment of conformity of the public annual reporting generation procedure with the requirements of applicable laws and internal statutory requirements regulating the business process of public annual reporting preparation.
- The recommendations of improving the quality of preparing public annual report were given.

The audit results proved the satisfactory status of the internal control system for the process of making the public annual reporting and the compliance of the annual public reporting generation procedure of TVEL JSC with the applicable laws, Policy of ROSATOM in the sphere of public reporting and the requirements of internal statutory documents of TVEL JSC regulating the process of public annual reporting preparation.

Director for Internal
Control and Audit

G. V. Gonso



Appendix 4. Independent Assurance Report on Joint-Stock Company “TVEL” Annual Report 2016

INTRODUCTION

The Independent Assurance Report is addressed to the Management of Joint-Stock Company “TVEL” (hereinafter referred to as JSC “TVEL”).

The subject of assurance is the annual report of JSC “TVEL” (hereinafter referred to as the Report) including information on key organisations of TVEL Fuel Company within the declared consolidation perimeter, as well as sustainability activities of JSC “TVEL”.

RESPONSIBILITIES

The management of JSC “TVEL” bears full responsibility for the preparation and accuracy of the Report.

We are responsible for the results of independent assurance of the Report only to JSC “TVEL” within the engagement and do not assume any responsibility to any third party.

SCOPE, CRITERIA AND LEVEL OF ASSURANCE

Sustainability activities of JSC “TVEL” was evaluated considering the following criterion:

- Nature and level of JSC “TVEL” compliance with the principles of the AA1000 Accountability Principle Standard 2008 — inclusivity, materiality, responsiveness.

The Report was evaluated considering the following criteria:

- Compliance with the requirements of GRI Sustainability Reporting Standards (Comprehensive option);
- Compliance with the requirements of the International Integrated Reporting Framework;
- Compliance of the Report preparation process with the requirements of State Corporation “Rosatom” in the sphere of public reporting.

The engagement was planned and performed in accordance with AA1000 Assurance Standard 2008 (moderate level of assurance) and International Standard on Assurance Engagement ISAE 3000 (revised) “Assurance engagements other than audits or reviews of historical financial information” (limited level of assurance). The statement corresponds to type 2, as defined by AA1000AS 2008, in accordance with the limitations specified in section “Limitations of the engagement” of the present statement.

The selective verification of information in the Report performed under aforementioned levels of assurance does not claim to provide a high level of assurance. The work was based on the supporting materials provided by the management of the entity and its employees, publicly available information and analytical methods of confirmation. In relation to the quantitative information contained in the Report the work performed cannot be considered sufficient for identification of all possible deficiencies and misstatements. However, the collected evidence is sufficient for expressing our conclusion in accordance with the above levels of assurance.

METHODOLOGY OF ASSURANCE

In our engagement, we have performed the following procedures:

- Study and selective testing of systems and processes implemented by JSC “TVEL” to ensure and analyze the compliance of the activities with AA1000APS 2008 principles; collection of evidence confirming practical implementation of these principles.
- Participation in the dialogues and public presentation of the Report, study of minutes of public dialogues.
- Interviewing the management and employees of JSC “TVEL” and obtaining documentary evidence.
- Study of information available on the web-sites of JSC “TVEL” and its subsidiary companies related to their activities in the context of sustainable development.
- Study of public statements of third parties concerning economic, environmental and social aspects of activities of JSC “TVEL” and its subsidiary companies in order to check validity of the declarations made in the Report.
- Analysis of non-financial reports of foreign companies working in the similar market segment for benchmarking purposes.
- Analysis of the current system of internal audit of non-financial reporting in JSC “TVEL”.
- Selective review of documents and data on the efficiency of the management systems of economic, environmental and social aspects of sustainable development in JSC “TVEL”.
- Study of the existing processes of collection, processing, documenting, verification, analysis and selection of data to be included into the Report.

- Analysis of information in the Report for compliance with the aforementioned criteria.

LIMITATIONS OF THE ENGAGEMENT

The engagement was performed only in relation to data for the year ended 31 December 2016.

The evaluation of reliability of the information on performance in the Report was conducted in relation to compliance with the criteria to be applied to prepare sustainability report 'in accordance' with the GRI Standards and nonfinancial information referred to in the GRI Content Index, as well as in relation to compliance with requirements of the International Integrated Reporting Framework. In respect to the quantitative performance indicators the conformity assessment to external and internal reporting documents provided to us is performed.

Assurance does not apply to forward-looking statements, as well as statements expressing the opinions, beliefs and intentions of JSC "TVEL" to take any action relating to the future. The assurance on the statements which are based on expert opinion is not performed.

Assurance is performed only in relation to the Russian version of the Report in the MS Word format which includes information to be published in a hard-copy form as well as in digital form on the JSC "TVEL" website.

This assurance report is the translation of the Russian original. The Russian version prevails.

CONCLUSIONS

The following conclusions are based on the assurance work performed within the limitations of the engagement specified above.

Nature and extent of compliance of JSC "TVEL" with AA1000 APS 2008 principles

As a result and within the scope of our work, we did not identify material non-compliance with criteria of AA1000APS 2008 in respect to adherence of JSC "TVEL" to the principles (Inclusivity, Materiality, and Responsiveness).

Compliance of the Report with the GRI Sustainability Reporting Standards (Comprehensive option)

Analysis of compliance to the GRI Standards requirements

In order to form a position on this issue, we have performed analysis of compliance to the GRI Standards requirements concerning principles and disclosures for the chosen 'in accordance' option.

- General disclosures are reported mainly in compliance with the requirements of the standard GRI 102 (2016) for the chosen 'in accordance' option. Employees' structure (102-8) is reported not in absolute but in relative indicators.
- Management approach disclosures are re-reported mainly in compliance with the requirements of the standard GRI 103 (2016): explanations of why the topic is material and of how the organization manages the topics are reported for material topics as well as explanations of how the organization evaluates the management approach for some material topics.
- Topic-specific disclosures required for the Comprehensive option are reported in compliance with requirements of GRI Standards. If it is not possible to disclose required information, the Report identifies the information that has been omitted and explains reason for omissions.

Overall assessment of the Report

- As a result and within the scope of our work, we did not identify material non-compliance to the requirements to the report prepared 'in accordance' with the Comprehensive option of the GRI Standards. The conclusion is stated taken into account abovementioned analysis of compliance to the GRI Standards requirements.

Compliance of the Report with the requirements of the International Integrated Reporting Framework

Based on the procedures performed and evidence obtained, we did not identify material non-compliance with the guiding principles of the International Integrated Reporting Framework and with requirements to the structure of content elements of integrated reports.

Compliance of the Report preparation process with the requirements of State

Corporation "Rosatom" in the sphere of public reporting

Based on the procedures performed and evidence obtained, we did not identify material non-compliance of the Report preparation process with the Unified Sectoral Policy of the State Corporation "Rosatom" in the sphere of public reporting and the Standard of Public Reporting of the State Corporation "Rosatom" and its organisations.

Recommendations

1. It is reasonable to disclose GRI indicators in relation to target values.
2. In case of significant changes in the list of material topics, explain reasons of changes in impact assessment.
3. Increase completeness of reporting on material topics by reducing the number of disclosures with omissions.
4. In case of disclosure with omissions due to absence of a recording system, provide more specific information about plans to obtain data in future.
5. Take into account remarks in the foregoing sections of the statement.

STATEMENT OF COMPETENCE AND INDEPENDENCE

"NP Consult" LLC, an independent audit firm, professionally rendering assurance services, is a licensed provider of assurance services in accordance with AA1000 Assurance Standard. "NP Consult" LLC is a member of Self-regulatory organization of auditors Association "Sodruzhestvo". "NP Consult" LLC complies with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Standard Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. "NP Consult" LLC applies International Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. "NP Consult" LLC employs a system of quality control of audit services, including control of compliance to ethical norms.

"NP Consult" LLC states that the present assurance report is an independent auditor's position on the Report. "NP Consult" LLC and its staff have no relations with JSC "TVEL" and its subsidiary companies that could result in the conflict of interest related to the independent assurance of the Selected Indicators.

General Director
LLC "NP Consult"

V. Y. Skobarev

Moscow, July 20, 2017



Appendix 5. Statement on Public Assurance of the JSC TVEL Report for 2016

INTRODUCTION

JSC "TVEL" management (parent company of the TVEL Fuel Company) contacted us with an offer to assure the 2016 Annual Report of the TVEL Fuel Company (hereinafter "the Report") in terms of completeness and relevance of information disclosed therein, and to assess the performance of management in response to recommendations and remarks of stakeholders.

DRAFT REPORT EVALUATION PROCEDURE

We are sufficiently competent and skilled in the sphere of corporate social responsibility, sustainable development and non-financial reporting.

We hereby confirm that we are acting independently and undertake to be objective in our evaluation, thereby expressing our personal expert opinion rather than the opinion of organizations we represent. No remuneration has been received from TVEL FC for our efforts and time invested in this project.

Our conclusion is based on the study of the Report and the analysis of information obtained in the course of dialogues and public consultations, where we and our representatives were allowed to participate and freely express our opinion on the matters under discussion.

We are not aware of any facts that compromise reliability of data set forth in this Report. However, checking of the data collection system and verification of reliability and completeness of information is not the subject matter of public assurance.

The results of our work are formalized in this Statement on Public Assurance wherein the opinions we all agreed upon are presented.

ESTIMATES, COMMENTS AND RECOMMENDATIONS

We all share positive opinion about the Report and note the endeavors of TVEL FC management to apply advanced international standards. Another characteristic feature of the Report 2016 is preparing the report according to the new version of GRI Standards (comprehensive option)

TVEL FC has prepared an informative and well-structured document that meets our expectations. It is our opinion that the priority topic of the Report – "New markets and partners of TVEL Fuel Company" is fully disclosed: The information about international and social partners was given. Also the information about expansion into new markets both in primary activity and in new businesses was presented. The Report was supplemented by the quotations of the Company partners, giving an opportunity to hear not only the opinion of TVEL Fuel Company but also the opinions of its contracting parties.

The Report sums up the results for 2016 and demonstrates the dynamics over the period of three years. The existence of such features as KPI on the next reporting period and either medium- or long-term outlook gives an opportunity to evaluate the effectiveness of Company's activity. There are also such features as: Company's strategy described in details, contribution of the reporting year in realization of this strategy, SWOT-analysis and factors of stability of the Company. These features definitely contribute to the merit of this Report. We would like to point out the constructive nature of stakeholder engagement demonstrated by the management in the course of preparation of the Report and during the dialogues and public consultations, as well as top quality organization of these events.

For providing more clear and complete information we recommend to include in the Report more analytical comments which would explain changes in measures or deviation of plan/actual.

COMPLETENESS AND MATERIALITY OF INFORMATION

In our opinion, the Report covers all spheres of core activity of the Company, as well as social, environmental and economic aspects of its sustainable development, material for stakeholders. The Report contains relevant information that is sufficiently complete for proper understanding of the current state and prospects of the Company.

COMPANY'S RESPONSE TO COMMENTS AND RECOMMENDATIONS OF STAKEHOLDERS

The Company has duly noted recommendations of the stakeholders in the minutes of dialogues and public consultations, conducted thorough analysis and used most of them in the Report, some of the recommendations to the Company activities were forwarded to the responsible departments. Hereby we confirm that all our suggestions and comments are set forth in the Table of Comments of Stakeholders (Appendix No. 7 to the Report).

Therefore, TVEL FC has demonstrated a responsible approach to implementation of requirements set forth in Public Reporting Policy of ROSATOM, and showed constructive attitude to wishes and suggestions of stakeholders.

We are confident that traditionally high quality of interaction between TVEL FC and stakeholders will be preserved in the future.

Councillor of the Head of the Federal Service for
Environmental, Technological and Nuclear Supervision



A. I. Kislov

Department Head of Federal Environmental, Industrial
and Nuclear Supervision Service



E. G. Kudryavtsev

Executive Director of the Association of Closed
Administrative Territorial Unit for Nuclear Industry



A. I. Makarenko

Chair of the Russian Trade Union of
Nuclear Power and Industry Workers



I. A. Fomichev

Head of Project Department of the Nuclear Fuel
Life Cycle ROSATOM State Corporation



O. I. Linyaev

Deputy head of Kovrov administration
on social issues



S. K. Stepanova

Member of Public Council of ROSATOM State Corporation
Member of the Board of the Center for Russian Ecological policy



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Head of the Center for Corporate Social Responsibility and Non-financial
Reporting of the Russian Union of Industrialists and Entrepreneurs



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Executive Director of Interregional Public Ecological
Organization "GREENLIGHT"



O. V. Plyamina

Director General
of the Institute of Natural Monopolies Issues



Yu. Z. Saakyan

Appendix 6. RUIE Public Endorsement of the Report

EXTRACT FROM MINUTES OF THE COUNCIL OF RUIE ON NON-FINANCIAL REPORTING FROM 22ND OF JUNE 2017 ON THE QUESTION OF THE AGENDA "ABOUT THE PUBLIC ENDORSEMENT OF THE ANNUAL REPORT OF TVEL JSC FOR 2016".

Regarding the question of the Agenda "About the Public endorsement of the Annual Report of TVEL JSC for 2016" the following decisions were made:

1. To declare the public endorsement of the report as accomplished.
 - 1.1. Put on record in the Statement of public endorsement the following:

Annual Report of TVEL JSC for 2016 covers the key areas of responsible business conduct according to the principals of the Social Charter of the Russian Business and provides sufficient information about company activities in these areas.

- 1.2. To approve the Statement of public endorsement taking into account discussions.
 2. To pay Company's attention on the following:

The Statement is prepared for TVEL JSC Company, which can use it for intercorporate aims and for aims of communications with stakeholders by means of its publishing in whole without any changes.

Chair of the Council of RUIE
on non-financial reporting

Fedor Prokopov

Deputy Chair of Council of RUIE
on non-financial reporting

Elena Feoktistova



Российский союз промышленников и предпринимателей

СВИДЕТЕЛЬСТВО

об общественном заверении
корпоративного нефинансового отчета

Годовой отчет
АО «ТВЭЛ» за 2016 год

прошел общественное заверение в Совете РСПП
по нефинансовой отчетности

Развернутое заключение Совета РСПП об общественном заверении Годового отчета АО «ТВЭЛ» за 2016 год направлено в Компанию, которая может публиковать его без каких-либо изменений и использовать как для внутрикорпоративных целей, так и в целях коммуникаций с заинтересованными сторонами.

Регистрационный номер 102.04.102.02.16

Президент РСПП



Москва, 2017

А.Шохин

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