
GAZPROM
MULTIFACETED ENERGY
PJSC Gazprom
Environmental Report 2023

# PJSC Gazprom Environmental Report 2023

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# Message by Mr. Aksyutin

Dear readers!

I am delighted to welcome you to the pages of our annual Environmental Report.

Russia has the largest natural gas reserves. Natural gas is the greenest and most affordable energy resource; its utilization is the best way to reduce negative impacts on the environment.

Gazprom adopts cutting-edge practices concerning the best available and innovative techniques that are developed in close contact with leading Russian R&D institutes.

Gazprom's operations are characterized by unique projects and record-breaking performance each and every year. This year, we continued the development of the Yamal gas production center, built new production facilities at the Bovanenkovskoye field, and kept the Kharasaveyskoye field expanding. In the interests of our country and the national gas industry in the East of Russia, we have been rapidly developing new gas production centers (the Sakhalin, Yakutsk, Irkutsk, and Kamchatka gas production centers) and a unified gas transmission system. They will guarantee gas supplies to consumers in Eastern Siberia and the Far East of Russia for many years to come, and will allow us to build a new powerful channel for Russian gas exports to the countries of the Asia-Pacific region.

The expansion of natural gas supply and infrastructure systems in the regions of the Russian Federation is one of large, socially and environmentally significant focus areas for Gazprom. Over the past year, several hundred more settlements were provided with gas in our country. Comprehensive efforts are being made on spreading natural gas in transport, which is an efficient answer to the challenges of reducing emissions of pollutants and greenhouse gases in Russian regions. In 2023, PJSC Gazprom Board of Directors approved Gazprom's 2050 Climate Strategy that was developed taking into account the low-carbon trend of the global economy. The Company provides the lowest carbon footprint of energy supplies.

The most efficient use of natural resources during operating activities is one of Gazprom's priorities. Improving energy efficiency through the implementation of energy saving and energy efficiency improvement programs resulted in saving over 3.7 billion cubic meters of natural gas for own process needs as well as 380 million kilowatt-hours of electricity in 2023.

Systemic actions on the mitigation of a negative impact on all environmental components contribute to the ongoing improvement of the Gazprom Group's environmental performance. This year, we have allocated over RUB 96 billion for environmental protection, which made it possible to complete an extensive list of measures and achieve all Corporate Environmental Goals set for 2023.

In 2023, we initiated and carried out over 4 thousand of voluntary nature conservation measures in the regions of Russia, planted over 240 thousand of seedlings of trees and bushes, released over 95 millions of fish of various spices, including highly valued ones.

Gazprom's leadership in environmental protection, sustainable development, corporate responsibility and reporting is proved by assessments of independent expert communities expressed in various ratings.

The conservation of healthy environment and natural resources of Russia is Gazprom's philosophy. By ensuring the widespread use of natural gas, we are shaping a future, where sustainable development goals are achieved.

**Oleg E. Aksyutin**
Deputy Chairman of the Management Committee – Head of Department, Head of PJSC Gazprom's Coordination Committee for Sustainable Resource Management

# Introduction

The present Environmental Report (thereinafter – the Report) has been prepared in accordance with PJSC Gazprom's Management Committee Resolution on Organization and Holding of the annual General Shareholders Meeting of Gazprom.

The Report uses annual statistical reporting data on environmental protection (EP) and energy efficiency collected by the corporate information & management system (IMS) along with other content from the reports on environmental activities of PJSC Gazprom's subsidiaries and organizations, corporate websites, Russian and international publications by the Group's companies.

The Report highlights EP and energy efficiency activities of the Gazprom Group companies in 2023, including actual impact on air, water and land resources, waste management, greenhouse gas (GHG) emissions, and measures undertaken to mitigate such an impact.

The Report specifies EP management and financing arrangements, research and technical improvement of the industrial complex that are aimed at enhancing environmental safety of the Gazprom Group's facilities.

Data are provided for the Gazprom Group in general, PJSC Gazprom (including five-year retrospective data) and for some companies from the Group that significantly contribute to reviewed issues of activities.

The terms "PJSC Gazprom" and "the Company" used in the Report refer to the parent company of the Gazprom Group – Public Joint Stock Company Gazprom and its 100% owned subsidiaries and organizations involved in hydrocarbons exploration, production, transmission, underground storage, processing and maintenance of the Unified Gas Supply System (UGSS):

OOO Gazprom dobycha Astrakhan
OOO Gazprom dobycha Irkutsk
OOO Gazprom dobycha Krasnodar
OOO Gazprom dobycha Kuznetsk
OOO Gazprom dobycha Nadym
OOO Gazprom dobycha Noyabrsk
OOO Gazprom dobycha Orenburg
OOO Gazprom dobycha shelf Yuzhno-Sakhalinsk
OOO Gazprom dobycha Urengoy
OOO Gazprom dobycha Yamburg
OOO Gazprom nedra
OOO Gazprom transgaz Ekaterinburg
OOO Gazprom transgaz Grozny
OOO Gazprom transgaz Kazan
OOO Gazprom transgaz Krasnodar
OOO Gazprom transgaz Makhachkala
OOO Gazprom transgaz Moscow
OOO Gazprom transgaz Nizhny Novgorod
OOO Gazprom transgaz Saint-Petersburg
OOO Gazprom transgaz Samara
OOO Gazprom transgaz Saratov
OOO Gazprom transgaz Stavropol
OOO Gazprom transgaz Surgut
OOO Gazprom transgaz Tchaikovsky
OOO Gazprom transgaz Tomsk
OOO Gazprom transgaz Ufa
OOO Gazprom transgaz Ukhta
OOO Gazprom transgaz Volgograd
OOO Gazprom transgaz Yugorsk
OOO Gazprom UGS
OOO Gazprom pererabotka
OOO Gazprom pererabotka Blagoveschensk
OOO Gazprom LNG Portovaya
OOO Gazprom NGHK
OOO Gazprom energo
OOO Gazprom geotekhnologii
OOO Gazprom gazomotornoye toplivo
OOO Gazprom avia Aviation Company
OOO Gazpromtrans
OOO Gazprom flot
OOO Gazprom invest
OOO Gazprom sotsinvest
AO Gazprom trubinvest

The terms “Gazprom Neft Group” and “Gazprom Neft” refer to PJSC Gazprom Neft, its subsidiaries and joint ventures under the operational management of PJSC Gazprom Neft.

The term “Gazprom neftekhim Salavat” refers to OOO Gazprom neftekhim Salavat and its subsidiaries.

The term “Gazprom energoholding” refers to OOO Gazprom energoholding and its subsidiaries (PAO Mosenergo, PAO MOEK, PAO OGK-2, PAO TGK-1, AO Gazprom teploenergo).

The Gazprom Group, Gazprom or the Group stand for PJSC Gazprom (with all listed above 100% owned subsidiaries and organizations) and the following companies:

Gazprom Neft Group
Gazprom energoholding
Gazprom neftekhim Salavat
AO Gazprom dobycha Tomsk
OOO Gazprom mezhregiongaz
AO Daltransgaz
OOO Sakhalinskaya Energia
OAO Severneftegazprom
ZAO Purgaz

as well as PJSC Gazprom’s subsidiaries operating abroad:
OAO Gazprom transgaz Belarus
ZAO Gazprom Armenia
OsOO Gazprom Kyrgyzstan
MKOOO Gazprom International Limited

The Gazprom Group’s gas business companies comprise PJSC Gazprom (and all its 100% owned subsidiaries and organizations involved in hydrocarbons production, transmission, underground storage and processing as well as UGSS maintenance), OOO Gazprom mezhregiongaz, AO Gazprom dobycha Tomsk, AO Daltransgaz, OOO Sakhalinskaya Energia, OAO Severneftegazprom, ZAO Purgaz.

The environmental impact indicators, ecological and economic indicators are given for the Gazprom Group operations in the Russian Federation. Environmental performance abroad is reviewed separately.

# Environmental management system

PJSC Gazprom adheres to the principles of sustainable development, which means a balanced and socially acceptable combination of economic growth and preservation of favorable environment for future generations.

PJSC Gazprom's Environmental Policy approved by PJSC Gazprom Management Committee's Decree No. 21 as of 25 May 2015 is a fundamental document of the Environmental Management System (EMS).

**In 1995, PJSC Gazprom adopted its Environmental Policy and became the first Russian oil and gas company to declare voluntary environmental responsibility.**

The Company's Environmental Policy features current trends in EP, energy efficiency and climate impact mitigation. The Environmental Policy stipulates obligations and instruments for ensuring environmental safety including those during development of hydrocarbon fields on the continental shelf and in the Arctic zone of the Russian Federation, and for mitigating negative environmental impact risks including highly vulnerable natural sites and sites of primary protection and preservation concern. Internal staff and external stakeholders, first of all contractors and outside suppliers, are informed on PJSC Gazprom's Environmental Policy provisions.

Since 2011, PJSC Gazprom has adopted a certified EMS designed to implement the Environmental Policy, set and pursue environmental goals, manage PJSC Gazprom's environmental aspects, fulfill assumed obligations, and address risks and opportunities.

**The recertification audit conducted in 2023 acknowledged PJSC Gazprom's EMS conformance to ISO 14001:2015 and the national standard of the Russian Federation GOST R ISO 14001-2016 "The environmental management system. Requirements and guidance for use". The validity period of the certificates of conformity of the system is set until 21 December 2026.**

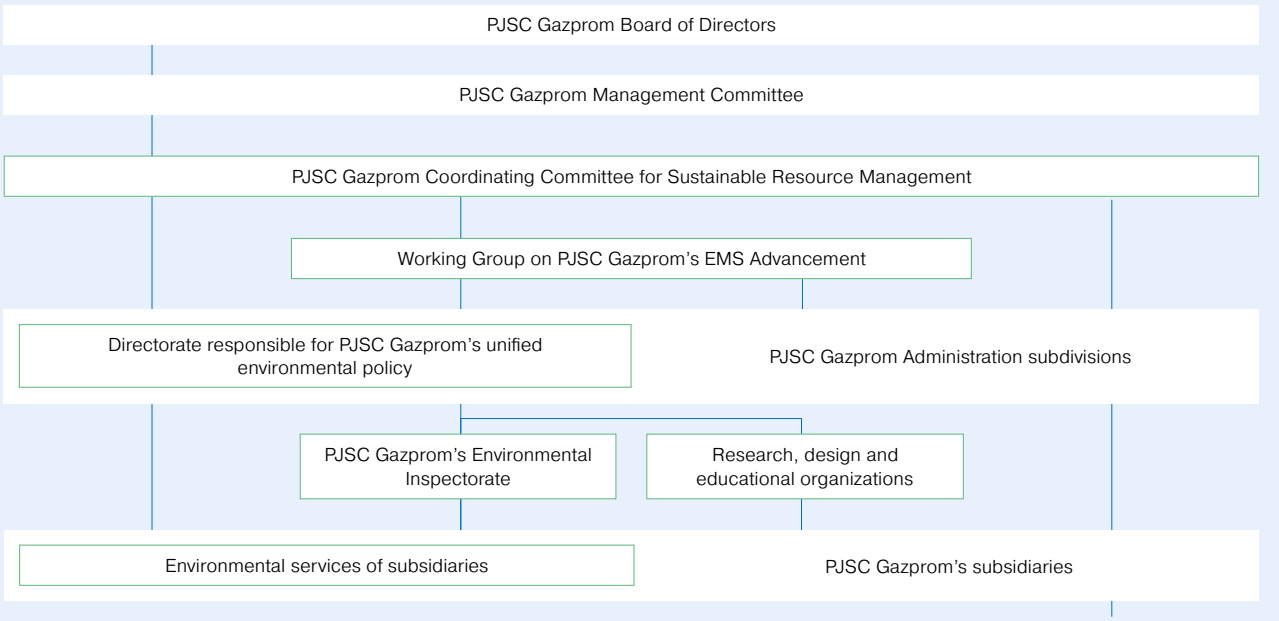
The Gazprom Management Committee is the top governing body of the Environmental Management System.

PJSC Gazprom established the Coordinating Committee for Sustainable Resource Management to secure multifaceted approach in rational use of natural resources energy efficiency and EP by PJSC Gazprom and its subsidiaries. The Committee comprises the majority of the Management Committee members and the heads of PJSC Gazprom's Administration subdivisions.

Teamwork of PJSC Gazprom's subsidiaries and organizations on EP activities, implementation of Coordinating Committee's and PJSC Gazprom's executive resolutions is arranged by the Directorate that is in charge of the unified environmental policy and arrangements aimed at energy efficiency improvement.

A permanent Working Group on PJSC Gazprom's EMS Advancement has been established to administer comprehensive approach and coordinate the work of PJSC Gazprom's divisions on environmental management.

**The structure of PJSC Gazprom's Environmental Management System**



**The updated Gazprom industry standard "Regulatory environmental documents. Environmental management system. The organization of environmental control and its procedures" was developed in 2023.**

Scope of PJSC Gazprom's EMS application is applied to management of subsidiaries that perform key activities, including:

- Natural gas and gas condensate production, including on the continental shelf.
- Natural gas and gas condensate processing.
- Natural gas and gas condensate transportation.
- Underground gas storage.
- Exploration.
- Geophysical works.
- Well construction, stimulation and repair, particularly offshore.
- Construction and operation of offshore drilling rigs, dedicated fleet and other floating equipment.
- Development and operation of offshore fields, onshore supply bases and port infrastructure.
- Power and water supply and operation of UGSS power equipment.
- Investment project management for PJSC Gazprom's facilities construction.

PJSC Gazprom's EMS scope applies to subdivisions of the Administration, 37 subsidiaries with 100% ownership involved in main businesses, the Corporate R&D Center for Environmental Safety and Energy Efficiency of OOO Gazprom VNIIGAZ, and PJSC Gazprom's Environmental Inspectorate as the part of OOO Gazprom gaznadzor.

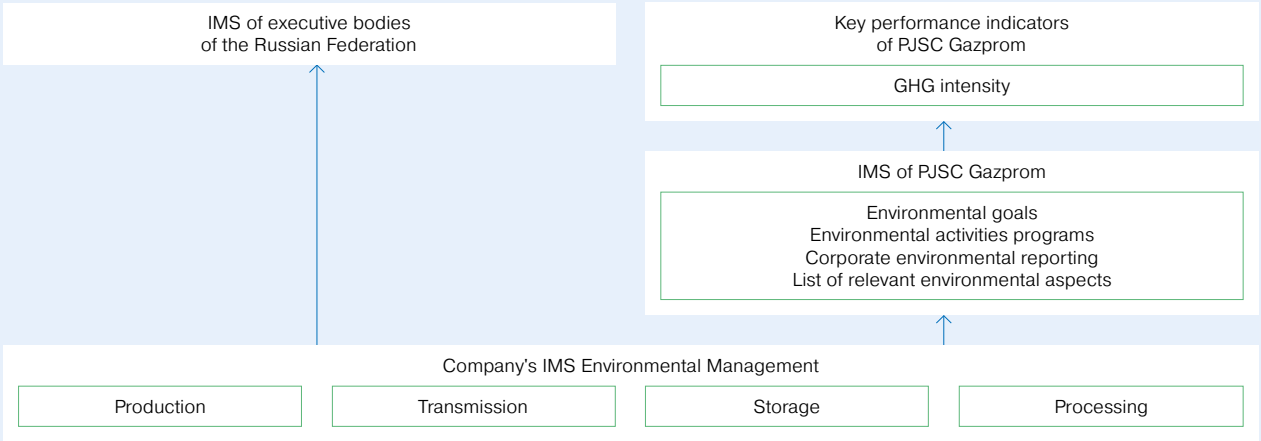
The Gazprom Group companies outside the boundaries of EMS scope have successfully adopted and put into operation individual EMSs, the majority of which is certified for conformance to ISO 14001:2015 requirements. Unique EMSs of those companies take into account specific features of their business.

For the first time ever in Russia, PJSC Gazprom developed the single software suit to introduce automation into EP activities of a vertically integrated company. The software developed on the basis of the Russian 1C platform provides a single digital information ecosystem within the Company, considers geography of its production facilities and provides reduction in the corresponding labor costs.

As part of PJSC Gazprom's digitalization strategy, an information & management system has been created and operated in 22 subsidiaries since 2019, automating Company's business process on Environmental Management (IMS C EM).

The number of organizations that have implemented this system is constantly growing both in the Gazprom Group and in other Russian vertically integrated companies. IMS C EM consists of the entire chain of environmental activities — from collecting and processing of initial data from production facilities to filling in summary reporting forms and their loading to PJSC Gazprom administration information systems and state information systems. In 2023, the introduction of IMS C EM has continued in another 33 subsidiaries.

**PJSC Gazprom Information & Management System (IMS) Environmental Management**



## Environmental training

Continuous advancement system of environmental knowledge and culture of employees is developed and operating in Gazprom.

The system of up-skilling and education provides training both in the corporate educational centers of PJSC Gazprom and in Russian leading educational centers. Since 1995, Gazprom Corporate Institute has been the leading educational establishment for signature continuous professional education system of PJSC Gazprom's personnel largely contributing into the Company's development. A multilevel corporate training system of the Institute encompasses all groups of personnel from young professionals to top management pool.

In 2023, Gazprom Corporate Institute carried out several educational projects to advance environmental education. New managers and employees of PJSC Gazprom obtained basic knowledge on the EMS and corporate environmental policy during the introductory training.

Managers and staff of environmental services at subsidiaries completed training under the following programs:

- Environmental Review under Expert review of projects in the gas industry" professional development program.
- Specialized work in the system "Ecology. 1 C-KSU. Environmental protection".

Professional development programs comprised the following EP courses:

- Development and implementation of the environmental management system based on ISO 14001:2015 requirements at gas industry enterprises, internal audit.
- Environmental Management System at PJSC Gazprom Facilities. Environmental Policy of PJSC Gazprom under "Corporate culture and management at PJSC Gazprom" professional development program.

Throughout the year, a considerable number of the Gazprom Group employees have completed the following training courses by virtue of the remote educational technologies:

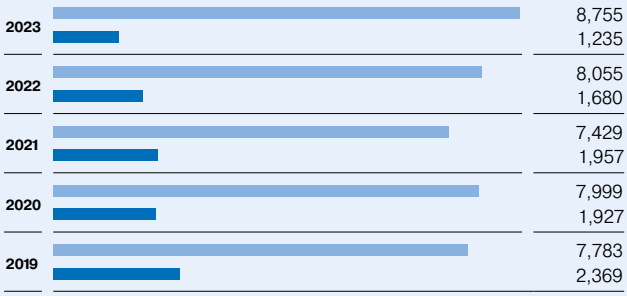
- Environmental Protection at PJSC Gazprom of the knowledgebase of PJSC Gazprom's signature continuous professional education system within e-teaching package "E-learning – advancing corporate competences".
- Environmental Protection within e-teaching package "Business integrity at PJSC Gazprom".

To maintain and improve the EMS of PJSC Gazprom, consulting seminars and trainings are held annually. The heads of environmental services of Gazprom subsidiaries, EMS internal auditors, and specialists form OOO Gazprom invest took part in the trainings:

- The procedure and mechanisms for managing inconsistencies within the EMS.
- Functioning of the Environmental Management System of PJSC Gazprom in accordance with the requirements of GOST R ISO 14001-2016, taking into account the characteristics of subsidiaries.
- Internal audit of the Environmental Management System.

In 2023, different educational institutions provided environmental training and skill upgrade for 8,755 employees of Gazprom (1,235 of them – on the EMS): 5,144 – at PJSC Gazprom and its subsidiaries (1,179 of them – on the EMS), 717 – OOO Gazprom mezhregiongaz (7 of them – on the EMS), 2,038 – at Gazprom Neft Group (49 of them – on the EMS), and 668 – at Gazprom energoholding.

**Environmental training of the Gazprom Group personnel, 2019–2023, prs.**




**40,021 employees completed environmental training at the Gazprom Group in 2019–2023.**

## Contest of environmental services and ecologists of PJSC Gazprom subsidiaries

Every year, PJSC Gazprom holds a Contest among environmental services and ecologists of its subsidiaries.

In 2023, OOO Gazprom nedra (Ms Yana E. Anisimova, head of the Department) won the Contest among environmental services as the 2022 Best Environmental Service.

The following specialists are the winners of the 2022 Best Gazprom Ecologist Contest:

- Ms Yana E. Anisimova – head of the EP and Energy-Saving Department of Occupational, Industrial, Environmental and Fire Safety Directorate at the administration of OOO Gazprom nedra.
- Ms Evgenia V. Pykina – leading engineer at the EP and energy-saving department at the administration of OOO Gazprom dobycha Irkutsk.
- Mr Vener R. Murzagulov – head of environmental control laboratory at the Engineering and Technical Center, the branch office of OOO Gazprom dobycha Yamburg.

# Environmental goals and programs

Under the EMS of PJSC Gazprom, the importance of environmental aspects is evaluated and analyzed annually, environmental action plans on achieving corporate environmental goals are being carried out. All that helps to reduce the negative environmental impact of Gazprom's production activities.

The following environmental aspects have been recognized as relevant and crucial for PJSC Gazprom: methane emissions during repairs of gas trunklines (GTL), nitrogen oxides emissions during operation of compressor stations (CS), wastewater discharges and waste disposal as well as environmental aspects related to implementation of investment projects.

PJSC Gazprom executes its Comprehensive Environmental Program for 2020–2024 towards sustainable eco-based development. The Program provides, among other things, the implementation of a set of measures for the transition to technology standardization and the introduction of the best available techniques (BAT).

All target values envisaged by PJSC Gazprom's Corporate Environmental Goals for 2023–2025 were achieved thanks to activities completed in 2023.

**PJSC Gazprom Corporate Environmental Goals for 2023–2025 achieved in 2023**

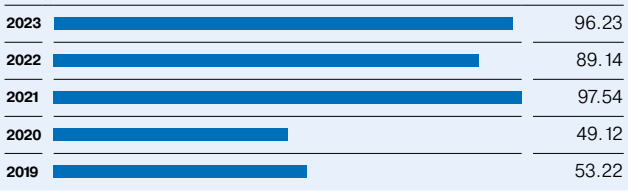
| № | Corporate environmental goal | Organizations under EMS scope | Baseline | 2023 value | Progress |
|---|---|---|---|---|---|
| 1. | Reduction in GHG emissions during natural gas transmission, t $CO_2$e/bln $m^3$·km | All natural gas transmission subsidiaries | 56.70 | 46.62 | Achieved |
| 2. | Reduction in nitrogen oxides emissions during natural gas transmission, t/mln $m^3$ | All natural gas transmission subsidiaries | 4.23 | 4.06 | Achieved |
| 3. | Reduction in limit-exceeding discharge of pollutants into surface water bodies, % | All subsidiaries | 5.26 | 1.47 | Achieved |
| 4. | Reduction in landfill against the total of circulating waste, % | All subsidiaries | 37.53 | 16.27 | Achieved |
| 5. | Reduction in subsidiaries that surpassed 5% payment for limit-exceeding environmental impact, % | All subsidiaries | 35 | 10.81 | Achieved |

**The development of PJSC Gazprom's Corporate Environmental Goals for 2025-2029 begun in 2023 aiming at further mitigation of negative environmental impact and improvement of PJSC Gazprom's EMS.**

# Environmental financing

In 2023, total expenditures of the Gazprom Group for EP in the Russian Federation increased by 8.0% against 2022 and amounted to RUB 96.23 bln. The growth was seen in fixed capital investments aimed at EP and rational use of natural resources as well as EP current costs.

**Dynamics of the Gazprom Group expenditures for EP, 2019–2023, bln RUB**




**In 2019–2023, the Gazprom Group allocated RUB 385.25 bln for EP.**

The Gazprom Group's fixed capital investments for EP and rational use of natural resources totaled RUB 52.07 bln. Increase by 8.5% against 2022 is related to construction of air protection facilities at Gazprom Neft Group and Gazprom Neftekhim Salavat.

In 2023, the Gazprom Group made investments into

- air protection – RUB 30,212.21 mln, incl. RUB 28,255.39 mln for construction and upgrading fixed assets of Gazprom Neft Group;
- protection and rational use of water resources – RUB 13,688.64 mln, incl. RUB 6,926.89 mln for construction of sewage treatment plants and recycling water supply systems;
- protection and rational use of lands – RUB 5,172.91 mln, incl. RUB 1,844.34 mln for restoration;
- other environmental issues – RUB 2,994.72 mln, incl. RUB 1,245.78 mln for the fishery protection and reproduction, RUB 652.26 mln for protection and rational use of forests, RUB 146.29 mln for waste recycling, treatment and disposal facilities and sites, others – RUB 950.39 mln.

**Fixed capital investments in EP and rational use of natural resources, 2019–2023, mln RUB**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **The Gazprom Group** | **20,421.32** | **13,987.15** | **60,529.57** | **47,971.71** | **52,068.48** |
| Gas business companies | 5,732.34 | 3,607.24 | 16,245.96 | 13,996.60 | 12,915.79 |
| incl. PJSC Gazprom | 5,119.59 | 1,646.16 | 14,973.70 | 13,606.36 | 12,525.16 |
| Gazprom Neft Group | 13,015.56 | 7,796.72 | 39,700.79 | 32,415.26 | 35,422.52 |
| Gazprom energoholding | 305.69 | 729.41 | 3,766.70 | 1,029.79 | 1,813.26 |
| Gazprom neftekhim Salavat | 1,367.73 | 1,853.78 | 816.12 | 530.06 | 1,916.91 |

Gazprom Neft Group's investments in 2023 increased by 9.3% and amounted to RUB 35.42 bln. RUB 28.26 bln, or 79.8% of fixed capital investments were channeled into air protection, in particular through the construction and upgrading of fixed assets of AO Messoyakhaneftegaz, aimed at air protection and completing activities of the Gas Program. Over RUB 5.6 bln, or 15.9% of investments were channeled into protection and rational use of water resources.

A significant increase in Gazprom neftekhim Salavat's investment costs is due to the construction of a commercial sulfur production facility included in the Agreement between the Ministry of Natural Resources and Environment of the Russian Federation, the Federal Supervisory Natura Resources Management Service, the Government of the Republic of Bashkortostan, and OOO Gazprom neftekhim Salavat.

In 2023, EP investments of gas business companies decreased by 7.7% due to the actual costs at investment construction facilities during the reporting year. Over 86.9% of investments were channeled into protection and rational use of lands and water resources.

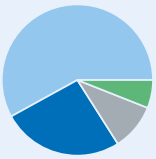
**In 2019–2023, the Gazprom Group invested RUB 195 bln into EP and rational use of natural resources.**

In the reporting year, Gazprom commissioned: 49 wastewater treatment plants and structures with a total capacity of 27.71 thousand $m^3$/day, 6 units for waste neutralization and treatment with a capacity of 186.95 thousand t per year, 2 circulation water systems with a capacity of 52.82 thousand $m^3$/day as well as one unit for entrapment and neutralization of off-gases contaminants with a capacity of 0.03 thousand $m^3$/hour.

In 2023, current EP expenditures of the Gazprom Group increased by 7.7% against 2022 and amounted to RUB 43,517.90 mln. The reason for this was the increase in EP operational expenditures, escalation of nature conservation service charges related to protection and rehabilitation of lands, surface and ground waters, collection and treatment of wastewaters, and air protection as well as prevention of climate change thanks to gas pumping by mobile compressor stations (MCS) to reduce pollutant emissions.

Increased expenses were observed simultaneously for all businesses (gas, oil, power), which had an overall effect for the total of the Gazprom Group.

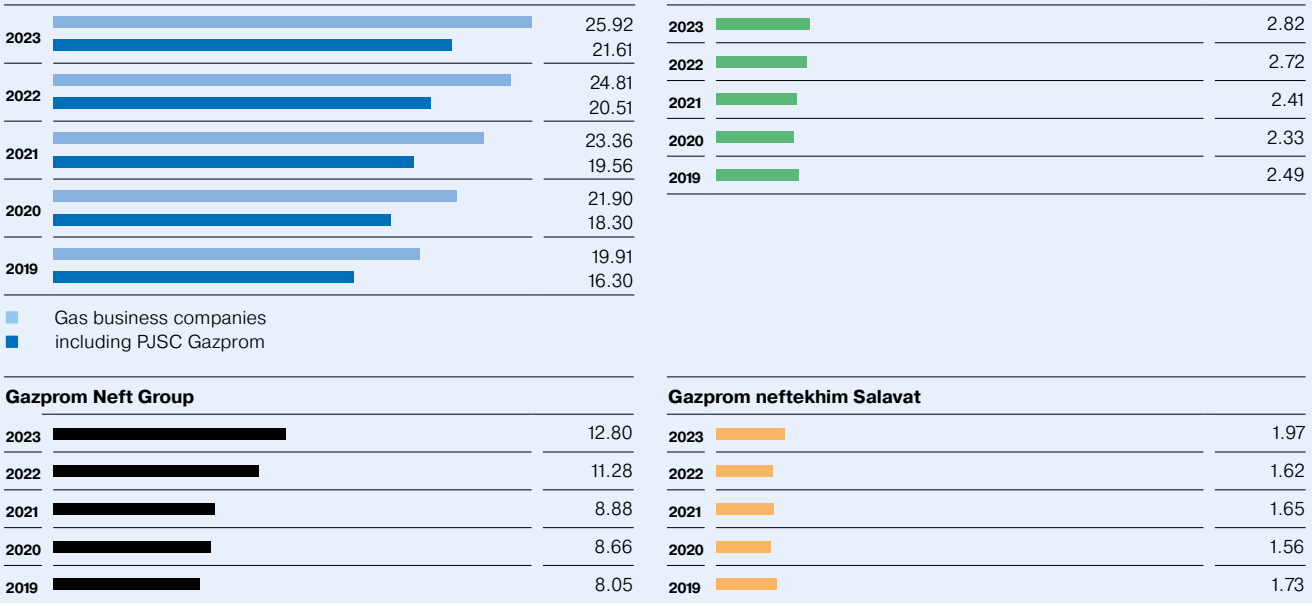
**Structure of the Gazprom Group investments in EP and rational use of natural resources, 2023, %**




**Current EP expenditures, 2019–2023, mln RUB**

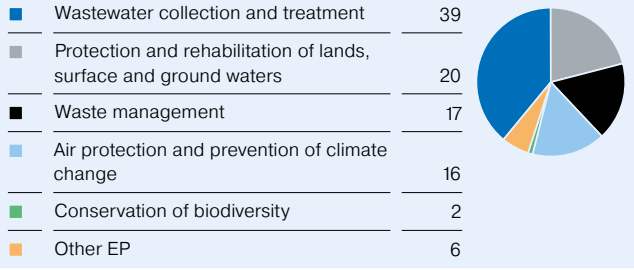
| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **The Gazprom Group** | **32,180.11** | **34,440.66** | **36,303.25** | **40,419.70** | **43,517.90** |
| Gas business companies | 19,909.65 | 21,899.51 | 23,362.21 | 24,805.79 | 25,924.89 |
| incl. PJSC Gazprom | 16,300.29 | 18,303.85 | 19,562.22 | 20,506.15 | 21,610.74 |
| Gazprom Neft Group | 8,053.81 | 8,655.44 | 8,877.77 | 11,276.12 | 12,800.19 |
| Gazprom energoholding | 2,486.13 | 2,329.58 | 2,412.42 | 2,720.36 | 2,821.42 |
| Gazprom neftekhim Salavat | 1,730.52 | 1,556.13 | 1,650.85 | 1,617.43 | 1,971.40 |
| **Including current (operating) EP expenditures** | | | | | |
| **The Gazprom Group** | **14,964.57** | **13,979.38** | **14,765.66** | **16,313.71** | **17,996.08** |
| Gas business companies | 10,431.86 | 10,472.04 | 10,935.10 | 12,259.02 | 13,295.57 |
| incl. PJSC Gazprom | 9,933.54 | 9,906.52 | 10,321.74 | 11,357.38 | 12,603.97 |
| Gazprom Neft Group | 3,088.78 | 2,262.02 | 2,596.30 | 2,793.15 | 3,316.65 |
| Gazprom energoholding | 656.20 | 633.56 | 573.04 | 607.50 | 653.67 |
| Gazprom neftekhim Salavat | 787.73 | 611.76 | 661.22 | 654.04 | 730.19 |
| **Including current expenditures for EP services** | | | | | |
| **The Gazprom Group** | **15,601.86** | **18,980.31** | **20,079.41** | **22,540.71** | **24,336.62** |
| Gas business companies | 8,530.24 | 10,701.90 | 11,810.24 | 11,809.58 | 11,893.74 |
| incl. PJSC Gazprom | 5,420.37 | 7,678.02 | 8,700.84 | 8,468.38 | 8,332.98 |
| Gazprom Neft Group | 4,673.04 | 5,984.36 | 5,764.75 | 7,908.13 | 9,455.11 |
| Gazprom energoholding | 1,606.82 | 1,508.39 | 1,715.75 | 1,970.62 | 2,076.21 |
| Gazprom neftekhim Salavat | 791.76 | 785.66 | 788.67 | 852.38 | 911.56 |
| **Including current expenditures for overhaul repair of environmental basic production assets** | | | | | |
| **The Gazprom Group** | **1,613.68** | **1,480.97** | **1,458.18** | **1,565.28** | **1,185.20** |
| Gas business companies | 947.55 | 725.57 | 616.85 | 737.19 | 735.58 |
| incl. PJSC Gazprom | 946.38 | 719.31 | 539.65 | 680.39 | 673.79 |
| Gazprom Neft Group | 291.99 | 409.06 | 516.72 | 574.84 | 28.43 |
| Gazprom energoholding | 223.11 | 187.63 | 123.64 | 142.24 | 91.54 |
| Gazprom neftekhim Salavat | 151.03 | 158.71 | 200.97 | 111.01 | 329.65 |

**Dynamics of current EP expenditures at the Gazprom Group, 2019–2023, bln RUB**




Wastewater collection and treatment costs routinely prevail in the structure of the Gazprom Group current expenditures. In 2023, these costs amounted to RUB 16.89 bln, or 38.8%. The Gazprom Group spent RUB 8.55 bln on protection and rehabilitation of lands, surface and ground waters; RUB 7.58 bln on waste treatment, RUB 7.05 bln on air protection and prevention of climate change; RUB 0.65 bln on conservation of biodiversity and protection of natural areas. Expenditures on other environmental issues such as protection against noise, vibration and other physical impacts, radiation safety, R&D activities aimed at mitigation of negative impact on the environment, etc. totaled RUB 2.80 bln.

**Structure of the Gazprom Group EP expenditures, 2023, %**



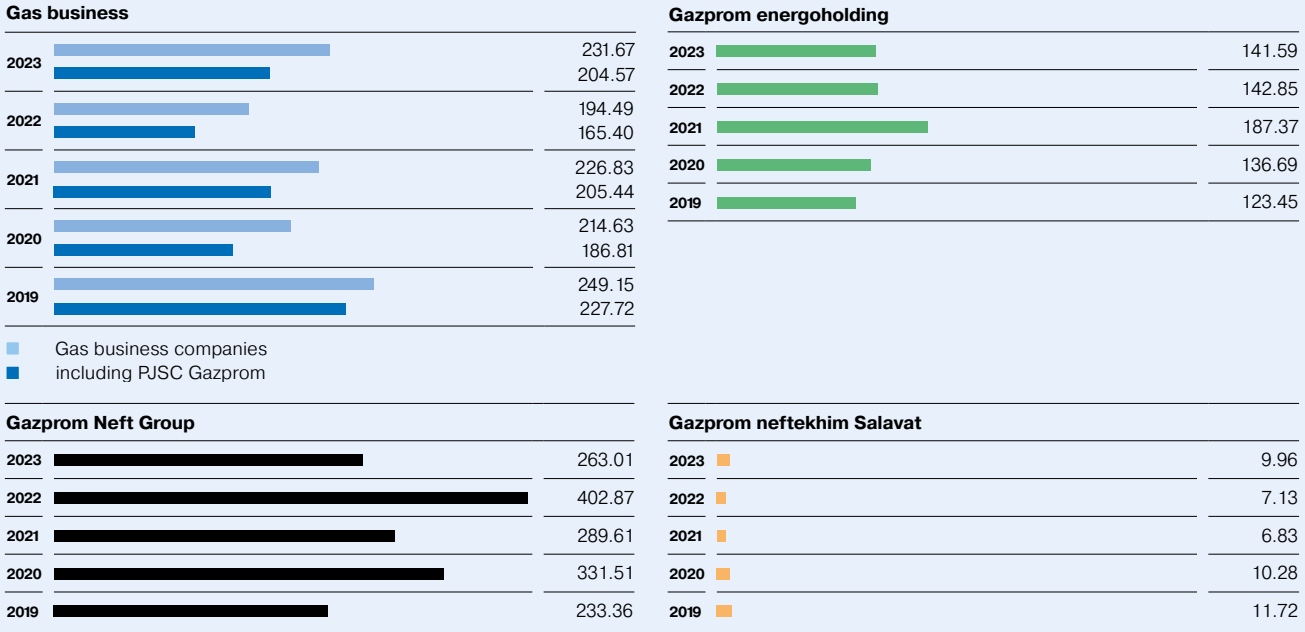

## Environmental impact fee

In 2023, the Gazprom Group paid RUB 646.23 mln in environmental impact fee to budgets of different levels that is 13.5% lower than payments in 2022. A significant reduction in fees was achieved thanks to obtaining permits for the Gazprom Group facilities.

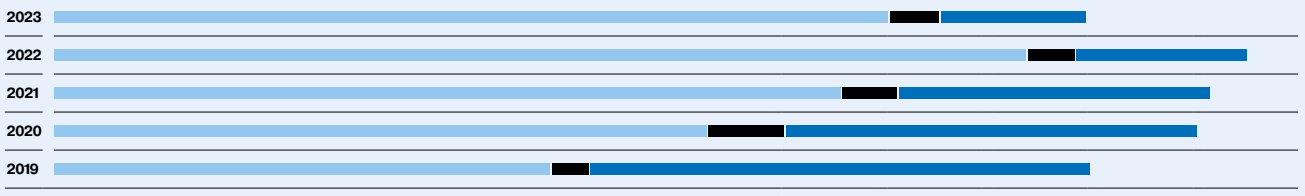
**Environmental impact fee, 2019–2023, mln RUB**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **The Gazprom Group** | **617.68** | **693.11** | **710.64** | **747.34** | **646.23** |
| Gas business companies | 249.15 | 214.63 | 226.83 | 194.49 | 231.67 |
| incl. PJSC Gazprom | 227.72 | 186.81 | 205.44 | 165.40 | 204.57 |
| Gazprom Neft Group | 233.36 | 331.51 | 289.61 | 402.87 | 263.01 |
| Gazprom energoholding | 123.45 | 136.69 | 187.37 | 142.85 | 141.59 |
| Gazprom neftekhim Salavat | 11.72 | 10.28 | 6.83 | 7.13 | 9.96 |

**Environmental impact fee dynamics, the Gazprom Group, 2019–2023, mln RUB**




**Dynamics of the Gazprom Group's environmental fees by types of negative impact on the environment, 2019–2023, mln RUB**




| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Emissions of pollutants into the atmosphere | 318.78 | 419.35 | 505.28 | 624.68 | 535.90 |
| Discharge of pollutants into water bodies | 22.49 | 46.58 | 33.65 | 28.47 | 30.15 |
| Industrial and consumption waste disposal | 276.41 | 227.18 | 171.71 | 94.19 | 80.18 |

Fees for pollutant emissions (82.9%) and for disposal of industrial and consumption waste (12.4%) prevailed in the structure of environmental impact fees in 2023.

Environmental limit-exceeding impact fee for the Gazprom Group reduced by 23.4% and amounted to 56.0% of total environmental fee, PJSC Gazprom – 16.8%, Gazprom Neft Group – 90.5%, Gazprom energoholding – 58.5%, Gazprom neftekhim Salavat – 0.4%.

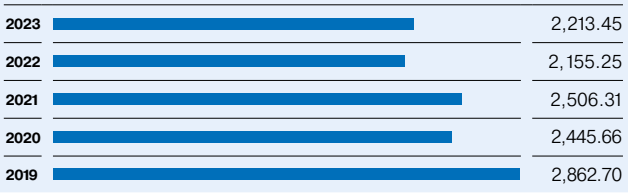
The existence of environmental limit-exceeding impact fees inside the total of environmental fee is mainly explained by burning of associated petroleum gas (APG) at the commissioned facilities of Gazprom Neft Group and paying for pollutant emissions.

# Environmental impact indicators

## Atmosphere impact

In 2023, the gross pollutant emissions from stationary sources of the Gazprom Group companies increased slightly (less than 3%) against 2022 and totaled 2,213.45 thousand t.

**Dynamics of gross pollutant emissions of the Gazprom Group, 2019–2023, thousand t**

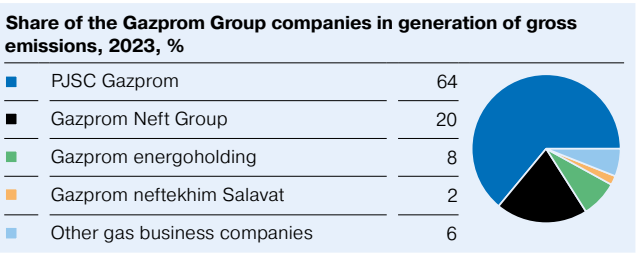



**In 2019–2023, pollutant emissions of the Gazprom Group decreased by 23%.**

Off-gas decontamination units captured and neutralized 390.93 thousand t of pollutants. Gazprom energoholding captured and neutralized 379.24 thousand t of pollutants, PJSC Gazprom – 4.36 thousand t, other companies of the Group – 7.33 thousand t.

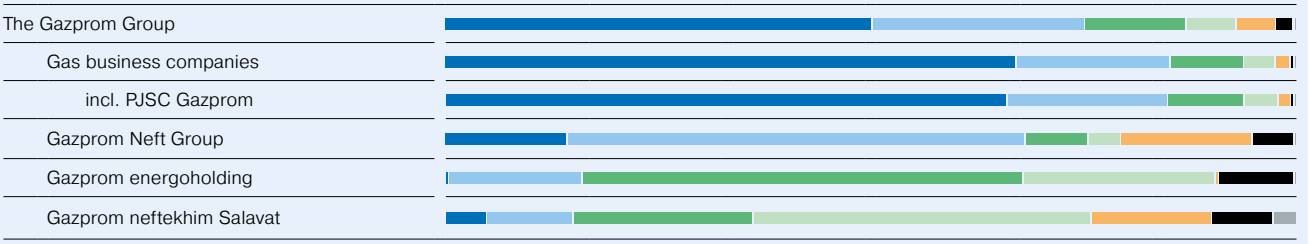
Solid particles, predominantly solid fuel ash of power facilities, constitute 97.4% of the total mass of captured and neutralized pollutants, while 2.6% goes for gaseous and liquid substances.

**Share of the Gazprom Group companies in generation of gross emissions, 2023, %**



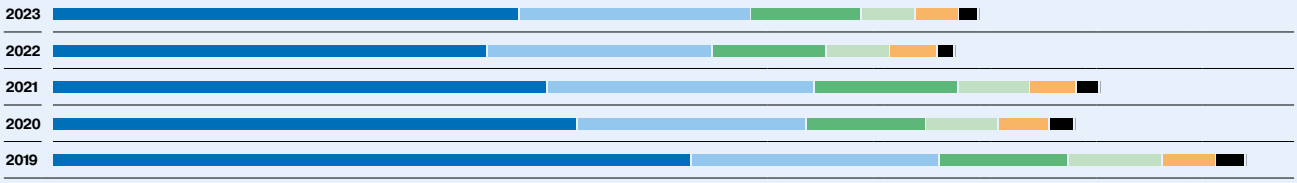

Hydrocarbons (including methane), carbon oxide, nitrogen oxides, and sulfur dioxide dominates in the structure of the Gazprom Group emissions that is explained by the production activities of PJSC Gazprom and other gas business companies. Emissions of solid particles come mostly from for Gazprom's power sector, while emissions of volatile organic compounds (VOCs) are mostly associated with companies of Gazprom Neft Group and gas business companies.

**Component structure of pollutant emissions at the Gazprom Group, 2023, thousand t, %**




| | The Gazprom Group | Gas business companies | Including PJSC Gazprom | Gazprom Neft Group | Gazprom energoholding | Gazprom neftekhim Salavat |
|---|---|---|---|---|---|---|
| Hydrocarbons (incl. methane) | 1,125.77 | 1,059.44 | 943.22 | 63.95 | 0.27 | 2.11 |
| Carbon oxide | 556.03 | 281.86 | 267.85 | 243.29 | 26.61 | 4.27 |
| Nitrogen oxides | 262.85 | 132.78 | 124.49 | 31.74 | 89.65 | 8.68 |
| Sulphur dioxide | 125.12 | 53.72 | 53.67 | 15.78 | 38.75 | 16.87 |
| Volatile organic compounds | 99.19 | 23.67 | 16.89 | 69.19 | 0.19 | 6.14 |
| Solid particles | 42.38 | 3.34 | 2.77 | 21.14 | 14.95 | 2.95 |
| Other gaseous and liquid substances | 2.11 | 0.77 | 0.36 | 0.17 | 0.06 | 1.11 |

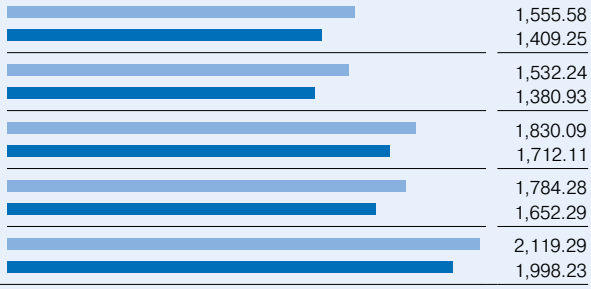
**Dynamics of the main pollutant emissions from stationary sources of the Gazprom Group, 2019–2023, thousand t**




| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Hydrocarbons (incl. methane) | 1,542.64 | 1,266.42 | 1,193.49 | 1,048.24 | 1,125.77 |
| Carbon oxide | 596.42 | 550.66 | 642.07 | 540.64 | 556.03 |
| Nitrogen oxides | 307.71 | 284.22 | 341.60 | 270.02 | 262.85 |
| Sulphur dioxide | 221.46 | 171.97 | 169.72 | 150.45 | 125.12 |
| Volatile organic compounds | 124.76 | 117.22 | 107.82 | 109.90 | 99.19 |
| Solid particles | 67.47 | 53.57 | 50.05 | 34.16 | 42.38 |
| Other gaseous and liquid substances | 2.24 | 1.60 | 1.56 | 1.84 | 2.11 |

**Dynamics of gross pollutant emissions at the Gazprom Group companies, 2019–2023, thousand t**

**Gas business**




Gas business companies
including PJSC Gazprom

**Gazprom energoholding**


**Gazprom Neft Group**


**Gazprom neftekhim Salavat**


A slight increase in pollutant emissions into the atmosphere at Gazprom energoholding (by 6%) and Gazprom Neft Group (by 5%) is related to energy generation growth at PJSC OGK-2 as well as an extension of the reporting scale of Gazprom Neft Group.

Pollutant emissions from stationary sources of the Group's gas business companies totaled 1,555.58 thousand t that is compared to 2022. The PJSC Gazprom's share in the total gas business emissions volume is 90% and determines the overall prevailing trend.

The gross emissions of PJSC Gazprom increased slightly by 28.32 thousand t, or 2.1% against 2022. The growth of refining segment emissions is explained by an increase in the volume of natural gas processed at the Amur Gas Processing Plant (GPP) and test starts at OOO Gazprom LNG Portovaya during 2023. The growth of transmission segment emissions is explained by in-line inspections and repair works under the major overhaul plan.

**Gross emissions by the type of PJSC Gazprom main activities, 2019–2023, thousand t**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **PJSC Gazprom** | **1,998.23** | **1,652.29** | **1,712.11** | **1,380.93** | **1,409.25** |
| Production | 146.58 | 150.56 | 172.43 | 175.76 | 156.13 |
| Transmission | 1,677.52 | 1,334.96 | 1,377.75 | 1,048.76 | 1,084.15 |
| Underground gas storage | 21.17 | 21.92 | 27.83 | 21.30 | 23.47 |
| Processing | 144.62 | 136.97 | 124.96 | 125.53 | 134.37 |
| Other activities | 8.34 | 7.88 | 9.14 | 9.58 | 11.13 |

Every year the subsidiaries of PJSC Gazprom execute many measures aimed at reduction of pollutant emissions. Energy saving projects based on the cutting-edge technologies targeted at prevention of natural gas leaks during repairs of linear sections of gas trunklines (LSs of GTLs) make significant contribution into emissions reduction. MCS are among the most effective modern technologies that in 2023 helped to prevent releasing of 765 mln $m^3$ of natural gas into atmosphere. In the reporting year, a special purpose company OOO Gazprom MCS implemented MCS project at full design capacity and used 12 MCSs.

Gas producing subsidiaries carry out well logging without releasing natural gas into the atmosphere thanks to telemetry systems, concentric tubing for the wells and multi-component surfactants that improve conditions for removing formation fluid from a bottom hole, thus reducing natural gas emissions.

**OOO Gazprom Dobycha Noyabrsk assessed the environmental & economic efficiency of using natural gas from the Kshuksky and Nizhnekvakchiksky fields. According to calculations, Kamchatka emissions decreased by 3.5 times thanks to gas infrastructure expansion. During 2012-2023, emissions of nitrogen dioxide halved, sulfur dioxide emissions decreased 5 times, and fuel oil ash – 6 times.**

**As part of the implementation of the Clean Air federal project program, a new primary oil refining complex begun operating at the Omsk Refinery of Gazprom Neft. Modern production facility will replace 6 units of older eco-classes at once. Gazprom Neft's investments in the project exceeded RUB 66 bln. The robot sensors of an automated air monitoring system that will transmit online data to the Federal Supervisory Natural Resources Management Service will control the environmental parameters of the complex. The Russian Minister of Energy Mr. N. Shulginov, Plenipotentiary Representative of the President of the Russian Federation in the Siberian Federal District Mr. A. Seryshev, CEO of PAO Gazprom Neft Mr. A. Dyukov and the Governor of the Omsk Region Mr. V. Khotsenko launched the complex.**

# Utilization of associated petroleum gas

Gazprom activities aimed at reduction (stop) of APG flaring impact significantly the reduction of emissions of pollutants and GHG as well as efficient use of resources.

Prevention of APG flaring is a burning issue for the oil and gas industry in the context of global trends of economy switching to low-carbon and energy efficient development scenario with due regard of economic losses and environmental risks. APG investment projects are aimed at achievement of minimum 95% APG used at the Gazprom Group fields according to the requirements of the Russian Government Decree No. 1148 as of 8 November 2012.

In 2023, the APG effective use factor at the fields of PJSC Gazprom gas producing subsidiaries (including AO Gazprom dobycha Tomsk) totaled 99.0%.

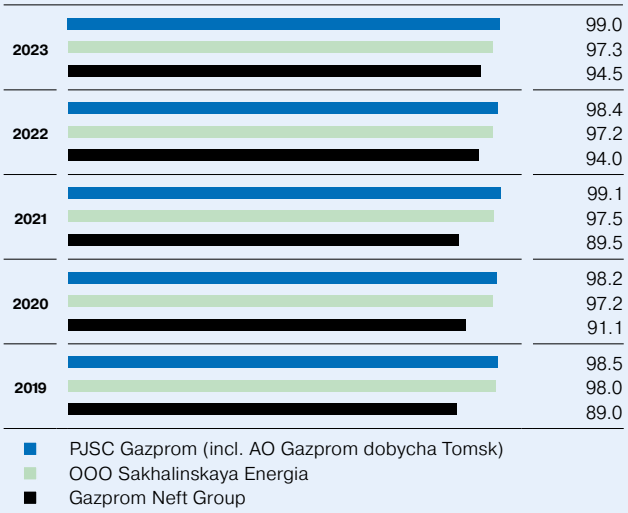
**In 2023, APG effective use factor for the Gazprom Group reached 94.73%.**

The Gazprom Group continues to work on reducing flaring, gradually approaching its corresponding corporate goal — 95% in rational APG use. The Group's completed investment projects that contribute to this goal comprise transmission and delivery of APG to GPPs and the UGSS of the Russian Federation, processing, generation of heat and electricity for own needs, injection into the gas cap to maintain formation pressure.

Gazprom Neft Group demonstrated 94.5% APG effective use level for the subsidiaries on the territory of the Russian Federation considering consolidation of production volumes of the current assets developed as per long-term risky operator contracts.

Key drivers for the increase in APG utilization are effective management of material flows and equipment, and the launch of new Gazprom Neft infrastructure facilities.

**APG utilization dynamics at the Gazprom Group companies, 2019–2023, %**




**The APG rational use program for the Messoyakha cluster of fields won the International Climate Competition "Green Eurasia" within the framework of the II Eurasian Economic Forum. Experts from the member countries of the Eurasian Economic Union recognized AO Messoyakhaneftegaz's project as one of the best solutions for decarbonization and sustainable development. APG effective use consists of the treatment, transportation and pumping of gas obtained during the production of hydrocarbons at the Vostochno-Messoyakhskoye field into undeveloped formations of the neighboring Zapadno-Messoyakhskoye site. One fifth of APG is utilized as fuel to generate electricity at the oilfield facilities; the rest is pumped into storage and can be extracted and processed later. The company controls environmental safety during the natural reservoir operation using digital systems of last-gen integrated geoseismic monitoring. This approach increases production processes safety and helps in developing a wide range of process design solutions including injection of carbon dioxide into the reservoir.**

# Water use

The Gazprom Group companies are aware of the high value of water resources and are committed to mitigate negative impact, among other things, by reducing water consumption for production needs and wastewater discharge to surface water bodies. The water resources management system operates at all the Company's facilities located in various regions of Russia, on land and at sea, using various types of water sources, fresh and seawater.

In 2023, water intake of the Gazprom Group companies totaled 4,432.21 mln m³ for supply purposes that is 19.3% higher than in 2022. The increase is due to an increase in electricity generation at Gazprom energoholding plants, and given that most plants have direct-flow process water supply systems, an increase in water intake has led to an increase in discharge.

Sewage disposal in 2023 increased also by 20.3% and amounted to 3,682.07 mln m³.

Water discharge to surface water bodies increased by 19.9% against 2022 and amounted to 3,523.75 mln m³. Water discharge to underground horizons made 65.75 mln m³, including 8.96 mln m³ to maintain formation pressure; sewage farms, absorption fields and terrain – 8.36 mln m³, holding basins – 0.87 mln m³. Discharge to municipal and other systems totaled 83.33 mln m³.

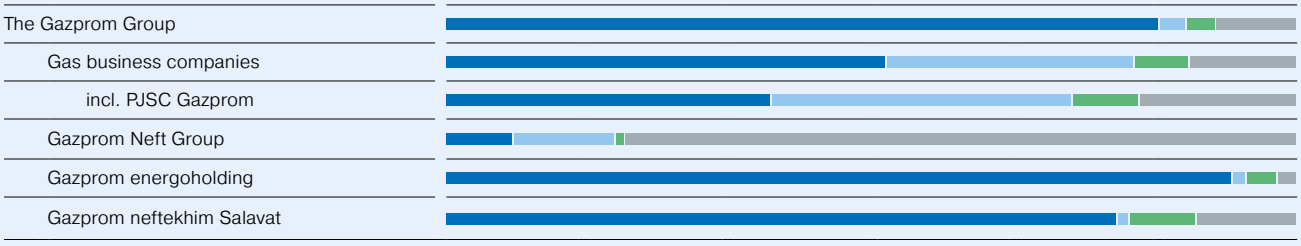
Water recycling systems used 12,060.44 mln m³.

**Water use rates at the Gazprom Group, 2019–2023, mln m³**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **Total water intake** | **3,921.41** | **3,236.63** | **3,898.24** | **3,716.01** | **4,432.21** |
| incl. water from natural sources | 3,571.28 | 2,905.78 | 3,520.59 | 3,285.27 | 3,871.40 |
| **Used for own needs** | **3,863.11** | **3,175.81** | **3,836.75** | **3,648.06** | **4,330.36** |
| incl. production needs | 3,678.12 | 3,008.63 | 3,518.42 | 3,274.92 | 3,864.22 |
| **Water discharge to surface water bodies** | **3,241.79** | **2,610.78** | **3,225.44** | **2,937.95** | **3,523.75** |
| incl. clean and treated as per standards | 3,152.71 | 2,533.70 | 3,125.43 | 2,837.53 | 3,422.29 |

**In 2019-2023, the share of clean and treated as per standards (at wastewater treatment plants) water in the total volume of wastewater discharged to surface water bodies by the Gazprom Group companies amounted to more than 97%.**

**The Gazprom Group water consumption structure by source types, 2023, mln m³**




| | The Gazprom Group | Gas business companies | Gazprom Neft Group | Including PJSC Gazprom | Gazprom energoholding | Gazprom neftekhim Salavat |
|---|---|---|---|---|---|---|
| Surface sources | 3,743.39 | 50.44 | 31.45 | 25.00 | 3,627.94 | 33.56 |
| Underground sources | 128.00 | 28.68 | 46.55 | 23.76 | 52.30 | 0.47 |
| Domestic water supply facilities | 143.29 | 5.80 | 3.30 | 4.82 | 130.90 | 3.29 |
| Other water supply facilities | 417.53 | 12.42 | 316.92 | 11.85 | 83.18 | 5.01 |

The share of natural sources in the Group's water intake is 87%, of which surface water bodies account for 97%, underground – 3%. Water intake from surface and underground sources is carried out precisely within current legislation on the terms set out in water use agreements and licenses, and does not exert a significant impact on the environment.

The structure of water consumption by types of sources in the Group depends on operation activities specifics and facilities location.

Gazprom energoholding is the main contributor to water consumption and, accordingly, wastewater disposal to surface water bodies that is due to the power generation at hydroelectric power plants (HPPs) with a direct-flow cooling system. Gazprom energoholding's contribution to the Gazprom Group's wastewater disposal in surface water bodies is 98.3%.

The Gazprom Group's gas business share in the overall water discharge to surface water bodies is not very high and amounts to 1.1%, including 0.5% – by PJSC Gazprom.

**Discharge to surface water bodies at the Gazprom Group, 2019–2023, mln m³**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **The Gazprom Group** | **3,241.79** | **2,610.78** | **3,225.44** | **2,937.95** | **3,523.75** |
| Gas business companies | 41.83 | 45.90 | 44.09 | 41.34 | 39.44 |
| incl. PJSC Gazprom | 18.89 | 23.08 | 21.43 | 18.31 | 17.46 |
| Gazprom Neft Group | 0.09 | 0.07 | 0.11 | 0.13 | 0.15 |
| Gazprom energoholding | 3,161.88 | 2,525.10 | 3,144.20 | 2,872.82 | 3,462.13 |
| Gazprom neftekhim Salavat | 37.99 | 39.71 | 37.04 | 23.66 | 22.03 |

**In 2019–2023, PJSC Gazprom reduced wastewater discharge to surface water bodies by 7.6%.**

**Discharge to surface water bodies at PJSC Gazprom by type of activity, 2019–2023, mln m³**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| **PJSC Gazprom** | **18.89** | **23.08** | **21.43** | **18.31** | **17.46** |
| Production | 1.35 | 3.22 | 4.81 | 0.36 | 0.32 |
| Transmission | 5.47 | 5.20 | 5.33 | 5.07 | 5.05 |
| Underground gas storage | 0.11 | 0.10 | 0.11 | 0.11 | 0.10 |
| Processing | 0.23 | 0.24 | 0.23 | 0.35 | 0.70 |
| Other activities | 11.73 | 14.32 | 10.95 | 12.42 | 11.29 |

In 2023, the Gazprom Group executed out over 400 environmental activities aimed at improving water use efficiency for industrial and household needs as well as increasing the treatment level of discharged wastewaters.

The main activities types performed by the Gazprom Group companies under EP programs:

- construction of new treatment and water intake facilities, pumping stations, engineering communications;
- upgrading and re-equipment of existing treatment and water intake facilities, pipelines of water supply and sanitation systems (replacement of steel pipelines with polyethylene ones), and recycled water supply;
- overhaul and checkout of existing treatment and water intake facilities, pumping stations, absorption wells, pipelines of water supply and sanitation systems;
- maintenance and routine repairs of the equipment of treatment and water intake facilities, pumping stations, water supply and sanitation pipelines, cleaning and anti-corrosive coating of tank equipment and structures.

The Gazprom Group put into operation two circulation water systems with a capacity of 52.82 thousand m³/day, 49 wastewater treatment facilities with a total capacity of 27.71 thousand m³/day (40 facilities at gas business companies and 9 facilities at Gazprom Neft companies). Of the total number of wastewater treatment facilities commissioned in 2023, PJSC Gazprom put into service 36 facilities with a capacity of 23.24 thousand m³/day.

# Waste management

In 2023, the Gazprom Group companies generated 3,490.98 thousand t of waste that is 34.9% more than in 2022. The change in waste generation dynamics is due to an increase in waste generation in Gazprom Neft because of the expansion of the reporting scope for joint ventures.

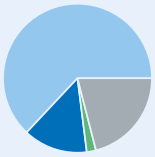
The bulk of the Gazprom Group's waste is represented by drilling cuttings from Gazprom Neft, bottom ash waste from Gazprom energoholding (solid coal combustion by-products at heat power plants), and oil sludge generated mainly at oil and gas production and processing facilities.

**Waste generation dynamics at the Gazprom Group, 2019–2023, thousand t**

| | |
|---|---|
| 2023 | 3,490.98 |
| 2022 | 2,588.59 |
| 2021 | 3,046.59 |
| 2020 | 3,229.83 |
| 2019 | 3,337.08 |

**The Gazprom Group waste structure by types, 2023, %**

| | |
|---|---|
| Drilling waste | 63 |
| Bottom ash waste | 14 |
| Oil sludge | 2 |
| Other waste | 21 |



Most of the production waste (97%) of the Gazprom Group is categorized as low hazardous and almost nonhazardous (hazard classes IV, V) waste.

**In 2019–2023, the Gazprom Group's gas business companies reduced waste generation by 23%.**

**Share of the Gazprom Group companies in waste generation, 2023, %**

| | |
|---|---|
| Gazprom Neft Group | 72 |
| Gazprom energoholding | 19 |
| PJSC Gazprom | 7 |
| Gazprom neftekhim Salavat | 1 |
| Other gas business companies | 1 |

**Dynamics of waste generation at the Gazprom Group companies, 2019–2023, thousand t**

**Gas business companies**

| | | |
|---|---|---|
| 2023 | 305.19 | 249.10 |
| 2022 | 325.92 | 272.57 |
| 2021 | 356.52 | 290.76 |
| 2020 | 337.48 | 272.24 |
| 2019 | 396.86 | 264.24 |

Gas business companies
including PJSC Gazprom

**Gazprom energoholding**

| | |
|---|---|
| 2023 | 655.69 |
| 2022 | 505.07 |
| 2021 | 1,296.31 |
| 2020 | 1,287.80 |
| 2019 | 1,661.72 |

**Gazprom Neft Group**

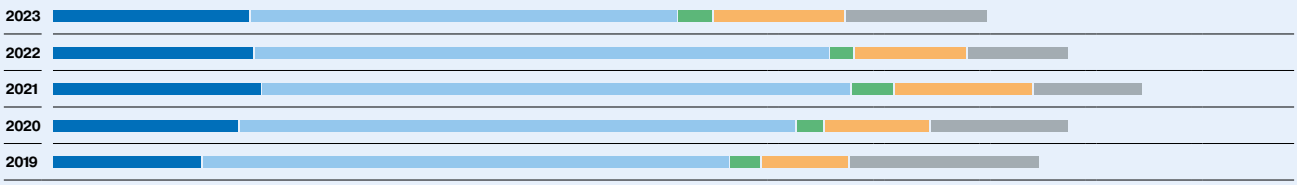
| | |
|---|---|
| 2023 | 2,507.99 |
| 2022 | 1,731.92 |
| 2021 | 1,366.51 |
| 2020 | 1,550.89 |
| 2019 | 1,217.70 |

**Gazprom neftekhim Salavat**

| | |
|---|---|
| 2023 | 22.12 |
| 2022 | 25.68 |
| 2021 | 27.25 |
| 2020 | 53.66 |
| 2019 | 60.80 |

Waste generation growth at Gazprom energoholding facilities by 29.8% is due to an increase in bottom-ash waste as well as sand waste from clearing the channel way of the power canal of the Nokocherkassk GRES (state district power station).

**Waste generation dynamics by PJSC Gazprom's types of activity, 2019–2023, thousand t**

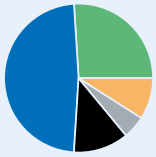



| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Production | 39.97 | 50.26 | 56.27 | 53.98 | 52.57 |
| Transmission | 142.30 | 149.73 | 158.80 | 155.42 | 115.69 |
| Underground gas storage | 8.22 | 7.08 | 10.62 | 6.28 | 7.85 |
| Processing | 22.72 | 28.43 | 36.51 | 29.87 | 34.86 |
| Other types of activities | 51.03 | 36.74 | 28.56 | 27.02 | 38.13 |

In 2023, waste generated by PJSC Gazprom decreased by 8.6% against 2022 and amounted to 249.10 thousand t. The reduction occurred in production and transmission segments thanks to reducing scrap metals waste from repair and construction works.

**Structure of production and consumption waste management at PJSC Gazprom, 2023, %**

| | |
|---|---|
| Managed, recovered and treated at the Company | 26 |
| Transferred to third-party organizations for management, recovery and treatment | 48 |
| Transferred to third-party organizations for storage and landfilling | 12 |
| Disposed at operated landfill sites | 5 |
| Waste remaining at the Company by the end of the reporting year, including storage sites | 9 |



In 2023, 444.20 thousand t of waste were managed at the PJSC Gazprom subsidiaries facilities (with the account of 82.21 thousand t available at the beginning of the year, 249.10 thousand t generated during the year, and 112.89 thousand t that came from other companies).

Of that volume, 330.60 thousand t were managed, recovered and treated by in-house capacities and transferred to third-party organizations for management, recovery and treatment, 74.42 thousand t were disposed at own sites and transerred to third-partry organizations for safe storage.

**In 2019–2023, the waste transferred for landfilling as well as the waste disposed at the Gazprom Group landfill sites decreased by 2.5 times.**

In 2023, the Gazprom Group operated 193 waste treatment and recovery units with a total capacity of 725.03 thousand t per year.

**Gazprom ensures efficient management of production and consumption waste using BATs at its facilities, including:**

- **Utilization of eco-friendly drilling mud.**
- **Environmentally safe high-temperature neutralization (incineration) of liquid waste. The thermal neutralization scheme is based on combustion in a cyclone reactor while spraying of liquid in a vaporous state into gas flame.**
- **Waste minimization by using factory-built units and installations.**

**During the construction of new facilities, the following requirements are met:**

- **Coordination with the customer on waste management measures for the waste generated during the construction of designed project in the area without waste management infrastructure and/or in need of waste transportation further than 100 km.**
- **Prohibition of the disposal of waste containing useful components to be recovered.**

The Gazprom Group companies place emphasis on environmentally safe management of oil-contaminated waste.

In the reporting year, the volume of oil-contaminated waste at the Group's facilities has decreased by 0.8% against 2022 and amounted to 84.06 thousand t, of which 72.8% belongs to Gazprom Neft Group.

**Share of the Gazprom Group companies in oil-contaminated waste generation, 2023, %**

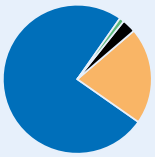
| | |
|---|---|
| Gazprom Neft Group | 73 |
| Gas business companies | 15 |
| Gazprom energoholding | 6 |
| Gazprom neftekhim Salavat | 6 |

This reduction in oil-contaminated waste generation is explained by reducing the number of equipment cleanups at Gazprom facilities.

In 2023, 115.64 thousand t of oil-contaminated waste were managed at the Gazprom Group facilities (with account of 29.4 thousand t available at the beginning of the year, 84.06 thousand t generated during the year, and 2.19 thousand t that came from other companies). Of that volume, 87.10 thousand t were transferred to special organizations for recovery and treatment and 3.63 thousand t – for safe disposal.

**Structure of oil-contaminated waste managementat the Gazprom Group, 2023, %**

| | |
|---|---|
| Transferred to third-party organizations for recovery and treatment | 75 |
| Transferred to third-party organizations for disposal | 3 |
| Waste recovered and treated at the company | 1 |
| Waste remaining at a company by the end of the reporting year, including storage sites | 21 |



Environmentally safe recovery of drilling waste during well construction and operation is one of the main goals for the Group's oil and gas producing companies.

In 2023, a total of 2,755.86 thousand t of drilling cuttings were subject to waste management (with account of 551.90 thousand t available at the beginning of the year and 2,203.96 thousand t generated during the year). Of that volume, 634.94 thousand t were recovered at the company, 17.02 thousand t were disposed at own landfill sites, 1,470.29 thousand t were transferred to special licensed companies for recovery and treatment.

**Structure of drilling waste management at the Gazprom Group, 2023, %**

| | |
|---|---|
| Recovered at a company | 23 |
| Transferred to third-party organizations for recovery and treatment | 53 |
| Disposed at own landfill sites | 1 |
| Waste remaining at a company by the end of the reporting year, including storage sites | 23 |

One of the main requirements for the well construction process is prevention of negative environmental impact of drilling waste especially under severe natural and climatic conditions of the Arctic zone of the Russian Federation.

**In 2023, Gazprom decided to start a pilot field development zero waste disposal project by using the Verkhnevilyuchansk oil, natural gas and condensate field (OGCF) and the Tas-Yuryakhskoye OGCF as an example.**

**In 2023, PJSC Gazprom approved an Action Plan on elimination of single-use plastic products in the Gazprom Group's offices. These actions are also destined for production and trading businesses.**

**As part of putting circular economy principles into practice, Gazprom Neft has commissioned a plant for processing plastic packaging materials into recycled granules. The plant (an annual capacity of 8.6 thousand t) began its operation in the city of Gatchina (Leningrad Region). The new enterprise will provide a full cycle of processing plastic packaging made of polypropylene and polyethylene as well as the production of prepared raw materials for further use.**

# Land use

The impact on land resources is not a significant environmental aspect for the Group; however, Gazprom is constantly focused on practical solutions to disturbed lands protection and restoration issues. Technical and biological restoration works aimed at recovery of productivity and economic value of disturbed land, conservation of landscape are carried out.

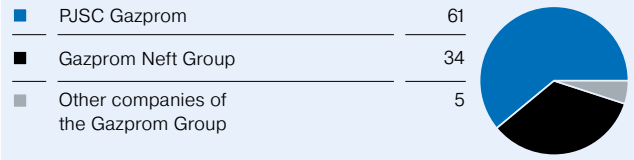
The Gazprom Group implements comprehensive activities aimed at improving reliability of pipeline systems that have positive effect on the preservation of natural environment components.

**Indicators of land protection activities of the Gazprom Group, 2019–2023, ha**

| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Disturbed lands within a year | 22,885.37 | 23,837.88 | 19,809.45 | 35,597.15 | 33,683.61 |
| incl. contaminated areas | 73.16 | 79.41 | 65.79 | 75.94 | 50.20 |
| Disturbed lands restored within a year | 17,670.50 | 15,836.39 | 17,199.40 | 15,053.12 | 33,447.84 |
| incl. contaminated areas | 65.69 | 65.77 | 78.08 | 77.19 | 59.21 |

During the reporting year, the Group's companies disturbed 33.68 thousand ha of land that is 5% lower than previous indicator. Of these, PJSC Gazprom is responsible for 20.73 thousand ha, Gazprom Neft – 11.39 thousand ha, and other Gazprom Group's companies – 1.56 thousand ha. Fewer disturbed lands during 2023 is due to the true state of overhaul and allocation of land for construction needs, expansion of production facilities, and fields development.

**Share of the Gazprom Group companies in disturbed land indicators during the year, 2023, %**

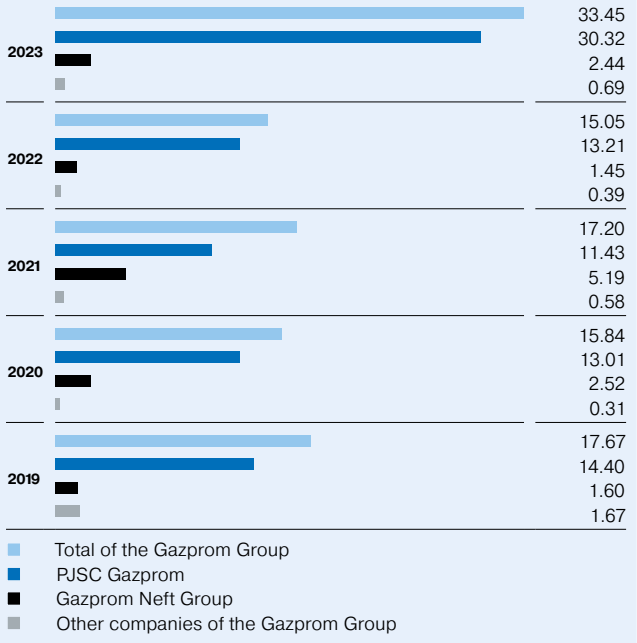



Treatment and restoration of land resources by the Group is carried out as needed in a timely manner. Lands, where work has been fully completed including lands disturbed and polluted during previous years, were reclaimed. In 2023, 33.45 thousand ha of land were reclaimed, including PJSC Gazprom – 30.32 thousand ha, Gazprom Neft – 2.44 thousand ha, other companies of the Gazprom Group – 0.69 thousand ha.

The area of land reclaimed in 2023 has more than doubled thanks to to the timely actions and restoration of lands previously disturbed during overhauls, investment construction, and exploration.

**In 2023, the necessary measures to remediate land quality were taken at all investment construction sites of the Power of Siberia trunkline.**

**Dynamics of disturbed land restoration at the Gazprom Group companies, 2019–2023, thousand ha**



**OOO Gazpromneft-GEO has completed R&D on the identification of automated/robotic complexes and solutions for disturbed lands restoration in the northern territories using unmanned aircraft systems (UAS).**

**The aim of the project is to identify the appropriate way to carry out the biological stage of the restoration using robotic complexes and UAS that allow effective land restoration with no harm to tundra areas, which remained undamaged during construction and operation, as well as to assess the maturity of a set of technologies for various scenarios.**

**In 2021, the project structured data on current methods of restoration of the northern lands, identified the appropriate ways to carry out restoration phases using robotics and UAS, analyzed the maturity of the solutions found and their application limitations, and developed recommendations on selected solutions implementation.**

**In 2022, the selection of seeds and fertilizers for land restoration in the Arctic zone was completed; the content of chemical elements and compounds in the samples of vegetation, which was grown at experimental sites, was analyzed.**

**In 2023, the field stage of the project was carried out. It included grass mixtures sowing and fertilizing soil in the remote areas of the Arctic tundra as well as monitoring the state of seedlings at experimental sites in the Arctic zone. Based on the results of R&D, it was decided to proceed with this work and deliver a new robotic technology project.**

Remediation of disturbed lands is part of the work on technical and biological restoration. Efforts follow the design solutions. Within the framework of operational environmental control and monitoring, the activities on construction and upgrading of facilities in the Gazprom Group are accompanied with checks of reclaimed soils for compliance with environmental standards – soil, geobotanical, agrochemical and other surveys.

Land restoration and compensational reforestation works are carried out within the necessary scope and in compliance with established timeline.

**In 2023, OOO Gazprom invest on behalf of PJSC Gazprom ensured reforestation works on 1,604.47 ha of forest areas in 14 constituent entities of the Russian Federation with the total cost of RUB 413.4 mln.**

**In 2023, necessary works on remediating 59.21 ha of land disturbed during the reporting year to its original quality were carried out, 33.45 thousand ha of land was restored.**

# Accidents

Every year, the Gazprom Group companies take measures to prevent accidents to increase equipment reliability and mitigate accident risks at the operated facilities of the Gazprom Group. They comprise technical diagnostics of pipelines, injection of corrosion inhibitors, timely repair and maintenance works, flood and erosion protection measures, regular inspections of plugged and abandoned wells, regular inspections of LSs of GTLs and offshoot pipelines to detect cracks and gas leaks, including the use of laser radars; supplying of necessary equipment and hydrocarbon spill response tools.

In 2023, three accidents with environmental consequences were recorded at the Gazprom Group's facilities: at OOO Gazprom transgaz Saratov, OOO Gazprom transgaz Yugorsk, and OOO Gazprom geotekhnologii. The main causes of accidents at production facilities are propagation of stress corrosion cracks.

As a result of accidents, natural gas losses in the Gazprom Group amounted to 3.45 mln $m^3$, and the estimated amount of environmental damage is RUB 143.9 thousand.

The reporting year witnessed 651 cases of oil pipeline rupture that occurred in Gazprom Neft Group. Internal corrosion defects caused by transmission of corrosive media at oil and gas fields are the main reason for these ruptures. The volume of spilled oil and petroleum products amounted to 43 t (16% cut against 2022) due to a reduction in the number of ruptures as well as improvement of responsiveness during localization of the accident.

There were no accidents with environmental consequences as well as ruptures of oil and condensate pipelines at the facilities of other Gazprom Group companies in the reporting year.

# International activity

## Republic of Armenia

ZAO Gazprom Armenia is a 100% subsidiary of PJSC Gazprom engaged in transportation, storage, processing, distribution and selling of natural gas, power generation and trade in the Republic of Armenia. In 2017, ZAO Gazprom Armenia successfully introduced the EMS that complies with ISO 14001:2015 requirements. ZAO Gazprom Armenia is included in PJSC Gazprom EMS application scope.

In 2023, gross pollutant emissions totaled 74.12 thousand t that is 29% higher than 2022. GHG emissions from gas business and power facilities amounted to 1.85 mln t of $CO_2$e. The increase in gross pollutant and GHG emissions is due to an increase in natural gas injection at the Abovyan UGS station and the changes in supplied gas flows that necessitated unscheduled cleaning and purging operations at trunkline treatment facilities and gas distribution stations.

Water discharge into surface water bodies amounted to 16.30 thousand $m^3$ in 2023. 100% of this volume are effluents treated to standard quality. The decrease in water discharge into surface water bodies is due to the mandatory flushing of all systems of the Hrazdan-5 power unit that was carried out in 2022.

During the reporting year, 0.11 thousand t of waste were generated, 92% of which pertain to hazard class IV waste.

The environment fee within the established rates amounted to RUB 0.96 mln. The increase is due to payment for pollutants emissions from generating more electricity at the Hrazdan-5 power generator. There was no limit-exceeding impact.

State environmental control (oversight) bodies did not conduct inspections during the reporting year.

**ZAO Gazprom Armenia basic environmental indicators, 2019–2023**

| Indicators | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Gross emissions, thousand t | 62.36 | 46.27 | 56.01 | 57.40 | 74.12 |
| GHG emissions, mln t of $CO_2$e* | 1.96 | 1.63 | 1.31 | 1.38 | 1.85 |
| Water discharged into surface water bodies, thousand $m^3$ | 140.00 | 148.00 | 20.53 | 20.87 | 16.30 |
| incl. clean and treated as per standards | 140.00 | 148.00 | 20.53 | 20.87 | 16.30 |
| Waste generated, thousand t | 0.12 | 0.22 | 0.11 | 0.11 | 0.11 |
| Disturbed land by the end of the year, ha | 0 | 0 | 0 | 0 | 0 |
| Environmental fee, thousand RUB. | 953.74 | 1,104.30 | 357.46 | 718.67 | 956.87 |
| Share of payments within the established rates in the total amount of fee, % | 100 | 100 | 100 | 100 | 100 |

*2019-2021 GHG emissions were calculated in compliance with the Methodological Guidance on the Quantification of Greenhouse Gas Emissions by Entities Engaging in Business and other Activities in the Russian Federation, approved by Order No. 300 of the Ministry of Natural Resources and Environment of the Russian Federation as of 30 June 2015. The 2022-2023 calculations were made in accordance with the Methodology for Quantifying Greenhouse Gas Emissions, approved by Order No. 371 of the Ministry of Natural Resources and Environment of the Russian Federation as of 27 May 2022.

## Republic of Belarus

OAO Gazprom transgaz Belarus is a 100% subsidiary of PJSC Gazprom engaged in transmission and underground storage of natural gas in the Republic of Belarus. The company is included in PJSC Gazprom EMS application scope.

Gross pollutant emissions amounted to 17.36 thousand t. The increase in gross pollutant emissions by 27% is due to an increase in planned repairs at the LS of GTL.

Water discharges into surface water bodies amounted to 143.84 thousand $m^3$ and were classified as treated to standard quality.

In 2023, 7.10 thousand t of waste were generated at the facilities of OAO Gazprom transgaz Belarus, 90% of which pertain to hazard class V waste.

The environment fee within the established rates amounted to RUB 1.52 mln. 17% decrease is thanks to less gas compressor units (GCU) operation time and reduction in methane emissions during routine diagnosis and repair works on gas equipment. There was no limit-exceeding impact.

In 2023, the regulatory bodies of the Republic of Belarus did not conduct inspections at the facilities of OAO Gazprom transgaz Belarus.

**OAO Gazprom transgaz Belarus basic environmental indicators, 2019–2023**

| Indicators | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Gross emissions, thousand t | 22.11 | 25.14 | 19.80 | 13.66 | 17.36 |
| GHG emissions, mln t of $CO_2e$* | 0.32 | 0.45 | 0.34 | 0.36 | 0.46 |
| Water discharged into surface water bodies, thousand $m^3$ | 125.43 | 131.24 | 131.03 | 119.43 | 143.84 |
| incl. clean and treated as per standards | 125.43 | 131.24 | 131.03 | 119.43 | 143.84 |
| Waste generated, thousand t | 5.61 | 12.34 | 20.33 | 8.96 | 7.10 |
| Disturbed land by the end of the year, ha | 0.87 | 0 | 0 | 0 | 0 |
| Environmental fee, thousand RUB. | 21,315.97 | 17,401.03 | 12,902.86 | 1,833.46 | 1,524.61 |
| Share of payments within the established rates in the total amount of fee, % | 100 | 100 | 100 | 100 | 100 |

* 2019-2021 GHG emissions were calculated in compliance with requirements of the Technical Code of Common Practice "Environmental protection and management of natural resources. Climate. Emissions and absorption of greenhouse gases. Rules for emissions calculation by means of energy-saving measures, renewable energy sources" approved by Decree of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus as of 5 September 2011 No. 13-T On approval and enforcement of technical statutory and regulatory enactmentsand making amendments in technical statutory and regulatory enactment. The 2022-2023 calculations were made in accordance with the Methodology for Quantifying Greenhouse Gas Emissions, approved by Order No. 371 of the Ministry of Natural Resources and Environment of the Russian Federation as of 27 May 2022.

## Kyrgyz Republic

OsOO Gazprom Kyrgyzstan is a 100% owned subsidiary of PJSC Gazprom engaged in natural gas transmission, storage, distribution and trade in the Kyrgyz Republic.

OsOO Gazprom Kyrgyzstan applies the EMS that complies with ISO 14001:2015 requirements. OsOO Gazprom Kyrgyzstan is included in PJSC Gazprom EMS application scope.

In 2023, the gross pollutant emissions amounted to 1.50 thousand t, GHG emissions – 0.03 mln t of $CO_2$e. Slight increase is due to the increase in methane emissions during process operations.

Waste generated amounted to 5.1 thousand t in 2023, 93% of which is waste of soil and asphalt chemise from facilities under repair, sent for recycling.

The environment fee within the established rates amounted to RUB 155.74 thousand.

In 2023, the environmental regulatory bodies of the Kyrgyz Republic did not conduct inspections at the facilities of OsOO Gazprom Kyrgyzstan, and no penalties were imposed.

**OsOO Gazprom Kyrgyzstan basic environmental indicators, 2019–2023**

| Indicators | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Gross emissions, thousand t | 2.93 | 1.66 | 2.02 | 1.47 | 1.50 |
| GHG emissions, mln t of $CO_2$e* | 0.07 | 0.04 | 0.05 | 0.04 | 0.03 |
| Water discharged into surface water bodies, thousand $m^3$ | 0 | 0 | 0 | 0 | 0 |
| incl. clean and treated as per standards | 0 | 0 | 0 | 0 | 0 |
| Waste generated, thousand t | 1.78 | 0.27 | 0.33 | 1.57 | 5.10 |
| Disturbed land by the end of the year, ha | 0 | 0 | 0 | 0 | 0 |
| Environmental fee, thousand RUB. | 93.30 | 50.60 | 171.74 | 151.25 | 155.74 |
| Share of payments within the established rates in the total amount of fee, % | 100 | 100 | 100 | 100 | 100 |

* 2019-2021 GHG emissions were calculated in compliance with the Methodological Guidance on the Quantification of Greenhouse Gas Emissions by Entities Engaging in Business and other Activities in the Russian Federation, approved by Order No. 300 of the Ministry of Natural Resources and Environment of the Russian Federation as of 30 June 2015. The 2022-2023 calculations were made in accordance with the Methodology for Quantifying Greenhouse Gas Emissions, approved by Order No. 371 of the Ministry of Natural Resources and Environment of the Russian Federation as of 27 May 2022.

# Preventing negative impact on the environment

## Environmental assessment of projects

In compliance with requirements of the Russian and international legislation, the Gazprom Group companies perform environmental impact assessment of planned business operations at all investment project life-cycle stages from concept planning to commissioning.

On a proactive basis, PJSC Gazprom conducts corporate expert review of investment projects before submitting them for the state expert review and the state environmental expert review.

PJSC Gazprom's expert review comprises, in particular, comprehensive assessment of documentation conformance with the requirements of legislation of the Russian Federation, international norms and rules, and PJSC Gazprom's regulatory and methodology documents regarding EP and improvement of energy efficiency.

To improve the quality of documentation as it relates to making timely decisions concerning EP and energy efficiency, all investment projects of PJSC Gazprom are a subject of expert EP and energy savings review.

**In 2023, PJSC Gazprom finished expert EP and energy savings review for 852 facilities under construction or upgrading.**

Reviewed design documentation included large-scale investment projects:

- Development of Cenomanian-Aptian deposits of the Kharasaveysky gas & condensate field (GCF). The connecting gas pipeline of the Kharasaveysky GCF. The pipeline-bridge between connecting gas pipeline of the Kharasaveysky and the connecting gas pipeline of the GP-3 of the Bovanenkovsky OGCF.
- Development of the Kovykta GCF. Stage 10.1.1, 13.1.1, 6.
- Construction of exploration wells 321-107, 321-108 of the Chayandinsky OGCF.
- Group work project for the construction of gas & condensate producing wells SK8, SK19, SK20, SK3, SK9, SK10 of the Yuzhno-Kirinskoye field.
- Development of the Kamennomysskoye-Sea gas field. Stage 2. Coastal facilities for the development of the Kamennomysskoye-Sea gas field.
- Development of the Kamennomysskoye-Sea gas field. Stage 1.
- Upgrading the UGSS of the Northwestern region to provide ethane-containing gas transport to the Baltic Sea coast.
- The Bovanenkovo-Ukhta trunkline. III line. Stage 4. Crossing the Baydaratskaya Bay (5th line).
- Development of the Severo-Kolpakovsky GCF.
- Producing wells for Cenomanian deposits of the East Harvutinskaya area of the Yamburgskoye field.
- The Ukhta — Torzhok trunkline system. III line (Yamal). Stages 1, 2, 3.
- The Ukhta — Torzhok trunkline system. III line (Yamal). Stages 4, 5, 6.
- Offshoot-pipelines of the Sakhalin — Khabarovsk — Vladivostok trunkline for the connection of gas infrastructure expansion facilities of the Khabarovsk Territory. Stages 1, 2, 3, 4, 5.
- Alpika-Service Mountain Climate Resort.
- Upgrading trunklines of the Urengoy — Peregrebnaya — Ukhta section.
- Upgrading the solid household waste landfill of the rotators' camp of the comprehensive gas treatment plant CGTP-6 of the Yamburg GCF.
- The Blue Stream — Russia — Turkey trunkline (marine version). Stages 3, 4.
- Process re-equipment of the Astrakhan GPP facilities by equipment on continuous automatic pollutant emissions control.

Control over adherence to engineering decisions and EP requirements is performed by the construction inspection service along with the designer's supervision over implementation of design solutions.

Public discussions, including in particular public awareness process, opening public reception rooms, organizing open access of the interested public to the documentation materials, are aimed at identifying the public opinion regarding planned activity and taking it into account in the environmental impact assessment.

In 2023, in order to take into account the interests of the public, open discussions on planned economic and other activities for the following projects were held:

- Development of the Kovykta GCF. Stage 6. CGTP-3 facilities (including producing wells).
- Upgrading the sewage treatment plant (STP) of the rotators' camp of CGTP-2.
- Development of the Kovykta GCF. Stage 10.
- Development of an absorbing well in the area of CGTP-10 of the Orenburg OGCF.
- Development of the Turonian deposit of the Zapolyarnoe OGCF for the period of pilot well program.
- Development of the Severo-Kolpakovsky GCF.
- Development of the Cretaceous deposits of the Tambeyskoye field and gas transmission. North Tambeysky license area. Quarry No. 1 on the North Tambeysky license area (area 3).
- Upgrading of power modules No. 1, 2, 3 of the gas turbine power plant (GTPP) GTPP-72 of the Yamburg OGCF.
- The Volkhov — Segezha — Kostomuksha gas pipeline. Construction Stage 2. LP of GTL. Part KU 303 — KU 532.
- Upgrading offshoot-pipeline to the cities of Salekhard, Labytnangi, and Kharp and offshoot-pipeline to the Salekhard GDS.

**PJSC Gazprom Order No. 106 as of 16 March 2023 approved the Temporary regulation on the organization and procedure of expert review of pre-design and project documentation in PJSC Gazprom. According to the Temporary regulation, the process of expert review of development projects from Gazprom's Investment Program is running in an "expert – developer" format, providing for the continuous mode of documentation expert review process.**

# Environmental risk insurance

Environmental insurance provides risk coverage for damage to the environment, life, health and property of third parties in the course of onshore and offshore exploration, drilling, production, transportation, processing, and storage of hydrocarbons, operation of hazardous facilities, construction and other related operations, including those performed on the Arctic shelf.

In 2023, PJSC Gazprom and AO SOGAZ signed a contract on liability insurance for damage to the environment (environmental risks), life, health and property of third parties in respect to activities of PJSC Gazprom and its subsidiaries. Extent and conditions of insurance coverage remained unchanged.

Insurance coverage territory is the Russian Federation and its continental shelf.

Insurance contract is voluntary and complements compulsory civil liability insurance contracts of the hazardous facility owner (according to Federal law No. 225-FZ as of 27 July 2010). Voluntary insurance contract covers liability that is not insured by the compulsory civil liability contracts for damage caused by accident at a hazardous facility as well as liability for damage exceeding liability limits under compulsory insurance contracts, and/or if liability limit under compulsory insurance contract is over.

In the reporting year, AO SOGAZ's payments under voluntary liability insurance contracts for environmental damage amounted to RUB 37.15 mln, including RUB 37.12 mln for damage of the previous years.

# Operational environmental control and monitoring

One of the Environmental Policy implementation mechanisms is operational environmental control and monitoring.

All companies of the Gazprom Group have organized operational environmental control (OEC) at their facilities with the 1st to the 3rd class negative impact on the environment. OEC is carried out in order to ensure compliance with the requirements of environmental legislation, established environmental impact standards, ensuring the rational use of natural resources. OEC is implemented at all stages of business activities of PJSC Gazprom subsidiaries and organizations as well as contractors. It is a crucial system of measures intended to reduce negative impact on the environment.

At the corporate level, PJSC Gazprom has the Environmental Inspection Service, which, in addition to monitoring compliance of subsidiaries and contractors with requirements of EP legislation and corporate environmental and energy saving rules, performs internal EMS audits of PJSC Gazprom subsidiaries.

**PJSC Gazprom is the only Russian oil and gas company with its own Environmental Inspection Service.**

The activity of the Environmental Inspection Service is aimed at improving the environmental efficiency and ensuring environmental safety at the Gazprom Group facilities.

Priority activities include:

- Improving the efficiency of the corporate environmental control system.
- Organizing and conducting internal EMS audits combined with verification of compliance with environmental legislation requirements at subsidiaries and organizations within the scope and boundaries of the EMS of PJSC Gazprom.
- Other control & oversight measures to comply with legal requirements, corporate norms and rules in EP and safety at the Gazprom Group facilities.
- Organizing compliance control over the procedure requirements of operational environmental (including eco–analytical) control at the subsidiaries of PJSC Gazprom.
- Analyzing the engagement experience of the subsidiaries of PJSC Gazprom with state control (oversight) bodies to eliminate and prevent violations of environmental legislation.
- Monitoring compliance with environmental design decisions during the construction and upgrading of UGSS facilities.

In 2023, the Environmental Inspection Service of PJSC Gazprom conducted 383 inspections on compliance with the requirements of environmental legislation.

The Environmental Inspection Service conducted 256 scheduled inspections in 43 production subsidiaries and organizations of PJSC Gazprom, including 176 inspections as EMS audits. The specialists of the Environmental Inspection of PJSC Gazprom checked 8 gas producing companies, 21 gas transmission companies (including OAO Gazprom transgaz Belarus, ZAO Gazprom Armenia, and OsOO Gazprom Kyrgyzstan), 11 branches of OOO Gazprom UGS, 2 GPPs, 3 branches of OOO Gazprom pererabotka and 8 branches of OOO Gazprom energo as well as 13 other subsidiaries (OOO Gazprom nedra, OOO Gazprom neftekhim Salavat, OOO Gazprom gazomotornoe toplivo, PAO Gazprom Neft, OOO Gazprom GNP Holding, and others). The inspections plan was 100% completed.

34 inspections were carried out at the facilities under construction and upgrade to verify the compliance with the requirements of EP and rational use of natural resources legislation, current norms and rules during the activities of customers and general contracting organizations, such as OOO Gazprom invest, OOO Gazprom pererabotka Blagoveshchensk, AO Gazstroyprom, OOO Gazenergoservice.

In 2023, the Environmental Inspection of PJSC Gazprom took part in process audits at the facilities of OOO Gazprom GNP Holding.

87 joint random inspections were conducted on “Organizing operation and boosting efficiency of treatment facilities/units, implementing prevention measures against the discharge of untreated and insufficiently treated wastewater”. Control activities were carried out in 29 subsidiaries and organizations of PJSC Gazprom: 17 subsideries engaged in gas transmission, 6 — gas production as well as OOO Gazprom UGS, OOO Gazprom pererabotka, OOO Gazprom energo, OOO Gazprom gazomotornoe toplivo, AO Gazpromneft-Noyabrskneftegaz, PJSC Gazprom branch “Morozovka Vacation Home”.

The outcomes of inspections with an analysis of results and recommendations for improving EP activities were brought to attention of the management of audited organizations, and measures were identified to eliminate and prevent inconsistencies. The inconsistency elimination indicator during the prescribed period reached 99%.

The operational environmental monitoring (OEM) system of PJSC Gazprom includes stationary and mobile eco-laboratories, meteorological and hydrological stations, automated pollutant emissions control stations, and observation wells. This enables to monitor pollutant emissions from controlled emission sources; quality of air in populated areas and at the border of sanitary protection zones of industrial facilities; noise impact; radiation background; quality of surface and ground waters, bottom sediments; quality of utility and drinking water supply sources; state of geological environment, soil and snow covers; solid waste and waste waters. The system monitors environmental parameters, analyzes obtained results and develops measures to mitigate negative impact on the environment.

**OOO Gazprom transgaz Yugorsk has developed a multi-user geoinformation network system “Ecological Atlas of OOO Gazprom transgaz Yugorsk” in order to improve environmental regulation and monitoring activities, to ensure the “Environmental Protection” activity with up-to-date geospatial data and tools.**

**This system provides for quick recording of pollutant emission sources, wastewater discharges, waste accumulation sites, points and results of environmental monitoring and control linked to cartographic data. In addition, unmanned aerial vehicles (UAVs) provide images on environmental situation at the branches; the images are loaded into the system. Isolines are then built on all the entered data, and reports are developed.**

The Company regularly implements methane emission monitoring system and carries out corporate control over gas leaks by the means of the Environmental Inspection Service of PJSC Gazprom.

Round-the-clock monitoring systems for detection of methane in the atmosphere and automatic alarm of its excessive concentration with the use of remote laser methane detectors are being introduced. The tasks of detecting methane at gas industry facilities are also solved using detectors mounted on helicopters or UAVs. The works on organization of advanced monitoring of GHG emissions, in particular methane, with the use of space satellites are underway.

The Company is developing services based on aerospace data and artificial intelligence that scale out opportunities for regular environmental monitoring of the Far North regions. The use of neural networks will speed up aerospace data analysis, increase the detail of digital cartographic models and provide new utilization functionality.

**Gazprom Neft and OOO Gazprom Space Systems intend to develop geospatial data analysis technologies using artificial intelligence, satellite systems, and aeromonitoring. The agreement on cooperation in this area was signed at the St. Petersburg International Gas Forum.**

**The companies are exploring the possibilities of digital oil and gas fields infrastructure twins based on neural networks processing of information on space observations of the Earth's surface (including by promising remote sensing satellites "Smotr").**

The created OEM system provides quick acquisition of valid data on environmental conditions in the impact zones of Gazprom facilities, timely analysis of the current environmental situation during industrial and business operations, planning of EP measures, control of their implementation and making effective environment protection decisions.

OEC at production facilities widely uses mobile eco-laboratories (MEL) fitted with modern analytical equipment that controls atmospheric air, physical environmental factors, meteorological parameters, and industrial emissions from different sources. MELs are equipped with a work station for the UAV operator, which provides an opportunity for the operator to work on open air inside a MEL, using virtual reality glasses and a high resolution camera installed on board of the UAV. Photo and video materials obtained during visual surveys using UAVs significantly increased the effectiveness of control activities and helped to reduce the time spent on them as well as reduce involvement of vehicles that is highly important in harsh terrain.

At the Bovanenkovo field, OOO Gazprom dobycha Nadym conducts online air monitoring with the use of the automated environmental control station (AECS) regularly. AECS is equipped with a measuring complex that includes two functionally different sets of devices. The first one is a gas analytical complex that measures the mass concentrations of nitrogen oxides, carbon monoxide, sulfur dioxide, methane, total of hydrocarbons with/without methane. The second – a meteorological complex that allows to measure wind speed and direction, temperature, relative humidity, atmospheric pressure, and the amount of precipitation.

Under the import substitution policy, laboratory equipment is only Russia-manufactured.

In some cases, OEM systems of the Gazprom Group are integrated into regional environmental monitoring systems.

Over 20 years, OOO Gazprom dobycha Orenburg successfully operates an OEM system, including automatic gas pollution control stations installed in 24 populated areas located in the affected zone of the facilities. The results of monitoring help to efficiently regulate performance of works in relation to peak emissions depending on meteorological conditions: works will not be permitted, when the wind is blowing towards nearby populated areas.

There has been a continuous dialog with the heads of municipal administrations and residents of the settlements located in the affected zones of the production facilities upon the following issues:

- Reporting to the Ministry of Natural Resources, Ecology and Property Relations of the Orenburg Region, territorial authorities of the Federal Service for the Oversight over Natural Resource (aka Rosprirodnadzor), and heads of municipality administrations on scheduled preventive and maintenance works at the facilities of OOO Gazprom dobycha Orenburg.
- Sending monthly information letters on concentrations of pollutants in the air as per the data from AGPCS to administrations of 24 populated areas, heads of the Orenburgsky and Perevolotsky Districts of the Orenburg Region.
- Cooperating with heads of municipality administrations and authorized representatives of residents to immediate investigate claims and complaints on air pollution.

The automated air monitoring system of the Omsk refinery covers five production installations of the enterprise and transmits all the information received about the environmental parameters of production directly to the oversight authorities. The mechanism for transmitting and receiving monitoring data was worked out jointly with Rosprirodnadzor. The sensors are mounted directly on the installations and continuously monitor the environmental parameters of the production. Digital tools for environmental control will become a prototype for the development of industry standards and the creation of a comprehensive monitoring system within the framework of the Ecology national project.

**In April 2023, OOO Gazprom neftekhim Salavat signed a four-party agreement on emission reduction at the Ecology and Technology Environmental Forum, the city of Ufa. The activities under the agreement will be included in the passport of the federal Clean Air project of the national Ecology project. The parties agreed to cooperate in reducing pollutant emissions, installing automatic emissions monitoring systems up to 2025, and developing an air quality monitoring system in the city of Salavat. In particular, in accordance with the agreement, OOO Gazprom neftekhim Salavat must take**

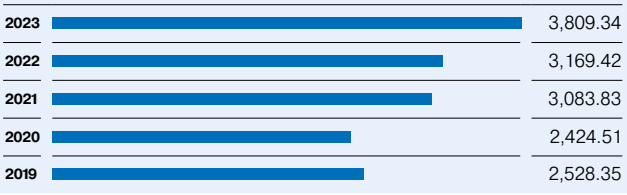
**measures to reduce emissions and achieve reduction in the total of pollutant emissions. The company agrees to lay out a development plan for automatic pollutants emissions control systems at operated facilities with the 1st class negative impact on the environment as well as to provide data on the planned number of stationary sources to be equipped with such systems by 2025. OOO Gazprom neftekhim Salavat must implement all activities under the agreement at its own expense.**

The Amur GPP system operates over 40 measuring instruments that control over 30 environmental parameters both at the plant site and in the immediate vicinity of production facilities. In the automatic mode, in particular, the instruments are measuring pollutants concentrations in atmospheric air, meteorological parameters, dust and noise levels, radiological contamination as well as controlling treated wastewater quality as for nitrates and petroleum products, turbidity and conductivity, oxygen content, and acidity levels. All data will be transmitted to a single environmental monitoring plant server for continuous real-time monitoring and preventing the negative impact on the environment of plant's production processes.

If specially protected natural areas (SPNAs) or special environmental status sites are located in business activities areas, the Gazprom Group includes monitoring over the status of such areas into respective OEM programs.

**During 2019–2023, the Gazprom Group has allocated RUB 15 bln to ensure operational environmental monitoring and control.**

**The Gazprom Group expenditures on operational environmental monitoring and control, 2019–2023, mln RUB**




**Structure of expenditures for operational environmental monitoring and control at the Gazprom Group, 2023, %**

# State environmental control (oversight)

In 2023, the state oversight authorities conducted 761 environmental and natural resources management compliance inspections at the facilities of the Gazprom Group, which revealed 517 violations as well as 563 inspections without violations.

**During 2023, the number of inspections of the facilities of the Gazprom Group continued to decrease. So, it decreased by 2.4 times against 2021 that is explained by state support measures for business and compliance with the Resolution of the Government of the Russian Federation No. 336 On Specifics of Organization and Execution of State Control (Oversight) and Municipal Control as of 10 March 2022.**

Out of the 517 violations identified, 4 violations (0.8%) have been canceled through legal proceedings, 104 violations (20%) are being appealed against in court, 245 violations (47%) have been corrected at a given time, and correction deadline for 160 violations has not expired in the reporting year. In total, 428 violations were corrected during the year, including 183 violations upon the results of inspections from previous years.

Of the detected violations, 440 (85%) did not entail any penalties for legal entities.

Penalties paid in the reporting year totaled RUB 4.65 mln, including RUB 0.11 mln as a result of inspections from previous years. Penalty payments were as follows: Gazprom Neft Group – RUB 3.49 mln, PJSC Gazprom – RUB 0.89 mln, Gazprom energoholding – RUB 0.26 mln.

In 2023, the Gazprom Group paid RUB 67.66 mln as compensation for environmental damage (of these, Gazprom Neft Group – RUB 66.92 mln), including RUB 64.91 mln as part of compensation for environmental damage caused in previous reporting periods (of these, Gazprom Neft Group – RUB 64.28 mln).

# Improving energy efficiency and energy saving

## The role of energy saving in implementation of sustainable development principles and achievement of environmental goals

The most efficient energy resources utilization in production activities is one of top priority tasks of PJSC Gazprom. PJSC Gazprom sets its corporate energy goals based on Gazprom's Energy Efficiency and Energy Saving Policy approved by the Management Committee Decree No.39 as of 11 October 2018.

The Policy demonstrates the official position of Gazprom's management on the commitments made regarding husbandry, improving the energy efficiency of Company's business, reducing the impact on the environment, and Gazprom's commitment to system solutions in energy efficiency management and energy-saving technologies.

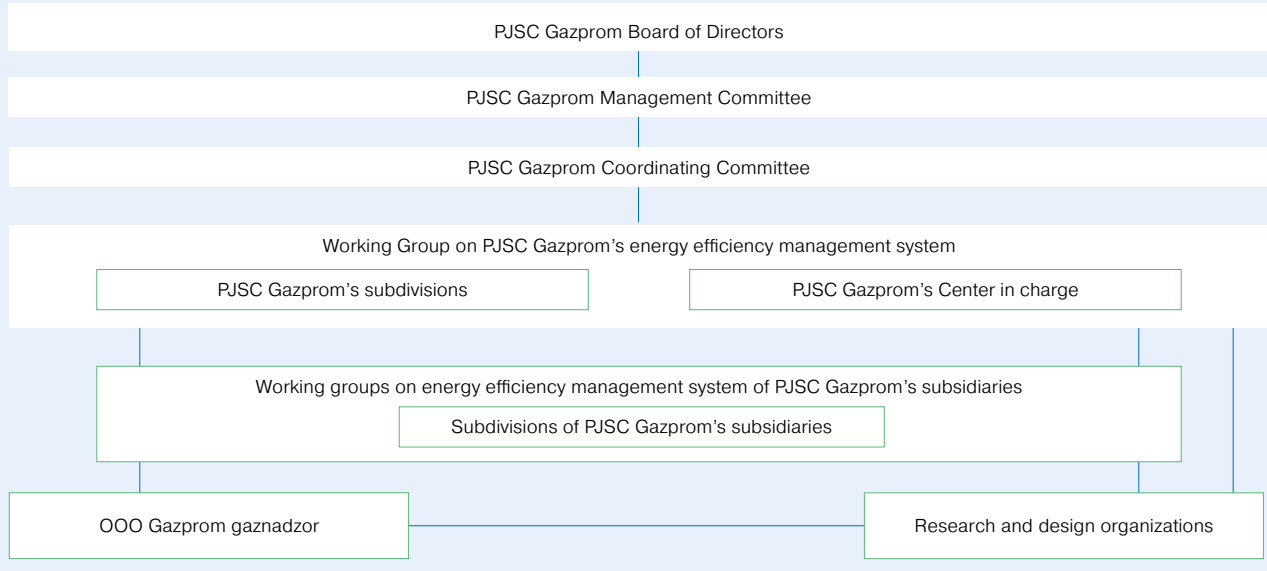
In order to fulfil the strategic commitments defined by the Policy, PJSC Gazprom has been developing Energy Saving and Energy Efficiency Improvement Programs that set corporate energy goals for companies within the scope of Gazprom's energy efficiency management system, such companies that have a great impact on fuel & energy resources (FER) consumption.

## Energy efficiency and energy saving management

The energy efficiency management system is an integral part of the Company's corporate management system and encompasses 28 subsidiaries engaged in natural gas and gas condensate production, gas transportation, underground gas storage, electricity, heat and water supply, energy equipment operation at the UGSS facilities as well as processing of raw hydrocarbons.

The 2023 internal audit confirmed the compliance of Gazprom's energy efficiency management system with the requirements of GOST R ISO 50001-2023 as well as with the commitments taken, and Gazprom regulatory and executive documents in energy saving and energy efficiency improvement.

**Chart of energy efficiency management system**



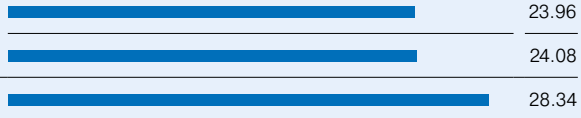
In 2023, in order to improve the energy efficiency management system, Gazprom proceeded with improving the energy efficiency structure, expanded targeted professional training in energy efficient technologies for the specialists and managers of subsidiaries, updated requirements for the parts of project design documentation when it comes to energy efficiency, continued conducting internal audits, and enhanced sharing of best practices on the introduction of energy efficient technologies between the Company's structural divisions. In the reporting year, the subpanel of the Science and Technology Council of PJSC Gazprom reviewed a corporate-wide energy efficiency issues.

## Energy efficiency and energy saving corporate goals

The specific FER consumption of business activities is the key corporate energy efficiency indicator. At the end of the reporting year, the specific FER (natural gas and electric energy) consumption for own process needs amounted to 23.96 kg c.e. per mln $m^3$ ·km for gas transmission and 27.41 kg c.e. per thousand $m^3$ for gas production.

**As of year-end 2023, specific FER consumption in gas trunkline transmission was reduced by 13.9% against the benchmark value of 2018. It indicates that Gazprom achieved not only a corporate goal but also target values of the 2035 Russian Energy Strategy (approved by the Decree of the Government of the Russian Federation No. 1523-r as of 9 June 2020).**

**Specific FER consumption for gas transmission, 2021-2023, kg c.e. / mln $m^3$ • km**




## Saving of fuel and energy resources

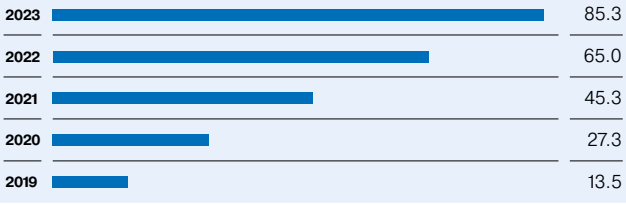
Thanks to the implementation of the Energy Saving and Energy Efficiency Improvement Program of PJSC Gazprom, Gazprom succeeded in the curtailment of FER consumption and improvement of the energy efficiency of production activities.

The performance of corporate FER saving values is listed in the following table.

**The performance of corporate FER saving values**

| Corporate energy goal | Planned performance value 2023 | Actual value 2023 | Progress |
|---|---|---|---|
| Natural gas savings, mln $m^3$ | 3,550.2 | 3,719.7 | achieved |
| Electrical power savings, mln kWh | 367.9 | 389.3 | achieved |
| Heat power savings, thousand Gcal | 339.2 | 346.0 | achieved |
| Combustibles & lubricants (C&L) and motor fuel, thousand t c.e. | 14.9 | 15.5 | achieved |

**Cumulative economic benefit, 2019-2023, bln RUB**



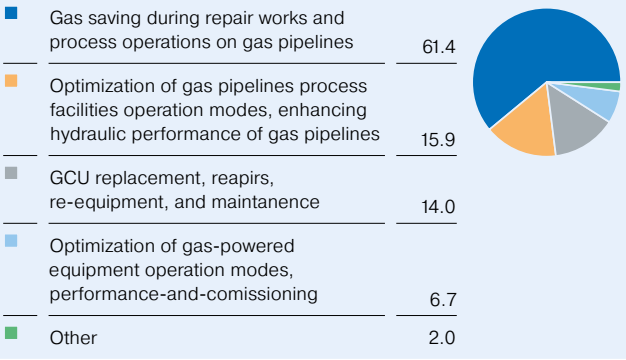

More than 81% of FER savings fall on the gas transmission business while natural gas accounts for approx. 95% of total FER savings in 2023.

**In 2023, the economic benefit of energy-saving measures provided for the Energy Saving and Energy Efficiency Improvement Program of PJSC Gazprom amounted to RUB 20.3 bln.**

**Breakdown of the achieved savings between production activities and FER types, 2023**

| Types of activity | Natural gas, mln m³ | Electrical power, mln kWh | Heat power, thousand Gcal | C&L and motor fuel, thousand t of c.e. | Total, thousand t of c.e. |
|---|---|---|---|---|---|
| Gas trunkline transmission | 3,049.4 | 330.9 | 105.9 | 13.1 | 3,664.4 |
| Gas production | 558.6 | 30.9 | 15.9 | 0 | 657.8 |
| Gas and condensate processing | 77.0 | 13.8 | 220.1 | 0.1 | 126.3 |
| Gas distribution | 19.2 | 5.7 | 0.9 | 2.3 | 26.6 |
| Underground gas storage | 13.5 | 0.9 | 0 | 0 | 15.9 |
| Power, heat & water supply and operation of UGSS power equipment | 2 | 7.1 | 3.2 | 0 | 5.3 |
| **Total** | **3,719.7** | **389.3** | **346** | **15.5** | **4,496.3** |

**The main process activities reducing natural gas consumption, 2023, %**

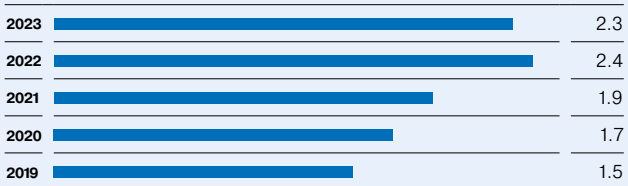



In 2023, the distribution pattern of natural gas saving remained the same. The most significant component (more than 60%) remained natural gas saving during repair works on gas pipelines and process operations within operating routine at production facilities:

- MCS utilization;
- Gas supply for the consumer using GDS;
- Gas bypass from the repaired section to the adjacent gas pipeline;
- Consumption for own needs of gas from the process piping of the compressor yard;
- Conducting survey and operation of wells without releasing gas into the atmosphere;
- Using hot tapping technology;
- Consumption for own process needs of separator gas.

As a result of this system-wide work and the implementation of a set of energy-saving measures to reduce gas venting in 2022-2023, gas saving reached 2.3-2.4 bln m³ per year.

**Natural gas saving at UGSS facilities, 2019–2023, bln m³**




The utilization of MCS remains one of the main natural gas saving activities. In 2023, the volume of saved natural gas totaled 764.7 mln m³ (MCSs were utilized at 14 gas transmission subsidiaries).

Starting in 2020, the large-scale utilization of this technology in gas transmission subsidiaries during repair works of LSs of GTLs ensures the saving of over 750 mln m³ of natural gas, annually.

## Electrical power saving breakdown

The major contribution into electricity saving is made by the following activities:

- Improving efficiency of power-consuming equipment (upgrading, repairs, and adjustment works, use of frequency-controlled drives and smooth start systems, etc.).
- Optimizing operation modes of GTS process facilities and electrical equipment.
- Reducing electrical energy losses.
- Introducing automation systems of operation process management.
- Upgrading lighting system.

## Implementation of key energy saving projects

The efficiency of FER utilization within current operations of production facilities is backed by activities on optimizing of energy technology equipment performance, using existing process solutions to reduce gas bleed and adjust equipment operating modes, conducting operational tests, using automation systems for energy technology processes, equipment maintenance, and repair works.

By the end of 2023, the attracted investments from energy service companies to finance current and promising energy-saving projects resulted in increasing of the energy service projects portfolio to 14 projects at various implementation stages. The total investments in these projects amounted to RUB 11.5 bln, and their economic effect for PJSC Gazprom is estimated at RUB 66.4 bln over the life cycle of the equipment.

As part of the energy efficiency management system, much attention is also paid to the introduction of the best available energy-efficient and energy-saving techniques for the stages of construction, reconstruction, and technical re-equipment of production facilities:

- Service gas-oil module of the fuel gas treatment and lubricating oil cooling system for gas turbine-driven GCU.
- Electric start of the GCU gas turbine start system.
- Frequency-controlled drive for electric drive motors of GCUs, pumps, fans, smoke pumps, air cooling units (ACU) for gas, and other process equipment.
- Automatic gas temperature control system at the outlet of an ACU for gas.
- Collector for smooth air intake of fan modules, composite-based wheels (blades) of ACU for gas.
- Turbo-expanding power unit for electricity output;
- Gas ejector to prevent gas bleed from the gas line hook-up of GCU and a compressor room (CR), utilization of low-pressure, separator, and weathering gas.
- Nonflow purging system for gas purification units.
- Automatic temperature control system for liquid and gaseous products in heaters.
- Block valves with double-sided purging using technical solutions for connecting to MCS.
- Jump-overs in gas pipelines for gas bypass to low-pressure lines when emptying gas pipelines and process equipment.
- System for automated maintenance of fuel combustion modes in boiler units and the supply of heat medium for heating needs, depending on the outside / indoor air temperature.
- Heat-recovery boilers.
- Autonomous power-supply sources based on electrochemical generators, renewable energy sources, and a Stirling engine.
- Dry-running gas seals and a rotor magnetic suspension system of a GCU centrifugal compressor.
- Replaceable flow parts of a natural gas centrifugal supercharger.
- Automatic control system for outdoor lighting according to light conditions.
- Technical solutions that help reduce hydraulic resistance during gas transmission (utilization for same diameter pipes in gas pipeline sections, elimination of bottlenecks, use of pipes with an internal smooth coating).
- Monitoring system for extended facilities (tightness control to ensure fast leakage elimination).

## R&D, regulatory, methodological and information support of energy saving and energy efficiency improvement

The Company pays special attention to ongoing R&D as well as developing and updating regulatory & methodology documentation of the energy efficiency management system:

- Developing a high-speed centrifugal gas compressor with an axial suction pump for natural gas.
- Developing a standard basic equipment set for the completion of GCU-C-25NK with the GTD AL-41ST-25 unit.
- Forecasting the consumption of natural gas for own gas transmission subsidiaries process needs.
- Developing ways for improving the efficiency of gas compression at a compressor yard with a gas turbine drive, electric drive, or combined drive based on the assessment of operating costs during the life cycle of a GCU.
- Recommending on organizing the optimal temperature regime for gas transmission.
- Methodology for determining and rationing natural gas consumption for own process needs during gas transmission.
- Developing a demonstration model of a power unit based on molten carbonate fuel cells.

The structural divisions of the Company provide on an ongoing basis:

- Enhancement of competence, awareness and motivation of production personnel in energy saving and energy efficiency;
- Improvement of the culture of rational use of energy resources;
- Engaging employees to play active role in energy efficiency activities.

## Training and internal audits

In 2023, under the Company's energy efficiency management system, internal audits to ensure compliance with the requirements of GOST R ISO 50001-2023 were conducted at the subsidiaries that ensure production performance for all major businesses.

Enhancing competence of administrative and production personnel is one of the key factors for the successful implementation of Energy Efficiency and Energy Saving Policies. In 2023, the list of industry-specific courses was expanded. The courses are available to the specialists and managers of subsidiaries for advanced training on improving production processes efficiency and cover all the main activities of the Company.

## Gazprom Neft

In 2023, the Energy Saving and Energy Efficiency Improvement Program exceeded its target values by 112%. The total energy & resources savings amounted to 123.6 thousand t c.e.

The key energy saving activities include:

- Redistributing steam and condensate flows in order to reduce thermal energy consumption.
- Improving the energy efficiency of the EURO+ complex by optimizing the heat balance.
- Optimizing steam and heat supply systems for commodity output.
- Optimizing vacuum system operation.
- Retrofitting and upgrading condensate pipelines.
- Utilizing excess steam in a water treatment system.
- Replacing heat-recovery boilers.
- Changing the visbreaking heat exchange scheme.
- Removing incomplete combustion products from the surface of the convection chambers coils of process furnaces.

As part of the efficiency control of FER utilization, energy surveys of process complexes as well as digital projects on energy saving and energy efficiency are carried out.

R&D on the analysis of absorption spectrometry technology based on a tunable diode laser for measuring flue gas parameters in the entire volume of the radiant zone of process furnaces is at its initial stage of implementation. The results obtained will be also used to optimize the fuel combustion process.

## Gazprom energoholding

OOO Gazprom energoholding consists of approx. 80 power plants with an installed electric capacity of 36 GW and a thermal capacity of 76.5 thousand Gcal/h.

Improving the efficiency of energy consumption is a priority for the company. By the end of 2023, the introduction of energy-saving measures resulted in FER savings of 885 thousand t c.e.

The main energy-efficient process solutions are:

- Increasing the share of heat generation.
- Optimizing pumping equipment operation modes.
- Sealing furnaces and exhaust ducts of power boilers. Improving the efficiency of turbine condensers.
- Using frequency converters and soft starters for electric drives.
- Changing the schemes of process pipelines, adaptating to the existing operating modes of power equipment.
- Automating central heating points.
- Reconstructing heating networks and process pipelines.

Large focus is on implementing energy consumption measuring and monitoring systems.

The following R&D projects are being implemented:

- An information & analytical system for assessing the condition, identifying, and predicting flaw growth in air and flue gases handling systems.
- Calculations to substantiate the replacing of existing reactors in a generator switchgear of 6-10 kV.
- Development of interactive instructions on the equipment used.
- Development of a VR-simulator for training repair, maintenance, and other personnel.

## Gazprom neftekhim Salavat

The energy efficiency of processes operations is an integral part of the company's production activities. Under the energy saving program in 2023, FER savings of 0.737 thousand t c.e. were achieved.

Energy efficiency is ensured through measures aimed at optimizing the operation of existing energy process equipment as well as increasing energy efficiency of production thanks to advanced technical energy-saving features, including:

- Replacing thermal insulation of pipelines for heating network water, steam and steam condensate.
- Upgrading the lighting system.
- Optimizing refrigerating units operation.
- Improving process water pipes.

The most significant activities are aimed at improving the efficiency of the process heat supply scheme.

As for 2024 targets, it is planned to implement energy-saving activities for the following FER:

- Natural gas – 9,303.9 thousand $m^3$;
- Electrical power – 1,219.4 thousand kWh;
- Heat power – 11,832.6 Gcal.

# Low-carbon development

## Role of natural gas in low-carbon development

Today, Gazprom's natural gas is an eco-fuel supplied to consumers with the use of green technologies (with low GHG and pollutants emissions) to improve the quality of people's life caring for nature simultaneously.

### Environmental impact of gas infrastructure expansion

Gas infrastructure expansion in Russian regions is crucial to the socio-economic development of the country, providing for not only more comfortable living for Russian citizens but also supply industry, business and transport with affordable and cost-effective energy resource. The President and the Government of Russia keep the progress of gas infrastructure expansion and further natural gas supply in regions under special control as a strategic task.

Diversification of gas use, gas infrastructure development of industries and fuel and energy complex facilities contribute to the quality of life and provide comfortable living conditions for the population. This work fosters social and economic development of regions, reduces negative impact on the environment and mitigates climate change.

Gas infrastructure expansion in Russian regions is one of the most ambitious and socially significant parts of Gazprom business on the domestic market.

Currently, Gazprom, represented by OOO Gazprom gazifikatsia, is a single operator for gas infrastructure expansion in 72 subjects of the Russian Federation and the Sirius Federal Territory, regional gas infrastructure expansion operators have been identified for another 13 subjects.

Natural gas holds a key position in satisfying Russia's internal consumption needs in energy carriers. In 2023, the share of natural gas accounted for more than 50% of the total energy resources used for electricity generation. A significant share of natural gas in the structure of the Russia's energy balance facilitates reduction in the carbon intensity of the whole fuel and energy complex, helping developing the economy of the Russian Federation with a low level of GHG emissions.

The level of technically feasible network for gas infrastructure expansion in Russia reached 89% out of 100% by 1 January 2024.

**The Russian Gas Infrastructure Expansion Program for 2021–2025: results in 2023**

| | | | |
|---|---|---|---|
| 72 regions | Gas Infrastructure Expansion program participants | RUB 236.8 bln | investments |
| 2.5 thousand km | inter-settlement gas pipelines | > 3.3 thousand | boiler stations connected |
| 73.8 % | gas infrastructure expansion level | > 400 | settlements |

In the reporting year, trunkline length increased significantly, gas network connections to new consumers grew up, the connection procedure was simplified. There are benefits for certain social categories; alternative gas infrastructure expansion spreads. All the necessary conditions are being created for natural gas to reach as many regions, homes and industries as possible.

Gazprom is working on gas supply and gas infrastructure expansion in the regions on the basis of five-year programs. The 2021-2025 Programs were signed with 72 subjects of the Russian Federation. Over 24 thousand km of gas pipelines will be built (2.5 times more than during the previous five years), conditions have been created for gas infrastructure expansion in 3.6 thousand settlements (growth at 2.7 times).

In 2023, extensive effort was made to answer the problem of accelerated connection to a gas network of certain households at Russian settlements already equipped with gas infrastructure.

Gazprom coordinates implementation of the National Eastern Gas Program, one of the priorities of which is to supply natural gas to consumers in Eastern Siberia and the Russian Far East.

Gazprom is conducting large-scale work on developing existing and setting up new gas production centers, building up gas transmission capacities. These strategic projects serve as the basis for gas infrastructure expansion projects in the Far Eastern regions.

Thanks to Gazprom, large power facilities have already been switched to gas in a number of big cities, in particular, in Kamchatka, Sakhalin, and Primorye. Inter-village gas pipelines and gas distribution stations are being built in the Kamchatka, Primorye, Khabarovsk Territories, the Sakhalin and Amur Regions. In the medium term, natural gas will come to the southern regions of the Republic of Yakutia (Sakha) and the central regions of Sakhalin Island.

Gazprom's participation concept for gas infrastructure expansion in Russian regions implies a differentiated approach to gas infrastructure expansion, taking into account the availability of natural gas reserves in the regions and the development of existing fields as well as the possibility of using alternative energy carriers including liquefied and compressed natural gas, liquefied petroleum gas.

At the same time, Gazprom is conducting further natural gas supply: in settlements already equipped with gas

infrastructure, the Company build gas network to the borders of private households as well as to boiler rooms of medical and educational organizations without attracting funds from citizens and these organizations.

2023 saw 50% increase in Gazprom performance under the further natural gas supply program compared to the previous year. 1.15 mln households were provided with the technical capability of bringing a gas pipeline to the boundaries of a site, 875 thousand households were supplied with gas to the boundaries of a site, 500 thousand households were supplied with gas.

By mid-2023, 580 further natural gas supply applications were received from 42 regions for boiler rooms of medical and educational organizations.

The Gazprom Group's gas distribution companies ensure natural gas networks construction at a fast rate in their area of responsibility. All executed agreements on further natural gas supply meet target date. According to preliminary estimates, about 1,530 medical and 1,760 educational organizations in the area of responsibility of gas distribution companies can participate in the further natural gas supply program.

In 2023, Gazprom continued to be engaged in work on securing access to the gas network for Russian citizens. According to the results of the reporting year, over 400 Russian settlements were connected to the natural gas network; approx. 2.5 thousand km of inter-village gas pipelines were built. In particular, new facilities were connected in the Saratov, Vladimir, Kaluga, Bryansk, Kemerovo, Kirov, Kostroma, Kurgan, Ivanovo, Tver, Tula, Rostov, Samara, Saratov, Omsk, Oryol, Penza, Orenburg, Ulyanovsk Regions, the Krasnodar, Khabarovsk, Primorsky Territories as well as the Kabardino-Balkarian Republic, the Karachay-Cherkess Republic, the Republic of Tatarstan, the Komi Republic, the Republic of Adygea, the Republic of Mordovia, the Mari El Republic, the Republic of Ingushetia and the Altai Republic.

Gas pipelines have been put into operation in the Belgorod, Vladimir, Volgograd, Ivanovo, Kemerovo, Kirov, Leningrad, Moscow, Nizhny Novgorod, Novosibirsk, Novgorod, Omsk, Pskov, Rostov, Smolensk, Tula, Ulyanovsk, Chelyabinsk, Yaroslavl Regions, the Altai, Krasnodar, Perm Territories as well as the Republic of Dagestan, the Altai Republic, and the Republic of Mordovia.

The gas infrastructure expansion of production enterprises and industries continues, switching to gas of agroindustrial complex facilities is actively underway.

Special attention is given to repairing and construction works at gas infrastructure facilities in the new constituent entities of the Russian Federation. A number of significant projects have been implemented, which made it possible to restore gas supply to tens of thousands of consumers. As a result, gas supply was provided to over 200 thousand consumers.

New regions of Russia are also integrated into the further natural gas supply program. As a result, 300 new households were connected to the gas supply network.

In 2023, gas infrastructure expansion costs RUB 236.8 bln that is almost twice as much as in 2022. In 2024, Gazprom plans to increase the pace of gas infrastructure expansion and further natural gas supply in the country.

## Switching transport sector to natural gas

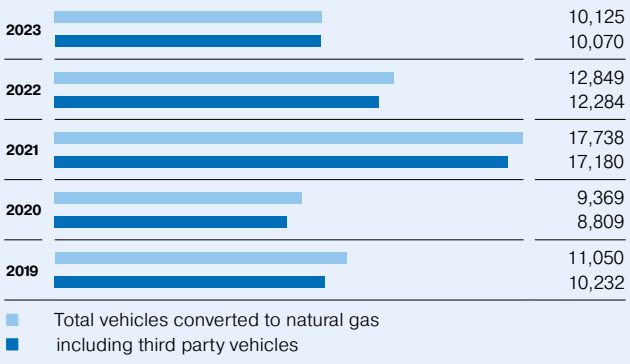
PJSC Gazprom continues its comprehensive efforts in extending gas motor fuel (GMF) application scope for the transport sector of the Russian economy contributing to mitigation of emissions of climatically active substances.

The use of GMF ensures preservation of people's health, reduces car owners' costs thanks to attractive pricing for refueling, reduces the negative impact on the environment as a result of using environmentally friendly gas fuel.

At present, there are over 940 gas-filling facilities in Russia; OOO Gazprom gazomotornoe toplivo operates 400 of those. Well-targeted work on the development of LNG complexes and cryo-filling stations is in progress.

In 2023, the Gazprom Group converted over 10 thousand vehicles to GMF.

**Dynamics of the conversion of vehicles to natural gas at the Gazprom Group, 2019–2023, units/year**




In 2023, the total consumption of compressed natural gas (CNG) in Russia amounted to 2.2 bln $m^3$ thanks to switching of transport to natural gas. This prevented 1 mln t of $CO_2e$ in GHG emissions.

At the same time, the utilization of the existing infrastructure has stalled at 34%. Additionally, over 500 thousand vehicles can be refueled with environmentally friendly and cost-effective fuel.

By the end of 2023, there were 836 gas-filling stations in Russia. Gazprom continues to implement projects on gas-filling network accelerated development together with the administrations of the constituent entities of the Russian Federation.

New facilities for refueling vehicles with environmentally friendly gas fuel started operating in the Krasnodar and Khabarovsk Territories, the Yamalo-Nenets Autonomous District, the Republic of Bashkortostan, the Vologda, Kaliningrad, Leningrad, Novosibirsk, Omsk, Rostov and Tula Regions.

Gazprom owns more than half of the stations. In 2023, they sold over 70% of the total GMF in the country.

In 2023, a solemn ceremony was held for the commissioning of 9 Gazprom gas-filling stations (approx. 4.5 thousand cars per day) in the Krasnodar Territory, the Rostov and Tula Regions.

The number of Gazprom's franchised CNG-filling stations increased by 11 and reached 25 in 2023. The first CNG-filling stations under the OOO Gazprom gazomotornoe toplivo franchise began refueling with methane in the Kursk and Nizhny Novgorod Regions from the end of 2023. Currently, 8 CNG-filling stations are operating in the Nizhny Novgorod Region under the franchise program. In 2024, it is planned to expand the franchise program in the Krasnodar Territory, the Republic of Bashkortostan, the Omsk, Rostov, Sverdlovsk, Tula, Tyumen, Chelyabinsk, Yaroslavl Regions[1].

Gazprom plans to build over 200 gas-filling stations by the end of 2025. It will focus on the development of a supporting gas-filling network along key federal highways. Today, Gazprom methane-filling stations operate on the M-1 "Belarus", M-2 "Crimea", M-4 "Don", M-5 "Ural", M-7 "Volga", M-10 "Russia", and M-11 "Neva" highways.

OOO Gazprom gazomotornoe toplivo presented the National Fuel project within the framework of the St. Petersburg International Economic Forum, the purpose of the project is the large-scale refit of vehicles to methane. The project is aimed at increasing the demand for gas as a fuel, especially during the active phase of gas infrastructure expansion in the regions. By investing, car owners get the opportunity to reduce the cost of refitting to zero plus additional savings.

The project widens the use of CNG to carsharing. Eco-friendly car rental is already operating in the Nizhny Novgorod and Tula Regions. PAO MOEK extends its fleet of methane-powered utility vehicles, and Russian Post and taxi companies are converting their cars to gas.

Gazprom keeps up with extensive collaboration with leading automakers on increasing the number of models of cars and equipment powered by gas. Gazprom and major automakers have reached an agreement to include NGV models into the range of manufactured vehicles including for own needs.

Currently, domestic factories produce over 230 models powered by natural gas — cars and trucks, buses, and special-purpose vehicles. Russian NGV fleet account for approx. 285 thousand vehicles, which increases the demand for GMF annually.

Initiated by Gazprom, KAMAZ has launched mass production of a wide range of cars and equipment powered by natural gas. Today, the factory produces approx. 130 models of such vehicles — more than half of all Russian-made NGVs. The parties pay special attention to the production of innovative NGV models. Thus, by order of Gazprom, KAMAZ manufactured a batch of KAMAZ-5490 NEO freight trucks powered by LNG for the transportation of insulated tanks with liquid helium.

Gazprom and the Ministry of Agriculture of the Russian Federation signed an agreement on cooperation in utilizing of natural gas as a motor fuel for a domestic agroindustrial complex, establishing a mutually beneficial long-term business partnership to develop measures of state support for agricultural producers and manufacturers of gas-powered agricultural machinery, mobile gas-filling vehicles as well as expanding the range of gas-powered agricultural machinery and mobile gas-filling infrastructure.

Keeping in mind that natural gas is the most cost-effective fuel, its use provides for cutting costs by more than half compared to petrol and diesel resulting in the cost reduction of agricultural products. According to expert estimates, the GMF consumption potential of the domestic agro-industrial complex is 300-400 mln $m^3$ of gas per year.

GMF utilization in the mining industry is expanding. With the conversion of 10% of rear-dump wagons, methane consumption potential by mining vehicles in Russia is estimated at 400 mln $m^3$ per year. This will be an additional input to the decarbonization of the mining industry, reducing GHG emissions by over 770 thousand t, and pollutant emissions — by almost 13 thousand t.

Gazprom is conducting large-scale work on converting its own fleet to gas. Today, over 14 thousand vehicles (63% of the fleet of main subsidiaries of PJSC Gazprom) are NGVs.

At the same time, Gazprom is exploring the prospects of using gas in other transport modes, e.g., rail and water-borne. By order of Gazprom, Russia's first LNG-powered shunting locomotive named TEMG1 has been developed. Currently, it is under operational test. The development of LNG-powered passenger ship models for use in the waters of St. Petersburg is underway.

Methane promotion in the Sakhalin Region is one of the important conditions for achieving carbon neutrality within the framework of the ongoing experiment to limit GHG emissions. The Government of the Sakhalin Region has planned to convert 50% of region vehicles to environmentally friendly fuels by 2025.

In April 2023, the 2023-2025 Action Plan (Roadmap) on accelerated switching to natural gas as a motor fuel and the development of gas-filling infrastructure in the Krasnodar Territory as well as the 2023-2024 Action Plan (Roadmap) on synchronizing the implementation of a large-scale investment project on the NGV infrastructure development at the resort city of Sochi were signed. The goal is to create conditions for wider use of natural gas at the Krasnodar Territory.

In order to objectively assess the level of GMF market development at the constituent entities of the Russian Federation, OOO Gazprom gazomotornoe toplivo keeps the Rating of Russian regions according to the level of GMF market development.

In 2023, the Rostov Region was the top methane transport consumer — 50.9 mln $m^3$, the Krasnodar Territory — 35.5 mln $m^3$, and the Republic of Tatarstan — 34.4 mln $m^3$.

[1] https://gmt.gazprom.ru/press/news/2024/01/296/

In 2023, the Irkutsk Region (77%), the Astrakhan Region (58%), the Tyumen Region (34%), the Kamchatka Territory (30%) and St. Petersburg (26%) continue to demonstrate a significant rise in GMF sales against 2022.

Priority tasks outlined by Gazprom for 2023 include increase in the volume of sales of natural gas as a motor fuel that means a greater contribution to the country's economy and its environmental well-being, improvement of reliability and operation efficiency of the existing network of gas-filling stations. The Gas Motor Fuel Market Development subprogram provides for an increase in the consumption of gas as motor fuel to 2.7 bln $m^3$ in 2024, gas-filling stations to 1,273 as well as the NGV fleet by at least 40 thousand vehicles by the end of 2024.

## Hydrogen economy

At the beginning of 2023, the Government of the Russian Federation and PJSC Gazprom signed an Agreement of intent to stimulate progress in technology intensive focus area "Expansion of the Hydrogen Economy". Joining and coordination of the Parties' efforts to foster technological development, achieve national technology sovereignty and technology leadership of Russia on global technology markets is the subject of this Agreement.

The main mechanism for the execution of this Agreement is the joint implementation of the Roadmap on technology intensive focus area – the 2030 Hydrogen Economy Development approved by the decision of the interdepartmental working group on the hydrogen economy development in the Russian Federation. The Roadmap is deemed to provide conditions for establishment of hydrogen economy in Russia, development of competitive national technologies, their scaling up and launching of pilot projects. The scheduled measures are agreed with gas infrastructure expansion activities and gas supply of national power facilities, GMF market development, carbon dioxide sequestration studies, including those generated by industrial enterprises. The declared initiatives will result in achievement of the national social and economic development targets, providing for the reduction in GHG emissions by 2050.

## Development of hydrogen technologies

In 2023, one of the main challenges in hydrogen technology was the development of domestic equipment and materials for hydrogen economy. Priorities lie in domestic technologies first of all production of hydrogen from natural gas (steam and auto-thermal conversion, methane pyrolysis), the extraction of hydrogen from hydrogen-containing mixtures and its purification as well as development of domestic materials and reagents (catalysts, etc.).

PJSC Gazprom undertakes advancement of priority disciplines of the hydrogen economy based on natural gas primarily as part of R&D and process operations with the involvement of the Gazprom Group companies and scientific institutions.

Development of technologies of hydrogen production from natural gas is supported by creation of a technological experimental and demonstration complex (TEDC) to validate and provide comprehensive introduction of hydrogen technologies. The TEDC work specification is ready, development of design documentation is close to its completion.

Created mobile plasma hydrogen generator prototype was delivered from the city of Tomsk to OOO Gazprom VNIIGAZ under the agreement between the Federal State Autonomous Educational Institution of Higher Education (FSAEI HE) "National Research Tomsk Polytechnic University", OOO Gazprom transgaz Tomsk and OOO Gazprom VNIIGAZ. This prototype is being prepared for the use in TEDC for further technology advancement and scaling-up.

As part of the hydrogen-filling stations development project, a preliminary design, and design specifications have been prepared; technical information has been received from vehicle manufacturers, and alternative technical solutions and structural designs are being worked out.

Science & technology proposals were developed for hydrogen production at gas processing facilities and its further use as a marketable product. The annual production capacity of marketable hydrogen is estimated at approx. 18 thousand t. At the same time, investment decisions on the construction of hydrogen separation facilities and infrastructure for marketable hydrogen storage and shipment can be made only after identifying a specific consumer (customer) and their requirements to the quantity and quality of marketable hydrogen.

R&D activities were initiated to develop technology for producing hydrogen from hydrogen sulfide, create a fuel cell based on molten carbonate. An assessment of hydrogen impact on the integrity and stability of the GTS, an analysis on the use of UGS facilities for storing various gaseous hydrogen-containing mixtures in a porous medium were performed. The hydrogen impact on the formation rock, reservoir water, cement stone, rubber seals under various thermobaric conditions is being investigated. The development of pilot production of membrane materials for the separation of carbon dioxide/methane and hydrogen/methane mixtures has begun.

A feasibility assessment of projects on production and use of methane-hydrogen fuel for GCU gas turbine engines was carried out. The main technology & economy issues have been worked out, including with process equipment suppliers. According to the results of a preliminary design and due to

the lack of economic and environmental effects for some technical solutions, transition to the next stage of development efforts was considered premature.

Taking into account the assignment of the Government of the Russian Federation, the development of a new promising area in exploration and production of natural hydrogen, which forms during various physico-chemical processes in the Earth's interior, is being studied. (Hydrogen is included in the all-Russian classifier of natural resources in accordance with the Order of Rosstandart of Russia No. 490-st as of 7 July 2023.) Plans are to survey and evaluate natural hydrogen sources.

As part of the implementation of the Gazprom roadmap, a hydrogen championship for young specialists and students was held with the involvement of base universities. 73 students from 28 Russian universities took part in the championship. The students completed the task of developing the hydrogen cluster concept at the territory of the Russian Federation, offering new ideas on the organization of hydrogen production and hydrogen utilization. The final was held within the framework of the VIII International Conference "Environmental Safety in the Fuel and Energy Complex" (the town of Razvilka, Moscow Region) on 15 December 2023. The jury of the championship included representatives of the Russian Ministry of Energy and the Russian Energy Agency.

OOO Gazprom hydrogen organized a practical training and internship program in order to attract young specialists and students to the technology intensive focus area "Expansion of the Hydrogen Economy". The first internships took place the spring semester of the 2022/2023 academic year and the fall semester of the 2023/2024 academic year.

The Technical Committee 029 "Hydrogen Technologies" (TC 029) and the Technical Committee for standardization 239 "Carbon Dioxide Capture, Transportation and Storage" (TC 239) are in charge for standardization issues. Gazprom keeps collaborating with domestic companies, implements projects with the participation of Russian and foreign organizations from friendly countries to demonstrate the capabilities of hydrogen based on natural gas.

## Low-carbon development: assessing risks and opportunities

Gazprom fulfills its voluntary environmental commitments stipulated by the Environmental Policy of PJSC Gazprom aimed at reducing GHG emissions.

Gazprom performs risk assessment for its activities to prevent environmental damage.

The Gazprom Group evaluates climate and environmental risks and implement appropriate measures to mitigate negative impact on the environment and climate as well as climate change adaptation measures.

In 2023, the decision of the PJSC Gazprom Board of Directors approved the 2050 Climate Strategy of PJSC Gazprom. The strategy was developed in order to reduce the carbon intensity of the natural gas production, transportation, storage and processing and to create the most favorable conditions for increasing the share of natural gas utilization in power, industry and transport. The document defines Company's priorities in low-carbon development based on natural gas.

The Climate Strategy is integrated into the Gazprom corporate planning system. It defines planned GHG emission reduction indicators that are recognized as strategic target values and key performance indicators in corporate policy documents on long-term and innovative development.

In 2023, PJSC Gazprom reduced specific GHG emissions by 5.45% against a 2018 baseline value (PJSC Gazprom's key performance indicator). One of the target values set by Gazprom's Corporate Environmental Goals for 2023–2025 is to reduce GHG emissions during natural gas transmission per commodity transport activity against a 2018 baseline value – 56.7 t of $CO_2$e/bln $m^3$•km. In 2023, this target value was achieved with 46.62 t of $CO_2$e/bln $m^3$•km.

Gazprom will proceed with further reduction of GHG emissions. The ongoing projects and activities strengthen Gazprom's leading position among global energy companies.

PJSC Gazprom has adopted medium-term target values for specific GHG emissions: the planned reduction in specific GHG emissions (against a 2018 baseline value) will be 12.9%. in 2033.

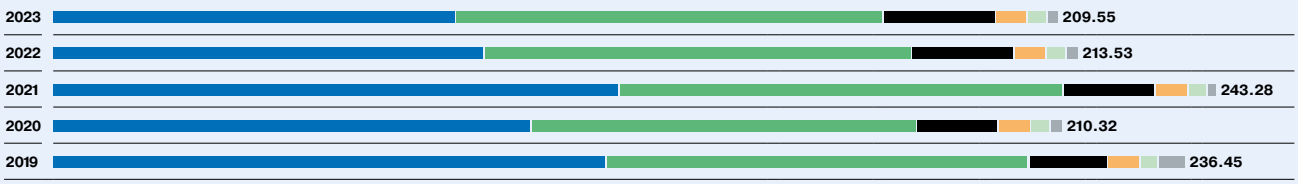
The annual analysis of the indicators shows that the actual values are ahead of the planned ones.

# Greenhouse gas emissions

The quantitative estimation of 2023 direct GHG emissions in all companies of the Gazprom Group (including PJSC Gazprom) was carried out according to the Methodology for Quantifying Greenhouse Gas Emissions approved by Order No. 371 of the Ministry of Natural Resources and Environment of the Russian Federation as of 27 May 2022.

**In 2023, GHG emissions (Scope 1) of the Gazprom Group totaled 209.55 mln t of $CO_2e$ that is lower than 2022 value.**

**Gazprom Group's GHG emissions, 2019–2023, mln t of $CO_2e$**

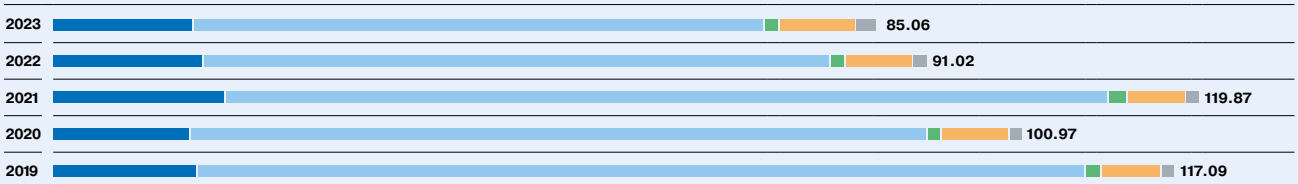



| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| PJSC Gazprom | 117.09 | 100.97 | 119.87 | 91.02 | 85.06 |
| Gazprom energoholding | 89.03 | 81.32 | 93.65 | 90.09 | 90.22 |
| Gazprom Neft Group | 16.04 | 16.65 | 18.73 | 21.08 | 23.16 |
| Gazprom neftekhim Salavat | 6.04 | 6.01 | 6.23 | 6.00 | 5.88 |
| OOO Sakhalinskaya Energia | 3.05 | 3.40 | 3.15 | 3.42 | 3.42 |
| Other companies | 5.20 | 1.97 | 1.65 | 1.92 | 1.81 |

In 2023, PJSC Gazprom's GHG emissions dropped by 6.5% against 2022. Reduction in GHG emissions is thanks to energy saving activities, innovations, scaling up of resource-saving technologies as well as decrease in natural gas consumption for fuel needs and commodity transport activity because of less gas supplies to foreign countries.

The Gazprom Group companies monitor and analyze GHG emission indicators, adopt innovative projects and BATs, carry out efficiency assessment and analysis of GHG reduction activities, develop the update of climate goals and tasks for the future in adherence to the GHG emissions management system.

**GHG emissions dynamics at PJSC Gazprom by types of activities, 2019–2023, mln t of $CO_2e$**




| | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Production | 15.01 | 14.27 | 17.95 | 15.63 | 14.12 |
| Transmission | 93.65 | 77.61 | 93.09 | 66.03 | 60.10 |
| Underground gas storage | 1.33 | 1.13 | 1.66 | 1.22 | 1.19 |
| Processing | 5.99 | 6.83 | 5.90 | 6.82 | 7.74 |
| Other activities | 1.11 | 1.13 | 1.27 | 1.32 | 1.91 |

**In 2023, a release of 33.0 mln t of $CO_2e$ was prevented during repair of GTLs.**

The most promising GHG emissions reduction is focused in projects, technologies and actions at the gas transmission subsidiaries of PJSC Gazprom. In particular, it is focused in activities on natural gas supply to consumers via GDSs, bypass of gas from the repaired section to the operated gas pipeline, use of gas from process piping of a CR for own needs.

The MCS utilization project aimed at prevention of methane (as GHG) venting into the atmosphere during repair works on GTLs is one of the most significant project of today.

As a gas saving technology, the MCS prevented GHG emission of 12.57 mln t of $CO_2$e in 2023. The volume of prevented methane emissions for 2019-2023 is estimated at 48.3 mln t of $CO_2$e.

Gazprom is increasing its MCS fleet to minimize methane emissions and further reduce the carbon footprint of gas supplies to Russian and foreign consumers.

PJSC Gazprom imply constant advancement of its business, including application of best practices on methane emissions reduction. A set of actions aimed at methane emissions reduction is enforced through the 2023 Energy Saving and Energy Efficiency Improvement Program, 2025 Innovative Development Program, and others documents.

**In 2023, GHG emissions from the facilities of PJSC Gazprom totaled 85.06 mln t of $CO_2$e that is 6.5% less than in 2022. Methane share in the total GHG emissions amounted to 26.5%.**

**Dynamics of methane emissions* by types of PJSC Gazprom activities, 2019–2023, thousand t**

| Type of activity | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Production | 51.99 | 47.72 | 59.84 | 82.09 | 71.58 |
| Transmission | 1,242.82 | 952.65 | 897.34 | 706.11 | 782.02 |
| Processing | 1.19 | 1.25 | 1.10 | 2.84 | 7.28 |
| Underground gas storage | 15.97 | 16.63 | 19.98 | 14.95 | 16.93 |
| Other activities | 1.95 | 2.43 | 2.80 | 4.17 | 22.62 |
| **Total** | **1,313.92** | **1,020.68** | **981.06** | **810.16** | **900.43** |

* As contemplated in the Methodology for Quantifying Greenhouse Gas Emissions by Organizations Engaged in Economic and Other Activities in the Russian Federation, approved by Order No. 371 of the Ministry of Natural Resources and Environment of the Russian Federation as of 27 May 2022.

In the reporting year, methane emissions made 0.04% of the produced gas, 0.21% of the transmitted gas, and 0.03% of the stored gas at PJSC Gazprom's natural gas production, transmission, and storage facilities, respectively.

PJSC Gazprom takes comprehensive measures to evaluate, account, and monitor atmospheric methane emissions. These measures are organized in view of the government regulations (EP regulatory actions, state environmental oversight, state accounting and reporting, methane environmental fees).

PJSC Gazprom strictly fulfills recommendations and requirements of the corporate standards on accounting, quantitative assessment and monitoring of methane emissions, including natural gas leaks. The inspection service of OOO Gazprom gaznadzor controls the fulfillment of legislative EP requirements, standards and guidelines.

PJSC Gazprom endeavors to improve the quality of data on methane emissions during natural gas operations along the whole process chain. Every year the Company gets an independent assurance report on methane emissions by the independent audit company.

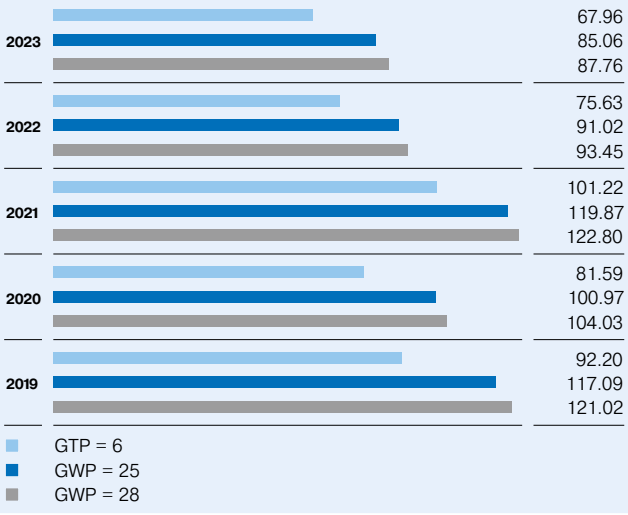
In 2023, PJSC Gazprom continued to execute methane emissions monitoring and measurement project for the Company's main business activities with the use of aerospace technologies with the purpose of actual data reporting on methane emissions.

**GHG emissions at PJSC Gazprom by emission source categories (Scope 1), 2023, mln t of $CO_2$e**

| Emission category | Total | $CO_2$ | $CH_4$ |
|---|---|---|---|
| **Total GHG emissions** | **85.06** | **62.55** | **22.51** |
| Stationary fuel combustion | 53.96 | 53.96 | 0.00 |
| Flaring | 3.35 | 3.20 | 0.15 |
| Fugitive | 26.98 | 4.63 | 22.35 |
| Other industrial processes | 0.00 | 0.00 | 0.00 |
| Fuel combustion by transport | 0.74 | 0.74 | 0.00 |
| Solid waste treatment, combustion and disposal | 0.03 | 0.02 | 0.01 |

Global Warming Potential (GWP) values are revised in a series of reports by the Intergovernmental Panel on Climate Change (IPCC). The IPCC's Sixth Assessment Report[2] recommends using the GWP value for methane over a 100-year period equal to 28.

**GHG emissions dynamics at PJSC Gazprom, 2019–2023, mln t of $CO_2e$**




The use of the global temperature change potential (GTP) over a 100-year period in accordance with IPCC recommendations, and with the decision of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement[3] provides more credible data on GHG emissions impact on the climate system. Thereby, conversion factor 6 is used to evaluate methane (CH4) emissions in $CO_2e$.

With due regard to the GTP, in 2023 GHG emissions of the Gazprom Group totaled 191.15 mln t of $CO_2e$, and GHG emissions of PJSC Gazprom – 67.96 mln t of $CO_2e$.

Indirect GHG emissions (Scope 2) related to power, heat or steam generation purchased from third-party companies are calculated for the whole production chain of PJSC Gazprom by types of activities and by the Group's companies.

**Indirect energy GHG emissions at PJSC Gazprom by types of main activities (Scope 2), 2023, mln t of $CO_2e$**

| | |
|---|---|
| Production | 0.34 |
| Transmission | 1.9 |
| Processing | 1.9 |
| Underground gas storage | 0.03 |

**Indirect energy GHG emissions at the Gazprom Group companies (Scope 2), 2023, mln t of $CO_2e$**

| | |
|---|---|
| PJSC Gazprom | 4.17 |
| Gazprom energoholding | 0.00 |
| Gazprom Neft Group | 5.06 |
| Gazprom neftekhim Salavat | 2.10 |

The Gazprom Group evaluates GHG emissions from the use of products as a fuel or feedstock both in Russia and abroad (Scope 3). Emissions are calculated from all types of sold products: natural gas, oil and gas condensate, petrol, diesel and jet fuel, liquefied hydrocarbon gases, oil residue.

Due to predominant share of natural gas in the products portfolio, and implementation of GHG emission reduction measures, the Gazprom Group demonstrates one of the lowest carbon footprint values of its products among major oil and gas industry companies.

**In 2023, in Moscow, OOO Gazprom energoholding, PAO MOEK and PAO Mosenergo executed the joint program on load switch between heat generation sources that resulted in GHG emission reduction – over 1.2 mln t, and nitrogen oxides reduction – over 1 thousand t. It is the same amount of emissions as annual emissions from the heat supply system of an average city with a population of 400 thousand.**

**The company is constantly updating and improving its generating equipment and that guarantees more energy efficient and cost-effective production. PAO Mosenergo implement regularly EP measures aimed at reducing pollutant and GHG emissions. Because of the work done in 2023, GHG emissions from Mosenergo's production facilities dropped by 24% against 1990 levels. Thus, a tangible contribution was made to achieving the goals of reducing the carbon footprint of Russian capital city.**

[2] https://www.ipcc.ch/report/ar6/wg1/
[3] Resolution 18 / CMA.1 Appendix 37.

# Use of renewable and secondary energy sources

The Gazprom Group uses and develops alternative energy sources wherever it is economically and technically feasible, especially in remote or technologically cut-off areas.

The Gazprom Group uses renewable energy sources (RES) and secondary energy sources (SES) for own needs and sales to external consumers. Solar and wind generators, converters of heat and energy of gas flow into electric power are widely applied at gas production and trunkline transmission facilities as well as gas distribution networks to provide current power supply to telemetry systems, cathodic protection of trunklines, lighting.

**The Gazprom Group companies invested in green energy in 2023 over RUB 5 bln.**

Renewable hydrogenation at PAO TGK-1 (Gazprom energoholding) and OOO Nugush hydrotechnical uzel (Gazprom neftekhim Salavat) produced 12.71 bln kWh of power in 2023. The main generation capacities are the hydroelectric power plants of PAO TGK-1 that make a significant contribution to the green energy of the North-Western Federal Region of Russia (40% of the installed capacity of PAO TGK-1 is accounted for hydro generation, i.e. 40 HPPs with a total capacity of approx. 2,900 MW).

In 2023, the Gazprom Group used 3,002 power units (excluding hydroelectric sets) based on SES and RES, such as turbo-expanders, thermoelectric generators, solar modules and batteries, and wind turbines. The total amount of electricity generated at these power units amounted to 5,121.4 thousand kWh.

PAO Gazprom Neft is successfully implementing pilot projects on alternative energy sources and digitalization of refinery power complexes. The company develops RES-based generation. The Omsk Refinery operates a solar power plant (SPP) with 1 MW of installed capacity, the construction of which was completed in 2019. In 2023, the actual power generation at the Omsk Refinery SPP amounted to 1,150.7 thousand kWh.

**Electrical power generation from renewable and secondary energy sources at the Gazprom Group, 2021–2023**

| | Power generation, kWh | | | Number of units, pcs. | | |
|---|---|---|---|---|---|---|
| Generation type | 2021 | 2022 | 2023 | 2021 | 2022 | 2023 |
| **All types of RES and SES** | **13,156,049,550.78** | **13,171,829,491.03** | **12,708,661,341.28** | **2,848** | **3,084** | **3,118** |
| incl. PJSC Gazprom | 4,236,483.34 | 3,656,277.33 | 3,444,170.52 | 1,686 | 1,846 | 1,846 |
| **Turbo-expanders** | **77,378.90** | **78,263.00** | **24,831.00** | **22** | **33** | **32** |
| incl. PJSC Gazprom | 77,378.90 | 78,263.00 | 24,831.00 | 22 | 33 | 32 |
| **Thermoelectric generators** | **3,949,184.66** | **3,326,556.66** | **3,159,050.49** | **872** | **999** | **999** |
| incl. PJSC Gazprom | 3,949,184.66 | 3,326,556.66 | 3,159,050.49 | 872 | 999 | 999 |
| **Solar and wind generators** | **1,623,258.22** | **1,588,150.37** | **1,677,243.79** | **1,838** | **1,936** | **1,971** |
| incl. PJSC Gazprom | 209,919.78 | 251,457.67 | 260,289.03 | 792 | 814 | 815 |
| **Hydroturbines** | **13,150,399,728.00** | **13,166,836,521.00** | **12,703,800,216.00** | **116** | **116** | **116** |
| incl. Gazprom energoholding | 13,130,080,629.00 | 13,136,298,283.00 | 12,669,429,509.00 | 113 | 113 | 113 |
| Gazprom neftekhim Salavat | 20,319,099.00 | 30,538,238.00 | 34,370,707.00 | 3 | 3 | 3 |

**In 2023, Gazprom commissioned the modernized hydro-electric set No. 2 of the Verkhne-Tulomskaya Hydroelectric Power Plant (HPP). Thus, a large-scale upgrade of the generating equipment of the most powerful HPP in the North-West of Russia was completed. Because of this upgrade, the installed power capacity of the HPP increased by 32 MW and amounted to 300 MW.**

**Extra consideration received the reduction of environmental impact. For example, seals made of modern polymer materials were used in oil-pressure installations to improve the environmental performance of hydro-electric sets. This ensures that oil will not go to the water passage of the hydro-electric set and further into the river.**

**In 2023, PAO TGK-1, SUE Mosgortrans, PAO Sberbank and the Moscow Transport Innovations Foundation signed a partnership agreement on the use of low-carbon electricity generated by hydroelectric power plants. The companies intend to work together to reduce GHG emissions, achieve sustainable development goals and expand the use of electricity generated by HPPs.**

**The first transaction under the agreement was a purchase of "green" certificates. SUE Mosgortrans bought certificates that were issued under Sberbank low-carbon energy voluntary certification system from PAO TGK-1. The certificate confirms that the electricity for Moscow electric buses is generated from RES at PAO TGK-1's HPPs with zero GHG emissions.**

**In 2023, the contracts of sale of zero-carbon electricity generated at the PAO TGK-1's HPPs were signed with OOO Khibinskaya Energy Marketing Company and OOO Rusenergosbyt. The use of green energy through the production chain allows companies to reduce the carbon footprint of their products, follow the principles of sustainable development and thereby gain additional competitive advantages.**

**The Gazprom Group companies planned the investments in green energy for 2024–2027 in amount of over RUB 24.76 bln.**

# Scientific and technical support of environmental protection

## Innovative research and development

Gazprom's science & technology policy goes after securing a leading position in the global energy industry for the Company. It is implemented through R&D programs and boosting of innovations in all Gazprom business activities.

The 2025 Gazprom Innovative Development Program includes an indicator representative of the share of R&D costs in revenue among its key indicators, and reduction of the negative impact on the environment during production activities among its goals.

**In 2023, the Gazprom Group implemented EP and energy efficiency R&D works priced at RUB 140.5 mln.**

The mission of Gazprom's science & design complex is to provide timely high-quality solutions to scientific and technical challenges that compromise Company's production targets. Currently, Gazprom's scientific support is consolidated in its lead institutes — OOO Gazprom VNIIGAZ and OOO NIIgazeconomika. However, the scope of the Gazprom Group's business and the tasks it faces require the involvement of advanced fundamental research concentrated in various national research centers.

The impact on the atmosphere is the most significant environmental aspect of the Gazprom Group's production activities.

Gazprom's corporate climate policy takes into account the provisions of the 2030 Energy Strategy and the Climate Doctrine of the Russian Federation.

One of the tasks is to improve Gazprom's GHG emissions management system, having consideration for new requirements of national and international carbon regulation.

Up-to-date and reliable data are necessary for timely response to and systematic reduction of GHG emissions, which is why a unified approach to quantifying GHG emissions is so important. In 2023, OOO Gazprom VNIIGAZ developed the Methodology Guidance Adapted for the Gazprom Group for Quantifying Scope 1, 2, 3 GHG Emissions. The Regulation on the Assessment, Reporting and Reduction of Methane Emissions at Gazprom Facilities was developed in accordance with the requirements of international and national environmental standards as well as Gazprom's strategic priorities and goals on environmental safety and sustainable development. The Regulation includes procedures and requirements for assessing methane emissions, reporting on these emissions as well as actions taken on planning and implementing measures to reduce them. In addition, the Regulation defines the responsibility for these procedures and requirements as well as compliance management routine. The Regulation is to be periodically reviewed and updated reflecting changes in legislation, technologies, Company's operating conditions, and other factors.

During the experiment on limiting GHG emissions in the Sakhalin region, OOO Gazprom dobycha shelf Yuzhno-Sakhalinsk, as one of the participants of the experiment, being the member of the implementation working group established by the government of the region, commissioned OOO Gazprom VNIIGAZ to study GHG emissions volumes at the Kirinskoye gas and condensate field. The study on the operation of field equipment and facilities included carrying out over 500 emission measurements on shut-off valves, main components, arrangements, and fuel-using equipment. The measurements did not record exceeding the threshold values, and, in some cases, the volume of emissions turned out to be significantly lower than the industry average values per unit of marketable products. Based on the results of scientific and technical support for the operation of the Kirinsky gas and condensate field during the experiment in 2023, the 2022 GHG emissions report, and proposals on the GHG quota for 2024-2025 were developed taking into account the projected increase in performance.

By order of Gazprom Neft Group, design solutions were developed to carry out GHG emissions reduction and sink enhancement of the disturbed ecosystems in the southern part of the Priobskoye field of OOO Gazpromneft-Khantos.

AO Gazprom promgaz assessed technology and economics of the potential for reducing GHG emissions and pollutants at the facilities under the 2021-2025 Programs on Gas Supply Development and Gas Infrastructures Expansion of the Regions of the Russian Federation with respect to the prospects for such expansion up to 2035.

The Methodology on Calculating Pollutant Emissions into the Atmosphere from Cooling Towers of PAO Gazprom Neft's Enterprises was published and listed as a regulatory document of the Ministry of Natural Resources and Environment of the Russian Federation.

The industry standard of PAO Mosenergo "Methodological guidelines on estimating pollutant emissions from gas-turbine units of thermal power plants of power generators with gas turbines during fuel combustion" was developed for OOO Gazprom energoholding.

Technical proposals on the engineering of pollutant emissions automatic control systems for Category I negative environmental impact facilities including an implementation program for this system were presented for OOO Gazprom pererabotka.

In order to ensure PJSC Gazprom's transition to the principles of technology standardization using BAT, OOO Gazprom VNIIGAZ developed three Gazprom industry standards in 2023: "Regulatory environmental documents. The gas supply system. Protection of atmospheric air. Permissible pollutant emissions standards. Basic requirements", "Regulatory environmental documents. The gas supply system. The environmental characteristics gas transmission equipment catalog", and "Regulatory environmental documents. Environmental management system. The organization of environmental control and its procedures".

The management of production and consumption waste is associated with significant risks to the environment. In this regard, the Gazprom Group strives to introduce into its business cutting-edge waste minimization practices and technologies.

The Roadmap on the execution of the waste-free production project at OOO Gazprom transgaz Yugorsk by introducing elements of a cyclical economy into the waste and material management system was also presented in 2023.

Gazprom pays special attention to ensuring environmental safety during its activities on the continental shelf and in the Arctic zone of the Russian Federation.

Gazprom Neft Group ordered a matrix of environmental restrictions and proposals on measures to remove such restrictions and environmental factors impact risks as well as to reduce the negative impact on the environment during the

development of the Yuzhno-Ob license area located in the Ob Bay of the Kara Sea.

OOO Gazpromneft-GEO has completed R&D on the identification of automated/robotic complexes and solutions for disturbed lands restoration in the northern territories. The aim of the project is to identify the appropriate way to carry out the biological stage of the restoration using agro-drones that allow effective land restoration with no harm to tundra areas, which remained undamaged during construction and operation, as well as to assess the maturity of a set of technologies for various scenarios. In 2023, the field stage of the project was carried out. It includes grass mixtures sowing and fertilizing soil in the remote areas of the Arctic tundra using agro-drones as well as monitoring the state of seedlings at experimental sites in the Arctic zone.

OOO Gazprom VNIIGAZ developed a polymer structure-forming agent to prevent dangerous manifestations of water erosion processes and to accelerate restoration of the soil and vegetation at industry-related disturbed areas during gas production and transportation in various natural and climatic conditions. Taking into account the need to restore large areas using mechanic means and especially in complex terrain, when creating compositions, the institute focused on "wet" technology as a surface fixing technology. The "wet" technology involves the preparation of a working solution at the work site. It is applied to the soil surface and has a binding effect on soil particles that helps accelerate root formation. The field tests of the structure-forming polymer were carried out under different climatic conditions: in the Far North (OOO Gazprom dobycha Nadym, Bovanenkovskoye OGCF), in central Russia (on the territory of the Research Base of OOO Hydroecology-KGS on the Oka River at the village of Smedovo), and in the Southern Federal District of Russia (facilities of OOO Gazprom transgaz Krasnodar).

In order not to disrupt ecosystems balance and preserve biodiversity of the territories near Gazprom facilities, various studies are conducted and actions are taken to minimize the risks of negative impact on natural objects every year.

In 2023, OOO Gazprom VNIIGAZ developed the Biodiversity Preservation Corporate Program for the areas of PJSC Gazprom's operations on production and development of oil and gas fields on the continental shelf of the Russian Federation in the Arctic. The Program is based on sustainable biological diversity indicators while conducting geological survey, exploration and production of oil and gas, construction or installment of offshore development facilities or other infrastructure facilities at offshore fields as well as transportation of raw hydrocarbons in the offshore zone.

An ecological and ornithological survey of airfields was completed for OOO Gazprom avia Aviation Company. Charts and schedules of bird migration were compiled for the area of airfields and aerodrome adjacent territories within a radius of 15 km during various periods of annual bird activity.
OOO Gazprom VNIIGAZ continues its work on improving Gazprom regulatory documentation in energy efficiency and energy saving and thus has developed the 2024-2026 Energy Saving and Energy Efficiency Program of PJSC Gazprom.
The institute analyzed results of the Gazprom Energy Saving Program in 2022 and developed proposals on saving fuel and energy resources to be included in the Innovative Technology and Equipment Program.

In 2023, OOO Gazprom VNIIGAZ, as part of enhancing efficiency of Gazprom's energy saving management system based on improving regulatory & methodological support and using the results of energy analysis backed by an assessment of operating costs during the life cycle of a gas compressor unit, developed measures for enhancing the efficiency of gas compression at a compressor yard with a gas turbine drive, electric drive, or combined drive.

OOO NIIgazekonomika presented technical and economic proposals on projects with introduction of energy-efficient and energy-saving technologies at Gazprom's production facilities in 2023, using energy service contracts.

In the reporting year, OOO NIIgazekonomika also benchmarked Gazprom's competitors (incl. foreign ones) in the field of environment.

OOO NIIgazekonomika came up with the conclusions of an economic efficiency study on fulfilling the potential of PJSC Gazprom's low-carbon development. The institute developed methodological approaches for a comprehensive assessment of strategic risks and opportunities in the context of changes in the projected share of natural gas in the fuel & energy balance, taking into account the balanced interests of all stakeholders of the fuel & energy market.

OOO Gazprom VNIIGAZ has continued its work on capability assessment of using the existing GTS of PJSC Gazprom for the transmission and storage of hydrogen-containing gas as well as underground storage of various gaseous hydrogen-containing mixtures in a porous medium.

For the sake of further development of the Russian gas industry, the Gazprom Group actively cooperated with Russian scientific institutes and universities in 2023.

The Institute of National Economic Forecasting of the Russian Academy of Sciences (RAS), commissioned by PJSC Gazprom, carried out research on "The Sustainable Development of PJSC Gazprom in the face of foreign economic challenges".

St. Petersburg State University of Economics has completed research on "Modeling the use of natural gas in the transport sector of the city of Saint Petersburg and the Leningrad Region by 2040 within the context of a metropolis transport sector transformation, taking into account current trends in social and science & technology development".

Gubkin Russian State University of Oil and Gas (National Research University) assessed the consequences of pumping biogas into a natural gas transmission system and UGS.

Gazprom Group's science & technology activities run the gamut of challenges, providing planning, design and scientific support for the entire cycle of investment projects.

**In 2023, the 50th anniversary of the publication of the order of the Ministry of Gas Industry No. 18 as of 23 February 1973 «On strengthening nature protection and improving the use of natural resources» was celebrated. For half a century now, the hard work of Gazprom's specialists has supported facing industry-wide challenges and developing innovative technologies in environmental safety and energy efficiency.**

# Use of best available techniques

BAT – a technique of outputs (goods) production, works execution, and services rendering defined by present-day achievements of science and technology, and the best combination of EP goal criteria if there are technical capacities for its application.

Use of BATs at different stages of business activities, including procurement of technologies, materials, and equipment is one of the Gazprom's Environmental Policy obligations that is met through the Company's comprehensive programs.

PJSC Gazprom's facilities on natural gas and oil production, manufacture of coke and refined petroleum products, gas processing, production of electric and thermal power by fuel combustion fall under the BAT scope according to the Russian Government Resolution No. 2674-r as of 24 December 2014.

As of end the end of 2023 the Gazprom Group has received 32 complex environmental permits (CEPs) for its production facilities, of which 3 CEPs for the facilities being commissioned.

**In 2023, PJSC Gazprom's subsidiaries (OOO Gazprom dobycha Irkutsk, OOO Gazprom dobycha Orenburg, OOO Gazprom dobycha Tomsk and OOO Gazprom dobycha Yamburg) received 14 CEPs, the rest of the Gazprom Group companies (Gazprom neftekhim Salavat, OOO Gazpromneft-Zapolyarye, OOO Gazpromneft-Khantos, OOO Gazpromneft-Yamal) – 5 CEPs.**

Gazprom faces the challenge of ensuring a unified approach to the implementation of BAT under both its environmental and industrial policies as well as participation in improving the system of state BAT-based regulation.

In 2018, the Gazprom Business Segments BAT Transition Roadmap was adopted. Under the Roadmap, PJSC Gazprom took over the management of the transition to new principles of environmental regulation, and OOO Gazprom VNIIGAZ, as the Company's head research center, has been playing the role in developing technologies, equipment and regulatory & methodological documents, participating in testing next generations of technologies, assessing technologies and equipment for compliance with BAT, and in developing best available techniques reference documents (BREF-ITS).

BREF-ITS are updated at least once every 10 years in accordance with the Russian Government Decree as of 23 December 2014 No. 1458 "On the procedure for determining technology as BAT as well as the development, updating and publication of BREFs". The update is based on the confirmed information on new technologies, process equipment, economic and environmental indicators, results, completed research, analysis, study and generalization of domestic and foreign experience.

OOO Gazprom VNIIGAZ was appointed by the Ministry of Energy of the Russian Federation as the developer of new editions of the BREF-ITS 29-2017 Natural Gas Production and BREF-ITS 50-2017 Processing of Natural and Associated Gas.

The Gazprom Group relies on BAT in its business activities as on modern process, technical and managerial solutions that help to increase the production resource efficiency and reduce pollution.

# Gazprom's Science and Technology Prize

Every year, PJSC Gazprom holds a competition for the Science and Technology Prize. The Prize aims to recognize outstanding solutions in production, transportation, storage, processing and utilization of natural gas, gas condensate and oil that transformed into new machinery, equipment, instruments and materials being created or improved and, what is most important, effectively applied. This award is an important constituent of the corporate R&D policy of Gazprom for promoting innovations for company's activities and securing its technological leadership.

The results of the competition are reviewed and approved at the meeting of the Gazprom Management Committee. Gazprom awards a maximum of ten Prizes per year.

In 2023, 17 works from 29 Gazprom companies and 5 third-party organizations were submitted for the competition.

**The total economic impact of the implementation of the Prize-winning solutions and technologies exceeded RUB 50 bln.**

The 2023 top two Prizes went to projects with direct environmental impact.

## Development and implementation of a gas ejection technology to reduce gas blowdown volumes at compressor stations

This project won Gazprom's Science and Technology Prize.

Nominee – OOO Gazprom transgaz Kazan. The project was carried out in cooperation with the relevant departments of PJSC Gazprom, OOO Gazprom VNIIGAZ, and Gubkin Russian State University of Oil and Gas.

The authors met the challenge of process losses of gas and their negative environmental impact. The developed technology makes it possible to pump natural gas out of the equipment and pipelines of the CSs planned to undergo maintenance, doing so with almost no additional energy expenditures, and reroute this gas into the pipelines of the CSs that are not involved in the maintenance operations. This ensures maximum possible gas savings and prevents gas emissions.

The commercial operation of the developed ejectors began in 2021. The technology and ejectors are now included into the Register of innovative products for use at PJSC Gazprom. The project received 18 Russian invention patents.

## Development and implementation of a unique technology for controlling the disposal of drilling waste and process liquids during the development of offshore oil and gas fields

This project took second place in the Gazprom's Science and Technology Prize competition.

Nominee – OOO Sakhalinskaya Energia.

The technology makes it possible to inject drilling waste into specially built intake wells. The technology is unique due to the application of self-developed approaches to control the integrity of caprock seals.

In 2016, the developed technology was recognized as the best available technique for waste management and included in the BREF-ITS "Disposal of production and consumption waste".

The technology is suitable for various facilities across Russia where fixed offshore platforms are utilized, including during the development of offshore fields and the fields of the Arctic and the Far North where the possibility of building special landfill sites for the disposal of drilling waste and process fluids containing mixtures of chemical agents and hydrocarbons is not available.

The project received three invention patents, a design patent and a state registration software certificate.

## Development of a construction technology for the structural layers of road pavements at motorways or other transport infrastructure facilities that involves the use of the BRIT construction substance

This project is among the winners of the Gazprom's Science and Technology Prize competition.

Nominee – PJSC Gazprom Neft.

The relevance of the research is determined by the need for decreasing drilling waste recovery volumes as well as minimizing environmental damage from active fields.
For the first time ever, a bitumen emulsion has been used together with drilling waste to create a construction material for structural layers of road pavements for fields' transport infrastructure.

The project received one invention patent.

The implementation of the results of this project contributes to environmental benefits.

## Development and creation of a domestic innovative complex to perform special studies of core

This project is among the winners of the Gazprom's Science and Technology Prize competition.

Nominee – OOO Gazprom VNIIGAZ.

The relevance of the research is determined by the need for developing the material & technical resources and laboratory facilities of research centers in order to improve the accuracy, reliability and information value of the results of reservoir systems studies as well as the effectiveness, completeness and quality of the performed studies.

For the first time at PJSC Gazprom, a universal multifunctional automated modular complex has been created that allows for a whole range of studies, including those for the identification of proppant pack conductivity and proppant flowback processes. The complex developed using a single design & engineering and hardware & software basis makes it possible to carry out studies in a whole range of experimental areas to obtain the source data for calculating hydrocarbon reserves at fields as well as to design field development processes and apply innovative technical & process approaches to hydrocarbons production.

The complex is now included into the Register of innovative products for use at PJSC Gazprom.

The project received three invention patents.

The implementation of the results of this project contributes to environmental benefits.

## Package of sci-tech solutions for ensuring internal corrosion protection of hydrocarbon production and treatment facilities

This project is among the winners of the Gazprom's Science and Technology Prize competition.

Nominee – OOO Gazprom dobycha Urengoy.

For the first time at PJSC Gazprom, a comprehensive approach to ensuring a reliable operation of gas pipelines under the conditions of carbon dioxide corrosion with regard to hard-to-recover reserves in the Far North as well as a package of methods that involve the use of unique equipment for corrosion simulation laboratory tests was proposed.

The project received five invention patents and two utility model patents.

The implementation of the results of this project contributes to environmental benefits.

## Implementation of the digital transformation principles by drawing on the example of the upgrades introduced into the business process of the Integrated Process Safety Management System

This project is among the winners of the Gazprom's Science and Technology Prize competition.

Nominee – OOO Gazprom transgaz Stavropol.

For the first time at Gazprom, the digital transformation of PJSC Gazprom's operational control processes has been implemented through the development and adoption of a vertically integrated solution as part of the Integrated Process Safety Management System. The project introduces a new methodological approach for analyzing the results of inspections of GDSs that are carried out as part of operational control using specially developed check lists as well as for assessing on this basis the level of reliability and safety of GDSs. It is done so through the calculation of a first developed special integrated scorecard on the compliance of GDSs with the regulatory requirements to process safety and reliability.

A professional staff development program on the training course entitled "The control of the operation of gas transmission system facilities on the basis of the targeted inspection data sheet" as well as a training tool, namely a simulator of a GTS facility for practicing the skills acquired, were developed.

The results of this project have been implemented since 2018; the training technology has been active since 2021.

The project received one utility model patent.

The implementation of the results of this project contributes to environmental benefits.

# Information disclosure

Guaranteeing wide availability of eco-data on EP activities and decisions taken is one of the key commitments made by PJSC Gazprom in its Environmental Policy. The main criteria for information disclosure are reliability, transparency, integrity, and accessibility for all parties concerned.

PJSC Gazprom official web-site www.gazprom.ru presents relevant information on EP and energy efficiency improvement of the Gazprom Group activities in section "Sustainable Development" under tabs "Sustainable development management", "Ratings", "Innovative activity", and "Environmental Protection" with further breakdown to tabs: "Environmental Management System", "Energy Management System", "Environmental Impacts", "Energy Saving", "Hydrogen Energy", "Vernadsky Foundation", and "Environmental Reports". Since 1995, PJSC Gazprom Environmental Report has been issued on an annual basis.

The Gazprom Group's Social Impact Report (formerly the Gazprom Group's Sustainable Report), that has been published regularly since 2010, contains "Environmental Protection" section, which provides detailed information on EP strategy, GHG emissions management, energy saving, atmospheric air protection, water resources protection, waste handling, and biodiversity preservation.

The tab "Investors" provides the Articles of Association and regulatory documents of PJSC Gazprom, data on the corporate governance, annual shareholders meetings, shares and dividends, creditor relations, financial calendar, and information disclosure. The "Information disclosure" tab encloses tab "Material facts" with year-wise statements, tab "Reports" with annual, financial, environmental, sustainability, social impact reports, IFRS consolidated financial statements, accounting statements.

The tab "Media" highlights chronologically the Gazprom Group news and events with hashtags "Gas infrastructure expansion", "NGV fuel", "Reports", "Social responsibility", "Power industry", "Environmental Protection".

Information on the current and future EP activities of Gazprom can be found in tab "Periodicals", which has pinned links to online versions of the corporate printed press:

- Gazprom Magazine, monthly (published since 2006)
- Gas Industry Journal, monthly industry-specific science & technology journal (published since 1956)
- Gas Science Bulletin, quarterly science & technology digest (The Bulletin is a successor to the science & technology periodical of VNIIGAZ, which was first published in 1948. OOO Gazprom VNIIGAZ has published the new version of the publication since 2010)

Within the Gazprom Group, subsidiaries publish newspapers and other periodicals, make TV and radio broadcasts (over 40 titles). Pursuing the information transparency principle, the Gazprom Group companies publish Environmental Policy guidelines, environmental news, environmental and sustainability reports, biological diversity preservation action plans, environmental monitoring reports, environmental impact assessment, information on public hearings, oil spill response plans, and other content on their websites.

PJSC Gazprom holds public hearings for the majority of its investment activities on an annual basis, as it is compulsory according to the Russian legislation.

The Gazprom Group companies bring together their employees and representatives of federal and regional mass media to discuss rational use of natural resources, EP, and energy saving. Gazprom monitors mass media to analyze public opinion on its environmental activities and further considers it for future planning and prompt managerial decision-making.

**In 2023, there were 14,486 positive publications in mass media and Internet related to environmental aspects of the Gazprom Group activities.**

As an eco-oriented company, PJSC Gazprom supports initiatives on protecting the environment and preserving natural resources.

On 21 March 2023, the YamalEcoHouse public space was opened in the city of Novy Urengoy. OOO Gazprom dobycha Urengoy was the social partner of this project. The YamalEcoHouse is a modern platform for environmental awareness events and public initiatives where you can hand over recyclable materials for further processing. This is the second YamalEcoHouse in the region. The first one was opened in the city of Salekhard in December 2022. The next one will be built in the city of Noyabrsk.

For several months of the reporting year, OOO Gazprom dobycha Yamburg has sponsored activities of photo expedition trip to the Polar Urals as part of a new stage of its ecological and educational project "Protected Yamal". The focus was on the SPNA of regional significance "Ingilor Nature Park" (area size 921,986 ha). The Ingilor Nature Park staff carries out a unique musk-oxen repopulation project. The Yamal musk-oxen breeding station is the largest in the world. The deliverables of photographers, journalists, employees of the Ingilor Nature Park, and researchers will be a photo album and a movie about the Polar Urals that will continue the "Protected Yamal" series.

Moreover, in 2023, OOO Gazprom dobycha Yamburg with the support of the Russian State Duma Committee on Ecology, Natural Resources and Environmental Protection, the government of the Yamal-Nenets Autonomous District (YNAD), and PJSC Gazprom held a strategic session "Environmental protection. Going green: fuel and energy companies". The purpose of the event: to determine development paths for environmental activities of fuel and energy companies in the Arctic region, to expand interaction and constructive cooperation with authorities in EP. During the event, two unique projects were launched: "Protected Yamal. Birds of the Arctic" that aims to study the ornithologic fauna of the Taz Peninsula, and "Culture of environmental safety at OOO Gazprom dobycha Yamburg" that will form the commitment of the company's staff to environmentally friendly behavior not only during production, but also in everyday life.

The representatives of 6 financial organizations with practical experience in ESG-agenda, a specialized waste management organization and a regional environmental operator, managers and environmentalists of over 30 fuel and energy companies, schoolchildren and students were among 250 participants of the event. Within the framework of the event, a round table on "Features of regulatory and legal support for EP activities of fuel and energy companies" was held. Master classes, intellectual and entertaining games "ECOlogic", exhibitions, a review competition and an exhibition «Art Waste 2023» of objet d'art made from waste (over 50 exhibits, incl. those the enterprises of the YNAD fuel and energy complex), excursions, an eco-practice with business games were conducted. Participants took part in a city clean-up, when 100 trees were planted under the "Yamal 100" district project, the Yamal Alley was opened.

The "Protected Yamal. Birds of the Arctic" project is aimed at increasing the population of rare falcons (the gyrfalcon, the peregrine falcon) on the Taz Peninsula. As part of this initiative, an expedition to study the flora and fauna of the Taz Peninsula "Yamburg Educational Watch 2023" was organized and conducted together with ornithologists at the Yamburgskoye field. The nesting of gyrfalcons was confirmed, this rare birds were ringed, and the creation of a network of artificial nests for them began (17 nests were installed). The documentary "Yamburg: the falcon's birthplace" was filmed. The project is a joint effort with the pupils of the Novy Urengoy children's ecological station. Following the expedition, the students of the ecological station prepared research papers and presented them at scientific conferences and competitions, receiving first and other prizes.

The event resulted in a resolution including 14 initiatives on improving environmental regulatory and legal support and covering the main ways of environmental development of YNAD and Russia. The resolution was sent to the Russian Ministry of Natural Resources and Environment.

With the support of OOO Gazprom dobycha Irkutsk, the XXII Baikal International Film Festival "People and Environment" named after V.G. Rasputin took place once again (https://baikalkinofest.ru) in the city of Irkutsk. The festival was first opened in 1999. Its main tasks are: forming environmental awareness among people, drawing attention to nature-related problems, and encouraging creativity of authors. The competition program of the 2023 festival included 35 films from 17 countries of the world: 9 documentaries, 8 popular science movies, 6 feature and 12 animated films. In addition, a separate jury evaluated 6 full-dome films that were shown in the planetariums of the regional center.

PJSC Gazprom has been the general sponsor of the All-Russian Nature Festival "Primordial Russia" for 10 years (https://fotocult.ru). At the 10th anniversary festival in 2023, 36 thematic and single author exhibitions were presented. The exposition included over 500 large-format photographs by 209 authors. This time, a large area of the exhibition was dedicated to the Red List of Threatened Species of Russia (aka the Red Book) and the protection of rare animal species. Separate expositions were devoted to Gazprom-supported research and repopulation of the Central Asian leopard in the Caucasus Nature Reserve and the Far Eastern leopard in the Land of the Leopard National Park. Thematic days were held at the festival – Day of Natural Photography, Polar Day, Day of the Nature Conservationist, Bird Day, Bear Day, and Volunteer of Protected Areas Day. In total, 132 lectures and 67 master classes for children and adults, excursions and quests at the festival were organized. As part of the film program of the festival, 40 films were shown. They were dedicated to the pristine nature of Russia and issues of its preservation. In 2023, over 65 thousand people attended the festival at the New Tretyakov Gallery.

Within the framework of the Primordial Russia festival, the winners of the V "The Best Eco-volunteer Squad" competition of the Vernadsky Non-Governmental Environmental Foundation were awarded. Over 600 applications for the competition from 78 regions of Russia were submitted. The total number of participants was aprox. 40 thousand people. The competition was won by 6 volunteer associations of Gazprom subsidiaries: the Eco-Balance Squad (OOO Gazprom transgaz Volgograd), the Council of Young Scientists and Specialists of OOO Gazprom dobycha Orenburg, the Decent People Squad (OOO Gazprom dobycha Nadym), the ECO-GREEN Squad (OOO Gazprom transgaz Tomsk), the Editorial Staff of the Protected Yamal project (OOO Gazprom dobycha Yamburg), and the Environmental Squad of OOO Gazprom transgaz Krasnodar.

On June 5, on Russian Ecologist's Day and World Environment Day, the Vernadsky Non-Governmental Environmental Foundation held an annual award ceremony for the winners of two large-scale projects. For the twelfth time, the winners of the International project "Environmental Culture. Peace and Conciliation" were praised. This year, over 700 projects from 68 regions of our country and the Republic of Belarus were submitted to the competition. The winners were the authors of 24 projects.

In the Sustainable Business nomination, the following were recognized as the best: the joint project of OOO Gazprom transgaz Stavropol and OOO Gazprom dobycha Astrakhan – "Diversity conservation of the biological resources of the Volga River basin in the Astrakhan Region"; the project of AO Gazstroyprom – "Thermal destruction installations and their utilization at construction sites". OOO Gazprom transgaz Volgograd won the Eco-education nomination with the project "Environmental calendar "Ecology NEXT". OOO Gazprom transgaz Saratov won the second prize in the nomination with the "Clean Shores to Volga" project.

**Among the winners of the environmental clean–up "Green Spring - 2023" were OOO Gazprom transgaz Belarus, OOO Gazprom transgaz Yekaterinburg, OOO Gazprom transgaz Tomsk, OOO Gazprom transgaz Kazan, OOO Gazprom transgaz Nizhny Novgorod.**
**The most creative works at the contest "I am a participant of the Green Spring" were presented by OOO Gazprom transgaz Yekaterinburg (the Best Video nomination), OOO Gazprom transgaz Ukhta ("Green Spring in focus" and the Best Video nominations).**

**The project "Construction of a flue gas treatment plant at the Yuzhnoye Butovo district thermal plant (hereinafter – DTP)", submitted to the environmental competition by the inventive entity of PAO Mosenergo and OOO Gazprom energoholding, came off second best among the projects using environmentally friendly and energy-saving technologies.**

**The project answers two problems simultaneously: reducing pollutant and GHG emissions as well as meeting the deficit of carbon dioxide on the food industry market, replacing carbon dioxide specially produced by other enterprises.**

**The process of carbon dioxide capture by the unit is based on the already well-developed technology of chemical absorption of carbon dioxide with an amine solution. The annual capacity of the plant is 20-25 thousand t of liquefied and solid carbon dioxide of high purity.**

**The implementation of the project will reduce carbon dioxide emissions of the Yuzhnoye Butovo DTP by 10-15% annually, nitrogen oxides emissions – by 28 t per year.**

## Gazprom effectiveness in environmental information disclosure is proved by independent expert rating agencies

In 2023, PJSC Gazprom achieved the top (Group "A") of two interconnected indices of the Russian Union of Industrialists and Entrepreneurs (RSPP) on sustainable development (ESG-indices): the Responsibility and Transparency Index and the Sustainable Development Vector Index. The indices are based on the understanding of corporate social responsibility as the responsibility of a company for the impact of its decisions and activities on society and the environment, incl. the economic, social and environmental aspects of this impact.

As of year-end 2023, the annual analytical review of the National Rating Agency (NRA) "ESG-ranking of Russian industrial sector companies" placed PJSC Gazprom among the Group 1 – "Companies with advanced sustainable development practices" that includes companies demonstrating leadership in integrating the ESG-agenda into their activities, and high quality of compliance with relevant practices.

In accordance with the analysis of the AK&M Rating Agency "Sustainable Development Reporting Rating 2023", PJSC Gazprom reached the highest level of the RESG1 rating "The highest level of sustainable development information disclosure in reports". This emphasizes the high level of environmental disclosure, data and facts about relations with society and personnel, compliance with generally accepted rules, and the requirements for sustainable development reporting.

The national standard "Business Reputation Index of Business Entities (ESG (Environment, Personnel, State) - rating)" examines the compliance of companies with the agenda set by the President of the Russian Federation in reliability, social and environmental responsibility. In 2023, it evaluated 5 Gazprom Group organizations at the leadership (AAA) level: OOO Gazprom transgaz Surgut (the best result among all companies participating in the rating), OOO Gazprom dobycha Yamburg, OOO Gazprom transgaz Tomsk, OOO Gazprom transgaz Moscow, OOO Gazprom pererabotka.

# Biodiversity conservation and voluntary environmental responsibility

Gazprom is fully aware of its responsibility in keeping environmental balance while delivering formidable projects in oil and gas production. The Company takes efforts in several ways: modern process solutions to minimize the impact of production processes on nature, continuous environmental monitoring, and biodiversity conservation programs both in regions of Company's presence and in other regions of Russia.

As part of its activities on the continental shelf and in the Arctic zone of the Russian Federation, Gazprom guarantees compliance with standards and requirements that ensure environmental safety. The Gazprom Group utilizes advanced eco-saving technologies to preserve the fragile ecosystem of the polar tundra during the development of Arctic fields.

**The Program on the Conservation of Biological Diversity at the Areas of PJSC Gazprom's Operations on the Continental Shelf of the Russian Federation in the Arctic was approved in 2023. Its purpose is planning and implementing measures on conservation, sustainable use and restoration of biodiversity at the territories of Gazprom's activities on geological research, exploration and production of oil and gas, during the construction or instalment of offshore field development facilities or other offshore field infrastructure facilities as well as the transportation of raw hydrocarbons.**

Gazprom subsidiaries develop and implement action plans involving measures on the conservation of biological diversity in the Arctic zone of the Russian Federation. So, in particular, when developing fields, a thermal stabilization system for supporting structures is used to preserve permafrost layers.

**The 2023 action plans involving measures on the conservation of biological diversity in the Arctic zone of the Russian Federation were fully completed. The total cost is over RUB 700 mln.**

The Russian Arctic Strategy addresses the issue of assessing and eliminating accumulated environmental damage. Russian Arctic territories have been cleaned since 2010. Gazprom actively participates in the execution and funding of projects to identify and eliminate sites of accumulated environmental damage in the Arctic zone of the Russian Federation.

In 2023, employees of OOO Gazprom dobycha Nadym continued the cleaning of production facilities and adjacent territories, and roadsides of the Kharasaveyskoye field as well as the coastal line from scrap metal, bulky debris and traces of human activities of the Kara oil and gas exploration expedition of the 1970s. As a result, 5 facilities were cleaned, 511 t of scrap metal were retrieved and removed, 504 t of various garbage were sent to solid waste landfills. The employees carried out the necessary restoration measures.

The Nadym gas companies and the government of the Yamal-Nenets Autonomous District (YNAD) has joined forces and consistently executed all action items of the Kharasaveyskoye field territories cleanup plan.

**In 2023, PJSC Gazprom and the government of the Yamal-Nenets Autonomous District signed subsequent three-year Cooperation Agreement for 2024-2026. According to the document, the parties will continue to cooperate in delivery on PAO Gazprom's projects in the YNAD. In particular, they are linked to the preservation of a favorable environment as well as the native habitat and traditional economic activities of the indigenous peoples of the North.**

To take all measures to preserve animal and vegetal life and their habitats is a keystone to the Environmental Policy of PJSC Gazprom.

**RUB 2.5 bln were spent for the conservation of biodiversity and the protection of natural territories in 2023.**

Gazprom provides charitable assistance to a number of publicly significant environmental, social and cultural initiatives.

Thanks to the cooperation among ANO Eurasian Center for the Conservation of Far Eastern Leopards, ANO Center for the Study and Conservation of the Amur Tiger Population and PJSC Gazprom, a set of environmental activities have been put to effect within the framework of the program for the conservation of the population of Far Eastern leopards and Amur tigers in Russia.

Tiger Day was organized as part of Company's educational and awareness-raising activities on 24 September 2023 in the city of Vladivostok. This eco holiday has the status of an official city holiday and has been held annually since 2000. The purpose of Tiger Day is to draw public attention to wildlife conservation, incl. the Amur tiger population.

For a number of years, PJSC Gazprom has been supporting the activities of the Association for the Conservation and Repopulation of Rare and Endangered Animals "Wildlife of the Steppe". In 2023, the work on protection of the environment and endangered animals in natural ecosystems was continued. Thanks to the support of PJSC Gazprom, action was taken to increase the population of rare and endangered species of animals resulting in increasing the saiga antelopes by 30% (listed in the Red Book of Russia), increasing the wild ducks by 3,000, as well as three Przewalski's horses (listed in the Red Book of Russia) were imported for the exchange of breeding material, 50 grey geese and 30 brant geese released into nature. Moreover, work has been resumed with the Askania Nova Biosphere Reserve on the exchange of breeding material.

Gazprom subsidiaries implement activities within the framework of the program on the recovery of aquatic biological resources in the regions of Company's presence. They are

aimed at preserving the ecosystems of rivers, lakes and seas of the Russian Federation.

**In 2023, over 95 mln various fish (incl. especially valuable species) were released into waterbodies.**

The Mordyakha River (the Yamal Peninsula) on the territory of the OOO Gazprom dobycha Nadym's license area of the Bovanenkovsky field became the only place in Siberia where the endangered muksun whitefish population restored its numbers thanks to the cooperation between OOO Gazprom dobycha Nadym and the Institute of Plant and Animal Ecology of the Ural Branch of the Russian Academy of Sciences. More than 25 years ago, on the recommendation of scientists, fishing was banned in the Bovanenkovo area and the muksun whitefish was included in the Red Book of the YNAD.

Employees of OOO Gazprom LNG Portovaya released over 3.7 thousand Atlantic salmon fry into the Baltic Sea river basin in May 2023 and 10 thousand whitefish fry into the Gulf of Finland together with residents of Seleznevsky rural settlement on 24 October.

In April 2023, employees of OOO Gazprom invest carried out the first release of over 48 thousand Atlantic salmon fry in 2023 into the waters of the Neva River on the territory of the Nevsky Fish Hatchery of the Northwestern Branch of the Federal Fish Breeding and Fishery Regulations General Administration. On 23 May, another 26 thousand Atlantic salmon specimens were released into the waters of the Neva River.

In June 2023, the representatives of OOO Gazprom invest together with the Angara-Baikal Directorate of the Russian Federal Agency for Fisheries released over 53 mln larvae of the Baikal omul cisco (a valuable whitefish) into the waters of the Snezhnaya River, which flows into Lake Baikal. In addition, during the month, OOO Gazprom invest's specialists replenished over 6.9 mln specimens of valuable commercial fish of various species: over 47 thousand European whitefish fry in the waters of the Vychegda River (Komi Republic), 1 thousand grayling in the basin of the Ilych River (Komi Republic), 150 thousand European whitefish juveniles in the waters of the Curonian Lagoon of the Baltic Sea (Kaliningrad Region), over 1.4 mln chum salmon juveniles in the basin of the Tym River (Sakhalin Region), over 5.3 mln pelyad whitefish juveniles in the Vilyui Reservoir (Republic of Sakha (Yakutia).

By the end of July 2023, OOO Gazprom invest's employees replenished the country's waters with over 7.1 mln fish: over 5.6 mln muksun whitefish fry into Baibalakovsky sor and the Endyrsky channel of the Ob-Irtysh basin (KhMAD-Yugra), 657.1 thousand nelma (inconnus) juveniles in the North Sosva River (KhMAD–Yugra), 424.8 thousand nelma juveniles in the Endyrsky Channel, over 55 thousand sterlet sturgeon juveniles in the Mologa River (Vologda Region), 260 thousand European whitefish fry in the Curonian Lagoon of the Baltic Sea, 19 thousand sterlet sturgeon juveniles in the Penza (Sur) Reservoir, over 6 thousand sterlet sturgeon juveniles in the Cheboksary Reservoir (Mari El Republic), 1.9 thousand sterlet sturgeon juveniles in the Don basin of the Sea of Azov (Rostov Region).

In August 2023, fish stocking took place with the participation of environmentalists of OOO Gazprom invest in the Taz River (YNAD) – 7.6 mln fry of muksun whitefish, in the Lena River (Republic of Sakha (Yakutia) – 34.5 thousand Siberian sturgeon. Amur sturgeon population increased by 77.6 thousand individuals: stoking took place in the Zeya River (Amur Region) and in the Amur River (Khabarovsk Territory). Over 6 thousand sterlet sturgeon were released to the Volgograd (Saratov Region) and Gorky (Nizhny Novgorod Region) Reservoirs.

On 7 June 2023, employees of OOO Gazprom dobycha shelf Yuzhno-Sakhalinsk released over 170 thousand chum salmon fry at the Zalom salmon hatchery in the Dolinsky district of the Sakhalin Region. In the reporting year, the Zalom salmon hatchery managed to increase the efficiency of fry fattening — they reached a weight of 1.2 g (at a rate of 0.7 g). This was achieved thanks to the use of domestic fish feed. The fry traveled from the Zalom salmon hatchery territory into the river of the same name, and then into the Naiba River that is one of the largest spawning sites of the East Sakhalin subzone.

In the summer of 2023, OOO Gazprom nedra organized the release of approx. 800 thousand fry of red sockeye salmon, chum salmon, Atlantic salmon, sturgeon, and muksun whitefish, grown by Russian fish-breeding farms by order of the company as part of compensatory measures for the reproduction of aquatic biological resources. The release took place into the reservoirs of some regions of company's business: the Kamchatka Territory, Sakhalin and Arkhangelsk Regions, the Republic of Sakha (Yakutia), and KhMAD-Yugra.

Employees of the branch of OOO Gazprom gazoraspredelenie released over 13 thousand juvenile of the Russian sturgeon in the Kizan River (Astrakhan Region). The juveniles were grown at the Kizan Sturgeon Plant, the first scientific and production base for improving the methods of reproduction of sturgeons and sheefishes, most valuable fish of the Caspian basin. The site of release was found taking into account the recommendations of specialists of the Volga-Caspian territorial headquarters of the Russian Federal Agency for Fisheries.

Releases of sterlet sturgeon juvenile took place in following places: over 7.5 thousand juvenile were released into the Volga River near the town of Lyskovo (Nizhny Novgorod Region) by OOO Gazprom gazoraspredelenie Nizhny Novgorod, 8.3 thousand individuals in the Oka River by AO Gazprom gazoraspredelenie Kaluga.

OOO Gazprom transgaz Yekaterinburg released over 3.2 thousand of the wild carp into the Iriklinsky Reservoir (Orenburg Region) as part of its environmental policy and in accordance with the requirements of the legislation of the Russian Federation.

OOO Gazprom dobycha Orenburg released over 30 thousand silver carp fry in the Ural River beyond the framework of environmental legislation requirements. The site of release was determined in coordination with specialists of the Volga-Kama territorial headquarters of the Russian Federal Agency for Fisheries.

On 8 June 2023, OOO Gazprom transgaz Kazan released over 19 thousand sterlet sturgeon fry in the Vyatka River in the Kirov Region. On 27 October, employees of the company and members of their families link up with the administration of the Abdulinsky city district and the Vernadsky Non-Governmental Environmental Foundation in a joint environmental campaign. They completed stocking with 160 kg of carp fry of the lake located on the outskirts of the city of Abdulino. Also, the participants of this eco-campaign planted birch, pine and spruce seedlings in the territory adjacent to the lake.

**In 2023, 4,353 clean-ups were completed in the Gazprom Group. The Company's employees cleared of garbage 4,051 sites (over 10 thousand ha), and planted over 241.6 thousand seedlings of trees and shrubs.**

The Flowers of Kindness eco-volunteer project on redeveloping and landscaping cities has been implemented by the enterprises of the Gazprom association in the Volgograd Region as well as by all branches of OOO Gazprom transgaz Volgograd in the Volgograd, Rostov and Voronezh Regions. This year, gas workers planted Japanese spirea shrubs on the territory of the Bubnovsky kindergarten "Flower", over 20 rose bushes – on the territory of the Olkhovsky Line Production Directorate of Gas Trunklines, pyramidal and spherical thujas – on the territory of the Olkhovka gymnasium.

OOO Gazprom transgaz Tomsk took part in international campaign "The Garden of Memory", thanks to which approx. 20 thousand trees and shrubs were planted. 5 thousand coniferous trees and approx. 100 lilac bushes were planted in the city of Novokuznetsk during the All-Russian campaigns "Forest live" and "The Lilac of the Victory".

The opening of the X All-Russian eco clean-up day "Green Spring" took place on 22 April at the Flagpole public space on the shore of the Gulf of Finland. The event was attended by approx. 600 residents of the city of Saint-Petersburg, incl. 400 employees of PJSC Gazprom and its subsidiaries: OOO Gazprom komplektatsiya, OOO Gazprom invest, AO Gazprom promgaz, OOO Gazprom energoholding industrial assets, OOO Gazprom gazifikatsiya, OOO Gazprom export, OOO Gazprom digital project services, OOO Gazprom transgaz Saint-Petersburg, and OOO Gazprom hydrogen. The participants landscaped a recreation area for citizens and a plot in Primorsky Victory Park as well as planted 320 trees and shrubs. At the same time, the Green Spring began in Kuzminki Park, Moscow. 630 people took part in the clean-up, including approx. 200 employees of PJSC Gazprom subsidiaries: OOO Gazprom gaznadzor, OOO Gazprom VNIIGAZ, OOO Gazprom UGS, OOO Gazprom energo, OOO Gazpromtrans, OOO Gazprom transgaz Moscow.

Large-scale clean-up days under the Green Spring lasted until 31 May in 50 regions of Russia. Approx. one million people took part in the X All-Russian eco clean-up day "Green Spring" during a month and a half.

Over 1.6 thousand employees of OOO Gazprom transgaz Stavropol took part in the All-Russian eco clean-up. The events were held in 7 regions of the company's responsibility: the Stavropol Territory, Astrakhan and Rostov Regions, Kalmykia, North Ossetia – Alania, Kabardino-Balkaria, Karachay-Cherkessia. Gas workers cleaned 80 ha of land, removed 50 t of garbage, collected 4 t of waste paper, planted 530 trees and shrubs, laid out 60 flower beds, cleared the coastal line of 8 water bodies, redeveloped over 50 monuments to the heroes of the Great Patriotic War. As part of the clean-up, a large eco-campaign "Protecting Nature" was held in the region of Caucasian Mineral Waters, where volunteers planted over 250 trees on the territory of the Nogai ethnic village of Kangly (Stavropol Territory), which will significantly enrich the flora of this unique eco & resort area. They also cleared the coastal zone of the Surkul River.

The Green Spring also involves holding various environmental education events for the younger generation that is why OOO Gazprom transgaz Stavropol's employees organized eco-quests for children, open lessons and classes in schools, intellectual contests and quizzes.

Over 3 thousand employees of all branches of OOO Gazprom transgaz Yugorsk also joined the Green Spring. Gas workers cleared approx. 200 ha, collected and removed over 220 t of garbage using 100 various machines. The shores of the North Sosva River, Lake Un-Mukhyngtuv, the vicinity of Lake Kapitonovsky were cleared. Landscaping and redeveloping are among mandatory obligations in the list of works under the Green Spring eco clean–up. Employees planted an alley of 30 rowan trees in the village of Unyugan, reconstructed lawns on the territory of the Northern Lights shift settlement, laid out flower beds in a sponsored kindergarten in the city of Yugorsk, completed landscaping of the territory of a new sports and recreation complex opened last year under the Gazprom for Children program, constructed a new playground for the pupils of the Yuri Gagarin orphanage in the city of Karpinsk.

In July 2023, in Victory Park on Sokolova Mountain, the city of Saratov, with the support of OOO Gazprom transgaz Saratov, the All-Russian environmental campaign "Peculiarities of national cleaning" took place under the Clean Country project and the Ecology national project. It allows regions to demonstrate not only environmental responsibility but also their uniqueness, local flavor, and traditions. The employees of OOO Gazprom podzemremont Urengoy held a clean-up day at the monument of military glory in the city of Kirovsk (Leningrad Region).

On 23 September 2023, OOO Gazprom transgaz Saint Petersburg's employees and their family members took part in an environmental event held at the Vyborgsky State Nature Reserve (Leningrad Region) with the support of the Vernadsky Non-Governmental Environmental Foundation. The clean-up brought together over 60 people who collected fallen branches on the territory of the reserve, and crushed them to make mulch for the Cape Kiperort hiking eco-trail.

Employees of OOO Gazprom transgaz Surgut joined the All-Russian campaign to clean the shores of water bodies "Water of Russia" under the federal project "Conservation of unique water bodies" of the Ecology national project. The goal is to

restore the existing recreational areas along the water bodies, to form caring attitude towards them. From the end of April to the end of July, clean-up days were held to clean the banks of rivers and lakes in the regions of company's presence: the Vyngapur River (Purovsky district, YNAD), the Karga River (Tyumen Region), Surgut GRES-2 Reservoir (KhMAD-Yugra), the Tobol River (Tyumen Region), Khanto Lake (the city of Noyabrsk, YNAD), the Ortyagun River (KhMAD-Yugra), Pur River (YNAD), water bodies near the city of Gubkinsky (YNAD), the Pyt-Yakh River (KhMAD-Yugra), the Irtysh River (Tyumen Region).

While developing mechanisms of voluntary environmental responsibility, over the years, PJSC Gazprom has been directing its efforts on to enchasing the competence and awareness of its employees in solving environmental issues. Therefore, not only clean-up days but also various environmental campaigns and educational events for a wide range of the public are held in the regions of Company's presence.

The employees of OOO Gazprom transgaz Tomsk implemented a number of environmental initiatives. They collected recyclables under the "Hand over the battery — save nature" project. Gas workers handed over over 420 units of hazard class II waste for further disposal to specialized picking points in the cities of Yakutsk and Khabarovsk. They supported the eco-marathon "Waste paper for good", the annual public forum "Eco-friendly Novosibirsk", and the eco-campaign "Christmas trees in action", where Christmas trees are collected and disposed for the subsequent transfer of ground litter to the society helping four-legged friends "Kind Heart". The families of gas workers also took part in the "Feed the birds during winter" project: almost 150 feeders were installed in the parks of the cities of Barnaul, Biysk and Ussuriysk.

On 3 June, the environmental festival "Heritage" took place on the territory of the Vernadsky Museum-Estate (Tambov Region), and over 200 people attended. The event was organized by OOO Gazprom transgaz Saratov in cooperation with the Vernadsky Non-Governmental Environmental Foundation as part of the celebration of the 160th anniversary of the birth of the Russian great scientist Vladimir I. Vernadsky. The guests of the festival attended lectures and educational platforms aimed at gaining knowledge in nature protection, cultivating respect for the environment, excepting codes of waste management, and developing a responsible attitude to the natural, cultural and historical heritage of Russia. Master classes, quizzes, creative tasks and a plein-air painting were organized at the festival.

In 2023, Gazprom held the II Environmental Camp for the children of employees of 29 subsidiaries and organizations. Children met with experts, boosted their environmental erudition, learned useful environmental habits and effective public communication in practice. In addition, the First Eco-Camp lasted from 13 to 19 September for the children of OOO Gazprom transgaz Yugorsk's employees in the city of Yugorsk (KhMAD-Yugra). The event was attended by over 150 people – representatives from 39 structural divisions of the company from YNAD, KhMAD and the Sverdlovsk Region. The delegations included schoolchildren aged 13-17. The Eco-Camp program consisted of lectures and master classes with the participation of various specialists of the company, researchers of the Kondinsky Lakes Natural Park (Sovetsky District, KhMAD-Yugra), representatives of the Federal Service for the Oversight over Natural Recourses from Yugra, the Vernadsky Non-Governmental Environmental Foundation, professors of the Yugra State University (the city of Khanty-Mansiysk) and the Ural Federal University named after Boris N. Yeltsin (the city of Yekaterinburg).

2023 saw the ninth season of the social project "Eco-squad of OOO Gazprom dobycha Urengoy". In the reporting year, 300 young ecologists gained work experience. The aim of the project is to promote the employment of schoolchildren aged 14 to 18 years during the summer holidays and to develop their environmental culture.

On 8 September, a cooperation agreement on the implementation of the Eco-Class project was signed by OOO Gazprom transgaz Yugorsk, the Department of Education and Science of KhMAD-Yugra, Yugorsky State University (the city of Khanty-Mansiysk) and the administration of Yugorsk city. The agreement provides for the organization and coordination of joint actions aimed at attracting the attention of the younger generation to the issues of nature protection, and assisting schoolchildren in professional self-determination. The main goal of the project is environmental career guidance training, development of environmental projects, participation in national and regional environmental competitions, educational activities among peers and adults.

Every year, the Gazprom Group companies are actively involved in regions of their operation and in whole Russia in the protection and restoration of flora and fauna, provide charitable financial and organizational assistance to various environmental organizations, take part in nature protection and environmental scientific and educational campaigns aimed at both adults and the younger population of the country.

# Glossary of main terms and acronyms

| Name | Definition |
|---|---|
| ACU | Air cooling units |
| AECS | Automated environmental control station |
| AGPCS | Automatic gas pollution control stations |
| Associated petroleum gas (APG) | Mixture of gases and vaporous hydrocarbon and non-hydrocarbon components emitted from oil wells and all-in-place during separation |
| BAT | Best available technique |
| Biodiversity (biological diversity) | The whole variety of living forms of different habitats, including onshore, offshore, and other water ecosystems and their constituent eco complexes |
| BREF-ITS | Best available techniques reference documents |
| CHPP | Combined heat and power plant |
| CNG | Compressed natural gas |
| CR | Compressor room |
| CS | Compressor station |
| EMS | Environmental Management System |
| Energy saving | Implementation of legal, organizational, scientific, production, technical and economic measures aimed at effective (rational) use of fuel and energy resources and introduction of renewable power sources into economic turnover. Energy-saving is a critical mission in preserving natural resources |
| Environment | Set of nature components, natural and anthropogenic as well as man-made objects |
| Environment quality | State of the environment characterized by physical, chemical, biological, and other values and (or) their combination |
| Environmental audit | Independent comprehensive documented assessment of compliance of business and other activities with environmental requirements, including standards and regulatory documents, international standards, and drawing up recommendations to improve such activities |
| Environmental damage | Negative change in the environment caused by pollution, which entailed degradation of natural ecosystems and depletion of natural resources |
| Environmental impact assessment | Type of activity aimed at identification, analysis and accounting of direct, indirect and other consequences of the impact on the environment from planned business and other activities to make a decision on possibility or impossibility of their execution |
| Environmental management | Part of the general corporate management system with a clear organizational structure aimed at reaching Environmental Policy provisions by implementation of environmental protection programs |
| Environmental monitoring | Comprehensive system of observations over the state of the environment, assessment and forecast of environmental conditions changes under the impact of natural and anthropogenic factors |
| Environmental oversight | System of measures aimed at prevention, identification and restraint of environmental legislative violations, ensuring compliance of business and other activities with environmental requirements, including standards and regulatory documents |
| Environmental protection (EP) | Actions aimed at conservation and recovery of the environment, rational use and reproduction of natural resources, prevention of negative environmental impact of business and other activities, and mitigation of consequences |
| Environmental protection requirments | Obligatory conditions, restrictions or their combination applicable to business and other activities stipulated by environmental laws, statutes, environmental standards, federal norms and rules as well as other environmental regulatory documents |
| Environmental review | Ensuring compliance of documents and/or documentation that justify planned business and other activities according to implementation of environmental review object with environmental requirements, established by environmental technical regulations and legislation, in order to prevent the negative impact of such activities on the environment |
| Environmental safety | State of security of the environment and vital human interests from possible negative impact of business and other activities, natural and man-made emergencies and their consequences |
| ESG | Environmental, Social, and Governance |
| FER | Fuel and energy resources |
| GCU | Gas compressor unit |
| GDS | Gas distribution station |

| Name | Definition |
|---|---|
| Global temperature change potential (GTP) | An index measuring the change in global mean surface temperature at a chosen point in time following an emission of a unit mass of a given substance, relative to that of the reference substance, carbon dioxide ($CO_2$) |
| Global warming potential (GWP) | An index measuring the radiative forcing following an emission of a unit mass of a given substance, accumulated over a chosen time horizon, relative to that of the reference substance, carbon dioxide ($CO_2$) |
| GMF | Gas motor fuel |
| GPP | Gas processing plant |
| Greenhouse gases (GHG) | Gases that presumably cause greenhouse effect globally. The main greenhouse gases in order of their estimated contribution into the Earth's heat balance are water steam, carbon dioxode, methane, ozone, sulphurylfluoride, halocarbons, and nitrogen oxide |
| GOST R | National standard of the Russian Federation |
| GTL | Gas trunkline |
| GTS | Gas transmission system |
| HPP | Hydroelectric power plant |
| IFRS | International Financial Reporting Standards |
| IMS | Information & management system |
| IMS C EM | PJSC Gazprom Information & Management System Environmental Management |
| IPCC | Intergovernmental Panel on Climate Change |
| ISO 14001:2015 | Environmental management systems – Requirements with guidance for use |
| ISO 14064-2:2019 | Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements |
| ISO 50001:2018 | Energy management systems – Requirements with guidance for use |
| KhMAD | Khanty-Mansi Autonomous District |
| LNG | Liquefied natural gas |
| LS | Linear section |
| MCS | Mobile compressor station |
| MEL | Mobile eco-laboratory |
| Natural complex | Set of natural objects functionally and natively related to each other, and united by geographical and other corresponding features |
| Natural object | Natural ecosystem, natural landscape, and their constituent elements that preserve their natural features |
| Nature resources | Nature components, natural objects, and nature and anthropogenic objects that are used or can be used in the course of business and other activities as energy sources, products and consumables, and that have consumer value |
| Negative impact on the environment | Impact of economic and other activities, which consequences lead to adverse changes in the environment quality |
| NGV | Natural gas vehicle |
| OEC | Operational environmental control |
| OEM | Operational environmental monitoring |
| OGCF | Oil, natural gas and condensate field |
| Pollutant | Substance or mixture of substances that occur in amounts and (or) concentrations exceeding specified limits for chemicals, including radioactive and other substances, and microorganisms, and affect the environment in negative ways |
| R&D | Research and development |
| RAS | Russian Academy of Sciences |
| RES | Renewable energy sources |
| Rosprirodnadzor | The Federal Service for Supervision of Natural Resources |
| Rosstandart | The Federal Agency for Technical Regulation and Metrology |
| RSPP | Russian Union of Industrialists and Entrepreneurs |

| Name | Definition |
|---|---|
| Specially protected natural area (SPNA) | Land, water and air zones with natural complexes and objects having special nature protection, scientific, cultural, esthetic, recreational and wellness significance with exclusive security arrangements, totally or partially removed from the economic use by the decision of state bodies. SPNAs are national heritage |
| SPP | Solar power plant |
| TEDC | Technological experimental and demonstration complex |
| UAV | Unmanned aerial vehicle |
| UGS | Undergroud gas storage |
| UGSS | Unified Gas Supply System |
| Waste management | Activities on collection, accumulation, transportation, processing, recovery, treatment, disposal of waste |
| YNAD | Yamal-Nenets Autonomous District |

## Russian Business and Other Organizations

| Name | Definition |
|---|---|
| ANO | Autonomous Non-Commercial Organization |
| AO | Joint Stock Company |
| FSAE HE | Federal State Autonomous Educational Institution of Higher Education |
| OAO | Open Joint Stock Company |
| OOO | Limited Liability Company |
| PAO | Public Joint Stock Company |
| SUE | State Unitary Enterprise |
| ZAO | Closed Joint Stock Company |

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# Appendix

NEW CHALLENGES
NEW SOLUTIONS

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## Independent practitioner's assurance report

To the Board of Directors of
Gazprom, PJSC

***Subject matter***

We have been engaged by Gazprom, PJSC (hereinafter "the Company") to perform a limited assurance engagement, as defined by International Standards on Assurance Engagements, (herein "the Engagement"), to report on the greenhouse gas emissions indicators included in the Gazprom Environmental Report 2023 (hereinafter "the Report") for 2023 (hereinafter "the Reporting period"):

- Direct GHG emissions dynamics (Scope 1) at Gazprom, PJSC by types of activities, 2023, mln tons $CO_2e$, page 48:

| | |
|---|---|
| Production | 14.12 mln tons $CO_2e$ |
| Transmission | 60.1 mln tons $CO_2e$ |
| Underground gas storage | 1.19 mln tons $CO_2e$ |
| Processing | 7.74 mln tons $CO_2e$ |
| Other activities | 1.91 mln tons $CO_2e$ |

- Indirect energy GHG emissions (Scope 2) at Gazprom, PJSC by types of mainstream activities, 2023, mln tons of $CO_2e$, page 50:

| | |
|---|---|
| Production | 0.34 mln tons $CO_2e$ |
| Transmission | 1.90 mln tons $CO_2e$ |
| Processing | 1.90 mln tons $CO_2e$ |
| Underground gas storage | 0.03 mln tons $CO_2e$ |

- Methane emissions at Gazprom, PJSC by types of activities, 2023, thousand tons of $CH_4$, page 49:

| | |
|---|---|
| Production | 71.58 thousand tons $CH_4$ |
| Transmission | 782.02 thousand tons $CH_4$ |
| Processing | 7.28 thousand tons $CH_4$ |
| Underground gas storage | 16.93 thousand tons $CH_4$ |
| Other activities | 22.62 thousand tons $CH_4$ |

Other than as described in the preceding paragraph, which sets out the scope of our engagement, we did not perform procedures on the remaining information included in the Report, and accordingly, we do not express a conclusion on this information.

NEW CHALLENGES
NEW SOLUTIONS

***Applicable criteria***

In preparing the Indicators the Company applied the methodology for quantifying greenhouse gas emissions approved by Order of the Russian Ministry of Natural Resources No. 371 dated 27 May 2022, guidelines for quantifying the volume of indirect energy emissions of greenhouse gases, approved by Order No. 330 of the Russian Ministry of Natural Resources dated 29 June 2017, International standard ISO 14064-1:2018 (GOST R ISO 14064-1-2021): "Greenhouse gases. Part 1. Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals" (hereinafter "the Criteria").

***The Company's management responsibilities***

The Company's management is responsible for selecting the Criteria and for preparation of the Indicators in accordance with the Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the Indicators, such that these are free from material misstatement, whether due to fraud or error. In addition, the Company's management is responsible for ensuring that the documentation provided to the practitioner is complete and accurate.

***Practitioner's responsibilities***

We conducted our assurance engagement in accordance with International Standard for Assurance Engagements 3410 *Assurance Engagements on Greenhouse Gas Statements* (hereinafter "ISAE 3410"). ISAE 3410 requires that we plan and perform our engagement to obtain limited assurance about whether, in all material respects, the Indicators are presented in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

***Our independence and quality management***

We apply International Standard on Quality Management 1, *Quality Management for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, which requires our firm to develop, implement and ensure operation of quality management system that includes policies or procedures with regard to compliance with ethical requirements, professional standards and applicable laws and regulations.

We comply with the professional ethical and independence requirements of the Code of professional ethics for auditors and the Independence rules of auditors and audit organizations and also the IESBA Code of Ethics for Professional Accountants (including international independence standards), which establishes the fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

NEW CHALLENGES
NEW SOLUTIONS

***Summary of work performed***

The assurance engagement performed represents a limited assurance engagement. The nature, timing and extent of procedures performed in a limited assurance engagement is limited compared with that necessary in a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is lower.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within information technology systems.

The GHG quantification process is subject to scientific uncertainty, which arises because of incomplete scientific knowledge about the measurement of GHGs. Additionally, GHG procedures are subject to estimation (or measurement) uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the Indicators and related information, and applying analytical and other appropriate procedures.

Our procedures included:

- Inquiries of the representatives of the Company management and specialists responsible for its GHG emissions, GHG emission reduction and energy consumption policies, activities, performance and relevant reporting;
- Analysis of key documents related to the Company GHG emissions, GHG emission reduction and energy consumption policies, activities, performance and relevant reporting;
- Obtaining understanding of the process used to prepare the information on GHG reporting process;
- Review of data samples regarding key GHG emissions of Scope 1 and 2 indicators for the reporting period, to assess whether these data have been collected, prepared, collated and reported appropriately.

We also performed such other procedures as we considered necessary in the circumstances.

NEW CHALLENGES
NEW SOLUTIONS

***Conclusion***

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the Indicators are not represented fairly, in all material respects, according to the Criteria.

E.N. Lezhankova
Partner
TSATR – Audit Services Limited Liability Company

16 May 2024

***Details of the independent practitioner***

Name: TSATR – Audit Services Limited Liability Company
Record made in the State Register of Legal Entities on 5 December 2002, State Registration Number 1027739707203.
Address: Russia 115035, Moscow, Sadovnicheskaya naberezhnaya, 75.
TSATR – Audit Services Limited Liability Company is a member of Self-regulatory organization of auditors Association "Sodruzhestvo". TSATR – Audit Services Limited Liability Company is included in the control copy of the register of auditors and audit organizations, main registration number 12006020327.

***Details of the entity***

Name: Gazprom, PJSC
Record made in the State Register of Legal Entities on 2 August 2002, State Registration Number 1027700070518.
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