PJSC Gazprom
Environmental Report 2017

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Letter of Deputy Chairman of PJSC Gazprom Management Committee

Dear readers,

On behalf of the PJSC Gazprom Management Committee I present you the Gazprom Group's Environmental Report 2017.

Environmental responsibility is a key pillar in the Company's sustainable development strategy. Compliance with the Company's Environmental policy and an effective environmental management system are the linchpin of Gazprom Group's environmental security. The quality workmanship of trained professionals, the employment of modern technologies and the provision of necessary funding, in turn, guarantee a high level of environmental safety allowing Gazprom to implement unique large-scale and strategically important projects without compromising the environment and human health.

In 2017, a new gas production center in the Yamal Peninsula, the Chayandinskoye field development, the construction of the Power of Siberia gas pipeline, the expansion of gas transportation systems in the North and North-West of Russia, as well as electricity generating capacities continued their brisk growth. The construction of Russia's largest Amur Gas Processing Plant was started, and conditions for gas infrastructure expansion in regions (gasification) were created. The reporting year was very important for the implementation of Nord Stream 2 and TurkStream. Furthermore, the Gazprom Group increased its oil and natural gas production in 2017 compared to the previous year. The implementation of all these projects contributed to the furtherance of natural gas usage as an environmentally friendly fuel for energy and transport, and thus to the solution to global climate change problems and nature conservation.

Alongside with the growth of production, the Gazprom Group continued its consistent reduction of anthropogenic impact on the environment. Over the past five years, from 2013 to 2017, the gross pollution air emissions, the volume of discharges and waste generation have been decreased.

2017 was declared the Green Year in the Gazprom Group and was held under the motto «Conserving Nature». During this time, a considerable set of activities introducing breakthrough technologies with significant energy-savings and green benefits was accomplished. In all regions of the Company's presence — in Russia and abroad — voluntary mass-gathering events to improve land, clean the rivers and reservoirs, plant trees have taken place. 682 thousand people took part in the Green Year: Gazprom Group's employees, members of their families, the employees of contractors, as well as schoolchildren, students and members of the public. Much has also been done for environmental education.

Traditionally, Gazprom Group companies take one of the top positions in public environmental ratings. For many years, PJSC Gazprom has maintained its leadership among Russian energy companies in environmental reporting through the Carbon Disclosure Project (CDP) — an international non-profit organization supporting climate strategies research and analysis of relevant risks. In 2017, according to the Russian Union of Industrialists and Entrepreneurs' corporate and social responsibility indices, PJSC Gazprom became a leader in Responsibility and Transparency and Sustainable Development Vector.

We will continue working on a comprehensive implementation of the principles for environmental and sustainable development, and making every effort to preserve the environment for future generations.

V. A. Markelov
Deputy Chairman of the PJSC Gazprom Management Committee, Chairman of the Gazprom Coordinating Committee for Environmental Protection and Energy Efficiency

Introduction

The present Environmantal Report has been formed in accordance with the Decree of the Gazprom Management Committee on Organization of Work Related to Preparation and Holding of the Annual General Shareholders Meeting of PJSC Gazprom.

The present report is based on the data of the corporate annual reporting statistics on environmental protection, as well as other information published on the corporate web resources, articles of the Group published in Russia and abroad.

The 2017 Environmental Report provides information about the Gazprom Group activities in the Environmental Policy implementation, including the current performance on air, water and land resources, waste management and measures undertaken to mitigate the environmental impact.

The Report presents data on environmental management and funding of fundamental studies and production complex technical modernization aimed at ensuring the environmental safety of the Gazprom Group operating facilities.

The data are provided in respect of the Gazprom Group on the whole, PJSC Gazprom (including retrospective data for 5 years) and some companies from the Group that contribute greatly to the activities aspects covered in the report.

The term PJSC Gazprom used in this Report refers to the parent company of the Gazprom Group, Public Joint Stock Company Gazprom and its fully owned subsidiary companies and organizations involved in hydrocarbons exploration, production, transportation, underground storage and processing activities, as well as maintenance of 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 Urengoy
OOO Gazprom Dobycha shelf Yuzhno-Sakhalinsk
OOO Gazprom Dobycha Yamburg
OOO Gazprom Transgaz Volgograd
OOO Gazprom Transgaz Yekaterinburg
OOO Gazprom Transgaz Kazan
OOO Gazprom Transgaz Krasnodar
OOO Gazprom Transgaz Makhachkala
OOO Gazprom Transgaz Moscow
OOO Gazprom Transgaz Nizhny Novgorod
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OOO Gazprom Transgaz Saint Petersburg
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OOO Gazprom Transgaz Ufa
OOO Gazprom Transgaz Ukhta
OOO Gazprom Transgaz Tchaikovsky
OOO Gazprom Transgaz Yugorsk
OOO Gazprom Geologorazvedka
AO Tchetchengazprom
OOO Gazprom UGS
OOO Gazprom Pererabotka
OOO Novy Urengoy gas chemical complex
OOO Gazprom Energo
OOO Gazprom Tsentrremont
OOO Gapprom geotekhnologii
OOO Gazprom georesurs
OOO Gazprom gazomotornoye toplivo
OOO Gazpromavia Aviation Company
OOO Gazpromtrans
OOO Gazprom Flot
OOO Gazprom Invest
OOO Gazprom Sotsinvest
ZAO Yamalgazinvest
ZAO Gazprom Invest Yug
OAO Gazpromtrubinvest
AO Tsentrgas

The terms Gazprom Neft Group or Gazprom Neft comprise PAO Gazprom Neft and its subsidiary companies.

The terms Gazprom Neftekhim Salavat comprise OOO Gazprom Neftekhim Salavat and its subsidiary companies.

The terms Gazprom Energoholding comprises OOO Gazprom Energoholding and its subsidiary companies (PAO MosEnergo, PAO MOEK, PAO OGK-2, PAO TGC-1, PAO Murmanskaya CHPP, AO Saint Petersburg Heating Grid).

Gazprom Group, Gazprom or Group will stand for PJSC Gazprom (all above mentioned 100% subsidiaries) and the following companies:

Gazprom Neft Group
Gazprom Energoholding
Gazprom Neftekhim Salavat
Vostokgazprom Group
OOO Gazprom Mezhregiongaz
AO Daltransgaz
PAO Krasnoyarskgazprom
Sakhalin Energy Investment Company Ltd. (Sakhalin Energy)
OAO Severneftegazprom
PAO Spetsgazavtotrans
ZAO Purgaz

as well as PJSC Gazprom subsidiary companies conducting their activities abroad:
OAO Gazprom Transgaz Belarus
ZAO Gazprom Armenia
OsOO Gazprom Kyrgyzstan
Gazprom EP International B.V.

The Gas business companies of the Gazprom Group comprises PAO Gazprom (and all its 100 per cent subsidiary companies and organizations involved in hydrocarbons production, transportation, underground storage and processing activities, as well as maintenance of UGSS), OOO Gazprom Mezhregiongaz, Vostokgazprom Group (OAO Tomskgazprom), AO Daltransgaz, Sakhalin Energy Investment Company Ltd., OAO Severneftegazprom, ZAO Purgaz.

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

Environmental Protection Management

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 a conducive environment for future generations.

PJSC Gazprom's environmental policy is a fundamental document of the environmental management system (EMS).

Having adopted in 1995 its own Environmental policy RAO "Gazprom" became the first Russian oil and gas company, which declare its voluntary responsibility in the field of the environment.

The updated version of the Company's Environmental policy approved by the Management Committee of PJSC Gazprom in 2015 reflects current trends in the field of environmental protection and energy efficiency, reducing the impact on climate.

Environmental policy defines obligations and mechanisms for ensuring environmental safety, including the development of hydrocarbon deposits at the continental shelf and in the Arctic area of the Russian Federation; risks minimization of the negative impact on the environment, including natural sites with increased vulnerability and facilities, the protection and preservation of which are of particular importance.

Top Administrative Body of PJSC Gazprom in the Environmental Protection Management System is the PJSC Gazprom Management Committee.

The Coordination Committee on environmental protection and energy efficiency of PJSC Gazprom, includes the majority of the Management Committee members and heads of the PJSC Gazprom Administration's structural subdivisions (specialized departments).

The Coordination Committee exercises complex administration and general coordination of activities for the PJSC Gazprom Administration structural divisions, affiliate and subsidiary companies of the Gazprom Group, interaction with the state environment protection bodies and social organizations.

The Directorate responsible for implementation of unified environmental policy of the PJSC Gazprom and aimed at increasing Gazprom Group energy efficiency is directly in charge of actions on interacting PJSC Gazprom subsidiary companies and organizations in the environmental activities area and decisions implementation of the Coordination Committee and senior executives of the PJSC Gazprom. This Directorate is included in the Department coordinating perspective development of PJSC Gazprom.

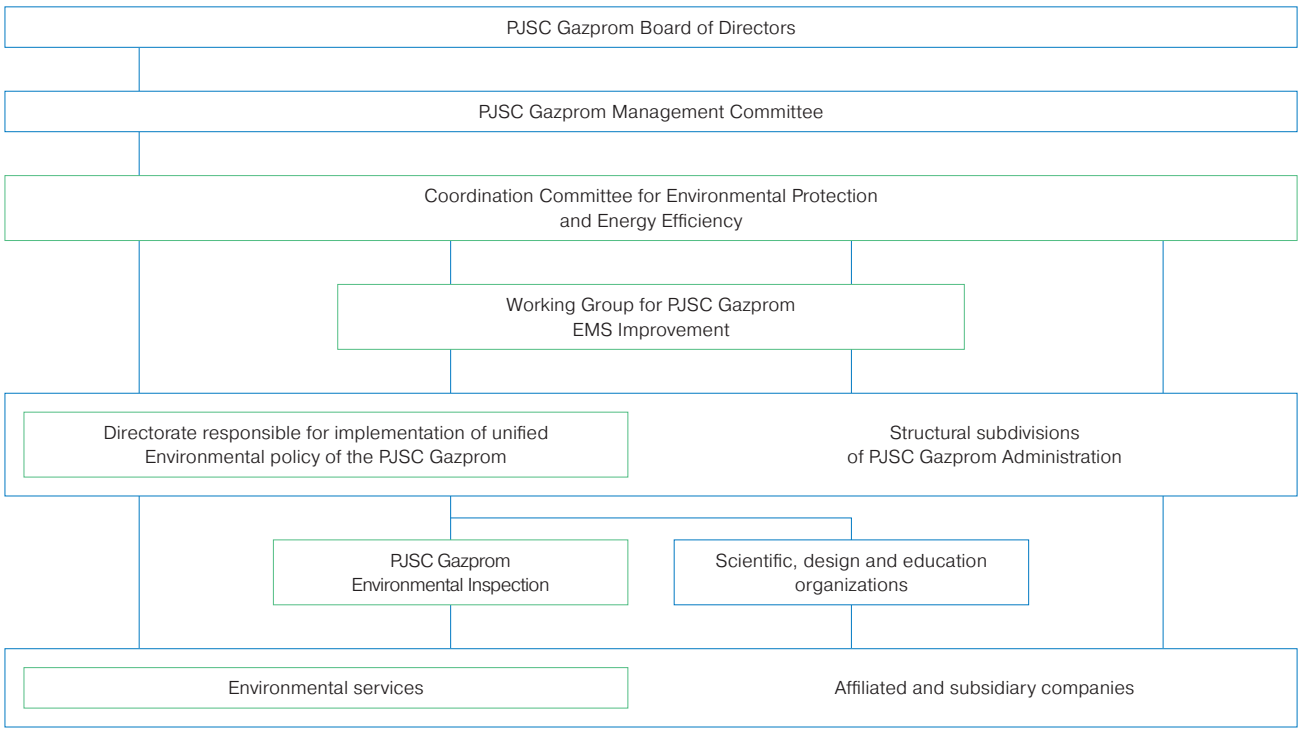
Corporate environmental review and environmental control (audit) are used by PJSC Gazprom successfully as tools of voluntary environmental responsibility. Environmental design and survey works carried out by research and development organizations upon Gazprom request are an integral part of the management system.

PJSC Gazprom has an environmental management system (PJSC Gazprom's EMS) implemented and functioning efficiently, that covers 34 subsidiaries engaged in basic activities for exploration, production, transportation, storage and processing of gas and gas condensate, as well as investment activities.

In order to ensure comprehensive approach and coordination of the environmental management activities of the PJSC Gazprom structural subdivisions, there is a constantly operating Working Group for the PJSC Gazprom's EMS improvement. The head of the group is O. E. Aksyutin, a member of the PJSC Gazprom Management Committee, Head of Department.

Application scope of PJSC Gazprom's EMS in 2017

OOO Gazprom Transgaz Volgograd
OOO Gazprom Transgaz Yekaterinburg
OOO Gazprom Transgaz Kazan
OOO Gazprom Transgaz Krasnodar
OOO Gazprom Transgaz Makhachkala
OOO Gazprom Transgaz Moscow
OOO Gazprom Transgaz Nizhny Novgorod
OOO Gazprom Transgaz Samara
OOO Gazprom Transgaz Saint Petersburg
OOO Gazprom Transgaz Saratov
OOO Gazprom Transgaz Stavropol
OOO Gazprom Transgaz Surgut
OOO Gazprom Transgaz Tomsk
OOO Gazprom Transgaz Ufa
OOO Gazprom Transgaz Ukhta
OOO Gazprom Transgaz Tchaikovsky
OOO Gazprom Transgaz Yugorsk
OAO Gazprom Transgaz Belarus
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 Urengoy
OOO Gazprom Dobycha shelf Yuzhno-Sakhalinsk
OOO Gazprom Dobycha Yamburg
OOO Gazprom Geologorazvedka
OOO Gazprom UGS
OOO Gazprom Pererabotka
OOO Gazprom Energo
OOO Gazprom Tsentrremont
OOO Gazprom Invest



The Meeting of Gazprom Coordination Committee

In 2017, at the meeting of Gazprom Coordination Committee for Environmental Protection and Energy Efficiency, the results of environmental activities and the Green Year were summed up. Subsidiaries work on energy efficiency improvement and need for consistent reduction of gas losses during blowing of wells in 2018–2019 were analyzed. Following issues were also discussed:

— safety measures for production facilities located in climatically vulnerable areas;
— implementation of energy saving measures with energy service contract mechanism in subsidiary companies;
— how to assure Gazprom's activities compliance with current and newly introduced legislative environmental requirements.

For PJSC Gazprom's EMS transition to a new edition of international standard ISO 14001:2015 Environmental management systems — Requirements with guidance for use, an action plan was implemented that included adjusted specified corporate procedures for Gazprom's EMS functioning, reviewed regulatory documents, relevant training of the staff.

In December 2017, a recertification audit of Gazprom's EMS took place that resulted in issuing of Certificate of Compliance with international standard ISO 14001:2015 requirements, the validity period — up to December 2020.

In Gazprom Group companies not covered by Gazprom's EMS other EMS were also implemented and successfully exist, most of them are certified for compliance with the requirements of international standard ISO 14001:2015. In these companies, EMS take into account specifics of the company activities and have their own features.

Environmental training

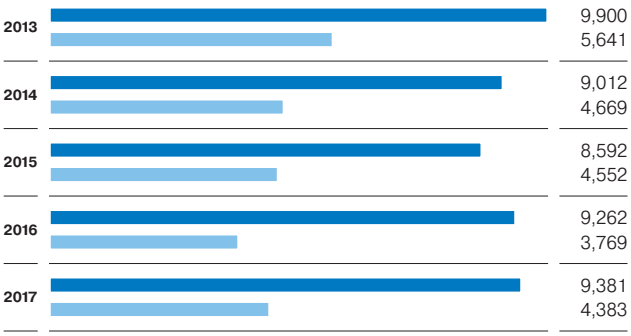
A prerequisite for successful environmental management is the process of continuous improvement of environmental knowledge and culture of the employees.

Leading educational institution for continuous professional personnel education system in PJSC Gazprom is Gazprom Corporate Institute which has made a significant contribution to the Company's development since 1995. A multi-level system of Institute's corporate training covers all groups of personnel from young professionals to the reserve of top management. Technical and informational equipment of the Institute are at the level of world's leading training centers, and the training meets high quality standards and is carried out on a wide range of educational programs, including environmental. In 2017, in order to improve environmental education, the Corporate Institute performed the following:

— interactive e-course of lectures Environmental Management in PJSC Gazprom was updated. The course is included into the program PJSC Gazprom — an Extensive Industrial and Financial Complex and 78 people completed this training;
— training of managerial employees of PJSC Gazprom and its subsidiaries under the advanced training program Organizing of Environmental Support for Production Activities in Oil and Gas Industry was carried out;
— in accordance with the wishes of the Gazprom subsidiary companies' managers and specialists and taking into account issuing of professional standard 40.117 Specialist on Environmental Safety (in Industry), curriculum and training course schedule for the professional retraining program Environmental Safety in the Oil and Gas Industry, including advanced environmental technologies usage in Gazprom, were developed;
— in training program Offshore Drilling and Operation of Oil and Gas Wells a topic Basic Principles for Environmental Protection during Offshore Oil and Gas Field Development was added;
— to improve environmental awareness of young specialists of the Gazprom Group, a workbook Ecology in the Oil and Gas Industry for the program School for Training of Young Specialists from PJSC Gazprom was developed and submitted to review contest of the best technical training facilities and educational materials.

In 2017, 9 381 people (4 383 of them studied EMS) were trained on the grounds of Corporate Institute and other training institutions and improved their skills, from them — in PJSC Gazprom — 6 683 people (3 540 of them studied EMS), in the Gazprom Neft Group — 2 119 people (718 of them studied EMS), in the Gazprom Energoholding Group — 228 people (21 of them studied EMS).

Environmental training of Gazprom Group personnel, 2013–2017, pers.



In 2013–2017, over 46 thousand employees underwent environmental training in the Gazprom Group.

Competition of Environmental Services and Ecologists of the PJSC Gazprom subsidiary companies

A Competition of Environmental Services and Ecologists of the PJSC Gazprom subsidiary companies is held annually in PJSC Gazprom in compliance with the OAO Gazprom Order No. 113/A dated April 30, 2008. In 2017, on the basis of 2016 environmental services performance, OOO Gazprom Dobycha Urengoy (D. G. Leshan, Head of the Environmental Protection Devision) became the winner of the Competition.

The winners of the Competition of Environmental Services and Ecologists were:

— M. V. Kuleshova, a leading environmental engineer-technologist of Urengoy Gas Production Department of OOO Gazprom Dobycha Urengoy branch;
— A. V. Mitrofanov, a leading environmental engineer of Krasnoturyinsk Local Operations & Maintenance Department for Main Gas Pipelines of OOO Gazprom Transgaz Yugorsk;
— I. V. Tsyganov, the 2nd category environmental engineer of Semyonov Local Operations & Maintenance Department for Trunk Gas Pipelines of OOO Gazprom Transgaz Nizhny Novgorod.

Environmental Targets and Programs

In the frame of EMS of PJSC Gazprom, environmental targets are set, programs of environmental protection measures are developed and implemented based on annually defined significant environmental aspects.

In 2017, the following environmental aspects were recognized significant for PJSC Gazprom: methane emissions to atmospheric air during repair of trunk gas pipelines (TGP) and nitrogen oxides emissions during operation of compressor stations (CS), wastewater discharges and waste disposal.

The corporate environmental targets of PJSC Gazprom set for the period of 2017–2019 were approved by Deputy Chairman of the Management Committee of PJSC Gazprom and Head of Coordinating Committee on environmental protection and energy efficiency V. A. Markelov.

In 2017, five of six targets set for 2017–2019 were achieved. Increase in the target indicator — Reduction of the payment for exceeding the allowed environmental impact — is mainly due to the late receipt of environmental permits (permits for emissions, discharges of pollutants, waste disposal limits).

Achiving Corporate environmental targets of PJSC Gazprom in 2017

№	Corporate environmental target	Entities covered by EMS	Change against the 2014 baseline, %
1	Methane emissions decrease, %	All subsidiaries engaged in natural gas transportation	Down 5.03%
2	Reduction of specific emissions of nitrogen oxides, tonnes per mmcm	All subsidiaries engaged in natural gas transportation	Down 4.06%
3	Reduction of discharge of contaminated and insufficiently treated wastewater into surface water bodies, %	All subsidiaries	Down 18.02%
4	Reducing of share of waste to be disposed of at the landfill, %	All subsidiaries	Down 5.71%
5	Reduction of the payment for exceeding the allowed environmental impact, %	All subsidiaries	Rise 6.58%
6	Reduction of specific fuel & energy consumption for auxiliaru process needs (APN), kg c.e. per mmcm·km	All subsidiaries engaged in natural gas transportation	Down 0.62%

Financing of Environmental Protection

In 2017, total expenditures of the Gazprom Group for environmental protection in the Russian Federation increased by 23% mainly due to growth of investments aimed at environmental protection and rational use of natural resources.

In the Gazprom Group, amount of capital investments intended for environmental protection and rational use of natural resources increased by 58% compared to year 2016 and amounted to more than RUB 35.5bn.

Gazprom Group environment protection costs dynamics, 2013–2017, RUB bn

Capital investments into environmental protection and rational use of natural resources, 2013–2017, RUB mm

	2013	2014	2015	2016	2017
Gazprom Group	24,947.93	15,578.35	15,754.33	22,541.85	35,584.53
Gas business companies	20,760.53	7,703.04	6,931.87	2,542.10	4,450.87
including PJSC Gazprom	20,671.18	7,526.22	6,893.16	2,270.89	2,862.86
Gazprom Neft Group	1,115.51	3,995.61	3,114.05	14,275.03	27,101.67
Gazprom Energoholding	162.26	800.78	2,837.54	368.31	579.20
Gazprom Neftekhim Salavat	2,909.63	3,078.92	2,870.87	5,356.41	3,452.79

In Gazprom group, amount of capital investments intended for environmental protection and rational use of natural resources increased by 58% compared to year 2016 and amounted to more than RUB 35.5bn.

The funds were invested in the framework of large-scale investment construction projects of PJSC Gazprom, such as development of the gas production centre in Yamal, Chayandinskoye oil and gas condensate field (OGCF), construction of trunk pipelines Ukhta — Torzhok — 2, Bovanenkovo — Ukhta — 2 and Nord Stream — 2, TurkStream, construction of Amur gas processing plant, complex for production, storage and shipment of liquefied natural gas (LNG) in the area of Portovaya compression station.

Gazprom Neft investment funds increased almost twice in 2017 compared to 2016 due to implementation of a number of large-scale investment programs on modernization of major environmental facilities in oil refining, implementation of gas program (reconstruction and modernization of gas transportation, treatment and processing facilities and gas facility): completion of the gas infrastructure development in the DNS-1 area of Yety-Purovskoye field; construction and commissioning of the 1st starting complex of gas compression and gas treatment plant at the Novoportovskoye OGCF and utilization of associated petroleum gas (APG) at the Shinginskoye, Zapadno Luginetskoye, Urmanskoye, Archinskoye fields, etc.

At the expense of investments in protection and rational use of water resources, the following works included in the Plan of main actions of the Year of the Environment in the Russian Federation were carried out:

— construction of closed-type treatment facilities BIOSPHERE at the Omsk Refinery (AO Gazprom Neft Omsk Refinery) and at the Moscow Refinery (AO Gazprom Neft Moscow Refinery);
— construction of the treatment plant for sulfide-alkaline drains of the Monomer plant and the Refinery Plant of OAO Gazprom Neftekhim Salavat, etc.

In 2013–2017, the Gazprom Group invested RUB 114.41bn into environment protection and rational use of natural resources.

In 2017, the investments were assigned for: air protection — RUB 23,905.27mm, or 67% of the Group's investments; protection and rational use of water resources — RUB 8,123.36mm (23%), of which RUB 7,287.22mm — for construction of wastewater treatment facilities; protection and rational use of land — RUB 2,617.66mm (7%), including restoration — RUB 577.01mm (2%). RUB 938,23mm were spent to the other purposes (3%), including facilities and landfills for disposal, decontamination and burial of waste —

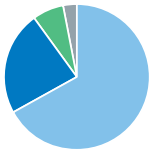
RUB 749.60mm, protection and reproduction of fish stocks — RUB 28.58mm, other RUB 160.05mm.

In 2017, Gazprom Group commissioned two plants for harmful substances capture from waste gases and neutralization with a capacity of 5,000mmc per hour; 58 plants and facilities for wastewater treatment with a capacity of 492,029mcm per day; 29 waste disposal and recycling facilities with a capacity of 9,275mcm per year; four landfills for disposal, decontamination and burial of toxic industrial, household and other wastes with a capacity of 2.2mcm per yea.

In 2017, current expenditures of Gazprom Group for environmental protection did not change significantly compared to year 2016 and amounted to RUB 34.47bn.

Structure of capital investments into environmental protection and rational use of natural resources, Gazprom Group, 2017, %

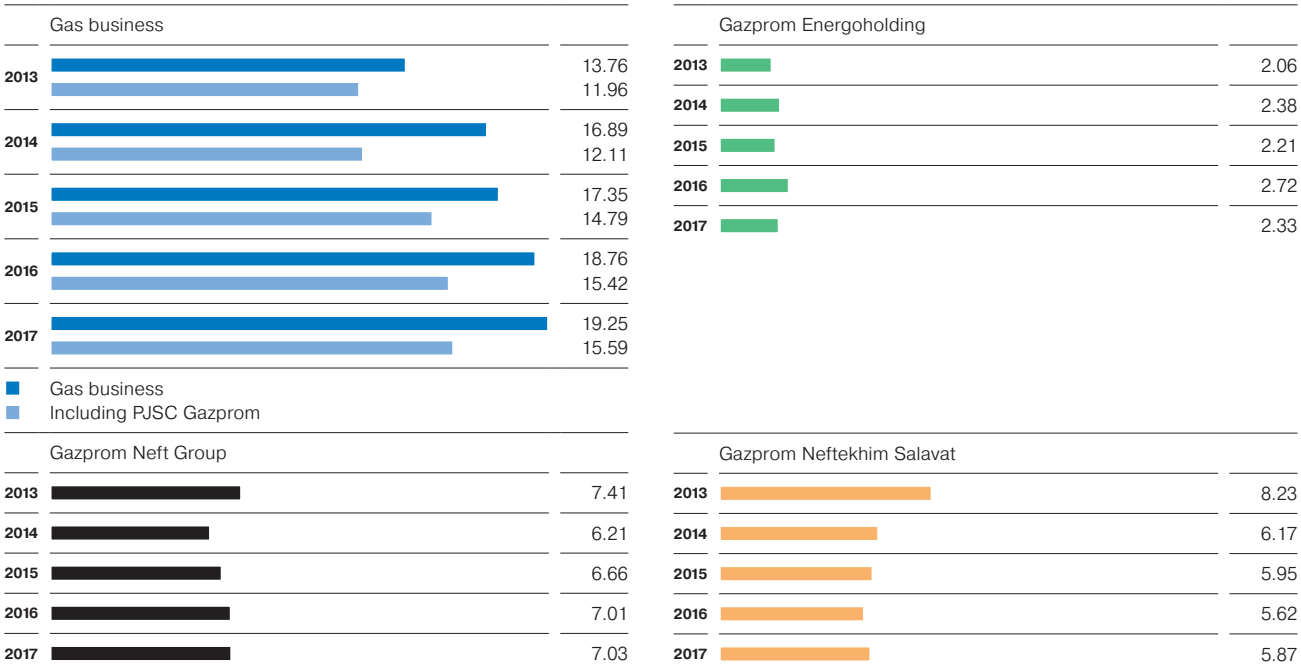
Air protection	67
Protection and rational use of water resources	23
Protection and rational use of lands	7
Protection and rational use of forest resources, protection and restoration of fish stocks, enterprises and landfills for utilization, neutralization and disposal of waste	3



Current environmental expenditures, 2013–2017, RUB mm

	2013	2014	2015	2016	2017
Gazprom Group	31,456.47	31,656.24	32,169.03	34,103.25	34,467.98
Gas business companies	13,758.91	16,895.69	17,348.59	18,757.29	19,246.64
including PJSC Gazprom	11,957.75	12,113.02	14,787.92	15,423.62	15,595.46
Gazprom Neft Group	7,413.42	6,210.19	6,656.05	7,005.29	7,027.52
Gazprom Energoholding	2,058.68	2,380.27	2,214.70	2,717.38	2,325.85
Gazprom Neftekhim Salavat	8,225.46	6,170.09	5,949.69	5,623.29	5,867.97
including current (operational) expenditures for environment protection					
Gazprom Group	20,328.15	18,047.89	16,399.90	17,189.74	18,219.75
Gas business companies	8,224.35	8,079.39	8,561.32	9,539.58	10,083.97
including PJSC Gazprom	7,161.35	7,141.84	8,328.66	9,273.12	9,707.42
Gazprom Neft Group	3,953.91	3,843.48	2,282.08	2,190.53	2,520.95
Gazprom Energoholding	425.05	544.65	413.00	457.90	515.12
Gazprom Neftekhim Salavat	7,724.85	5,580.37	5,143.50	5,001.73	5,099.71
including fees for environmental protection services					
Gazprom Group	8,021.87	9,403.46	12,806.27	14,725.57	14,495.59
Gas business companies	4,008.73	4,988.78	6,591.72	7,735.50	7,854.85
including PJSC Gazprom	3,273.98	3,300.71	4,284.04	4,690.93	4,592.33
Gazprom Neft Group	2,208.34	2,316.29	4,095.48	4,685.08	4,387.15
Gazprom Energoholding	1,420.62	1,686.30	1,729.35	1,843.82	1,683.04
Gazprom Neftekhim Salavat	384.18	412.09	389.72	461.17	570.55
including current costs for overhaul of main production assets (environmental protection aspects)					
Gazprom Group	3,106.45	4,204.88	2,962.86	2,187.94	1,752.64
Gas business companies	1,525.84	3,827.52	2,195.54	1,482.21	1,307.83
including PJSC Gazprom	1,522.42	1,671.01	2,175.23	1,459.57	1,295.71
Gazprom Neft Group	1,251.17	50.41	278.49	129.68	119.42
Gazprom Energoholding	213.02	149.32	72.36	415.66	127.69
Gazprom Neftekhim Salavat	116.42	177.63	416.47	160.38	197.70

Dynamics of current expenditures for environmental protection in Gazprom Group, 2013–2017, RUB bn



Costs for wastewater collection and treatment usually prevailes within Gazprom Group current expenditures and in 2017 amounted to RUB 16.93bn (49%). The Gazprom Group spent RUB 4.77bn on conservation and rehabilitation of land, surface and ground waters; RUB 4.54bn — on air protection and preventing climate change; RUB 5.65bn — on waste management; RUB 0.36bn — on biodiversity conservation and natural areas preservation; RUB 2.2bn — on other environmental activities: protection of the environment against noise, vibration and other physical effects; radiation safety of the environment; environmental impact reduction R&D, etc.

Structure of Gazprom Group's current environmental expenditures, 2017, %

Waste water collection and treatment	49
Waste management	16
Protection and reclamation of lands, surface and underground waters	14
Atmospheric air protection and prevention of climate change	13
Protection of biodiversity	7
Other activity areas in the environmental protection sphere	1

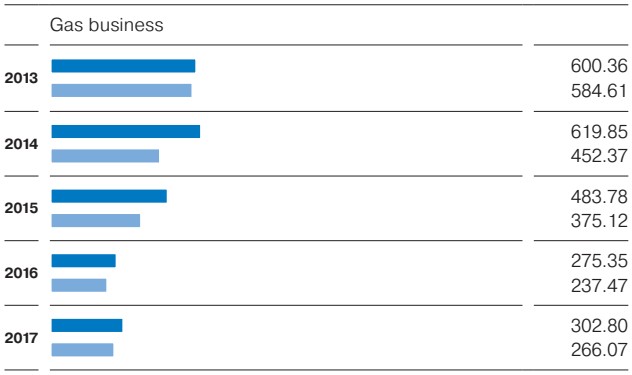
Adverse Environmental Impact Fee

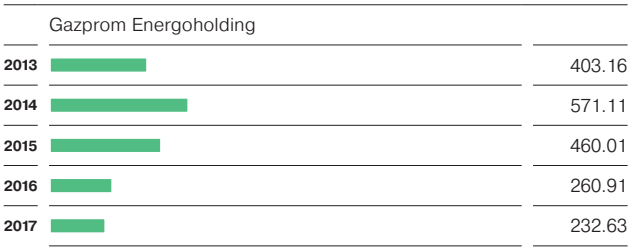
In 2017, Gazprom Group transferred to budgets of different levels RUB 824.80mm as payment for adverse environmental impacts.

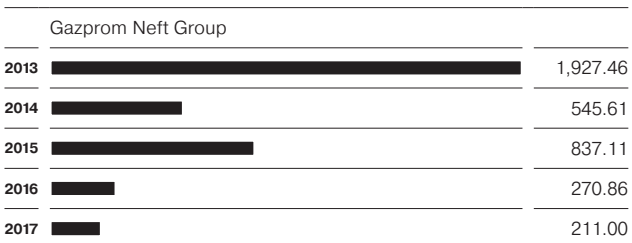
Payments for negative environmental impact, 2013–2017, RUB mm

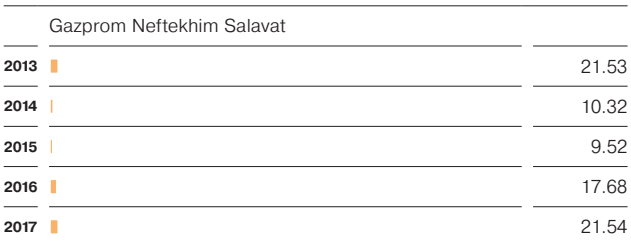
	2013	2014	2015	2016	2017
Gazprom Group	2,952.5	1,746.89	1,790.42	824.80	767.97
Gas business companies	600.36	619.85	483.78	275.35	302.80
including PJSC Gazprom	584.61	452.37	375.12	237.47	266.07
Gazprom Neft Group	1,927.46	545.61	837.11	270.86	211.00
Gazprom Energoholding	403.16	571.11	460.01	260.91	232.63
Gazprom Neftekhim Salavat	21.53	10.32	9.52	17.68	21.54

Adverse environmental impact fee dynamics in Gazprom Group, 2013–2017, RUB mm

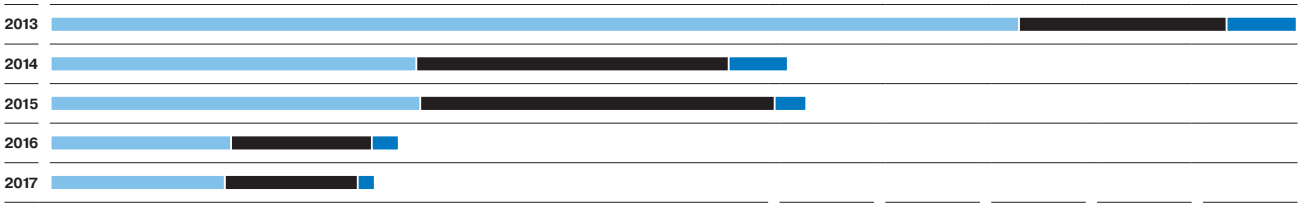








Structure of environmental payments of Gazprom Group in the Russian Federation by types of adverse environmental impact, 2013–2017, RUB mln



	2013	2014	2015	2016	2017
Air pollutant emissions	2,294.27	866.34	875.7	427.38	412.39
Industrial and consumption waste disposal	492.41	740.44	840.06	333.7	315.36
Pollutant discharge into surface water bodies	165.84	139.96	74.66	63.72	40.23

In the adverse environment impact fee structure, payments for air emissions pollutants (53.7%) and for industrial and consumption waste disposal (41.1%) were predominant in 2017.

The Gazprom group share of over-norm emissions payment in total amount of payment for adverse environment impact as a whole was 33%, for PJSC Gazprom — 24%, for Gazprom Neft Group — 57%, for Gazprom Energo-holding — 22%, for Gazprom Neftekhim Salavat — 78%. The excess emissions payment, in the vast majority of cases, was due to organizational reasons (late receipt or prolongation of environmental permits).

Reduction in 2017 of paid by Gazprom Group total adverse environment impact fee by 7% in comparison with 2016 is due to reduction of fees for pollutant emissions in the process of APG flaring at the fields of Gazprom Neft, deduction in 2017 of funds unnecessarily paid in 2016, reduction of amount of production waste transferred for storage or disposal, pollutants emissions into the atmospheric air, reduction of over-norm fees for discharges to water bodies.

Environmental Performance and Energy Saving

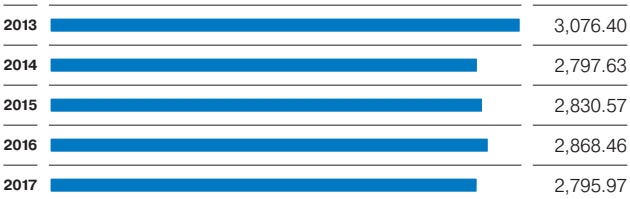
Air Protection

In 2016, total pollutant emissions from stationary sources of Gazprom Group companies amounted to 2,795.97 thousand tonnes which is by 2.5% less than 2016 value.

At Gazprom's gas treatment facilities 2,263.58 thousand tonnes of pollutants, including 2,132.01 thousand tonnes at Gazprom Energoholding, 103.62 thousand tonnes at PJSC Gazprom, 27.96 thousand tonnes at other companies were captured and neutralized. Weight of captured and neutralized pollutants is construed by 95% by solid particles, mainly by ash of solid fuels of power generating facilities, and by 5% — gaseous and liquid substances (sulfur dioxide, nitrogen oxides, volatile organic compounds, etc.)

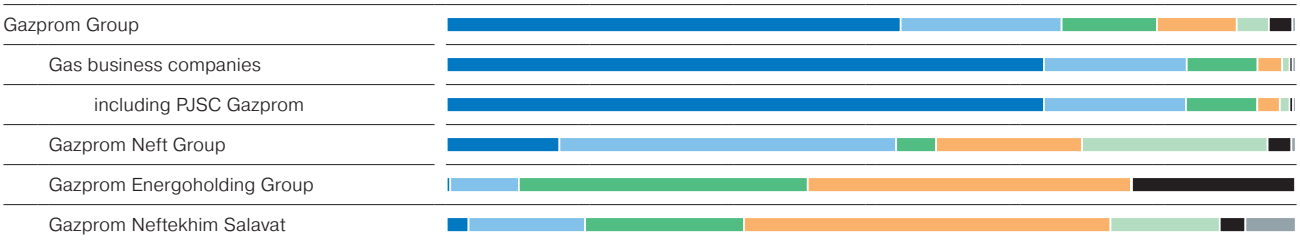
In 2013–2017, Gazprom Group reduced total pollutant emissions by 280.43 thousand tonnes.

Dynamics of total air pollutant emissions in Gazprom Group, 2013–2017, thousand tonnes



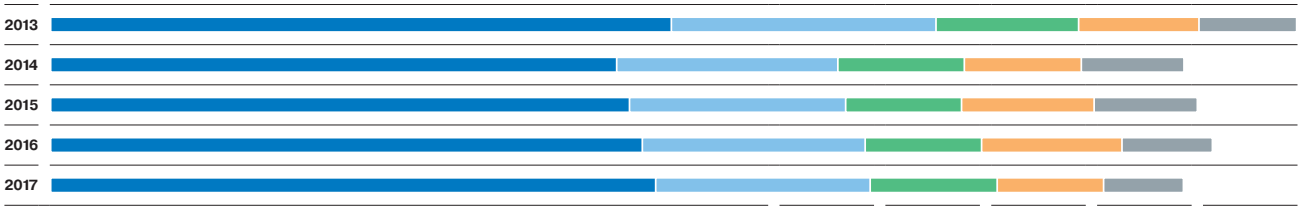
Share of Gazprom Group companies in total emissions, 2017, %

Component structure of air emissions in Gazprom Group, 2017, thousand tonnes



	Gazprom Group	Gas business companies	including PJSC Gazprom	Gazprom Neft Group	Gazprom Energoholding Group	Gazprom Neftekhim Salavat
Hydrocarbons (including methane)	1,495.67	1,445.10	1,372.72	49.38	0.34	0.85
Carbon monoxide	529.92	349.40	334.14	147.81	28.13	4.57
Nitrogen oxides	313.57	175.42	167.40	17.40	114.52	6.23
Sulfur dioxide	262.66	56.07	56.01	64.12	128.08	14.38
Volatile organic compounds	109.85	23.89	18.49	81.31	0.36	4.29
Solid substances	79.31	2.98	1.80	10.53	64.80	1.00
Other gaseous and liquid substances	5.00	1.20	0.50	1.80	0.03	1.97

Dynamics of air pollutant emissions from Gazprom Group's stationary sources, 2013–2017, thousand tonnes



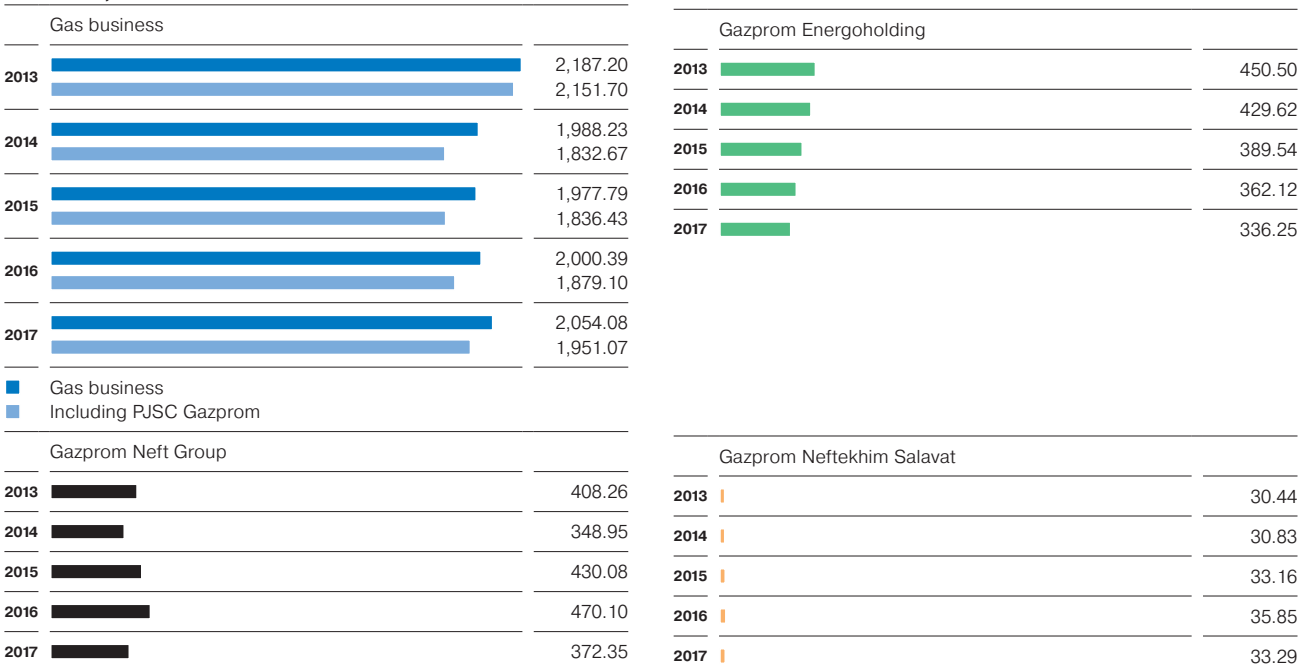
	2013	2014	2015	2016	2017
Hydrocarbons (including methane)	1,534.00	1,398.48	1,430.80	1,462.35	1,495.67
Carbon oxide	653.41	546.95	533.64	550.48	529.92
Nitrogen oxides	352.90	313.10	286.26	288.46	313.57
Sulfur dioxide	296.89	289.33	328.43	346.09	262.66
Other substances	239.20	249.77	251.42	221.08	194.15

Structure of pollutants emissions in Gazprom Group is mostly dependent on specific production activities of PJSC Gazprom and other gas business companies. Basic pollutants within total emissions of the Group include hydrocarbons (mainly methane), carbon oxide, nitrogen oxides, and sulfur dioxide. Solid particles emissions come mostly from the Gazprom energy sector, whereas volatile organic compounds are commonly associated with operations of the companies of Gazprom Neft Group and gas production sector.

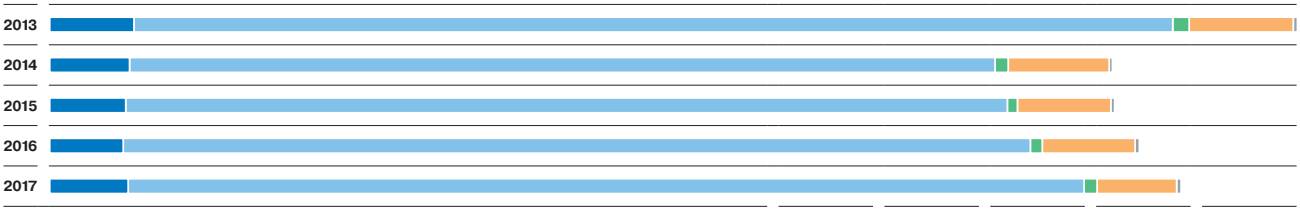
Change in emissions structure in 2017 is due to increase in volumes of natural gas production, growth of transport operation in PJSC Gazprom subsidiary companies, implementation of Gazprom Neft Group programs on associated gas utilization, and coal substitution by natural gas in the fuel mix at OOO Gazprom Energoholding generating facilities.

In 2013–2017, Gazprom Group's emissions decreased by:
- **hydrocarbons — 38.33 thousand tonnes**
- **carbon oxide — 123.49 thousand tonnes,**
- **nitrogen oxides — 39.33 thousand tonnes,**
- **sulfur dioxide — 34.23 thousand tonnes.**

Dynamics of total air emissions in Gazprom Group, 2013–2017, thousand tonnes



Dynamics of total air pollutant emissions in PJSC Gazprom* by activity types, 2012–2016, thousand tonnes



	2013	2014	2015	2016	2017
Gas and gas condensate production	145.29	137.65	131.05	126.75	135.30
Gas Transportation	1,791.33	1,492.61	1,520.37	1,564.34	1,648.55
Underground gas storage	28.36	22.66	17.38	20.57	22.34
Natural gas and gas condensate processing	179.55	174.12	161.08	160.14	137.18
Other (supporting) activities	7.16	5.63	6.55	7.30	7.70

Pollutant emissions from stationary sources of the Group's gas business companies amounted to 2,054.08 thousand tonnes, which is by 2.6% more than in 2016. PJSC Gazprom share accounted to 95% of total emissions of the gas business and defines overall trend of the indicators.

Total emissions of PJSC Gazprom* increased by 71.97 thousand tonnes or by 3.8%, compared to 2016. The main reasons are growth in activity in production, transportation and UGS, as well as scope of trunk gas pipeline repair.

At the same time, it should be noted that due to implementation of energy efficiency and energy saving programs, in 2017, during repairs of main gas transport, PJSC Gazprom prevented natural gas (methane) release into air in the amount of 791.18 thousand tonnes.

Decrease in Gazprom Neft Group total pollutant emissions into air by 21% compared to 2016 is mainly due to the implementation of programs for construction and commissioning of process infrastructure facilities for APG utilization.

Total Gazprom Energoholding emissions decreased by 8% due to change in the fuel balance with increase of natural gas share.

Emissions from Gazprom Neftekhim Salavat facilities decreased by 7% due to production decrease at Monomer plant.

* Pollutant emissions (including methane) at PJSC Gazprom facilities were calculated according to documents of PJSC Gazprom standardization system, included in the List of Guidelines used in 2016 for calculation, rating and monitoring of pollutant emissions to air, approved by AO Scientific Research Institute for Atmospheric Air Protection on December 28, 2015.

Greenhouse Gas Emissions

PJSC Gazprom's climate protection activities are based on the provisions of the following documents:

- Energy Strategy of Russia for the period up to 2030;
- Climate Doctrine of the Russian Federation approved by the Executive Order of the President of the Russian Federation No. 861-RP of December 17, 2009;
- Decree of the President of the Russian Federation On Reduction of Greenhouse Gas Emissions No. 752 of September 30, 2013;
- Action plan on 75% Greenhouse Gas Emissions Reductions Below 1990 Levels by 2020 approved by the Russian Government Resolution No. 504-p of April 2, 2014;
- Methodology Guidlines for Greenhouse Gas Emissions Reduction Indicators Development by Sectors of Economy approved by the Order of the Ministry of Economic Development of the Russian Federation No. 767 of November 28, 2014;
- Framework for System Development of Monitoring, Reporting and Verification of Greenhouse Gas Emissions Volumes in the Russian Federation approved by the Order of the Government of the Russian Federation No. 716-p of April 22, 2015;
- Methodology Guidance and Procedure Manual on Greenhouse Gas Emissions Volumes Evaluation by Business and Other Organizations Performing Activities in the Russian Federation approved by the Order of the Ministry of Natural Resources and Environment of the Russian Federation No. 300 of June 30, 2015.

Greenhouse gas (GHG) management is a part of the Corporate Strategy of PJSC Gazprom. It helps the PJSC Gazprom to maintain dominant positions in sustainable development ratings, encourage achievement of the national objective approved by the Order of the President of the Russian Federation No. 752 dd. September 30, 2013 that is, to ensure a 75% reduction of GHG emissions by 2020 as compared to the 1990 level.

PJSC Gazprom's Management and Reporting System for GHG emissions reduction encompasses PJSC Gazprom — the parent company and 100% Gazprom's subsidiary companies and organizations engaged in production (including exploration), transportation, underground storage and processing of hydrocarbons, as well as UGSS which are financially and operationally managed by the Company.

The management and reporting system for GHG emissions reduction includes the corporate Energy saving system and GHG emissions management system in PJSC Gazprom. The system has all necessary elements that make it possible to sustainably manage the process of addressing energy saving issues, energy efficiency improvement, GHG emissions reduction. These elements are: informational support for managerial decisions by Gazprom's top management, including development and implementation of Energy Saving and Environmental programs; monitoring of energy saving and energy efficiency indicators, process facilities and natural environments conditions in Gazprom's regions of responsibility; development and adoption of the best available techniques (BAT), innovative resource- and energy-saving technologies and corporate regulatory documents, etc.

All quantifiable direct GHG emissions corresponding to the selected significance level classified by types of Gazprom's main economic activities[1] — production, transportation, underground storage and processing, by emissions catalogue and emissions sources types, which are typical of PJSC Gazprom[2], are included in the PJSC Gazprom reports.

In accordance with the Order of the Ministry of Economic Development of the Russian Federation No. 767 On Approval of Methodological Guidelines on the Development of Greenhouse Gas Emissions Reduction Indicators for Sectors of Economy of November 28, 2014, PJSC Gazprom GHG emissions level in 2014 is used as a reference for GHG emissions reduction indicators calculation.

PJSC Gazprom understands that some uncertainties may affect the accuracy of GHG emissions quantitative estimates, for example, instrument measurement accuracy of natural gas flow meters, methodological calculation methods inaccuracies for natural gas volume measuring and methodological analytical methods inaccuracies for identification of fuels and hydrocarbon mixtures' physical and chemical characteristics (density, composition), as well as risks of deliberate or accidental information distortion in sampling, aggregation and processing of the primary data used to evaluate GHG emissions. These risks are identified and controlled at all stages of the reporting process. Taking into account the Methodo-

[1] Types of the main economic activities of PJSC Gazprom are listed in the Appendix to the Order of the Ministry of Economic Development of the Russian Federation No. 767 On Approval of Methodological Guidelines on the Development of Greenhouse Gas Emissions Reduction Indicators for Sectors of Economy of November 28, 2014.

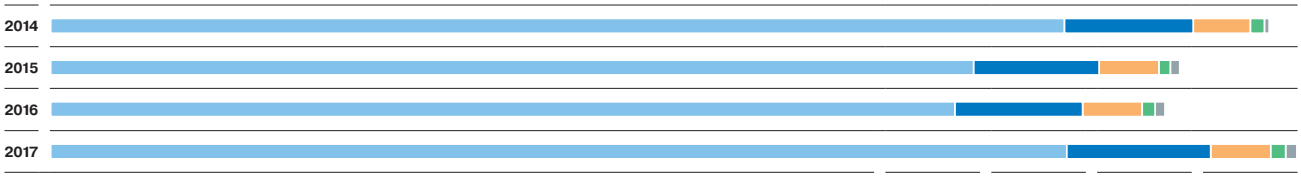
[2] Emission sources types and the catalogue of GHG emissions typical for PJSC Gazprom are listed in the STO (Industry Standart) Gazprom 102-2011 Greenhouse Gas Emissions Inventory.

logical Guidelines and the international Corporate Accounting and Reporting Standard "The Greenhouse Gas Protocol", possible deviations of these indicators from cumulative effect of all possible negative factors are not deemed significant if they do not exceed 5% of total GHG emissions combined.

In general, 2017 GHG emissions from PJSC Gazprom's facilities increased compared to 2016 due to the growth of production, transportation, and natural gas injection in UGS; and also due to the expansion of Gazprom activities boundaries — the increase in number of reporting subsidiaries and organizations involved in other activities for the UGSS maintanance, including air and rail transportation. However, emissions decreased by 5% below 2014 level (if methane volume is calculated using a Global Warming Potential (GWP) of 25).

GHG emissions from the main economic activities of PJSC Gazprom (production, transportation, underground storage and processing) in 2017 amounted to 112.15mm tonnes of CO_2-equivalent, where methane accounts for 9.2%.

Dynamics of greenhouse gas emissions from main activities of PJSC Gazprom, 2014–2017, mm tonnes of CO_2-equivalent



	2014*	2015	2016	2017
Transportation	92.12	83.87	82.20	92.28
Production	11.69	11.39	11.60	13.07
Processing	5.2	5.44	5.41	5.46
Underground storage	1.26	1.02	1.20	1.34
Other (supporting) activities	0.43	0.85	0.83	1.02

* All the greenhouse gas emissions calculations till 2014 were based on the methane's Global Warming Potential (GWP) of 21. Since 2015, the GWP for methane is 25 in accordance with the Methodology Guidance and Procedure Manual on Greenhouse Gas Emissions Volumes Evaluation by Business and Other Organizations Performing Activities in the Russian Federation approved by the Order of the Ministry of Natural Resources and Environment of the Russian Federation No. 300 of June 30, 2015.

In 2017, the main measures to reduce GHG emissions in PJSC Gazprom were prevention of natural gas bleeding during trunk pipelines repair works (791.2 thousand tonnes of methane) and reduction of methane emissions during process operations (16.6 thousand tonnes). The prevented methane emissions totaled to 807.2 thousand tonnes or 20,180.0 thousand tonnes of CO_2-equivalent.

Since 2009, PJSC Gazprom participates in the Carbon Disclosure Project (CDP), an international investment partnership. Since 2013, the Company has expanded a set of reporting indicators for the questionnaire and has been providing additional data on indirect GHG emissions.

PJSC Gazprom has been acknowledged as the best Russian oil and gas company according to the 2011–2017 CDP questionnaire results (https://www.cdp.net/en/scores-2017).

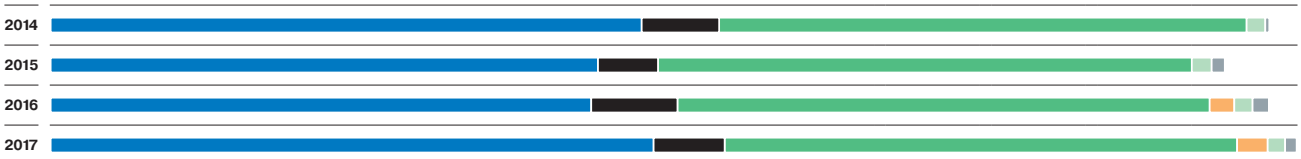
The participation of PJSC Gazprom in CDP climate and water programs provided an opportunity to demonstrate its corporate GHG emissions and water resources managemnet strategies to global financial institutions and investors, which take these data into account for their investment portfolio policy development.

In 2017, in the fulfilment of the Assidmnent from the Chairman of the Management Committee of PJSC Gazprom, the preparation work on verification and independent certification of company's GHG emissions data was organized. The auditor AO KPMG carried out an analysis of internal regulations and reports, visited production facilities to collect primary data and confirm the technical security of monitoring system with control and measuring instruments.

The GHG control and metering system is being implemented and improved in other Gazprom group companies. Since 2016, all subsidiary companies of the Group, regardless of their activity type, carry out monitoring and calculates GHG emissions using an unified algorithm — according to the Methodology Guidance and Procedure Manual on Greenhouse Gas Emissions Volumes Evaluation by Business and Other Organizations Performing Activities in the Russian Federation approved by the Order of the Ministry of Natural Resources and Environment of the Russian Federation No. 300 of June 30, 2015.

In 2017, the GHG emissions from the Gazprom Group facilities amounted to 233.7mm tonnes of CO_2-equivalent as a whole, 2.4% above 2016 level. The indicator growth is associated with the ncrease in production in all business segments of PJSC Gazprom and the expansion of activities boundaries — the increase in number of reporting subsidiaries and organizations.

Greenhouse gas emissions per activity types, 2014-2017, CO_2-equivalent, mm tonnes



	2014	2015	2016	2017
PJSC Gazprom*	110.70	102.56	101.24	113.17
Gazprom Energoholding	98.85	99.99	99.72	96.17
Gazprom Neft Group	14.46	11.22	16.18	13.31
Gazprom Neftekhim Salavat	–	–	4.56	5.75
Sakhalin Energy	3.52	3.70	3.42	3.22
Other companies	0.72	2.49	3.07	2.21

* GHG emissions classified by main economic activities of PJSC Gazprom: production, transportation, underground storage and processing of natural gas, and PJSC Gazprom emissions from other activities.

Greenhouse gas emissions by category of source in Gazprom Group, 2013–2017, CO_2-equivalent, mm tonnes

Emissions sources (processes)	Total	CO_2	CH_4
Greenhouse gas emissions, total	233.83	200.30	33.53
Stationary fuel combustion	183.81	183.81	0
Flaring	9.63	9.53	0.10
Fugitive emissions	33.61	0.18	33.43
Oil processing	3.56	3.56	0
Ammonia production	0.17	0.17	0
Petrochemical production	0.13	0.13	0
Other industrial processes	2.82	2.82	0
Air transport	0.08	0.08	0
Railway transport	0.02	0.02	0

Assessment of the carbon footprint for natural gas exported to foreign countries

GHG emissions and climate issues are becoming increasingly important dealing with European partners. Carbon footprint (greenhouse gas emissions from the whole production chain up to the product consumption) becomes a key indicator for the energy resource market.

In 2016, a German association known as Zukunft ERDGAS initiated a research that demonstrated the environmental advantages of natural gas compared to other types of hydrocarbon energy sources and refuted incorrect data on the carbon footprint of Russian natural gas supplies presented at the Directorate General for Energy of the European Commission website. Calculations performed by German institute DBI showed that the carbon footprint of Russian natural gas supplied to the Central Europe averages 12.2 kg CO_2-eq/GJ and 9.3 kg CO_2-eq/GJ for export by the Nord Stream (as per 2015 data).

In 2017, in response to repeated requests from German parliamentarians on a carbon footprint of natural gas, the Federal Environmental Agency of Germany (UBA), together with the DVGW Research Centre at Karlsruhe Institute of Technology (KIT) and the Fraunhofer Institute for Systems and Innovation Research (ISI) organized a study Emissions Estimats for Natural Gas in Germany which confirmed the results of DBI study on the carbon footprint of Russian natural gas.

Taking into account the DBI report data approval by the Federal Environmental Agency of Germany (UBA), the correct carbon footprint values for Russian gas supplies will be used nation-wide for energy regulation and low-carbon development forecasts.

Utilization of Associated Petroleum Gas

A great contribution to the greenhouse gas emissions reduction is made by Gazprom activities aimed at decrease (elimination) of APG flaring.

APG combustion is an urgent problem of the oil and gas sector at the background of global tendencies of economy transition to the low-carbon and energy-efficient way of development and due to the reasons of economic, environmental and social risks and losses. Implementation of investment projects for APG use at Gazprom Group fields is aimed at achievement of a minimum APG utilization level of 95% in accordance with the Decree No. 7 of the Government of the Russian Federation dated January 8, 2009.

In 2016, the rate of the APG utilization for production fields of PJSC Gazprom subsidiaries (including OAO Tomskgazprom) comprised 98.4%, for Gazprom Neft Group — 76.2%, for Sakhalin Energy Investment Company Ltd., — 97.0%.

In 2017, as part of the Gas program aimed at increasing APG utilization level, Gazprom Neft group implemented a large set of measures. AO Messoyakhaneftegaz launched fuel gas treatment plants to meet the fuel needs of the gas turbine power plant at the Vostochno-Messoyakhskoye field; APG amount used for oil preparation increased due to increased production volumes; the gas turbine power plant (GTPP) was fueled with APG instead of natural gas.

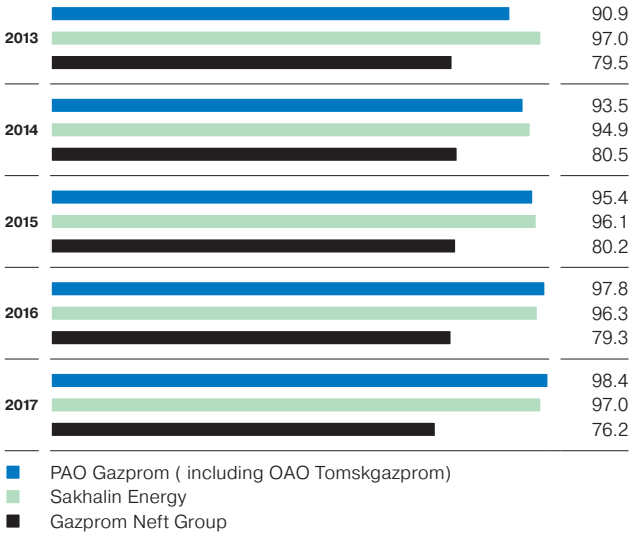
At the Novoportovskoye field, OOO Gazprom Neft Yamal put into operation a gas turbine power plant with a capacity of 96 MW and started commissioning work at the 1st commissioning and start-up complex of compression plant to for associated gas pressurizing into the reservoir. The technological scheme for APG pressurizing into the reservoir, except for complex gas treatment unit which includes three GPA's (1st start-up complex), includes two groups of gas absorbing wells and extensive system of gas pipelines for APG delivery for pressurizing and to GTPP as a fuel.

OOO Gazprom Neft — Vostok lunched gas and vacuum compressor stations at Shinginskoye field, a vacuum compressor station at the Zapadno-Luginetskoye field, so amount of APG delivered to the complex gas and condensate treatment plant at the Myldzhinskoye field of OAO Tomskgazprom increased.

OOO Gazprom Neft Orenburg put in operation a system for APG external transportation from the eastern section of the Orenburgskoye OGCF to the Orenburg gas processing plant.

At the same time, APG utilization level in Gazprom Neft Group decreased in comparison with 2016 due to increase in oil production, lunching of new wells with a large gas factor at Messoyakha group of fields and at the Novoportovskoye field, as well as due to the shift in terms of start-up and commissioning works at necessary infrastructure facilities of the the Novoportovskoye field.

APG utilization level in Gazprom Group's companies, 2013–2017, %



Reduction of Vehicle Fleet Impact on Air

PJSC Gazprom considers expansion of the scope of gas motor fuel application both as a strategic direction in the domestic and foreign markets and as a contribution to implementation of the climate policy of the Russian Federation. The world's leading automotive companies and car owners have already appreciated benefits of natural gas (EcoGas). Currently, about 1.4 million cars in 40 European countries, including Russia, use natural gas.

Use of natural gas for car running significantly reduces emissions both at the stage of the car operation and throughout the life cycle (production chain). For example, a carbon footprint of motor CNG production process is four times lower than that of gasoline production. Specific CO_2 emissions at natural gas use as motor fuel are 1.3 times less than at use of gasoline — 124 and 164 g CO_2-eq./ km, respectively (according to report of the European Gas Motor Association, 2014–2015).

PJSC Gazprom has developed and implemented a schedule for reconstruction of existing NGV refill stations up to 2020, works on natural gas compression modules installation at operating fuel filling stations of Russian oil companies are carried out, mobile gas tankers are operated to supply gas motor fuel to consumers located at far from NGV refill stations. In the territory of Russia, in the period 2015-2017, PJSC Gazprom identified 10 priority regions for development of gas infrastructure: the Republics of Tatarstan and Bashkortostan, Krasnodar and Stavropol territories, Leningrad, Moscow, Rostov and Sverdlovsk regions, Moscow and Saint Petersburg. Gazprom signed agreements with 45 Russian regions on expansion of natural gas use as a motor fuel.

As of the end of 2017, NGV refill station network in the country includes about 300 units, and 239 of them belong to Gazprom. In 2017, volume of CNG sales through the Gazprom gas filling network was amounted to 433mmcm. In 2017, construction of 20 CNG stations was completed, 3 stations were reconstructed and 3 stations were purchased. By the end of 2020, Gazprom CNG stations network in Russia will have about 500 facilities. Work on CNG modules accommodation at existing filling station of PAO Gazprom Neft, AO Gazprom GazEnergoset, PAO LUKOIL, PAO Tatneft is carried out.

Work on reequipping of vehicles to use natural gas in the frame of a special program aimed to adaptation of own transport to natural gas is now carried out in all companies of the Gazprom Group. PJSC Gazprom has the largest gas motor vehicle fleet in Russia: 48% of the company's total vehicle fleet (9,465 units) is running at natural gas. Similar work for own transport adaptation to natural gas is carried out in other companies of the Gazprom Group.

The company coordinates the work of interested participants in the domestic gas market, involves large organizations with large fleets.

Gazprom PJSC and Moscow government signed agreement on cooperation in the field of expanding use of gas motor fuel. Currently, in the territory of Moscow and Moscow region there are two companies operated CNG filling stations, eight more CNG stations are operated by FGUP Mosavtogaz.

In November 2017, in Moscow, a solemn commissioning of the new CNG filling station of PJSC Gazprom — the largest in Russia and Europe — took place. The design capacity of the new CNG station is 29.8mmcm of natural gas per year. There are 12 filling stations and a column for mobile tankers filling at the station. Modern reliable equipment, consisting mainly of domestic components, allows serving about 2,000 vehicles every day.

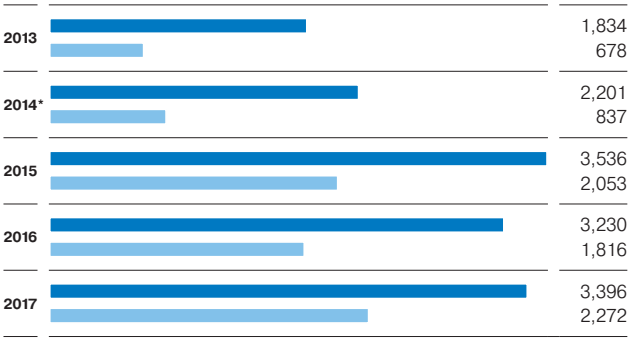
The event was attended by Chairman of the Board of Directors of PJSC Gazprom V. Zubkov, Deputy Minister of Energy of the Russian Federation K. Molodtsov, mayor of Moscow S. Sobyanin, Deputy Chairman of the Management Committee of PJSC Gazprom V. Markelov and Director General of OOO Gazprom Gazomotornoe Toplivo M. Likhachev.

The President of the Russian Federation Vladimir Putin sent a greeting to the participants of the event.

In the framework of the cooperation agreement with Russian Railways on expansion of LNG use at railways, in the summer 2017, OOO Gazprom gazomotornoye toplivo began at Egorshino station, Sverdlovsk region, fueling of Russian Railways LNG locomotives. A gas fuelling point was built at the station where cryogenic tank trucks — special trucks for LNG transportation — were placed. The fuel will be regularly delivered from Gazprom Group's liquefied natural gas production facilities. Within the framework of the contract, it is planned to deliver 600 tonnes of LNG. Currently, three gas-engine locomotives are operated at Egorshino — Serov Sortirovochny section of the Sverdlovsk railway: a gas piston shunting locomotive and two mainline gas-turbine locomotives.

In the reporting year, at Russian investment forum in Sochi, Chairman of the Management Committee of PJSC Gazprom A. Miller and Director General of Russian Post D. Strashnov signed an Agreement on cooperation in the field of natural gas use as a motor fuel. The parties agreed to jointly develop and implement programs for adaptation of Russian Post vehicles to natural gas. PJSC Gazprom and Russian Post will also coordinate efforts to improve performance of existing Gazprom gas filling infrastructure facilities and provide workload for prospecting facilities.

Number of vehicles switched to natural gas by Gazprom Group, 2013–2017, vehicles in year



* The data reported through 2014 are provided for PJSC Gazprom only.

In 2017, Gazprom group replenished the fleet of gas motor vehicles with 3,396 units, including 51 units in the CIS countries.

In the Russian Federation, PJSC Gazprom adapted to gas motor fuel 1,664 car, OOO Gazprom mezhregiongaz — 1,524, Gazprom Neft Group — 156 motor vehicles.

Gazprom continues evaluating options for development of the NGV segment abroad. In 2016, OOO Gazprom gazomotornoe toplivo and OAO Gazprom Transgaz Belarus signed a Roadmap for development of gas motor fuel market in the Republic of Belarus. A Memorandum of cooperation in the area of natural gas use as motor fuel in the Republic of Kazakhstan was signed with AO KazTransGas.

In December 2017, at a working meeting of members of the government of the Kyrgyz Republic headed by Prime Minister S. Isakov and delegation of PJSC Gazprom headed by Deputy Chairman of the Management Committee V. Markelov, a Memorandum on buses purchase for the needs of Bishkek was signed.

In the framework of OsOO Gazprom Kyrgyzstan activities, in August of the reporting year, the first modern eco-fueling station — CNG filling station — was opened in Leninskoye settlement, Chui region. Complete replacement of the equipment and change of layout to ensure CNG filling station compliance with all modern technological standards. The modernized station is suitable not only for fueling of cars but also for trucks and buses. Today, in the Republic, there are four CNG stations owned by Gazprom.

OOO Gazprom export and its subsidiary and joint companies invest in construction of gas filling stations in Europe. Central component in Gazprom Germania GmbH work is creation of infrastructure for marine vessels, trucks and cars fueling with compressed and liquefied natural gas.

In November, 2017, in the framework of the IV Forum of gas exporting countries held in Santa Cruz (Bolivia), OOO Gazprom gazomotornoe toplivo and Yacimientos Petroliferos Fiscales Bolivianos (YPFB) signed a Memorandum of intent to establish a joint venture. The joint venture is planned for development of production and marketing infrastructure for compressed and liquefied natural gas to be sold as a motor fuel, as well as for the needs of autonomous gasification in Bolivia and other Latin American countries.

To promote a unique combination of ecological, economic and social benefits of natural gas when it is used as motor fuel, since 2008 Gazprom organizes gas car rally under a common name Blue Corridor which demonstrates a diversity of gas cars.

The route of Blue Corridor-2017 rally — Iberia — Baltic — passed through territories of 12 countries: Portugal, Spain, France, Italy, Switzerland, Liechtenstein, Germany, Poland, Lithuania, Latvia, Estonia, and Russia. During 19 days all cars run more than 5.3 thousand kilometers. This rally was focused on LNG use in heavy-duty transport. Using LNG, trucks successfully passed all stages of the rally. The first Russian certified LNG trucks were among them: KAMAZ truck and Ural NEXT, mobile workshop with crane-manipulator. Prototypes of these vehicles were developed by PAO KAMAZ and GAZ Group in cooperation with PJSC Gazprom.

In 2017, 10 LNG trucks produced by such automakers as Iveco, Scania, JSC «Automobile plant» URAL», PAO KAMAZ and JSC «Minsk automobile plant», and 7 passenger cars produced by such companies as Volkswagen, Seat, PAO «AvtoVAZ» took part in Blue Corridor rally. In addition, other brand gas cars owned by local partners joined to the rally participants at various demonstration events held in the frame of the rally.

During the rally, roundtables were organized in which automakers, representatives of oil and gas companies, experts, politicians and representatives of media environment took part. In this year, discussions were held in Lisbon, Milan, Ulm, Berlin and Tallinn. LNG use in freight transport generated a lively response in the European media and expert community. Dozens of articles and television stories in the European media were devoted to Blue Corridor-2017.

At the rally-marathon Africa Eco Race 2017, gas motor KAMAZ demonstrated the first result among vehicles with hybrid drive, took 4th place in the category of trucks and entered top ten among 52 cars in the absolute ranking. It was demonstrated once more that the EcoGas fuel used in the truck fully corresponds to the basic concept of the main eco-marathon of the planet. Gazprom participation in the rally with eco-friendly truck allows demonstrating to the world that Russia sets standards for environment protection and develops alternative fuels for transport.

Water Use and Protection of Water Resources

In 2017, indicators of water intake for water supply in Gazprom Group did not change much compared to 2016 and comprised 4,523.45mmcm.

Water discharge to surface water bodies in Gazprom Group has grown by 1.3% compared to 2016 and reached 3,905.26mmcm. Water discharge to irrigation field and filtration fields was 5,727.76mmcm, to underground horizons — 45.28mmcm including 38.69mmcm for reservoir pressure maintaining. 182.96mmcm was discharged to municipal and other water supply systems. 12,006.85mmcm was used in recycling and return water supply systems

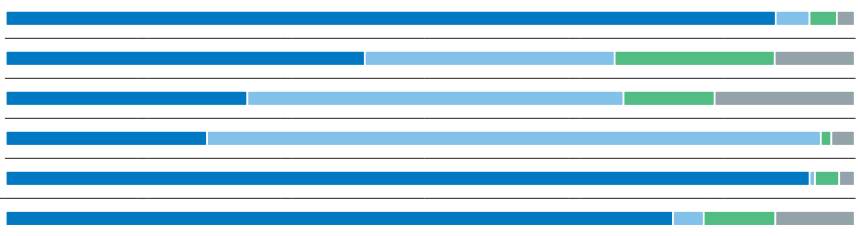
The share of natural sources in the Group water intake comprises 94.7%, of which 90.7% are presented by surface sources, and 3.98% by underground sources. Water consumption structure by source types depends on the Group's specifics of production and location.

Gazprom Group wastewater discharge into surface water bodies was reduced by 11% from 2012 to 2017. In the total volume of the Group discharge to surface water bodies, untreated clean waters as per standards and effluents treated to standard quality comprised 91%.

Aggregated figures of Gazprom Group water use, 2013–2017, mmcm

	2013	2014	2015	2016	2017
Total water intake	5,130.18	4,895.38	4,511.81	4,538.21	4,523.45
including water from natural sources	4,890.63	4,410.68	4,290.12	4,301.46	4,283.52
Auxiliary needs	5,051.64	4,779.50	4,387.64	4,449.27	4,421.11
including production needs	4,919.51	4,506.18	4,149.04	4,192.10	4,164.84
Water discharge to surface water bodies	4,389.91	4,179.09	3,853.75	3,855.45	3,905.26
including clean and treated as per standards	4,227.86	3,991.59	3,660.57	3,691.24	3,781.68

Structure of water consumption in Gazprom Group by types of sources, 2017, mmcm

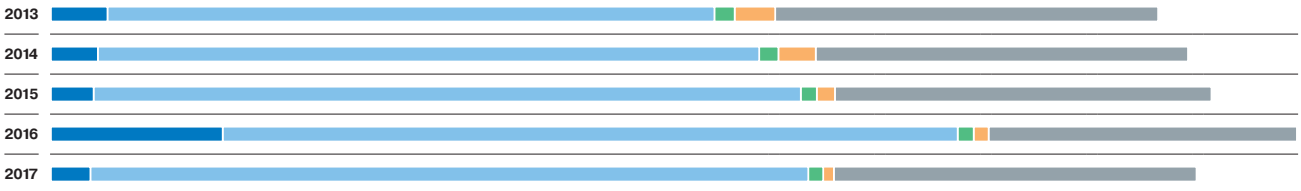


	Gazprom Group	Gas business companies	Including PJSC Gazprom	Gazprom Neft Group	Gazprom Energoholding	Gazprom neftekhim Salavat
Surface source	4,103.56	46.18	16.93	40.22	3,984.52	32.64
Underground source	179.96	32.16	26.33	122.55	23.75	1.50
Municipal water supply systems	145.84	20.58	6.39	2.12	119.64	3.50
Other water supply systems	94.09	10.28	9.79	4.57	75.38	3.86

Indicators of water discharge to surface water bodies in Gazprom Group, 2013–2017, mmcm

	2013	2014	2015	2016	2017
Gazprom Group	4,389.91	4,179.09	3,853.75	3,855.45	3,905.26
Gas business companies	34.00	40.35	34.09	35.10	33.87
including PJSC Gazprom	10.38	10.66	10.88	11.69	10.74
Gazprom Neft Group	0.08	0.32	27.20	0.11	0.12
Gazprom Energoholding	4,307.80	4,091.95	3,754.12	3,781.85	3,832.00
Gazprom neftekhim Salavat	48.03	46.47	38.34	38.39	39.26

Dynamics of water discharge to surface water bodies in PJSC Gazprom by activity types, 2013–2017, mmcm



	2013	2014	2015	2016	2017
Gas and gas condensate production	0.53	0.44	0.40	1.61	0.37
Gas Transportation	5.69	6.20	6.63	6.89	6.73
Underground gas storage	0.19	0.18	0.15	0.15	0.14
Natural gas and gas condensate processing	0.38	0.35	0.17	0.14	0.10
Other (supporting) activities	3.59	3.49	3.53	2.89	3.40

Gazprom Group wastewater discharge into surface water bodies was reduced by 11% from 2013 to 2017.

The Gazprom Energoholding accounted for 94% of total water consumption of the Group companies and 98% of total wastewater discharge into the surface water bodies. The Group gas business share in the water consumption is insignificant, about 2% (of which 0.84% is the share of PJSC Gazprom).

Effluent (without treatment) discharge into surface water basins reduced by almost 40% against 2016 value. Gazprom Neft Group, Sakhalin energy investment company Ltd., OOO Gazprom Transgaz Saint Petersburg and other companies completely discontinued discharge of contaminated (untreated) effluents into surface water basins.

Gazprom Group performed a large number of environmental events aimed at increasing water utilization efficiency both in industrial and in household sectors.

58 units of effluent treatment plants were commissioned in 2017, their total capacity is 492.03mcmd, (in Gazprom Neft companies – 19 units, OOO Gazprom gazomotornoe toplivo — 17 units, OOO Gazprom Transgaz Krasnodar — 8 units, OOO Gazprom Transgaz Moscow — 4 units, OOO Gazprom UGS — 3 units and 1 in each of the following companies: OOO Gazprom mining Kuznetsk, OOO Gazprom Dobycha Nadym, OOO Gazprom Transgaz Saint Petersburg, OOO Gazprom Transgaz Surgut, OOO Gazprom Transgaz Ufa, Pansionat Soyuz (Gazprom branch), Gazprom Neftekhim Salavat. 4 recycling water supply systems of 504.01mcmd capacity are launched (2 in Gazprom Neftekhim Salavat and 1 in each of the following companies OOO Gazprom Transgaz Saratov, OOO Gazprom Transgaz Surgut.

Production and Consumption Waste Management

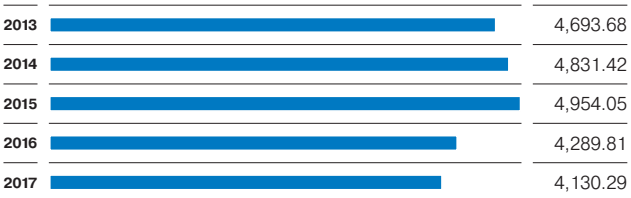
In 2017, the companies of the Gazprom Group formed 4,130.29 thousand tonnes of waste, which is by 3.7% lower than in the previous year. Activities of Gazprom Energoholding had significant impact on the volume of waste produced. This reduction is due to decrease of ash and slag waste (V waste hazard class) generation at Gazprom Energoholding which is a result of natural gas share increase in the fuel balance by 12.8% (primarily) and waste of II hazard class by 91.5% (primarily amine sludge at Astrakhan Gas Refinery Plant of OOO Gazprom Dobycha Astrakhan).

The major part (97.7%) of waste of Gazprom Group is represented by lowhazard or nonhazard waste.

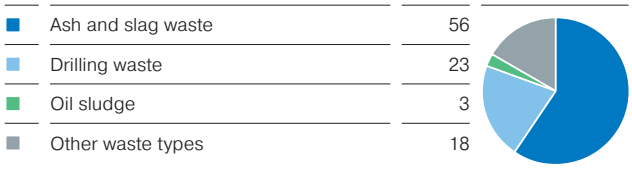
The main volume of waste of Gazprom Group is represented by ash and slag waste from Gazprom Energoholding (solid ash from coal combustion at HPPs), as well as drilling waste and oil sludge generated mainly at oil and gas production and oil refining facilities.

During 2013–2017, volume of Gazprom Group waste reduced by 563 thousand tonnes.

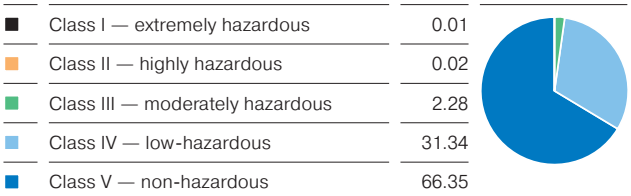
Dymanics of waste generation in Gazprom Group, 2013–2017, thousand tonnes



Waste structure in Gazprom Group by types, 2017, %



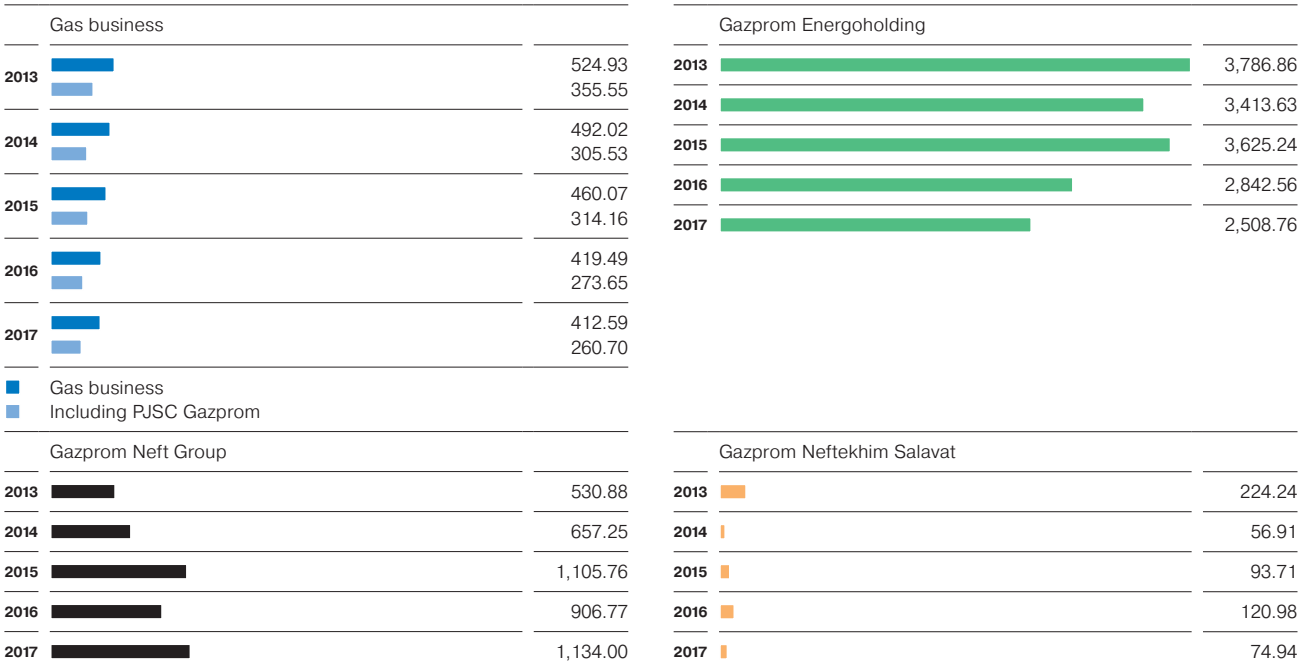
Waste structure in Gazprom Group by hazard classes, 2017, %



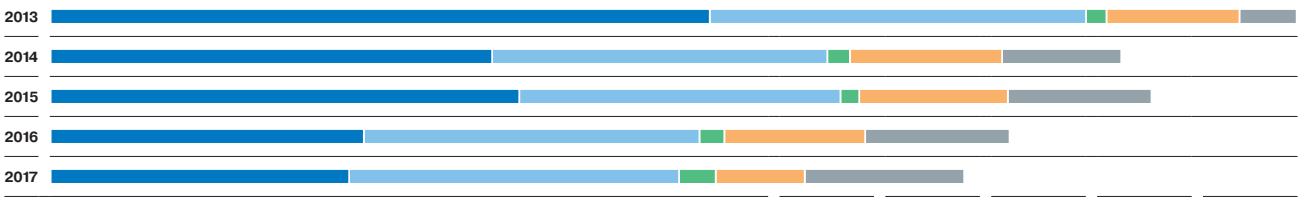
Share of Gazprom Group companies in waste generation, 2017, %

During 2017, Gazprom Group launched 29 waste neutralization and disposal facilities with capacity of 9.29 thousand tonnes per year, including 27 units in Gazprom Neft Group, 2 units in PJSC Gazprom (Gazprom Transgaz Krasnodar and Gazprom Transgaz Kuznetsk). Four landfills for utilization, neutralization and disposal of production, household and other wastes with a capacity of 2.19 thousand tonnes per year, including two facilities in the Gazprom Neft Group, one facility in PJSC Gazprom (Gazprom Transgaz Ukhta) and OAO Tomskgazprom, were put into operation.

Dymanics of waste generation in Gazprom Group companies, 2013–2017, thousand tonnes



Dymanics of waste generation by activity types in PJSC Gazprom, 2013–2017, thousand tonnes



	2013	2014	2015	2016	2017
Gas and gas condensate production	188.07	125.99	133.73	89.37	85.18
Gas Transportation	107.37	95.65	91.66	95.78	94.15
Underground gas storage	5.84	6.45	5.36	7.10	10.45
Natural gas and gas condensate processing	37.95	43.44	42.40	40.20	25.42
Other (supporting) activities	16.32	34.00	41.01	41.20	45.50

In 2017, amount of PJSC Gazprom waste reduced compared to 2016 by 4.7% to 260.70 thousand tonnes.

In gas transportation subsidiaries of PJSC Gazprom, waste generation decreased slightly, by 1.7%, or 1.6 thousand tonnes.

In the segment “Underground gas storage”, there was an increase in the amount of waste in the reporting year compared to the previous year by 47%. This is due to increase in the amount of carbon-containing waste resulting from the growth of gas extraction from UGS.

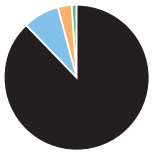
In the segment “Processing”, waste generation decreased by 37% and amounted to 25.42 thousand tonnes. The main factor causing this decrease was reduction in the volume of repair works at the processing enterprises OOO Gazprom Dobycha Astrakhan, OOO Gazprom Dobycha Orenburg.

Gazprom Group companies pay great attention to environmentally safe handling of oily wastes. This waste group is mainly represented by the waste sludge formed at cleaning of pipelines, tanks and oil separation facilities, supernatant film from oil catching facilities (gasoline separator). As a rule, these are moderately hazardous wastes (hazard class III).

In total, 149.18 thousand tonnes of oil-containing waste were in circulation at Gazprom Group facilities in 2017 (taking into account 9.87 thousand tonnes at the beginning of the year, 139.21 thousand tonnes from other enterprises, 0.10 thousand tonnes). Of this amount, 77.4% was transferred to specialized licensed organizations for use, disposal, as well as for safe placement.

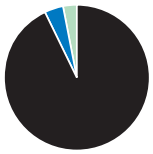
Share of Gazprom Group companies in oil-contaminated waste generation, 2017, %

Gazprom Neft Group	88
Gas business	8
Gazprom neftekhim Salavat	3
Gazprom Energoholding	1



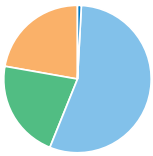
Share of Gazprom Group companies in drilling waste generation, 2017, %

Gazprom Neft Group	93
PJSC Gazprom	4
Sakhalin Energy	3



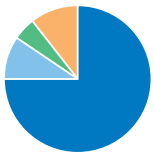
Structure of oil-contaminated waste handling in Gazprom Group, 2017, thousand tonnes

Utilized and neutralized at the enterprise	0.11
Transferred to specialized organizations for utilize, neutralization and treatment	83.31
Transferred to specialized organizations for storage	32.41
Availability at the enterprise by the end of the reported year, including in sites of storage	33.35



Structure of drilling waste handling in Gazprom Group, 2017, thousand tonnes

Transferred to specialized organizations for utilize and treatment	731.29
Utilized and neutralized at the enterprise	91.98
Located on site of landfilling	49.76
Availability at the enterprise by the end of the reported year, including in sites of storage	100.20



One of the main requirements for technological process of well drilling is prevention of drilling adverse environmental impact, especially in extreme climatic conditions of the Far North. For these purposes, field infrastructure development involves practical implementation of some solutions that provide minimal environmental impact during drilling. For instance, during operational well drilling, a pitfree drilling is used. Practice of drilling waste utilization with production of mineral construction materials for use at civil works for fields arrangement is widely applied.

In the Gazprom Neft Group, there is a consistent tendency to expand use of the most environmentally friendly methods for drilling waste handling. In 2017, volumes of drilling sludge neutralization were reduced due to increase in the share of its useful use for secondary products production. Gazprom Neft group created a system of comprehensive accounting of drilling waste generation, by wells, and monitoring of compliance with the 11-month period of drilling waste accumulation which fully meets requirements of environmental legislation.

Sakhalin Energy Investment Company Ltd. applies a method of drilling waste disposal by pressurizing through special absorbing wells into deep subsoil formations which have necessary insulating layers that ensure reliable disposal of waste in the layer. This technology was included into the information technology reference book ITS-17 2016 «Production and consumption waste disposal» as regulation for utilization of waste associated with oil and gas production. The reference book was approved by the Order of the Federal Agency for technical regulation and Metrology No. 1885 dated December 15, 2016 and put into effect on July 1, 2017. During the reporting year, the company carried out continuous monitoring of the technological pressurizing process and took all reasonable measures to reduce amount of drilling waste.

Land and Soil Protection

As a result of geological survey, construction and repair works, operation of wells, pipelines and other facilities by the Gazprom Group, mechanical soil disturbance and pollution take place.

Gazprom pays constant attention to practical ways of resolving the issues of restoration and preservation of disturbed soils. Biological and technical remediation works aimed at recovery of land productivity and its economic value, landscapes preservation are conducted.

Gazprom implements comprehensive measures to improve the pipeline systems reliability that has a positive effect on the preservation of natural environment components.

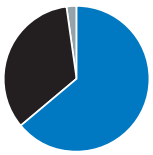
During the reporting year, the Group companies disturbed 42.16 thousand ha of land, which is 56% lower than in the previous period. 27.15 thousand ha is disturbed by PJSC Gazprom, 14.35 thousand ha is affected by Gazprom Neft Group, and 0.66 thousand ha is affected by other companies of the Group. During the year, 87.33 ha were polluted as a result of pipeline leakages at Gazprom Neft Group facilities.

Soil protection activities parameters in Gazprom Group, 2012–2017, ha

	2013	2014	2015	2016	2017
Area of disturbed lands during the year	13,065.47	15,407.40	58,054.53	27,027.45	42,162.29
including polluted areas	1,019.48	105.43	82.30	71.31	87.33
Disturbed lands restored during the year	13,977.04	12,589.34	18,220.34	42,450.24	19,600.05
including polluted areas	839.18	464.39	187.37	94.08	89.10

The share of Gazprom Group companies in indicators of disturbed lands, 2017, %

PJSC Gazprom	64
Gazprom Neft Group	34
Other activities	2



Land disturbance occurred as a result of construction, repair and geological exploration. Significant area of the land was affected due to construction of the trunk gas pipeline "Power of Siberia".

The problem of disturbed land resources is not an acute environmental issue for the Group, for rehabilitation measures are undertaken to the extent required, and no damage accumulation is noted. The majority of companies fully recover the lands disturbed during the year. Works on remediation and rehabilitation of the lands are performed at the operation sites of producing companies of the Group.

Used lands, i. e. lands where production operations causing soil damage are completed, reclamation underwent, including lands disturbed in the previous period. In 2016, 19.60 thousand ha was reclaimed, PJSC Gazprom reclaimed 14.82 thousand ha, Gazprom Neft Group restored 4.16 thousand ha, and other companies of the Group reclaimed 0.62 thousand ha.

The decrease in the reclamation volumes in 2017 is due to the completion in 2016 of large-scale land reclamation after seismic surveys at the facilities of OOO Gazprom Neft Angara.

Reclamation of lands disturbed during construction of the trunk gas pipeline "Power of Siberia" is planned to be started in 2018.

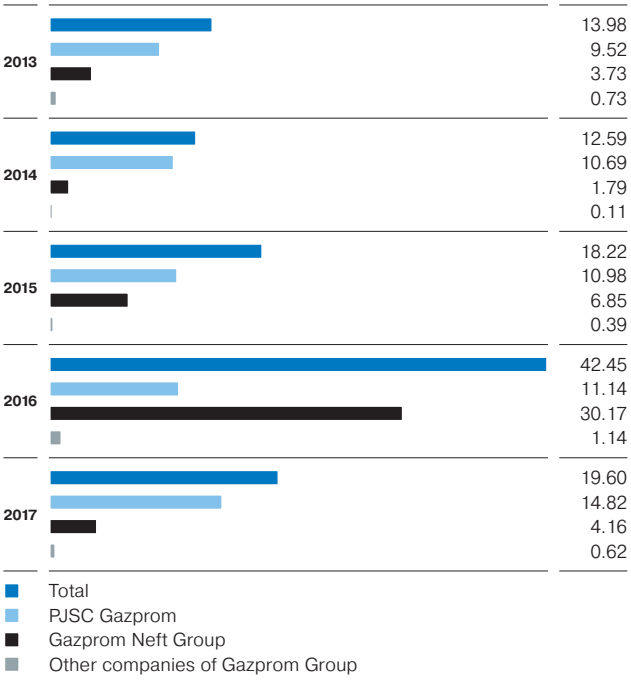
Actions necessary to restore contaminated land quality were carried out on an area of 89.10 ha, including purification and reclamation of 86.95 ha in PAO Gazprom Neft, and 2.15 ha of land contaminated in 2016 in OOO Gazprom Pererabotka.

Economic and technological restoration methods used by Gazprom are aimed at preventing development of negative erosion processes, contribute to landscapes stabilization and restoration of soil and vegetation cover. The technologies provide use of accessible materials, including secondary materials (e.g. drilling waste), geotextile, plant growth stimulants. Specially selected strains of soil microorganisms allow strengthening of topsoil, including slopes of facility embankment, increasing speed and intensity of root formation and growth of plants.

The Group companies take every precaution to prevent pollutant penetration into the soil, surface and ground waters, avoid erosion and other types of the soil degradation. The environmental monitoring and control of the Gazprom Group construction and reconstruction operations are provided for inspection of remediated soil compliance with

environmental regulations on soil state: geobotanical, agrochemical and other types of surveys. The road transport and mobile process equipment of subcontractors operating within the assigned land areas are monitored.

Dynamics of disturbed land recultivation in Gazprom Group companies, 2013– 2017, thousand ha



Works on identification and restoration of quality of lands with cumulative ecological damage due to economic activity performed by previous land users are carried out. So, within 2010–2017, Gazprom Neft Group implemented the program “Historical heritage” aimed at rehabilitation of contaminated lands. The program was successfully completed; a total amount of 1,735 ha of oil-contaminated lands of “historical heritage” were enhanced; reclamation costs amounted to RUB 2.5bn. In addition, during the period 2010–2017, Gazprom group oil restored 506 sludge pits of “historical heritage”, restoration costs amounted to RUB 3.28bn.

At that, in order to ensure contractors warranty obligations on the lands restoration, quality control of works is organized (within three years) at relevant facilities.

Comprehensive measures are implemented in Gazprom Neft Group to enhance piping system reliability: since 2014, the “Clean Territory” investment program was implemented, which includes measures for assessment, monitoring and forecasting of the pipeline systems condition. Due to the preventive replacement of potentially dangerous pipelines sections detected in the course of diagnosis, a tendency to reduce the number of leakages at field pipelines remains. Operational actions of own specialized units to localize and eliminate consequences of pipeline leaks lead to situation when the land area contaminated in the course of Gazprom Neft Group current activities does not increase.

Protection of Biodiversity

Gazprom's sustainable development includes conservation of biological and landscape diversity, habitat conservation for threatened and endangered plants and animals.

Supporting activities on the protection of threatened animals is expected from Group companies. In 2017, a total of RUB 385.70mm were invested in biodiversity conservation and natural areas preservation related activities, and conservation and reproduction of fishery resources, of them over RUB 28mm — in the latter.

Fish screens are installed at water intakes, bird protection devices are mounted on overhead power transmission lines for wildlife conservation purposes. Green planting activities are being carried out in areas affected by production facilities.

PJSC Gazprom makes contributions to noncommercial organizations: Amur Tiger Center and Amur Leopards Eurasian Center that are executing projects on preservation and population growth of threatened animal species from the Red List of Threatened Spicies of Russia (aka the Red Book).

Alongside conservation of threatened animals, PJSC Gazprom's subsidiaries finance projects implemented with the Russian Geographic Society in the Arctic, including Arctic island ecosystems monitoring, conservation of threatened marine mammal and polar bear populations in specially protected natural North East areas of the Barents Sea.

In the fulfilment of the Assigment from the President of the Russian Federation following the meating on efficient and secure exploration of the Arctic (June 5, 2014), Gazprom is implementing the Biodiversity Conservationon Program for the Gazprom Group on the basis of Flaura and Fauna List of Sustainability Indicators for Marine Ecosystems of the Russian Arctic.

The Program consists of PJSC Gazprom's Biodiversity Conservation Strategy and Action Plans for Gazprom Group projects on the Arctic continental shelf of the Russian Federation, in the internal sea waters, territorial sea and contiguous zone of the Russian Federation.

The Program is prepared involving leading research institutes of the Russian Academy of Science, Russian Arctic National Park, and the Marine Mammal Council.

OOO Gazprom Neft Shelf with its oil production on the Prirazlomnoye oil field has been carring out environmental monitoring since 2010 and implements the Atlantic Walrus Conservation Program since 2013.
In 2017, as a part of the Atlantic walrus population study and conservation activities, on-the-way ship observations, coastal studies on the walruses rookeries, aero monitoring of marine mammals, remote (satellite) observations, monitoring of walruses through autonomous photo recorders (trail cameras), as well as satellite tagging walruses and biological sampling were carried out.

Walruses' migration routes and aggregation areas were identified via satellite tags. It was found that the main aggregation and feeding area is the water area between Dolgy Island and Vaigach Island.

On Matveev and Vaigach Islands, Karpovy Islands, walrus rookeries were found thanks to ground-based observations and satellite tagging. Number of walruses on the rookeries varied from a few dozen to 1,000 animals.

During the field work on the rookery, the walruses were sampled for toxicological and genetic studies. Biological analysis and research and also toxicological and genetic studies of the samples showed no significant changes.

On-the-way ship observations on Naryan-Mar — Matveev Island — Vaygach Island route which were carried out in July 2017, confirmed the absence of marine mammals in the waters of the Prirazlomnoye license area similarly to the same time of previous years.

During the ice season (April), 19 times such marine mammals as Beluga whales, walruses, Greenlandic seals, ringed seals were aero monitored from the Nord laboratory-aircraft. All of them are flag species for this water area. The Nikolai M. Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO) was involved in this research.

Environmental monitoring and the Atlantic Walrus Conservation Program for the area of Prirazlomnaya Offshore Ice-Resistant Platform (OIRP) will continue till the end of the Prirazlomnoye oil field development.

In 2017, a large number of environmental activities on conservation and reproduction of fishery resources, including threatened species, were carried out; for detail information see subsidiaries websites. Some examples of such work are given below.

OOO Gazprom Dobycha Shelf Yuzhno-Sakhalinsk has been assessing the Sakhalin taimen population in the Nabil River and other water bodies of the Sakhalin Island, developing and implementing environmental action plans and programs for community environmental education on taimen conservation. In 2017, OOO Gazprom Dobycha shelf Yuzhno-Sakhalinsk involved Sakhalin Research Institute of Fisheries and Oceanography in the performance. The spawning areas certification, estimation of abundance and food potential for the Sakhalin taimen were performed in the operation area of the Kirinskoye gas and condensate field's onshore process system:

— promoting public awereness through awareness-rising activities, distribution of booklets, banners instalation, printed media publications and TV brodcast;
— monitoring of poaching and other activities (anti-poaching raids with the Sakhalin-Kuril territorial directorate of the Federal Agency for Fishery (aka Rosrybolovstvo).

OOO Gazprom Geologorazvedka annually implements compensatory measures on commercial fish reproduction. During 2017 summer, valuable fish juveniles were released in different regions of Russia. The solemn ceremony of Pacific salmon juveniles release took place at the Parutan Experimental Production Salmon Hatchery of Sevvostrybvod. More than 3 millions of chum salmon fingerlings grown at the hatchery for OOO Gazprom Geologorazvedka were released into the Trezubetc stream of the Paratunka River basin. 3.5 millions of Kuben nelma (a valuable species of salmon family) fish larvae were released to the Kubena river of Vologda region (the Barents sea shelf). In the Mologa River, Vologda region, more than 55 thousand of sterlet fingerling grown in OOO RusRybResursy for the company was realized.

Peled fingerlings grown at the Belsk Fish Hatchery were released to the Bratsk Reservoir, Irkutsk region. OOO NPO Sobsky Fish Hatchery's specialists released on OOO Gazprom Geologorazvedka's request peled fingerlings to the Ob River near the town of Labytnangi in Yamalo-Nenets autonomous district. In the Republic of Sakha (Yakutia), the employees of Chernyshevsky Fish Hatchery released peled larvaes into the Vilyui Reservoir, Sakhalinrybvod specialists released chum salmon juveniles to the Tym River basin in Sakhalin in the framework of OOO Gazprom Geologorazvedka's compensatory activities.

The employees of OOO Gazprom Dobycha Krasnodar together with the Directorate of Federal Supervisory Natural Resources Management Service (aka Rosprirodnadzor) for the Krasnodar Territory and the Republic of Adygea, Sochi National Park and Priazovsky State Natural Sanctuary administrations released more than 80 thousand carp juveniles into the Dolgy liman in the Slavyansky region of the Krasnodar Krai.

In July, 2017, OOO Gazprom Dobycha Nadym released into the Ob River of Irtysh fishery area of Khanty-Mansi Autonomous district-Yugra peled juveniles in the amount of 4,714 speciments to mitigate damage caused to aquatic bioresources and their habitat by exploration well construction in the Medvezhye OGCF. In September, 2017, more than 100 thousand peled juveniles were released into the Sob River to mitigate damage caused by water withdrawal from water bodies for the needs of the Bovanenkovsky OGCF and the Kharasaveyskoye GCF.

OOO Gazprom Transgaz Stavropol carries out on a regular basis activities on artificial reproduction of aquatic biological resources in the South of Russia. In 2017, more than 7,500 speciments of the Caspian salmon were released in the Baksan River in the Kabardino-Balkar Republic and the Terek River in North Ossetia-Alania. The compensatory release is a part of nature protection measures for reducing adverse impact on water bodies caused by oparations at offshoot gas pipelines to Nalchik and Tyrnyauz. The event allowed increasing a diversity of unique aquatic biological resources of the North Caucasus and expanding a salmon fishes habitat. This project involved the staff of Georgievsky Line Production Directorate of Trunk Gas Pipeline of OOO Gazprom Transgaz Stavropol, representatives of Western-Caspian territorial directorate of Rosrybolovstvo, Chegem Trout and Ardon Salmon Hatcheries.

For the fifth year in a row, OOO Gazprom Transgaz Samara usual releases over 4 thousand sterlet juveniles specifically grown for this purpose at the Kazan Svyato-Bogorodichy monastery in the Vinnovka village. This is a voluntary contribution of the company to aquatic biological resources recovery. Almost extinct Volga sterlet population is recovering gradually.

A new enclosure for a couple of the Amur tigers was opened in the Samara zoo with the support of OOO Gazprom Transgaz Samara. The Amur tigers are on the verge of extinction, there are about 500 speciments in the wild. Nowadays, one of the zoos purpose is genetic conservation of threatened species to restore populations.

In 2017, OOO Gazprom Transgaz Moscow significantly (by six times compared to 2016) increased its expenditures on biodiversity conservation and natural area preservation. Since 2012, the company has carried out charitable activities and provides charitable support to the Zablotsky Prioksko-Terrasny State Natural Biosphere Reserve located in Serpukhov district, Moscow region, including supporting the Adopt a Bison campaign. Since 2014, the company has supported the Oka State Nature Biosphere Reserve in Ryazan region. In 2014, the company won the V.I. Vernadsky national environmental award in the Environmental initiatives nomination for cooperation with the Oka Reserve.

Since 2015, OOO Gazprom Dobycha Orenburg has supported financially and organizationally the Orenburgsky State Nature Reserve's project on returning of the Przewalski's horse to its natural habitat. In 2017, the transportation of 16 Przewalski's horses from the Orenburg Central airport to the reserve was accomplished. The Red Book animals were delivered from the Hortobágy National Park (Hungary). This is the third case of purebred wild Przewalski's horses' delivery to Orenburg region in the framework of semi-wild population restoration program.

OOO Gazprom Dobycha Kuznetsk monitors the endemic of the Salair Ridge — ringed earthworm Eisenia salairica. The research is being conducted (with the Russian Geographical Society) on coal bed methane wells impact on the endemic's livelihood. The development of new production sites and territories is performed bearing in mined the obtained results. The environmental and biological livelihood monitoring area of Eisenia salairica worms was expended in 2017. Measures for conservation of the animals and plants listed in the Red Book of the Russian Federation and the Red Book of Kemerovo region were developed.

Altai Line Production Directorate of Trunk Gas Pipelines of OOO Gazprom Transgaz Tomsk in cooperation with the Ministry of Natural Resources and Environment of the Altai Krai arranged a media tour to the Lebediny Swans Wildlife Sanctuary. The event was attended by the representatives of regional media, as well as scientists-ornithologists. Using an unmanned aircraft system (UAS) which was also purchased with the gas industry support, scientists plan to obtain high resolution UAS images. These images will help ornithologists not only to conduct more accurate birds counting, but also to identify arrived swans, without disturbing them.

PJSC Gazprom executive management decisded to make contributions to the Lebediny Swans Wildlife Sanctuary and has been supporting the sanctuary every year since 2013 to the value of RUB 1.5 mm. Altaipriroda of the Ministry

of Natural Resources and Environment of the Altai Krai has received charity support from the gas industry since 2013 which helped not only permited land improvements in a unique natural sanctuary but also research on defining lake ecosystem sustainability, as well as on the expansibility of wintering birds. Allocated by the gas industry funds were supplied on meal mixture for whooper swans and fuel for clearing of the lake access road. About 750 swans flew to the lake In 2016/2017 winter: not only whooper swans, but also another species listed in the Red Book — Bewick's swans.

With OOO Gazprom Dobycha Yamburg's financial and administative support, the ecological expedition "Wildlife research in the Yamburg oil, gas and condensate field and the Paylovayakha Rivere basin" was accomplished in the Yamalo-Nenets Autonomous District (YANAO). A group of scientists from Tyumen State University studied the numerosity and distribution of birds and mammals, as well as the level of anthropogenic impact on the fauna of the Tazovsky Peninsula tundra. The main industrial facilities areas of the Yamburg oil, gas and condensate field were surveyed. As part of the study, nesting places and number of peregrine falcons, Bewick's swans, white-winged scoters and other birds were identified. The data on number and spatial distribution of the animals in areas with different anthropogenic load were obtained.

Compensatory measures for replanting of trees listed in the Red Book are carried out by JSC Gazprom Sotsinvest in the Krasnodar Territory and the Republic of Adygea.

During the year, the Gazprom Group rendered support for 80 specially protected natural areas, including the state nature reserves: the Basegi, the Bashkirsky, the Bryansky Les, the Dagestansky, the Oksky, the Prioksko-Terrassny, the V. L. Komarov Ussuriysky Natural Reserve of Far Eastern Branch of the Russian Academy of Sciences, the Yuzhno-Uralsky; national parks: the Buzuluksky Bor, the Curonian Spit, the Losinyy Ostrov, the Nechkinsky, the Plescheevo Ozero, the Sebezhsky, the Smolenskoye poozerye, the Khvalynsky, the Yugyd Va; state nature sanctuaries the Voronezhsky and the Priazovsky, as well as numerous regional and local protected areas.

Energy Saving

In 2017, PJSC Gazprom continued implementation of Energy Saving and Energy Efficiency Improvement Policy as per the Concept of OAO Gazprom Energy Saving and Energy Efficiency Improvement for 2011–2020 and energy saving and energy efficiency improvement programs.

As a result of energy saving and energy efficiency improvement programs of PJSC Gazprom in 2011–2017, actual saving of fuel and energy resources comprised 18.9mm t. c.e., including: 15.8bcm of natural gas; 1.8bn kWh of electric energy; 1.5mm Gcal of heat energy.

Energy saving and energy efficiency increase objectives fulfillment for the PJCS Gazprom for the period 2011–2020

Cumulative sum of natural gas saving, bcm	
2011	2.4
2012	4.2
2013	6.1
2014	8.2
2015	10.9
2016	12.8
2017	15.8

Cumulative sum of heating energy saving, thousand Gcal	
2011	102.9
2012	344.7
2013	562.6
2014	799.9
2015	1,004.9
2016	1,259.8
2017	1,528.2

Cumulative sum of electrical energy saving, mmkWh	
2011	194.1
2012	437.0
2013	742.9
2014	997.5
2015	1,258.1
2016	1,518.1
2017	1,849.6

Cumulative sum of Total FER saving, mm t c.e	
2011	2.8
2012	5.0
2013	7.3
2014	9.8
2015	12.5
2016	15.3
2017	18.9

Energy saving and energy efficiency increase reached objectives fulfillment for the PJSC Gazprom the period 2011–2020

Fuel and power resources saving	Decrease of natural gas specific consumption for APN during transportation	Greenhouse gases reduction
Energy saving potential of PJSC Gazprom in 2011–2020 — 28.2mm t c.e.	Planned annual reduction previous year — not less than 1.2%.	Planned reduction for the period up to 2020 is 48.6mm tonnes.
Actual saving in the period of 2011–2017 — 18.9mm t c.e.	Actual reached annual saving in the period of 2011–2017 — 3.1%.	Actual achieved reduction in the 2011–2017 period is 20.1mm tonnes.
Objective fulfillment — 67.0%	Objective fulfillment — The objective is achieved.	Objective fulfillment — 58.6%.

Main areas of natural gas saving in a gas pipelines, 2017, %

Reduction of gas consumption for process needs of CW, CS	41.0
Optimization of operating modes of GTS process facilities	19.8
Reconstruction and upgrade of CW, CS, LP, GDS	19.4
Improvement of GPU technical state by means of repair	10.6
Reduction of gas losses at the CS, LP, GDS facilities	5.6
Other activities	3.6

Main areas of energy saving in a gas pipelines, 2017, %

Optimization of operating modes of electric equipment	40.8
Management operational arrangements	25.4
Increasing the equipment technical condition by means of repair	15.4
Introduction of variable frequency drives and electric engine cushion start	8.1
Other activities	10.3

Based on the 2017 results, actual specific rate of FER consumption (natural gas and electrical energy) for gas pipeline transportation amounted to 27.30kg c.e./mmcm·km, which is 23.2% lower than the target value of specific FER consumption, 35.57kg c.e./mmcm·km, defined for 2017 by the Order No 587e of the Federal Service for Tariffs, dated 31.03.2015.

Increase in the specific cost indicators of FER and gas for own technological needs is caused by growth in gas product transportation and gas pressurizing into underground gas storage. This required use of additional capacities for gas compression and fuel gas consumption. At that, data on comparable work performed in the past years show a decrease in the specific consumption when comparing the same or similar gas product transportation.

The biggest contribution in FER saving (84.4%) was achieved in trunk gas pipeline transportation sector due to a large variety of energysaving actions. In 2017, the practice of vented gas recovery technologies in repair operations, including the use of mobile compressor stations, continued.

Energy saving and energy efficiency improvement targets fulfilment of PJSC Gazprom for the period of 2011–2020 in gas transportation

Gas specific consumption and losses at APN, 2011–2017, cubicmeter/mmcm·km

2011	34.15
2012	31.30
2013	30.33
2014	26.68
2015	26.30
2016*	25.21
2017	27.30

FER Specific consumption, 2011–2017, kg c.e./mmcm·km

2011	27.80
2012	25.50
2013	24.80
2014	21.80
2015	21.67
2016*	20.79
2017	22.10

* Since 2016 it is calculated with account of commercial transportation operations of North-European gas pipeline.

Results of the PJSC Gazprom's program of energy saving and energy efficiency improve in 2017

	Natural gas, mmcm	Electric energy, mm kWh	Thermal energy, thousand Gkal
Gas, condensate and oil production	362.8	28.1	11.6
Gas transportation	2,579.8	222.7	60.1
Underground gas storage	16.6	9.4	0.0
Natural gas, condensate and oil processing	39.2	56.0	193.0
Distribution of gas	14.5	8.5	3.6
Non-core activity	0.6	6.7	0.2
Total	3,013.5	331.4	268.4
Total, thousand t c.e.	3,480.6	107.7	38.4

OOO Gazprom Transgaz Yugorsk continues preparation and implementation of technologies of end gas heat recovery at compressor stations, and OOO Gazprom Transgaz Tchaikovsky continues development of turbo expander technologies at gas distribution stations for electric energy generation. Both projects are implemented using energy service contracts.

Work on implementing of ISO 50001 requirements are carried out with subsequent certification of the energy efficiency management system in the main production subsidiaries and PJSC Gazprom. The system certification for compliance with ISO 50001 will allow the Company to obtain additional organizational and image advantages: to more systematically and effectively realize the energy saving potential in the production subsidiaries, to demonstrate compliance with the practices of the world's leading companies in the field of energy- and resource efficiency, to confirm commitment to the principles of sustainable development and to support national and international legislative initiatives in the field of energy efficiency and environmental impact reduction, including those in the field of climate change.

Autonomous power plants, such as gas turbine power plants, including those fueled with APG, are used for power supply to Gazprom Group facilities located in hard-to-reach territories.

Energy policy that forms the basis of the energy management system is applied by PJSC Gazprom Neft and it is gradually introduced at the company's enterprises since 2011. The PJSC Gazprom Neft energy management system meets requirements of the international standard ISO 50001:2011. The main instrument ensuring planned energy efficiency indicators of the company is the Program of energy saving and increase of energy efficiency.

The energy efficiency program in upstream sector was implemented in 2017 exceeding the target. Energy savings amounted to 466mm kWh (RUB 1,500mm). The key indicator of the energy efficiency of the upstream sector — specific electricity consumption for liquid product production was 28.98 kWh per tonne, 1.4% less than planned for the year. In the reporting year, a program for reliability improvement, modernization of electrical equipment and networks was developed and implemented in the upstream sector; the Program included 102 kinds of activity. These measures will make it possible to significantly reduced oil shortages caused by emergency power outages, compared to 2016.

In 2017, the midstream companies continued implementation of measures stipulated in the comprehensive energy saving program. As a result, the fuel and energy resources saving in the midstream companies exceeded the targets and was amounted to: thermal energy — 279.4 thousand Gcal; fuel — 137.5 thousand t.c.e.; electrical energy — 18.9mm kWh.

Consumption of fuel and energy resources by PO Prirazlomnoye (offshore) amounted to: electricity — 177.47mm kWh, heat energy — 27.88 Gcal, fuel — 74.33 thousand t.c.e.

In general, energy-saving activity allowed saving of 7.8 TJ of thermal and electric energy and fuel. The economical benefit exceeded the targets and amounted to RUB 929.7mm.

In 2017, Gazprom Neft aero and Gazprom Neft bituminiye materialy entered the energy saving program. Thus, the energy saving program combines energy-saving actions of 49 production assets of the midstream companies. Slavneft-YANOS and Omsk Lubricants plant were included in the perimeter of the unified Energy management system (EnMS) of the midstream companies.

Modernization and repair of key Moscow Refinery facilities in 2017 allowed reducing fuel consumption by 2.1%, thermal energy — by 0.9%. The main contribution to the reduction of fuel consumption was made by modernization of technological furnaces ELOU-AVT-6, which is responsible for 19% of the total energy consumption of the plant. In addition to this, the entire factory lighting system applies energy-saving technology.

Gazprom Neft's energy and technical policy in the field of energy efficiency is aimed at improving the energy efficiency of enterprises while ensuring the required level of reliability, safety and productivity, as well as reducing an adverse impact on the environment and reducing consumption of irreplaceable energy resources.

Indicators of energy efficiency and saving program inplementation, PAO Gazprom Neft, 2017

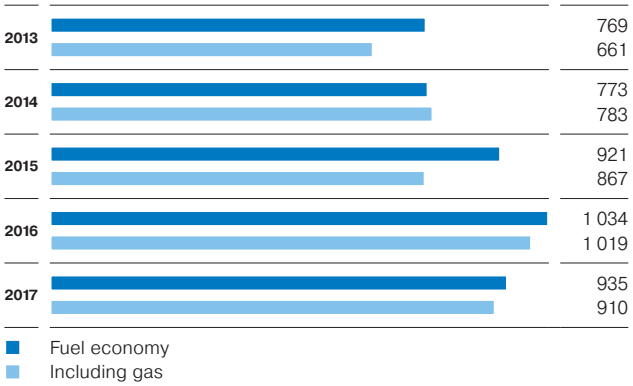
	Exploration and Production Unit	Logistics, Processing and Sales Unit	Prirazlomnoye production facility (Shelf)	Total
FER consumption				
Electrical energy, mm kWh	6,380	3,236	179	9,795
Heat energy, thousand Gcal	268	15,531	28	15,827
Fuel, thousand t c.e.	482,845	2,944	74	485,863
Fuel and power resources saving				
Electrical energy, mm kWh	363	18.9	0.308	382.2
Heat energy, thousand Gcal	0	279.4	0	279.4
Fuel, thousand t c.e.	1.4	137.5	0	138.9

All Gazprom Energoholding companies have developed energy efficiency and energy saving policy documents in accordance with the legislative requirements. Medium-term energy efficiency programs are accepted and annually updated in PAO MosEnergo, PAO MOEK and PAO TGC-1. PAO OGK-2 has been implementing the operational efficiency improvement program (Project "Efficiency") since 2013; the Program includes measures in the field of energy efficiency. The main issues of the programs — implementation of projects on technical re-equipment and reconstruction (start-up of new facilities); improvement of the equipment efficiency (within the framework of capital and medium repairs), other organizational and technical measures (modernization of lighting systems, etc.); energy surveys, development and application of methodological documents based on the principles of rational use of energy resources.

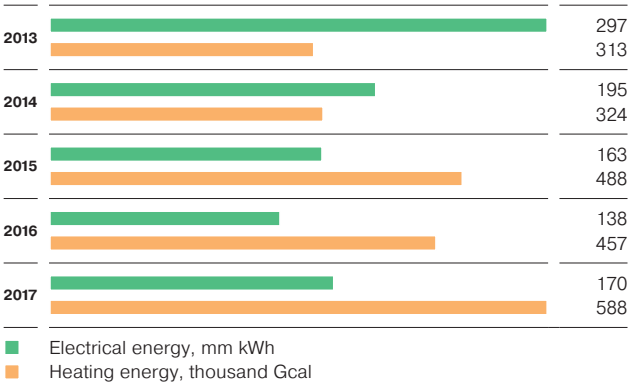
Results of implementation of energy saving and energy efficiency improvement programs in Gazprom Energy, 2017

	Fuel saving, thousand t c.e.		Electrical energy saving, mm kW·h	Heat energy saving, thousand Gcal
	total	including natural gas		
PAO Mosenergo	900.93	885.78	565.28	87.62
TGK-1 PJSC	11.05	11.04	0.29	0
OGK-2 PJSC	23.03	13.64	22.13	7.39
PAO MPIC	0.15	0.15	0	75.44
Total	935.16	910.61	587.70	170.45

Dynamics of fuel economy in Gazprom Energoholding, 2013–2017, thousand t c.e.



Dynamics of electric and heating energy economy in Gazprom Energoholding, 2013–2017



Use of Renewable and Secondary Sources of Energy

Gazprom Group supports use of alternative energy sources where it is economically and technically feasible, particularly in far regions or technologically isolated areas. It complies with provisions of the Federal Law No. 261FZ dated November 23, 2009 “On energy saving and energy efficiency improvement, and on modification of some legislative acts of the Russian Federation”.

Gazprom Group utilizes renewable energy sources (RES) and secondary energy sources (SES) for energy generation for auxiliary needs and sale to thirdparty consumers. Solar and wind generators, gas flow heat and energy converters into electric energy are widely used at the production facilities, trunk gas piplines and gas distribution networks to provide current power supply to telemetry systems, cathodic protection of trunk gas piplines, lighting, etc.

13.72 billion kWh of electric power was produced by OOO TGC-1 (Gazprom Energoholding) and OOO Nugush hydroengineering complex (Gazprom Neftekhim Salavat) by means of hydraulic power generation. The main volume of production falls on the TGC-1 hydroelectric power plants which make a significant contribution to the “green” energy of the North-West Federal district of Russia.

In 2017, the Gazprom Group used, excluding hydro units, 1,959 power plants based on SES and RES, such as turbo-expanders, thermoelectric generators, solar modules and batteries, wind turbines. The total volume of electric power generated by these power plants is amounted to 471.47 thousand kWh.

Indicators of electric energy generation with renewable and secondary sources, Gazprom Group, 2017

Energy generation type	Electric energy produced, kWh		Number of plants based on RES and SES, pcs	
	2016	2017	2016	2017
All types of RES and SES	13,036,783,055.28	13,723,908,386.01	1,907	2,077
including PJSC Gazprom	297,211.13	362,391.59	1,329	1,423
Turbo expander plants	38,470.46	143,915.52	10	20
including PJSC Gazprom	38,470.46	143,915.52	10	20
Heat and electric energy generation	774.14	2,670.00	672	719
including PJSC Gazprom	774.14	2,670.00	672	719
Wind and Solar generation	321,235.68	324,887.49	1,107	1,220
including PJSC Gazprom	257,966.53	215,806.07	647	684
OOO Mezhregiongaz	63,050.15	108,862.42	459	535
OAO Severneftegazprom	219.00	219.00	1	1
Hydrogeneration (hydroturbines, hydroaggregates)	13,036,422,575.00	13,723,436,913.00	118	118
including Gazprom Energoholding	13,007,579,963.00	13,685,902,140.00	115	115
Gazprom Neftekhim Salavat	28,842,612.00	37,534,773.00	3	3

Gazprom Neft tests in Serbia technologies of power generation using renewable energy sources: Gazprom Neft implements several successful projects in the field of geothermal energy and, together with Energowind NIS, constructs a wind power plant in Plandište.

In 2017, AO Gazprom Neft Yamal started pilot project on the combined wind and solar power plant YURTA with a capacity of 47.5 kW. The power plant consisting of two wind turbines, 30 solar panels and battery pack is installed at the acceptance point of the Novoportoskoye field near the village of Mys Kamenny. The plant is intended for electric power supply to the first block of control system which is responsible for work of the pressure pipeline connecting central collecting oil point with acceptance point of the production field. The plant work will significantly reduce the electric power cost for remote from the network infrastructure facilities by eliminating the need of power lines construction.

Indicators of secondary and renewable energy source utilization in PJSC Gazprom, 2015–2017

	Number of plants, pcs
2015	1,210
2016	1,329
2017	1,423
	Electric energy produced, kWh
2015	264,635
2016	297,211
2017	362,392

Parameters of Environmental Activity and Environmental Impact of PJSC Gazprom Abroad

Republic of Armenia

ZAO Gazprom Armenia is a 100% subsidiary of PJSC Gazprom, engaged in transportation, storage, processing, distribution and selling of natural gas, electric power generation and selling of electric energy in the territory of the Republic of Armenia.

In 2017, total pollutant emissions into the atmospheric air comprised 88.61 thousand tonnes which is 5.7% higher than in previous reporting year due to increased of gas production in TGP and UGFS and electric power generation growth. Greenhouse gas emissions from gas business facilities and power industry comprised 2.44mm tonnes of CO_2-equivalent.

Water discharge to surface water bodies in the reporting year comprised 115.00mcm, 100% of which was represented by effluents treated to standard quality.

During the year, 0.124 thousand tonnes of waste was produced, 93% of which belongs to environmental hazard classes IV and V.

In 2017, increase in fees for adverse impact on the environment by 31.7% was due to the increase in total emissions of pollutants.

In 2017, one accident without natural gas ignition occurred which was caused by gas pipeline deformation with formation of through cracks due to landslide at 52 kilometer of Kazakh-Yerevan trunk pipeline (Du — 1000). The gas loss was 645.746mcmd.

Inspections of state environmental control (supervision) bodies were not carried out in the reporting year.

Main indicators of environment protection by ZAO Gazprom Armenia, 2014–2017

Indicators	2014	2015	2016	2017
Total air pollutant emissions, thousand tonnes	86.13	80.07	83.80	88.61
Greenhouse gas emissions, mm tonnes of CO_2-equivalent*	–	–	2.44	2.61
Water discharge to surface water bodies, mcm	265.70	105.00	122.00	115.00
including clean and treated as per standards	265.70	105.00	122.00	115.00
Produced waste amount, thousand tonnes	0.13	0.36	0.19	0.12
Disturbed lands as of the end of the year, ha	0	0	0	0
Charges for negative environment impact, RUB thousand	301.65	360.27	449.85	592.42
Share of payments within established rates in the total payment amount, %	100	100	99.99	100

* Greenhouse gas emissions were calculated according to the Methodology Guidance and Procedure Manual on Greenhouse Gas Emissions Volumes Evaluation by Business and Other Organizations Performing Activities in the Russian Federation approved by the Order of the Ministry of Natural Resources and Environment of the Russian Federation No. 300 of June 30, 2015.

Republic of Belarus

OAO Gazprom Transgaz Belarus is a 100% subsidiary of PJSC Gazprom involved in natural gas transportation and storage in the Republic of Belarus. The company is included in the scope of the PJSC Gazprom Environmental Management System.

In December 2017, the certification body (Republican unitary enterprise “Belarusian state Institute of Metrology”) conducted a recertification audit in the company which confirmed compliance of OOO Gazprom Transgaz Belarus EMS with the requirements of the state standard of the Republic of Belarus STB ISO 14001–2017, and issued a certificate of conformity.

Total pollutant emissions into the atmospheric air comprised 26.98 thousand tonnes, which is 13.5% more than in 2016. This is related to increase in methane emissions when carrying out technological operations, increase in gas pressurizing to and extraction from underground storage facilities, as well as due to standard works during gas storage according to requirements of regulations. The total volume of emissions was within the established standards.

Effluent discharge into surface water bodies comprised 142.94mcm, which is more than in 2016 by 46.6%; this is due to the uneven precipitation. 100% of the discharges were clean or treated as per standards.

During the year, 5.96 thousand tonnes of waste were produced at the facilities of OOO Gazprom Transgaz Belarus, which is 44% more than in 2016. This is related to increase in formation of scrap metal as a result of repair work at the line part of gas pipelines and change in the order of waste accounting.

During the year, 58.988 ha of lands were disturbed which is 8 times more than in 2016. This is due to enlargement of repair work area at the line part of gas pipelines. 59 ha of lands were recovered (0.014 ha — disturbed in 2016).

A fee for adverse impact on the environment amounted to RUB 24.61mm and was within the established standards. Increase in the fee for adverse impact on the environment compared to 2016 is the result of increase in the pollutants mass emitted into the air, as well as the result of termination in 2017, after three years from the environmental certificate of conformity receipt date, of application of a decreasing coefficient 0.9 to the rates of the environmental tax.

Implementation of the Energy saving program of OAO Gazprom Transgaz Belarus allowed preventing release of 11.5 thousand methane into the air at works on line part of trunk gas pipeline repair.

In 2017, amount of payment for adverse impact on the environment increased due to increase in the amount of emissions, discharges of wastewater and solid waste.

No inspections of the company by the territorial bodies of the Ministry of natural resources and environmental protection of the Republic of Belarus were carried out in the reporting year.

Main indicators of environment protection by OAO Gazprom transgaz Belarus, 2013–2017

Indicators	2014	2015	2016	2017
Total air pollutant emissions, thousand tonnes	25.70	24.85	23.78	26.98
Greenhouse gas emissions, mm tonnes of CO_2-equivalent*	0.29	0.32	0.30	0.38
Water discharge to surface water bodies, mcm	37.47	167.42	97.48	142.94
including clean and treated as per standards	37.47	167.42	97.48	142.94
Produced waste amount, thousand tonnes	2.29	5.00	4.13	5.96
Disturbed lands as of the end of the year, ha	0	14	0	0
Charges for negative environment impact, RUB thousand	30,441.11	25,600.88	22,116.42	24,608.43
Share of payments within established rates in the total payment amount, %	100	100	100	100

* NG emissions were calculated in compliance with the technical code of common practice "Environment protection and use of natural resources". Climate. Greenhouse gas emissions and absorption. Rules of emissions calculation with implemented energy saving actions, renewable energy sources» approved by Decree No. 13-T of the Ministry of Natural Resources and Environment Protection of the Republic of Belarus dated September 5, 2011 "Approval and introduction of technical laws and regulations and amendments of technical laws and regulations».

Kyrgyz Republic

OsOO Gazprom Kyrgyzstan is a 100% PJSC Gazprom subsidiary operating in transportation, storage, distribution and marketing selling of natural gas at the domestic market of the Republic of Kyrgyzstan.

In 2016, total pollutant emissions into the atmospheric air comprised 1.49 thousand tonnes, GHG — 0.04mm tonnes of CO_2-equivalent. A significant decrease compared to 2016 is due to the completion of pneumatic tests in TGP Tashkent — Bishkek — Almaty in Bukhara gas-bearing region.

In 2017, water consumption volume decreased by 42%, which is related with decrease in water intake from surface water bodies and with rational use of water and renewal of water use agreements with authorized state bodies. Total wastewater discharges amounted to 22.22mcm (2016 — 23.80mcm). The water disposal was carried out mainly to utility systems, discharges to surface water objects were not carried out. Purified water is also used for greenery watering and dedusting during construction.

Water disposal to other systems (12% of the total water disposal) — accumulators (septic tanks) installed in branches where there is no city sewer network. The water disposal increase is due to improvement of accounting in the field of water consumption and wastewater disposal.

The generated waste volume amounted to 156.153 thousand tonnes.

In the reporting year, the disturbed area amounted to 411.24 ha. This is land in the area of trunk gas pipeline construction in Bukhara gas-bearing region — Tashkent — Bishkek — Almaty, reconstruction of gas distribution station (GDS) and measuring unit "Chuy" in 2016. Lands restoration is planned for 2018.

Payment for adverse impact on the environment was carried out within the established standards and amounted to RUB 63.84 thousand.

Expenditures for operational environmental control and monitoring were RUB 669.78 thousand (in 2016 — RUB 101.87 thousand). In 2017, environmental monitoring of completed constructed and reconstructed investment facilities was carried out: 1-st and 2-nd stage of trunk gas pipeline in Bukhara gas-bearing area — Tashkent — Bishkek — Almaty, gas distribution station "Sokuluk" and "Bishkek-2", NGV refill station in Leninskoye, measuring unit "Chuy".

Laboratory studies at the OsOO Gazprom Kyrgyzstan facilities are conducted jointly with the laboratory of environmental monitoring of the State Environmental Protection Agency under the government of the Kyrgyz Republic. MPC was not exceeded.

In 2017, the state supervisory bodies in the field of environmental protection of the Kyrgyz Republic conducted six inspections at the facilities of OsOO Gazprom Kyrgyzstan. As a result of the inspections, three violations were revealed and were timely eliminated, no penalties were imposed.

Main indicators of environment protection by OSOO Gazprom Kyrgyzstan, 2014–2016

Indicators	2014	2015	2016	2017
Total air pollutant emissions, thousand tonnes	1,67*	1,88*	13,52	1,49
Greenhouse gas emissions, mm tonnes of CO_2-equivalent**	–	–	0,33	0,04
Water discharge to surface water bodies, mcm	0	0	0	0
including clean and treated as per standards	0	0	0	0
Produced waste amount, thousand tonnes	0,16	0,16	0,14	0,16
Disturbed lands as of the end of the year, ha	0	0	0	411,24
Charges for negative environment impact, RUB thousand	41,32	166,95	61,75	63,84
Share of payments within established rates in the total payment amount, %	100	100	100	100

* Without account of process loss of natural gas.
** Greenhouse gas emissions were calculated according to the Methodology Guidance and Procedure Manual on Greenhouse Gas Emissions Volumes Evaluation by Business and Other Organizations Performing Activities in the Russian Federation approved by the Order of the Ministry of Natural Resources and Environment of the Russian Federation No. 300 of June 30, 2015.

Non-CIS countries

Gazprom EP International B.V. is a PJSC Gazprom operator of projects on exploration and development of hydrocarbon deposits outside the Russian Federation. Realizing its high responsibility to partners and communities of countries where the Company operates, Gazprom EP International B.V. takes all measures required to protect environment and health of employees, keeping to the highest environmental standards. The company makes a lot of effort to implement technological and scientific innovations aimed, in particular, at minimizing the environmental impact.

Currently the company runs activities in 16 CIS and Non-CIS countries and sees its mission as facilitating economic development and strengthening the energy potential of its partners by offering a range of highquality services: geological exploration, drilling, and construction of pipelines, compressor stations, and many other things.

In 2017, Gazprom EP International B.V. companies performed production operations in People's Republic of Bangladesh; in all other countries of operations Gazprom EP International B.V. runs activities in the form of representative offices.

Bangladesh

Gazprom EP International B.V. is the General Contractor for construction of wells in the Bengal oil and gas basin, at the Shahbazpur field located in the Bola district of the Barisal administrative region. The operator for this Project is the BAPEX company — a subsidiary of Petrobangla, Bangladesh state oil and gas Corporation.

In 2017, in the framework of the Project, exploration wells Shahbazpur East-1 and North Bola-1 were drilled. The well construction was conducted in compliance with the legislation of Bangladesh in the field of environmental protection and use of natural resources which established rules and regulations for drilling. According to the requirements of the legislation, the drilling water sludge from East Shahbazpur — 1 and North Bola — 1 wells was taken out for further utilization to a specially designated landfill on the Bola Island.

During 2017, in order to reduce the adverse impact of drilling operations on the environment, the drilling contractor Eriell Oilfield services B. V. and service contractors carried out a set of actions to minimize the impact on the areas surrounding the drilling sites. Prior to the start of work on the well construction, emergency response plans were developed and approved, including measures to localize and eliminate spills of hydrocarbons, reagents, drilling fluids, and other reservoir fluids. According to the project documentation, waterproofing of production sites, places of facilities for storage of materials, reagents, drilling mud, collecting industrial and household waste, sewage, sludge, and also waterproofing of drilling sites perimeter was carried out. In order to eliminate the possibility of groundwater and soil contamination with liquid drilling wastes, metal trays were installed for the wastes collection and transportation to the slurry barn. Due to very high seasonal rainfall, regular removal of excess rainwater from the slurry pits was organized by pumping out into the transport cisterns and removal from the work sites. Regular checks of integrity of the waterproof protective anti-filtration screen in slurry barns were carried out.

For all types of industrial, domestic and medical waste, separate collection and transfer to the relevant local licensed organizations was organized.

Measures for preventing of adverse environmental impacts from well construction also included regular discussion on environmental safety issues during production meetings and on-the-job training. Admission of contractors' employees to work was provided upon availability of a certificate of compulsory training under the Rig Pass program, which includes information on management of industrial and environmental risks. These issues were discussed with employees during introductory briefings before the work start. The drilling contractor included workers training on oil products spills elimination into the program of weekly training sessions on actions in case of emergency situations.

On April 14, 2017, the Chairman of the Management Board of PJSC Gazprom A. Miller and Minister of Foreign Affairs of the People's Republic of Bangladesh Abul Hassan Mahmud Ali held a working meeting in Moscow. The parties praised the work of Gazprom in the territory of the Republic and agreed to continue implementation of the contract between Gazprom and Petrobangla.

Preventing Negative Impact on the Environment

Environmental Assessment of Projects

According to the requirements of Russian and international laws, the Gazprom Group companies perform environmental assessment of planned business activities at all the investment life cycle stages — from and investment idea to construction projects.

Since 1994, PJSC Gazprom provides corporate expert review before submitting the documents to the state expert review and state environmental expert review (for facilities specified in the Federal Law No. 174-FZ Concerning Environmental Review dated November 23, 1995).

The corporate environmental review procedure is governed by the STO Gazprom 2-2.1-031-2005 "Regulations on the review of preliminary and detailed project design documentation in OAO Gazprom".

The review of the design object is carried out in the frame of corporate expertise to verify the compliance of pre-project and project materials with the requirements of the legislative, regulatory documents and corporate standards in the field of environmental protection, energy saving and energy efficiency.

The purpose of corporate expertise is to improve documentation quality in terms of adoption of modern environmental and energy-efficient solutions aimed at reducing environmental risks in the projects implementation.

In 2017, as part of the corporate environmental assessment, technical specifications for design and technical requirements for 305 construction, reconstruction and technical re-equipment facilities, as well as pre-design and design documentation for 130 constructing, reconstructing and re-equipping facilities were examined:

— Investment plan for development of hydrocarbon transportation system from the Yamal, Gydan and the adjacent shelf of the Kara sea;
— Reconstruction of existing and construction of new facilities of Kaliningrad UGS water-brine complex, water intake and brine discharge into the Baltic sea and bringing it up to the target active volume of 800mmcm;
— Trunk gas pipeline "Power of Siberia". Stage 4.3. Section from Blagoveshchensk to the border with China;
— Development of the Kirinskoye gas-condensate field (correction 2).

Documentation for construction and reconstruction facilities of TGP and UGS facilities, fields re-equipping and expansion of the UGSS was examined. The most significant projects among them are:

— Trunk gas pipeline "Power of Siberia" (the trunk gas pipeline section Belogorsk — Blagoveshchensk, Zeyskaya CS, Saldykelskaya, Olekminskaya, Amginskaya, Nimnyrskaya, Nagornaya, Skovorodinskaya, Sivakinskaya, and also methanol job work sites and warehouses at CSs);
— Mozdok-Grozny trunk gas pipeline;
— Operating gas wells of the Chayadinskoye oil and gas condensate field for construction at "Production drilling at the field", Supplement No. 1;
— Technical re-equipment of gas and gas condensate wells of the Urengoy OGCF;
— Amur gas processing plant;
— Additional arrangement of Urengoy area, including Tab-Yakhinskaya section of complex gas treatment unit UKPG-10;
— Reconstruction of the Komsomolskoye gas field (Stage 2);
— Group working project for construction of R3, R4 wells at the Kirinskoye gas condensate field using mobile floating drilling rig, Supplement No. 1;
— Substantiation of investments in reconstruction of gas transportation and gas distribution system facilities in Tambov region;
— Substantiation of investments in construction of gas pipeline branch Yuzhno-Balykskaya CS — Nefteyugansk;
— Substantiation of investments in reconstruction of Rylsk GDS, Kursk region;
— Arrangement of Berriasian-Valanginian deposits in Nadyn area of Medvezhye oil and gas condensate field.

In 2017, in the frame of Nord Stream-2 project, the final report on environmental impact assessment (EIA) was prepared and approved, public hearings were held and state environmental expertise of the project documentation was performed. All procedures were carried out in accordance with the requirements of the legislation and other regulatory legal acts of the Russian Federation which regulate natural resources management, environmental safety and investment activities. In addition to the public hearings, Nord Stream-2 AG company (the project operator), in accordance with the international requirements, held consultations with nongovernmental organizations, experts, local communities in formats of round tables, individual expert meetings, focus-group workshops, group meetings with the population.

All comments provided during the EIA procedure and public hearings, answers and explanations of customer and project documentation developer were included into the books of public discussions and are a part of the documentation submitted for the state environmental expertise.

The project documentation includes a comprehensive operational environmental monitoring and control program for the marine section for the period of construction and operation and for the offshore sections of the pipeline for the period of construction and operation. The program is developed in accordance with the requirements of the legislation of the Russian Federation, as well as provisions of international environmental law, not contradicting the legislation of Russia.

Nord Stream-2 project is based on the experience of design, construction and operation of Nord Stream pipeline which became a benchmark in environmental protection, technical design and safety. More detailed and constantly updated information can be found at the websites: www.nord-stream.com и www.nord-stream2.com.

TurkStream is a new export pipeline from Russia to Turkey via the Black Sea. The first line of the pipeline is intended for gas supply to Turkish consumers, the second — for gas supply to southern and south-eastern Europe.

On 2 October, 2017, the Ministry of environment and urban planning of Turkey announced approval of the final EIA report for TurkStream offshore gas pipeline project.

EIA materials include information on potential impact of TurkStream offshore gas pipeline on the environment and social sphere. The report gives recommendations on actions for reducing the pipeline potential impact and enhancing positive effect of the project.

When preparing the EIA, field surveys were conducted to identify, assess and document all aspects of the potential environmental and social impacts of the project. The assessment includes consultations with various interested parties in Turkey, including government experts, representatives of local society and fishing industry.

The EIA report for Russian section of the offshore gas pipeline was approved as a part of the South Stream offshore gas pipeline project. Activities to enhance the benefits and compensate for possible impacts included into this EIA report will be implemented in the TurkStream project.

More information can be found on the website: www.turkstream.info.

Operational Environmental Monitoring and Control

Operational environmental control is performed in each subsidiary of Gazprom Group. In addition, Environmental Inspection Service of PJSC Gazprom monitors implementation of environment protection legislation, corporate standards and rules in the field of Environment Protection by subsidiaries and contractors, and performs internal audits of the EMS of PJSC Gazprom's subsidiaries. Corporate environmental control at the facilities of PJSC Gazprom is performed according to corporate standard STO Gazprom 2-1.19-275-2008 "Environment protection at enterprises of PJSC Gazprom. Operational Environmental Control. General requirements".

PJSC Gazprom is the only Russian oil and gas company having its own Environmental inspection.

In 2017, according to the approved schedule, the Gazprom Environmental Inspection Service performed in PJSC Gazprom subsidiaries and organizations 356 inspections of compliance with environment protection legislation and internal audits, including 271 — at operation facilities, 85 — at investment construction and reconstruction facilities.

Following companies were inspected: 10 gas companies, 18 gas transport companies (including OAO Gazprom Transgaz Belarus), OOO Gazprom UGS, OOO Gazprom Pererabotka, OOO Gazprom Energo, as well as 34 other subsidiaries (OOO Gazprom Armenia, OOO Gazprom Kyrgyzstan, OOO Gazprom trans, etc.), customers and general contractors engaged in work at the most important construction and reconstruction facilities of the UGSS (OOO Gazprom Invest, OOO Gazprom Tsentrremont, OOO Gazprom Socinvest, OOO Stroygazconsulting, OOO Stroygazmontazh, OOO StroyTransgaz, etc.).

In accordance with the Ecological inspection schedule of work, 193 internal audits of EMS of PJSC Gazprom subsidiaries structural subdivisions were performed in 30 subsidiaries of PJSC Gazprom, this was combined with inspection of environmental legislation requirements observance.

Results of all assessments with analysis of results and recommendations for improvement of environmental activities were brought to the management of the audited organizations; measures to eliminate and prevent violations were worked out. An indicator of violation elimination possibility within the prescribed period was 79%.

In order to ensure construction and operation environmental safety of the production facilities, Gazprom Group companies impose strict requirements on their contractors. Inspections of implementation of environmental measures planned for the construction and reconstruction projects are carried out within operation environmental monitoring (OEM). The OEM system of Gazprom Group use high level technical equipment and is in constant development. Rules, procedure and features for OEM systems design and implementation at various production facilities are regulated by a number of industry and departmental regulations, including standards of the organization.

Gazprom Group's OEM system includes stationary and mobile laboratories, meteorological and aerological stations, automated control posts, and observation wells. This makes it possible to control pollutant emissions into the atmospheric air from organized sources; quality of atmospheric air at the border of sanitary protection zones and in settlements; noise; radiation background; quality of surface water and ground water, bottom sediments; quality of drinking water supply sources; state of geological environment, soil and snow cover; solid waste and waste waters.

If specially protected natural areas (SPNA) or objects of special ecological status are located in the zone of influence of economic activity, Gazprom Group includes into OEM programs relevant observations of their condition.

To confirm absence of adverse impact of drilling waste disposal facilities on the environment, Sakhalin Energy Investment Company Ltd., carried out monitoring of the bottom seawater layer, bottom sediments and benthic communities. Based on the results of waste disposal facilities monitoring in 2017, Rosprirodnadzor made decision on absence of adverse impact of drilling waste depositing.

OOO Gazprom Dobycha Krasnodar continued monitoring of the water area condition in the Taganrog Bay of the Azov Sea and quality of marine waters. OOO Gazprom Flot carries out monitoring of the water area at fleet base in the Kola Bay, and also monitoring of the water area at winter base for semi-submersible drilling rigs.

In the area of the Prirazlomnaya platform, in connection with the development of the Novoportovskoye OGCF, OEM of marine environment and atmospheric air is carried out. Monitoring of natural environment components of the Novoportovsky license area, oil receiving point at Mys Kamenny, Gulf of Ob in the area of the Arctic terminal facilities for year-round oil export, Yamal flora and fauna is carried out. The results of the monitoring conducted in 2017 indicate that there is no adverse impact of economic activities on flora and fauna. The species diversity in communities was at a high enough level.

To assess the environment condition, to identify environmental impact of production facilities and to develop measures to eliminate or reduce the impact, Sakhalin Energy Investment Company Ltd. has implemented a number of local environmental monitoring and biodiversity conservation programs. Activities aimed to ecological monitoring and biodiversity conservation were carried out in the following areas: monitoring of river ecosystems; monitoring of flora and vegetation; monitoring of wetlands; monitoring of protected bird species; monitoring of Steller's sea eagle; ballast water control in the coastal zone of the Aniva Bay in the area of production complex Prigorodnoye; monitoring of gray whales.

In order to prevent and reduce methane emissions into atmosphere, Gazprom's gas transporting subsidiaries conduct helicopter surveys of TGP technical condition using laser gas leak detectors; detect natural gas leaks at compression stations with the use of infrared imagers; conduct in-line inspection to prevent gas losses and reduce risks of environmental impact. For example, OOO Gazprom Transgaz Nizhny Novgorod applies the Aeropoisk 3M laser system for timely detection of gas leaks. OOO Gazprom Transgaz Tomsk, OOO Gazprom Transgaz Makhachkala conduct lidar helicopter survey of the linear part of gas pipeline branches for holes and leaks detection; OOO Gazprom Transgaz Saratov conducts helicopter patrols, and also uses unmanned aerial vehicles to detect methane leaks from TGP.

In monitoring observations, one of the effective primary information sources are data of remote earth sensing obtained from spacecraft, as well as from aircraft, including unmanned aerial vehicles (UAV). Global territories coverage and high reliability of aerospace information significantly improve efficiency of production and environmental monitoring of gas infrastructure facilities. To provide geoinformational services to the companies of Gazprom Group, OAO Gazprom Kosmicheskiye Sistemy created the Aerospace Monitoring Center of PJSC Gazprom and developed appropriate technology.

Use of UAVs for monitoring the technical condition of oil pressure pipelines Gazprom Neft — Noyabrskneftegaz (Gazprom Neft Group) oil pressure pipelines makes it possible to significantly improve observation quality. The vehicles are equipped with high-tech digital optics — high-resolution camera and ultra-sensitive infrared imager. With two shifts of operators, this arrangement allows around the clock flights. The aircraft is controlled from the ground station using navigation equipment, the system provides for rapid adjustment of the trajectory, altitude and other movement parameters. Regular inspection of pipeline routes for assessment of their technical condition significantly increases reliability of the entire transport infrastructure of the company. During the monitoring process, possible deviations in the production facilities operation are detected, compliance of oil pipelines with the design parameters is assessed, environmental monitoring functions are performed.

Since 2017, OOO Gazprom Mezhregiongaz Maykop (OOO Gazprom Mezhregiongaz) has been using UAVs equipped with high-resolution cameras to detect unauthorized connections to gas distribution systems.

Automated OEM systems of PJSC Gazprom for existing facilities are operated as a part of integrated operational and supervisory control system. For example, the main purpose of the automated OEM system of OOO Gazprom Dobycha Astrakhan is to ensure safety of production personnel and population living in close proximity to the Astrakhan gas complex. In 2017, environmental monitoring was carried out at 15 automatic posts equipped with the latest equipment for meteorological observations and chemical-analytical control of pollution. The obtained information is transmitted every 20 minutes via radio channel to the Monitoring Center, where this information is processed, stored in a database and transferred through the local computer network to the terminals of the duty person of Central gas safety post and Environmental safety laboratory. In case if MPC is exceeded or other emergency situation occurs, alarm signal is transmitted immediately.

By the order of Gazprom Transgaz Krasnodar, in the Black Sea waters, inspection of the sea section of Dzhubga — Lazarevskoye — Sochi gas pipeline are regularly carried out. The inspections goal is to monitor the pipeline condition. A satellite positioning system is located on the board of the research vessel "Akwamarin"; specialists perform accurate geodetic reference of all measurements in the water area. If the device operator receives an alarm signal, a remote control device is lowered into the water to inspect this area in more detail using photo-video equipment.

A complex system for atmospheric air monitoring, including automated control stations in 24 towns and 7 mobile environmental laboratories, successfully operate in OOO Gazprom Dobycha Orenburg. To improve environmental safety, additional level of control was created — the Center for gas and environmental safety of OOO Gazprom Dobycha Orenburg. The OEM system monitors in real-time condition of atmospheric air in territory of the Orenburgskoye OGCF. More than 3,000 tests for the harmful substances presence in the air are carried out annually by automated gas contamination monitoring stations and mobile environmental laboratories.

In some cases, Gazprom Group's OEM systems are integrated with regional environmental monitoring systems. For example, the Moscow Refinery (Gazprom Neft Group) applies an automated air monitoring system (AAMS), which provides real-time information on the company's impact on atmosphere. The Gazprom Neft AAMS system together with the city monitoring and control service has been implemented since 2015 as a part of the environmental modernization program of the Moscow Refinery. AAMS combines sensors installed inside the pipes of the plant technological facilities and, in the automatic mode, continuously transmits information to the Central control room of the plant, to the Department of environmental protection of the Moscow Refinery and State Nature Protection Budgetary Institution Mosekomonitoring of the Department of natural resources and environmental protection of Moscow. In addition to direct sources monitoring, an independent laboratory conducts air monitoring twice a day in the territory of the enterprise and within its sanitary protection zone. The measurements results are provided to supervisory authority and are published at the open website of the plant and on special screen "Ekoinformer".

In 2017, the Moscow Refinery donated to the Department of Natural Resources and Environment of the Moscow region a new mobile environmental monitoring laboratory. The laboratory is equipped with modern systems for pollutants detection in atmospheric air, including hydrogen sulfide, nitric oxide, hydrocarbons, methane, sulfur dioxide, carbon monoxide. For prompt results processing, computer equipment with Internet access was installed on the laboratory board. Weather data are collected by automatic weather station that records among other wind speed and direction. All equipment is certified as measuring equipment. The mobile laboratory transferred to the Department from the Moscow Refinery will be included into the modern ecomonitoring system which is created by the Department of Natural Resources and Environment of the Moscow region on the base of GUP MO «Ekosystema».

The companies which are a part of Gazprom Energoholding (PAO MosEnergo and PAO Moscow United Energy Company (MOEK) continue active work to reduce the impact of production facilities on the environment.

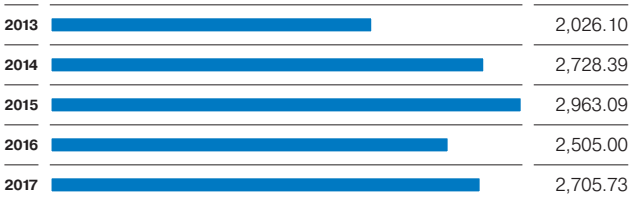
In order to prevent excessive pollutant emissions, automated environmental monitoring systems have been installed at the TPP power boilers and boiler plants of district and quarterly heat stations of MosEnergo and MOEK that allow real-time monitoring of pollutant concentrations in waste gases and, if necessary, implementing of routine activities to reduce emissions. The systems automatically transmit information both to the environmental services of the companies themselves and to the Mosekomonitoring service.

To comply with the requirements of Federal legislation in the field of environmental safety, in 2017, Gazprom Group provided timely categorization and state registration of facilities causing adverse effect on the environment. As of December 31, 2017, 9,568 objects are included into the register, including I category — 239, II category — 2,281, III category — 6,435, IV category — 619.

To support of the OEC and OEM, the Gazprom Group has been spending considerable financial resources annually, in particular in 2017 — over RUB 2.7bn, almost 77% of which fell on PJSC Gazprom.

In 2013–2017, Gazprom Group provided RUB 12.93bn for operational environmental monitoring and control.

Gazprom Group expenditures on operational environmental monitoring and control, 2013–2017, RUB mm



Structure of expenditures on operational environmental monitoring and control in the Gazprom Group, 2017, %

Prevention of Accidents

Annually, the Group's companies take measures to prevent accidents that improve equipment reliability and reduce probability of accidents at production facilities of Gazprom. These measures include technical diagnostics of pipelines in the field conditions, injection of corrosion inhibitors; timely repair and preventive works; anti-flood and anti-erosion measures; regular inspection of abandoned plugged wells; regular helicopter surveys of the TGP line parts and branch pipelines for detection of holes and leaks of gas, including use of lidars; equipping with necessary equipment and technical means for hydrocarbons spills elimination.

Among the accidents which occurred at the Gazprom Group facilities, environmental consequences were recorded in six cases. No significant environmental damage was caused as a result of these accidents.

Three of such accidents (OOO Gazprom Transgaz Moscow, OOO Gazprom Transgaz Ukhta, OOO Gazprom Transgaz Yugorsk) occurred at gas trunk pipeline facilities, and one accident occurred at facilities of each of companies: Sakhalin Energy Investment Company Ltd., Gazprom Neft and Gazprom Energoholding. Area of land contaminated as a result of accidents is amounted to 0.77 ha, loss of natural gas — 12.17bcm, estimated amount of damage to the environment due to accidents — RUB 397.94 thousand.

Accident with gas emissions and ignition happened in OOO Gazprom Transgaz Moscow on October 20, 2017, the accident cause was corrosion destruction of TGP pipe section Central Asia — Center — 2 of Gavrilovsky LPUMG.

Accident with gas ignition in OOO Gazprom Transgaz Ukhta happened on March 31, 2017: at pulse operation of gas pipeline of compressor shop No. 5 connection unit, a destruction of a pipe section with a diameter of 150mm happened with gas leakage and ignition.

Accident with gas emissions and ignition happened in OOO Gazprom Transgaz Yugorsk (nearly 3.5mcm) on July 26, 2017 at distance of 354.5km of TGP Igrim — Serov — Nizhny Tagil of Ivdel LPUMG. Causes of the accident: destruction of the pipeline section with length of 20m due to mechanical impact and microcracks in the area of the pipe longitudinal weld with the parameters below sensitivity of pigging devices for the surface corrosion damage identification.

On 26.03.2017, in Sakhalin Energy Investment Company Ltd., during scheduled maintenance work at the LUN-A platform, depressurization of the wellhead equipment with release of downhole fluid under pressure 152 bar occurred. For the accident liquidation, downhole shut-off valve was closed, relief line to flare system was opened and sea water irrigation system was activated to prevent emergence and spread of gas-air mixture. The accident was eliminated within 21 hours. Maximum volume of natural gas leakage (emissions) was 30.30mcm. Investigation has been carried out to identify technical and organizational causes of the accident, and measures to be taken were identified.

In OOO Novorosnefteservice (Group Gazprom Neft), an accident occurred due to petroleum depot flooding during heavy rains in the summer. Pollution of the bankline of the untitled stream and river Tsemes (Krasnodar region) with an area of 0.105 ha being a result of the water-oil emulsion spilling was completely eliminated.

In PAO OGK-2 (Gazprom Energoholding) at the Ryazan regional hydro-electric power plant, on September 23, 2017, during the boiler unit shutdown for scheduled repairs, an explosion of coal-air mixture, without ignition, occurred at the coal mill of the boiler-turbine shop. Smoldering of coal dust was eliminated; the station equipment and load-bearing structures were not damaged.

At the facilities of other Gazprom Group companies, there were no accidents with environmental consequences in 2017.

Environmental Risk Insurance

The Gazprom Group environmental insurance covers the liability for emergency environmental contamination and aimed at provision of environmental safety, compensation of the environmental damage and compensation of losses of third parties.

In 2017, PJSC Gazprom and AO SOGAZ re-signed a comprehensive insurance contract providing for coverage of activities related to land and offshore drilling, construction and geological exploration, production of hydrocarbons; transportation, preparation, processing of hydrocarbons; storage of gas, oil, oil products and other products resulting from preparation and processing of hydrocarbons; as well as auxiliary commercial or non-commercial activities directly related to the above mentioned activities, including: exploitation and/or legal use (possession / disposal / use) of own and/or leased and / or rented buildings, premises, including non-productive assets: offices, rest houses and other commercial real estate; exploitation and/or use of sources of increased danger by insured persons.

The territory of the insured activity implementation is the Russian Federation and the continental shelf of the Russian Federation.

The insurance contract is voluntary and complements obligatory general liability insurance contracts of a hazardous facility owner (as per Federal Law No. 225FZ dated July 27, 2010). The insurance contract replaced all voluntary general liability insurance contracts of legal persons who operate sources of increased hazard, signed earlier by each subsidiary company.

Amount of insurance payments of AO SOGAZ in the reporting period comprised RUB 23.51mm (RUB 11.57mm in 2016), including RUB 23.43mm for damages of the previous years (RUB 11.23mm in 2016).

State Environmental Supervision

In 2017, authorities of the state ecological supervision performed 532 inspections of compliance of Gazprom Group company's facilities with environmental requirements. 324 inspections revealed no violations.

Of the 455 identified violations, 14 violations (3%) were overturned by the court, 283 violations (62%) were eliminated within the prescribed period, deadlines for other violations did not expired in the reporting year. During the year, 689 violations were eliminated, including 406 revealed as the results of audits of previous years.

Of the identified violations, 65% did not pose a threat of damage to the environment and did not entail penalties for legal entities.

In the reporting year, we paid fines in the amount of RUB 11.41mm, including RUB 3.42mm by the results of audits of previous years. Payments on the fines amounted to: Gazprom Neft Group — RUB 3.71mm; PJSC Gazprom — RUB 3.01mm; Gazprom Energoholding — RUB 2.31mm, OAO Tomskgazprom — RUB 1.12mm, OOO Mezhregiongaz — RUB 0.91mm.; OOO Gazprom Neftekhim Salavat — RUB 0.34mm.

Scientific and Technical Support of Environment Protection

Scientific Research and Development

In order to improve operational efficiency in the Gazprom Group companies, scientific research is being carried out; new technologies are being developed and implemented decreasing negative impact on the environment.

14 environmental R&D works were completed for PJSC Gazprom during 2016.

The following works of previous years were continued:

— Biological product development based on rhizospherical and nitrogenfixing microorganisms for rehabilitation of disturbed and contaminated land;
— Disturbed and contaminated land reclamation processes studies and improvement of land rehabilitation technologies under conditions of the Yamal Peninsula;
— Development of Best Available Techniques (BAT) reference document (BREF) for PJSC Gazprom's hydrocarbons transportation;
— Development of strategies for BAT introduction and adaptation in PJSC Gazprom, including BREFs development for the gas industry (in 2017, BREF for hydrocarbon processing was developed).

In addition, the R&D portfolio includes such works as:

— Yamal Peninsula climate and ecosystems change assessment for the process of full field development (current climate and ecosystem characteristics for the priority areas of hydrocarbon fields development and gas transportation in the Yamal Peninsula in 2016 were estimated);
— Development of a Roadmap for Greenhouse Gas Emissions Management System in Gazprom Group companies. Proposals on the estimation of methane and hydrocarbon $C_1 – C_5$ and $C_6 – C_{10}$ mixtures emissions for the purpose of environmental and sanitary regulation are being developed;
— Potential for use analysis of innovative waste heat recovery technologies at Gazprom's compressor stations for increasing energy efficiency;
— Development, production and experimental research of low emissions burner with penetrable element for Gas Pumping Unit (GPU) drive's combustion chamber improvement.

Within the framework of Energy saving R&D for PJSC Gazprom, analysis and proposal development for technological processes energy efficiency improvement in PJSC Gazprom were carried out in accordance with the requirements of Gazprom's 2011–2020 Energy Saving and Energy Efficiency Concept.

In the subsidiaries of PJSC Gazprom and other companies of the Gazprom Group, R&D works on environmental safety and energy efficiency enchancement were also carried out.

In OOO Gazprom transgaz Kazan, a Standard instruction on displacement of a gas-air mixture (air) from an internal cavity of natural gas pipelines repaired sections was developed. The aim of the work was to improve the reliability and safety of start-up operations for newly constructed and repaired sections of line parts of trunk pipelines and reduce accident risks when filling gas pipelines with natural gas. Under the Mobile Gas Pumping Compressor Unit Construction R&D work, a prototype of a mobile compressor unit for gas pumping out from the gas pipeline section under repair to the operating gas pipeline was created and its acceptance trials were carried out.

During the initial R&D stage of Development of a Method for Intensification of OOO Gazprom Dobycha Krasnodar's Wastewater Treatment Facilities with the Use of Integrated Microbe Engineering, a survey of wastewater treatment facilities was conducted, biological sludge sampling was performed. The aim of the work was to improve a biological stage of wastewater treatment.

In 2017, development and adaptation in refinery operations of new catalysts and components for gasoline manufacturing with improved environmental performance were carried out for the Gazprom Neft Group.

To ensure environmental safety of the oil production process, a task of anthropogenic salined areas reclamation in the oil fields territory is of great importance. As part of Testing of Saline Lands Reclamation Technologies in AO Gazprom Neft – Noyabrskneftegaz R&D work, a technology of saline lands reclamation under conditions of the Far North was tested. Test results were positive (reduction of chloride ion concentrations to standart-compliant content and strong herb stratum on reserch plots were achieved).

The following R&Ds were carried out for Gazprom neftekhim Salavat:

— wastewater treatment technical solutions development for super absorbent polymers (SAP) production (applicability analysis of available wastewater disposal/neutralization technologies was carried out; elaboration of permissible concentrations standards for the pollutants discharge was conducted; possible methods of wastewater disposal/neutralization were selected and proved);
— development of technical and technological measures to reduce flare emissions (in 2017, following stages of work were completed: recommendations development and finding solutions to reduce flaring and emissions from the flare; process equipment predesign; estimated equipment cost, estimation of economic and environmental effects);

— survey and development of measures to increase hydrogen sulfide concentration and reduce hydrocarbon concentration in hydrogen sulfide gas after hydraulic treatment units and before the elemental sulfur production (ESP) unit (as a result of the work, technical solutions for improvement of amine gas purification of hydrogen sulfide and efficiency of the ESP unit were prepared).

To select the most cost-effective option for improvement (reconstruction) of the process water supply system for power unit No. 4 of Cherepovets State District Power Plant, to ensure effective, reliable and efficient operation of its basic equipment, PAO OGK-2 of OOO Gazprom energoholding performed a feasibility study on various alternatives for process water recycling systems adoption. It was done in the framework of the R&D work.

Implementation of Innovative Environment Protection Technologies Adoption of Innovative Environmental Technologies

In June 2016, Gazprom approved an Innovative Development Program up to 2025. Main purpose of the Program is a continuous improvement of technology level in Gazprom to maintain technological leadership in the global energy business. The Program provides for active cooperation with corporate and third-party research organizations on R&D activities, state development institutes and higher education institutions to arrange joint research and personnel training.

Improvement of environmental safety and energy efficiency of Gazprom Group companies' activities is achieved largely owing to adoption of innovative technical and process solutions.

In 2017, work on development of strategies for BAT introduction and adaptation in PJSC Gazprom, including BREFs development for the gas industry continued (OOO Gazprom VNIIGAZ and OOO NIIgazekonomika). In 2017, the following documents were developed: The Procedure for a Comprehensive Assessment of Economic and Environmental Aspects of the Best Available Techniques and the Impact Assessment of the Adaptation of Technology Standartization System based on the Best Available Techniques on the Economic Performance of PJSC Gazprom; BREF Hydrocarbon Production by PJSC Gazprom.

In 2017, the large-scale investment construction projects of PJSC Gazprom were being implemented. Construction of water treatment facilities at the Omsk and Moscow Refineries (the Gazprom Neft Group), and also at Gazprom Neftekhim Salavat's Refinery was carried out. The construction projects were included in The Action Plan for the Year of Ecology in the Russian Federation.

Gazprom Neftekhim Salavat's Refinery completed a large-scale environmental project — construction of a decontamination sulphide-alkaline wastewater unit with a capacity of 50 tonnes per hour.

Wastewater contains persistent chemical pollutants, including aromatic compounds and phenols, which are highly resistant to biodegradation. Launching of a new high-tech sulphide-alkaline wastewater treatment unit will allow achieving such parameters that the treated wastewater can be transferred to final treatment at company's main sewage treatment plants without any violation of the sewage treatment plant technology. Also, irretrievable water losses from sewage will be stopped and as such water consumption will be reduced, as a consequence, the burden on the Belaya River ecosystem will be decreased.

Gazprom Neft carried out works on basic environmental assets improvement of the Omsk Refinery, where the following facilities were launched: a gas purification unit for catalytic cracking regeneration gases; a system for regeneration gases chlorine purification; a sealing rack system.

The construction of BIOSPHERE units at Moscow and Omsk Refineries is the largest environmental project of the comprehensive program for the improvement of Gazprom Neft's refining assets; the key priority of the program is to reduce the production impact on the environment.

In the BIOSPHERE project multi-stage wastewater treatment is designed, including mechanical, physical, chemical and biological treatment, as well as coal filtration and ultraviolet disinfection. BIOSPHERE wastewater treatment efficiency index exceeds 99.9%, and its true-circle water treatment cycle allows recycling up to 75% of treated water that reduces amount of used river water up to 2.5 times. The key water treatment technology is the application of membrane bioreactor and bological sludge from the microorganisms that use refinery products, nitrogen and other substances as a nutrient medium. Process design solutions developed by domestic engineers made it possible to significantly reduce total area of treatment facilities, to make them more compact and to ensure complete tightness of water treatment process phases. In particular, the BIOSPHERE project implemented at the Omsk Refinery will reduce the treatment facilities area by 17 times with an increase in overall productivity by 20%.

Gazprom Neft delivered goods to the remote field using unmanned aircraft system (UAS) for the first time. The tests confirmed usability of UASs for cargo delivery to remote production sites, when there is no ground conection during springs and autumns, and when helicopters are economically impractical. The tests performed allowed defining flight regulations, assessing automatic flight mode implementability, as well as the hardware susceptibility under various weather conditions, including strong winds. The project on cargo delivery by UASs was developed and implemented within the framework of Gazprom Neft's technological development program. In winter 2017–2018, testing of helicopter-type UASs as well as rotary aircrafts at Gazprom Neft Group assets will be continued.

The Green Seismic technology which allows saving trees from cutting down during seismic exploration is prepared for implementation in Gazprom Neft assets. Since the main labor safety risks during seismic surveys are associated with the seismic profiles preparation phase, minimizing the cutting down will increase industrial safety. Thanks to state-of-the-art technical aid and organizational decisions, the Green Seismics can significantly reduce anthropogenic impact on the environment and reduce the occupational injuries rate. The economic effect of a new seismic exploration method is expected in the sum of RUB 250mm per year.

The studies performed showed that the quality of geological information obtained with the use of a new technology is not worse than the results from traditional methods. At that, amount of cut down forest is reduced that require less workers and amount of work. The technology is versatile and can be used both in forest regions and in agricultural areas, in areas with mountainous terrain or with infrastructure facilities where is much easier to place wireless sensors than traditional sensors.

Testing and quality control of the equipment unified system installation for environmentally safe thermal liquid effluents treatment was performed at the Experimental plant of OOO TyumenNIIgiprogaz. The equipment was assigned by OOO Gazprom Dobycha Noyabrsk. At peak loads, this installation allows disposal of liquid wastes to the extent of 1000 cubic meters per day. This is enough for the Chayanda Field even in the periods of active construction and well workover, when a large volume of liquid drilling waste is generated.

OOO TyumenNIIgiprogaz designers created a high performance thermal utilization units system desighned from Russian components only. All equipment trains are made at the Experimental plant. In addition to a new technology, a number of new devices were created. For example, previously, double-fuel burners with a capacity of 5 MW were not produced in Russia. They were developed as directed by OOO TyumenNIIgiprogaz designers especially for this project.

The advanced design will allow complying with all environmental requirements and at the same time maintaining high economic production efficiency.

OOO Gazprom Energo has successfully completed testing of the Instantaneous Automatic Switch Reserve Power Source (BAVR) system for closed 10 kV switchgear of OOO Gazprom Transgaz Surgut's Yuzhno Balykskaya compression station. The system is designed to prevent unplanned equipment shutdowns in case of power outages.

During the system testing, power supply disruption was simulated at one of two CS units, equipment power supply sources were changed. The BAVR system demonstrated high efficiency; its application ensured stable operation of the GPU, and natural gas transportation during power disruptions continued as planned. Thus, the system increases reliability of gas supply to consumers.

Currently, the BAVR system is operated in test mode. Based on test results, the prospect of equipping other gas transportation facilities with such system will be considered.

Pilot tests of the external protective coating from domestic POLISTEK rolled material applied on the 1,420mm caliber pipe were performed at Pelym Line Production Directorate of Trunk Gas Pipeline of OOO Gazprom Transgaz Yugorsk. The testing of anticorrosive POLISTEK coating took place during repair works at the facility of Urengoy — Petrovsk TGP's inter-valves sector.

The Omsk Refinery (Gazprom Neft) produced the first batch of new low-sulphur marine fuel which is suitable for Sulphur Emission Control Areas (SECA[1]) stipulated by the International Convention for the Prevention of Pollution from Ships MARPOL[2]. The fuel received a certificate of compliance with the technical regulations of the Eurasian Economic Community (EEC). The fuel production technology from catalytic cracking of hydrotreated vacuum gasoil was developed by the Omsk Refinery specialists in 2016.

[1] SECA — special navigation areas, which include the Baltic sea, the North sea and the English channel, where vessels ought to switch to low-sulphur fuels.
[2] MARPOL — The International Convention for the Prevention of Pollution from Ships. At the beginning of 2015, additions to the main body of the Convention came into force: sulphur in marine fuel used by ships whose routes pass SECA is regulated.

Gazprom's Science and Technology Prize

Gazprom's Science and Technology Prize has been awarded annually since 1998. The Prize is an important component of the corporate scientific and technological policy aimed at promoting innovations in the Company's businesses and maintaining its technological leadership within the global energy industry. The Prize is granted for major developments in natural gas production, transportation, storage, refining and usage, resulted in creation or improvement, and — which is most important — efficient use of new machinery, devices, equipment and materials specimens. Generally, most of the nominated scientific and technical works have direct or indirect environmental effect.

In 2017, Gazprom's subsidiaries submitted 23 projects for the Prize, with 188 authors engaged in the projects.

The total economic effect of the awarded works results implementation exceeded RUB 18bn.

The papers were assessed by a group of experts from Gazprom and its subsidiaries. The assessment criteria included urgency, novelty, scientific and technological level (research intensity), area of application, scope and economic impact with regard to Gazprom, commercial potential and protectability, and use of domestic products, technologies and equipment.

The top prize went to Gazprom VNIIGAZ for the paper entitled **"Corporate management system for energy efficiency and greenhouse gas emissions at Gazprom."** (A. G. Ishkov, G. S. Akopova, E. V. Kosolapova, N. B. Pystina, G. A. Khvorov, A. S. Melkov, K. V. Romanov, E. S. Fomichev, E. V. Varfolomeev).

The corporate management system for energy efficiency and GHG emissions provides data support for managerial decision making to achiev key indicators of energy and resource saving in PJSC Gazprom. The system offers a comprehensive solution to the challenge of reducing the amount of energy used for process needs and minimizing greenhouse gas emissions.

The work presents studies on the role of natural gas in the energy market taking into account its environmental benefits. A methodology was developed and carbon footprint of the Russian natural gas life cycle from production to consumer was evaluated; national GHG emissions factors for the gas industry of Russia were identified; hygienic regulatory actions inexpediency for methane as a pollutant of community air was proved; the BAT register providing energy, economic and environmental efficiency at the PJSC Gazprom's facilities was created; carbon and toxic footprints of oil and gas motor fuels throughout all phases of their life cycles (well-to-wheel) were assessed; a domestic model to estimate GHG emissions throughout life cycles of various hydrocarbons (natural gas, oil, condensate etc.) from wells to consumers was developed, that allows a reliable life cycle assessment of the exported Russian natural gas and confirms its high environmental performance; Energy Saving and Energy Efficiency Programs for PJSC Gazprom as well as more than 30 regulatory international, federal and corporate documents were developed.

The economic benefit of the corporate management system implemented in 2011–2016 totals RUB 11.6bn.

International Cooperation

International cooperation in the field of environmental protection and energy efficiency is an integral part of PJSC Gazprom activities in the area of sustainable development.

Year 2017 marks the 25th anniversary of scientific and technical cooperation between Gazprom and SE Uniper (formerly Ruhrgas, E. On). The companies scientific and technical cooperation programs cover almost all stages of the production cycle: from hydrocarbons production and transportation to processing. Taking into account the perspective course of energy industry development, the companies jointly initiated a technical dialogue on hydrogen technologies in order to study the possibility of using the existing GTS for transportation and storage of hydrogen-containing gas.

PJSC Gazprom continued its scientific and technical cooperation with Wintershall Holding GmbH to assess the carbon footprint of the gas industry, including assessments for Nord Stream-2 project, and to promote environmental benefits of natural gas.

Within the framework of cooperation between PJSC Gazprom and Shell concern, a seminar on methods of methane emissions detection, metering and control at production facilities and information exchange on available practices was held in Moscow in the reporting year. PJSC Gazprom presented a report on corporate management system for GHG emissions control and on methane emissions control. The companies exchanged information on best practices in this area and agreed to continue the dialogue. Also, on 17 November, the 18th meeting of the Advisory group of the International Union for conservation of nature (IUCN) took place. The issues related to west-pacific gray whales were discussed with the participation of specialists in environmental protection of the Sakhalin Energy Investment Company Ltd. and Shell concern. By the meeting results, a draft Plan of Work for the joint gray whales monitoring program in 2018 was prepared.

In August 2017, in PJSC Gazprom office in St. Petersburg, talks were held with representatives of Mitsubishi Corporation on cooperation in the markets of emissions quotas; the parties agreed to continue cooperation in the field of innovation in environmental protection and energy efficiency, including hydrogen technology. This proposal was approved on November 20, 2017 at the first meeting of Gazprom and Mitsubishi Corporation Joint Coordinating Committee.

Gazprom and OMV Aktiengesellschaft are actively developing their scientific and technical cooperation aimed at application of the best available and perspective technologies. On May 16–17, 2017, a meeting of Coordinating Committee for PJSC Gazprom and OMV Aktiengesellschaft company cooperation took place in Vienna (Austria); during the meeting, OMV and PJSC Gazprom representatives visited the site at OMV Austria Exploration and Production GmbH facility where BIOROS preparation was tested. The biological preparation was developed by OOO Gazprom VNIIGAZ, the head research center of PJSC Gazprom.

Use of biotechnologies for environment restoration is of great interest to a number of companies around the world. For example, scientific and technical cooperation between PJSC Gazprom and CNPS included in the reporting year a special technical seminar “Elimination of hydrocarbon pollution and environment restoration” (Lanfan). Russian side presented report of PJSC Gazprom on biotechnological methods. On 9 February 2017, in Beijing 12th meeting of the Gazprom and CNPS Joint Coordinating Committee was held where Gazprom presented its report “Environmental aspects of natural gas use”.

PJSC Gazprom constantly works at the international level to promote development of sustainable energy. In 2017, in order to provide information support for this activity, a number of events was organized, including:

- seminars in the framework of the Green Year, in Gazprom’s offices in Belgium, Brazil, Qatar and Iran, on the role of natural gas in sustainable development and climate protection;
- report “Natural gas in the era of decarbonization” in the frame of the 86th Energy Dialogue in the Bundestag (30 June 2017, Berlin);
- Sustainable Energy Day with a theme “Role of natural gas in a low-carbon economy” was held at the 23rd UN Conference on climate change (November 16, 2017, Bonn) where, for the first time in the history of international climate negotiations, a pavilion of the Russian Federation was organized.
- informational meetings were held with socially and environmentally responsible investors and shareholders of PJSC Gazprom (20–23, November 2017, the Netherlands and Sweden),
- a report was presented at the Round Table “Natural gas and climate agenda of the EU” in the European Parliament (December 7, 2017, Brussels).

Information Disclosure

Information openness is one of the most important principles of Gazprom Group companies activity on the environmental efficiency field. The main criteria for the implementation of information transparency principle are: reliability and completeness, regularity and timely presentation, and availability to the state authorities, shareholders and investors, the public, media and other interested parties.

Information on the Gazprom Group is available at the official website of PJSC Gazprom (www.gazprom.ru) in the Environment, Media, Shareholders and Investors sections. Sections of environment protection and energy saving are provided in the Annual Report of PJSC Gazprom and in the corporate edition "Gazprom in Figures".

Information on the current and proposed Gazprom activities in environment protection and energy efficiency sphere is constantly published in corporate magazines "Gazprom", "Gas Industry", newspapers and other periodicals of Gazprom Group subsidiaries, special industrial publications.

As a part of the Cooperation Agreement with Roshydromet, Gazprom submits data for inventories of anthropogenic emissions from sources and GHG removal by absorbers, and also for "National communications" submitted by the Russian Federation to UNFCSC bodies. The reports disclose data on GHG emissions up to 2030 and on activities to reduce the emissions. Participation of PJSC Gazprom in the international project CDP (Carbon Disclosure Project) aimed to disclosure of information on GHG emissions is an important indicator of success in the work to improve the transparency of the Company's activities and one of the factors of its investment attractiveness increase.

Since 1995, Environmental Report of the Company has been issued annually. Since 2010, a Report of PJSC Gazprom on sustainable development activities has been issued regularly, its "Environmental Impact" and "Rational Use of Resources" sections give detailed information on the strategy and tactics of rational nature use, environment protection, climate change and interaction with stakeholders

Following the information transparency principle, Gazprom Group companies publish Environmental Policy texts, environmental news, environmental and sustainability reports, plans of activities to preserve biological diversity, environmental monitoring reports, EIAs, data of public hearing of projects, OSRPs and other materials.

Annually the Group's subsidiaries prepare and submit reports on the parameters of production activity impact on the environment, implemented activities and volume of their financing, adverse environmental impact charges to the state executive authorities and state statistic bodies of the Russian Federation.

Public discussions for the majority of the investment activity objects of PJSC Gazprom are compulsory according to the Russian laws; however the statutory requirements to the procedure of such discussions are not available. To fill this legal gap, a document of the corporate standardization system is in force in PJSC Gazprom since 2014 that contains recommendations for provision of public discussions and public hearings for materials of assessment of the impact on the environment for the planned economic activities.

In 2016, a number of public hearings were held for such projects as:

- Development of experimental sites of the Novoportovskoye OGCF for the period of test operation. Landfill for solid domestic and industrial waste. Expansion. OOO Gazprom Neft Yamal;
- Development of well groups at Novoportovskoye oil and gas condensate field. 3rd stage. Group 21, OOO Gazprom Neft Yamal;
- Trial operation of the Zapadno-Chatylkinskoye field. Well groups №4, 4 BIS, OAO Gazprom Neft — Noyabrskneftegaz;
- Development of the Zapadno-Messoyakhskoye and Vostochno-Messoyakhskoye fields. Landfill for shousehold and industrial solid waste. Correction. AO Messoyakhaneftegaz;
- Substantiation of planned economic activities during the implementation of the project estimate for modernization of OIRP Prirazlomnaya. System 34 "High Pressure Flare System" and system 35 "Low Pressure Flare System" for sootless combustion, including environmental impact assessment (EIA);
- Plan for prevention and liquidation of emergency oil and oil products in the area of the Prirazlomnaya platform operational responsibility, including materials on EIA, OOO Gazprom Neft Shelf;
- Exploration well № 1 of Ayash area and Plan for the prevention and liquidation of emergency oil and oil products spills during construction of exploration and evaluation of well № 1 in Ayash area, OOO Gazprom Neft Sakhalin;
- Complex for LNG production, storage and export in the area of CS Portovaya. Stage 3: construction of a complex for LNG production, storage and export in the area of CS Portovaya, including materials of environmental impact assessment (EIA).
- Development of gas transportation facilities of UGSS in north-west region, at section Gryazovets — CS Slavyanskaya;
- Complex for production, storage and export of liquefied

natural gas in the area of CS Portovaya, stage 1;
— Terminal for receiving, storing and regasification of liquefied natural gas (LNG) in Kaliningrad region, OOO Gazprom Invest;
— Complex for production, storage and export of liquefied natural gas in the area of CS Portovaya, stage 4.

Public discussions on the project "Mountain climatic resort Alpika-Service, including Olympic infrastructure facilities, cable car "Aibga-2", and construction of engineering protection, technological road, pedestrian crossing, antenna mast construction № 2 (designing and survey, construction), construction phase 4.2.2", including EIA materials, were held in Adler district of Sochi.

Dedication of Gazprom Group companies to information transparency is demonstrated by annual meetings with central and regional mass media representatives where issues of rational use of natural resources, environment protection and energy saving are discussed.

Gazprom monitors mass media to analyze public opinion on its environment protection activities and consider it in its future planning and timely making of management decisions. In 2017, 9,657 positive articles were published in mass media and Internet on the subject of environmental aspects of Gazprom Group business.

Efficiency of corporate policy in this area is confirmed by independent experts. Thus, over the past seven years, Gazprom has been a constant leader in the Energy sector of the Russian investment partnership rating Carbon Disclosure Project.

PJSC Gazprom is recognized as the best Russian power industry company in terms of corporate climate reporting and strategies of GHG emissions reduction in international Carbon Disclosure Project (CDP) rating for the period of 2011–2017.

In 2017, PJSC Gazprom once again became a leader of the ecological rating of the Living planet TV channel and Institute of modern media (MOMRI). The rating is recognition of the environmental performance of 33 Russian companies acting in the fuel and energy and metallurgical sectors of the economy.

Sakhalin Energy Investment Company Ltd. became a leader of the environmental responsibility rating among oil and gas companies (the project is implemented by KREON Group and WWF Russia) by achieving high results in three sections: «Environmental management», «Impact on the Environmental» and «Information disclosure".

Gazprom's work in the field of improvement of environmental situation in the regions of Gazprom presence won significant number of awards, diplomas, letters of gratitude from Federal, regional and local authorities, educational institutions and public organizations.

Voluntary Environmental Activities

To support implementation of the Decrees of the President of Russia No. 392 on Holding the Year of Specifically Protected Natural Areas in the Russian Federation dated August 1, 2015 and No. 7 on Holding the of the Environment in the Russian Federation in 2017 dated January 5, 2016, in 2017, PJSC Gazprom announced the Gree Year in PJSC Gazprom under the motto “Conserving nature”.

Action plan of the GreenYear in PJSC Gazprom includes 8,600 events.

All companies of Gazprom Group, both in Russia and abroad, demonstrated high activity and interest. Total number of participants amounted to more than 682 thousand people. In addition to the staff of Gazprom Group organizations and members of their families, involved participants — pupils, students, members of the public — took active participation in the events.

During the year, PJSC Gazprom subsidiary companies participated in various actions: 19,150 planned and additional events with a total cost of RUB 27,035mm.

Of the total number of activities following was implemented:

— 3,084 in the field of reduction of adverse impact of production activities on the environment 3,084;
— 6,199 on maintenance of favorable environment in the regions of activity;
— 9,867 in the field of information and educational activities on environmental safety.

The main results are:

— 14,208 ha of land were cleared of debris and landscaped;
— more than 682,677 seedlings of trees and shrubs were planted;
— 20 807 tonnes of garbage was removed;
— 329 water bodies were rehabilitated;
— 53 060 008 species of juvenile fish were produced and released into water bodies.

In the area “Reducing the adverse impact of production activities on the environment”, air protection measures were carried out which were mainly related to use of a set of effective technologies to reduce methane emissions into the air during TGP repair, introduction of new technology with improved environmental performance at the production facilities UGS, transportation and processing of gas.

A large number of water protection measures aimed at optimization of technological regimes, reconstruction and repair of treatment facilities, cleaning of drainage systems, diagnostics and maintenance of water supply and sanitation systems were implemented, and this contributes to the achievement of corporate environmental goal: contaminated wastewater discharge into water bodies was reduced.

In 2017, Gazprom subsidiary companies were developing systems of selective collection of waste to be recycled and safe handling of toxic waste, were putting into operation facilities for thermal waste disposal and recycling of drilling waste. About 500 events were held in this area. 86 events in the field of improvement of subsidiaries OEM, restoration of natural environment quality and elimination of accumulated ecological damage were carried out.

Energy saving measures were focused on optimization of technological regimes and also on introduction of energy efficient equipment, saving and efficient utilization of gas in the trunk gas transport, UGS and wells, useful APG utilization, modernization of lighting system at production facilities with application of energy saving lamps, etc.

583 events in the field of environmental monitoring were implemented. In addition to development and improvement of the facilities and equipment for environmental monitoring, a set of works on environmental monitoring of SPNA was carried out.

Support in various forms (finance, equipment, labor, organizational assistance, volunteer actions) was provided to 80 SPNA of federal, regional and local importance.

More than 130 thousand employees from 65 PJSC Gazprom subsidiary companies and involved organizations across the country took part in the All-Russia community work day “Green Spring-2017”. As a part of the Green Year, 716 environmental forums, conferences, meetings of federal and regional levels were held which were attended by more than 23.3 thousand people. More than 700 different exhibitions and presentations were held which were dedicated to the World Days of water, land, birds, Ecologist’s Day, Car-Free Day, Earth Hour, etc., which were attended by about 106 thousand people.

In order to increase information disclosure and level of environmental knowledge, television and radio programs were prepared, public meetings were held, special information pages were organized on the websites of subsidiaries, etc. 796 visits to production facilities, sports events, quests and games, press tours and environmental campaigns were organized, more than 22.6 thousand people took part in them. More than 1,000 events were related to training of employees, children and young people (lessons, lectures, seminars, competitions, thematic contests, games, documentaries, etc.).

In central offices in Moscow and St. Petersburg, Gazprom continues implementing the project “Green office”. In the Green Year, new campaign and educational leaflets were issued and distributed, work was carried out on separate waste collection, energy and water saving. Principles

and mechanisms of greening office are also actively introducing in many subsidiaries.

PJSC Gazprom work in the field of green production and activities of the Green Year was highly appraised by public organizations, local, regional and higher bodies of state authorities of the Russian Federation

By the results of the the Year of the Environment in the Russian Federation, the Certificate of Honor of the Federation Council of the Federal Assembly of the Russian Federation was awarded to PJSC Gazprom for great contribution in reducing the adverse impact on the environment.

The President of the Russian Federation Vladimir Putin, in his Letter of Gratitude addressed to the staff of PJSC Gazprom highly appreciated the company's active participation in the preparation and holding of events in the framework of the Year of the Environment in the Russian Federation.

A. G. Ishkov, Deputy Head of the Department — head of the Department of PJSC Gazprom, was awarded by the Decree of the President of the Russian Federation to the honorary title "Honored ecologist of the Russian Federation" in gratitude for his services in the protection of the environment and natural resources, long-term conscientious work.

As a result of the regional competition "EcoLeader" held in the Samara region, the 1st degree diploma in the nomination "Industrial giant" was awarded to OOO Gazprom Transgaz Samara. General Director of OOO Gazprom Transgaz Samara, V. A.Subbotin, was awarded to the title "Distinguished Ecologist of the Samara region".

General Director of JSC Chechengazprom L. V. Baymuradov was awarded to the Certificate of Honor of the Ministry of natural resources of the Chechen Republic in gratitude for active participation of AO Chechengazprom in the ecological projects aimed at steady development of the Chechen Republic and efforts on maintenance of favorable environment.

In gratitude for conscientious work, personal contribution to the activities aimed at environmental protection, Senior engineer on environmental protection of OOO Gazprom Energo G. A. Smirnova was awarded to honorary badge the Republic of Komi "Labour valour". The II category engineer on environmental protection of OOO Gazprom Energo N. A. Alimova was awarded to Certificate of Honor of the Ministry of industry, natural resources, energy and transport of the Komi Republic.

OOO Gazprom Neft Khantos was awarded to the gold medal and diploma of the winner of the competition "100 best organizations of the Russian Federation. Ecology and Environmental management". Director General S. A. Doctor was awarded to the honorary badge "Ecologist of the Year – 2017" in gratitude for achievements in the field of environmental management.

According to the results of the IV-th All-Russian competition "Best young specialist of oil and gas industry", Leading engineer on environmental protection of administration of OOO Gazprom Geologorazvedka K. S. Ivanova awarded a special prize "For ecological line of thinking".

Gazprom Group's work on development of voluntary mechanisms of environmental responsibility will be continued.

Благодарю Вас
за активное участие
в подготовке и проведении мероприятий
в рамках Года экологии
в Российской Федерации

В. Путин

Москва, 22 февраля 2018 года

Conclusion

PJSC Gazprom keeps to the policy of information transparency and provides data on its activities in the sphere of environment protection and rational use of natural resources to the stakeholders, primarily to shareholders and investors.

Analysis of main environment impact indicators for 2013–2017 period allows for conclusions about reduction of environment impact: total emissions to the atmospheric air have fallen by 9%, waste water discharge into surface water bodies decreased by 11%, waste generation reduced by 12%. In all Gazprom Group companies, greenhouse gas metering, monitoring and emissions reduction system is implemented and improved.

Amounts of investment in fixed capital, targeted for environment protection and rational use of natural resources through the Gazprom Group comprised over RUB 35.6bn, while current costs reached RUB 34.5bn. Of them, RUB 2.7bn were spent for production environmental inspections and environmental monitoring.

Through the year, no accidents with significant environmental consequences were registered at the Group facilities. Environmental risks of production activities are insured.

The Group companies control compliance of contractors' operations with environment protection legislation.

Development and implementation of projects in Gazprom Group involves target planning of actions aimed to reduce environmental risks, register environmental economy and environment protection aspects on par with financial and economical parameters.

Gazprom Group uses innovative technologies and devices in all production areas, runs research for improvement of energy efficiency and reduction of negative environmental impact.

In the frame of the Green Year in PJSC Gazprom, Gazprom Group initiated and implemented more than 19 thousands volunteer ecological events in its operation regions, both in the Russian Federation and abroad.

High results of independent public ratings demonstrate efficient functioning of environmental management system in Gazprom Group companies.

Comprehensive work on mitigation of adverse impact on the environment, preservation of natural ecosystems and ensuring efficient use of natural resources will be continued.

Glossary of Main Terms and Abbreviations

Name	Definition
Adverse environmental impact	Impact of economic and other activity, the consequences of which lead to adverse changes in environmental quality
APG (Associated petroleum gas)	Mixture of gases and vaporous hydrocarbon and non-hydrocarbon components emitted from oil wells and in-place oil in the process of its separation
APN	Auxiliary process needs
Biodiversity (biological diversity)	Diversity of living organisms in all spheres including onshore, marine and other water ecosystems and ecological complexes forming them
CNG	Compressed natural gas
CNG FS	Compressed natural gas filling station
Ecological monitoring (environmental monitoring)	Comprehensive system of environment monitoring, evaluation and forecast of environmental changes under the impact of natural and man-caused factors
EIA (environmental impact assessment)	Type of activity aimed at detection, analysis and accounting of direct, indirect and other environmental impact consequences of planned economic and other activity to make a decision on possibility or impossibility of its implementation
EMS	Environmental management system
Energy saving	InImplementation of legal, management, scientific, production, technical and economic measures aimed at efficient (rational) use of energy resources and involvement of renewable energy sources into economic turnover. Energy saving is an important task for natural resources preservation
Environment	System of nature components, natural, natural and man-made, as well as man-made objects
Environmental audit	Independent comprehensive documented assessment of compliance of an economic or other entity with requirements, including standards and regulatory documents, in the environmental protection sphere, requirements of international standards and preparation of recommendations for such activity improvement
Environmental damage	Negative change in environment caused by pollution which resulted in degradation of natural ecosystems and depletion of natural resources
Environmental management	Part of the general corporate management system with a clear organization structure and aimed at reaching the objectives indicated in the environmental policy by means of environmental programs implementation
Environmental monitoring (ecological monitoring)	Comprehensive system of environment monitoring, evaluation and forecast of environmental changes under the impact of natural and man-caused factors
Environmental quality	Environmental condition characterized by physical, chemical, biological and other parameters and/or their combination
Environmental requirements (nature protection requirements)	Any obligatory conditions, limitations or their combination for economic or other activity, established by laws, other regulatory legal acts, environmental norms, state standards and other regulatory documents in the environmental protection sphere
Environmental safety	State of protection of the environment and vital interests of humans from possible adverse impact of economic and other activity, natural and industrial emergencies, and their consequences
Environmental surveillance	System of measures aimed at prevention, detection and elimination of legislation violation in the environmental protection sphere, provision of fulfillment by entities of economic or other activity of the requirements, including norms and regulatory documents, in the environmental protection sphere
EP (environment protection)	Activity aimed at preservation and recovery of the environment, rational use and reproduction of natural resources, prevention of the adverse environmental impact of economic and other activity and liquidation of its consequences (hereinafter environment protection activity)
FER	Fuel and energy resources
GCF	Gas condensate field
GDS	Gas distribution station
Global warming potential (GWP)	Value characterizing heating effect of a greenhouse gas compared to the effect of carbon dioxide molecule
GPU	Gas pumping unit
Greenhouse gases (GHG)	Gases that presumably cause the global greenhouse effect. The main greenhouse gases in the sequence of their estimated impact on the Earth's heat balance include water steam, carbon dioxide, methane, ozone, sulphurylfluoride, halocarbons and nitrogen oxide
LNG	Liquefied natural gas
LPUMG	Line production department of main gas pipelines
Natural complex	Complex of natural objects functionally and naturally related to each other, united by geographic and other corresponding characteristics
Natural object	Natural environmental system, natural landscape and their components, which preserved their natural properties

Name	Definition
Natural object	Natural environmental system, natural landscape and their components, which preserved their natural properties
Natural resources	Environmental components, natural, natural and man-made objects which are or can be involved in economic or other activities as energy sources, manufacturing and consumption as well as have consumer value
NGV	Natural gas vehicle (NGV) is an alternative fuel vehicle that uses compressed natural gas or liquefied natural gas as a cleaner alternative to other fossil fuels
OEC	Operation environmental control
OEM	Operation environmental monitoring
OGCF	Oil, gas & condensate field
Pollutant	Substance or a mixture of substances that occur in amounts and/or concentrations exceeding specified limits for exposure to chemicals, radiation sources, other substances and microorganisms, and affect the environment negatively
SPNA	Specially protected natural areas

Russian business structures

Name	Definition
AO	Joint Stock Company
OAO	Open Joint Stock Company
OOO	Limited Liability Company
PAO	Public Joint Stock Company
ZAO	Closed Joint Stock Company

Measurement of units

Unit	Definition
cm	cubic meter
Gcal	billion calories
ha	hectare (ten thousand square meters)
mm	million
mcm	thousand cubic meters
mcmd	thousand cubic meters per day
mmcm	million cubic meters
bcm	billion cubic meters
t	tonne
kilotonne	thousand tonnes
t c.e.	tonne of coal equivalent
W	watt
Wh	watt hour
kW	thousand watts
MW	million watts

Addresses and Contacts

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Appendix

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Independent Practitioner's Limited Assurance Report relating to the information on greenhouse gas emissions from the main economic activities of PJSC Gazprom (transportation, production, processing and underground storage) in 2017

To the Management of PJSC Gazprom

Introduction

We were engaged by the Management of PJSC Gazprom (hereinafter the "Management") to undertake a limited assurance engagement relating to the information on greenhouse gas ("GHG") emissions from the main economic activities of PJSC Gazprom (transportation, production, processing and underground storage) in 2017 (hereinafter – the information on GHG emissions from the main economic activities) with a conclusion providing limited assurance that nothing has come to our attention that causes us to believe that the Management Statement that the information on GHG emissions from the main economic activities is prepared, in all material respects, in accordance with the applicable criteria (set out below in section "Applicable Criteria" of this report) and is free from material misstatement, is not fairly stated.

The information on GHG emissions from the main economic activities is presented in the table "Dynamics of greenhouse gas emissions from main activities of PJSC Gazprom, 2014–2017, mm tonnes of CO_2-equivalent", in section "Greenhouse Gas Emissions" of the attached PJSC Gazprom Environmental Report 2017 (hereinafter – the "Report"). Our conclusion does not apply to any other information provided in the Report.

Management's Responsibility

Management is responsible for the preparation of the information on GHG emissions from the main economic activities in accordance with the applicable criteria (set out below in section "Applicable Criteria" of this report) and for the information contained therein.

This responsibility includes designing, implementing and maintaining the system of internal control relevant to the preparation of the information on GHG emissions from the main economic activities that is free from material misstatement, whether due to fraud or error. This responsibility also includes: selecting the applicable criteria, selecting and applying relevant GHG quantification methodologies and GHG reporting policies, preventing and detecting fraud, identification of and compliance with legal requirements applicable to PJSC Gazprom, developing assumptions and estimates, which are

Audited person: PJSC Gazprom.

Entered in the Unified State Register of Legal Entities, 1027700070518

Audit firm: JSC "KPMG", a company incorporated under the Laws of the Russian Federation, a member firm of the KPMG network of independent firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.

Entered in the Unified State Register of Legal Entities, № 1027700125628.

Member of the Self-Regulating Organization of Auditors Russian Union of Auditors and has Primary Registration Number of the Entry in the State Register of Auditors and Audit Firms 11603053203.

reasonable in the current circumstances, maintaining sufficient documentation with regard to the information on GHG emissions from the main economic activities.

Our Responsibilities and Applicable Standards

Our responsibility is to express a limited assurance conclusion on the Management Statement relating to the information on GHG emissions from the main economic activities based on the procedures we have performed and the evidence obtained. We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements 3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the International Auditing and Assurance Standards Board. That Standard requires that we plan and perform our procedures to obtain a meaningful level of assurance about whether the Management Statement that the information on GHG emissions from the main economic activities has been prepared, in all material respects, in accordance with the applicable criteria (set out in section "Applicable Criteria" of this report) and is free from material misstatement, is fairly stated.

Our Independence and Quality Control

We have complied with the independence and ethical requirements established by the Rules on Independence of Auditors and Audit Firms and the Code of Professional Ethics for Auditors approved by the Audit Council of the Ministry of Finance of the Russian Federation and by the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which are based on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

We apply the *International Standard on Quality Control* 1 and apply accordingly a system of quality control that includes documented policies and procedures for compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Procedures Performed

A limited assurance engagement undertaken in accordance with ISAE 3410 involves assessing the suitability in the circumstances of PJSC Gazprom's use of the applicable criteria (set out below in section "Applicable Criteria" of this report) as the basis for the preparation of the information on GHG emissions from the main economic activities, assessing the risks of material misstatement of the above mentioned information whether due to fraud or error, responding to the assessed risks as required in the specific circumstances, and evaluating the overall presentation of the information on GHG emissions from the main economic activities. The nature, timing and extent of procedures selected is a matter of our professional judgment, including the assessment of the risk of material misstatement in the preparation of the information on GHG emissions from the main economic activities, whether due to fraud or error, our understanding of the activities of PJSC Gazprom, as well as other circumstances of the engagement.

In making this risk assessment, we considered the internal control relevant to the preparation of the information on GHG emissions from the main economic activities, in order to design procedures that are appropriate in the circumstances, but not for the purposes of expressing a conclusion as to the effectiveness of the internal control.

Our engagement also included: assessing the appropriateness of the particular GHG emissions included in the information on GHG emissions from the main economic activities; the suitability of the applicable criteria (set out below in section "Applicable Criteria" of this report) used in preparing the information on GHG emissions from the

main economic activities in the circumstances of the engagement; evaluating the appropriateness of the GHG quantification methods, policies and procedures used in the preparation of the information on GHG emissions from the main economic activities and the reasonableness of estimates made by Management.

The procedures we performed were based on our professional judgment and included inquiries, observation of the processes performed, inspection of documents, analytical procedures, assessment of the appropriateness of the GHG quantification methods, as well as reconciliation of data used for GHG calculation with the respective underlying records.

The procedures we developed based on the risk assessment included, but were not limited to, the following:

- Assessment of compliance with applicable criteria (presented in the "Applicable criteria" section of this report) in the preparation of information on GHG emissions from the main economic activities;
- Assessment of the validity and applicability of key assumptions;
- Inquiries to gain an understanding of the conditions affecting the information on GHG emissions from the main economic activities;
- Interviewing representatives of the Management and responsible employees of PJSC Gazprom regarding the internal procedures regulating the collection of data used in the preparation of the information on GHG emissions from the main economic activities;
- Site visits at selected sites of PJSC Gazprom to assess the completeness of the emissions sources identification, data collection methods, assessment of input data and relevant assumptions applicable to the conditions of the engagement;
- Corroboration of the data used in the preparation of the information on GHG emissions from the main economic activities with data from available specialized and non-specialized sources, for the purpose of its completeness, accuracy and consistency;
- Recalculation of quantitative data and inspection of underlying documentation.

The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Accordingly, we do not express a reasonable assurance opinion about whether the information on GHG emissions from the main economic activities is prepared, in all material respects, in accordance with the applicable criteria (set out below in section "Applicable Criteria" of this report).

Independent Practitioner's Limited Assurance Report relating to the information on GHG emissions from the main economic activities of PJSC Gazprom (transportation, production, processing and underground storage) in 2017

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Applicable Criteria

Applicable criteria comprise relevant requirements, contained in the following documents:

- International Standard ISO 14064-1-2006[1] (GOST R ISO 14064-1-2007[2]): Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals;
- 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 the Environment of Russia dated 30 June 2015)[3].

Management Statement

Management states that the following information on GHG emissions from the main economic activities presented in the table "Dynamics of greenhouse gas emissions from main activities of PJSC Gazprom, 2014–2017, mm tonnes of CO_2-equivalent", in section "Greenhouse Gas Emissions" of the attached PJSC Gazprom Environmental Report 2017:

— Transportation	**92.28** million tonnes of CO_2-equivalent
— Production	**13.07** million tonnes of CO_2-equivalent
— Processing	**5.46** million tonnes of CO_2-equivalent
— Underground storage	**1.34** million tonnes of CO_2-equivalent

was prepared, in all material respects, in accordance with the applicable criteria (set out in section "Applicable Criteria" of this report) and is free from material misstatement.

Inherent Limitations

GHG quantification is subject to inherent uncertainty because of the incomplete scientific knowledge used to determine emission factors and the values needed to combine emissions of different gases.

Conclusion

Our conclusion has been formed on the basis of, and is subject to, the matters outlined in this report. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Based on the procedures that we have performed and the evidence that we have obtained, nothing has come to our attention that causes us to believe that the Management Statement, asserting that the information on GHG emissions from the main economic activities has been prepared, in all material respects, in accordance with the applicable criteria (set out in section "Applicable Criteria" of this report) and is free from material misstatement, is not fairly stated.

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[1] https://www.iso.org/standard/38381.html

[2] http://docs.cntd.ru/document/gost-r-iso-14064-1-2007

[3] http://docs.cntd.ru/document/420287801

Restriction of Use of Our Report

Our limited assurance report relating to the information on GHG emissions from the main economic activities in 2017 has been prepared for the Management solely for the purposes of providing such information in the Report and does not imply its use for any other purposes or in any other context.

Zaitsev Stanislav Valerievich

JSC "KPMG"

Moscow, Russia

10th May 2018

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