

Environmental Protection

Goal of the environmental policy of PJSC IDGC of Siberia is the improvement of a level of Company environmental safety, and growth of capitalization of Company distribution organizations by ensuring reliable and environmentally-safe transport and distribution of power. Goal of environmental policy in the sphere of ensuring environmental safety of power industry is gradual limitation of load of the fuel and energy sector on the environment by means of reduction of pollutant emission (discharge) into the environment and reduction of production and consumption waste generation.

PJSC IDGC of Siberia joined the implementation of environmental policy in the electric grid complex approved by the decision of the Board of Directors of PJSC "Russian Grids" as of 01.03.2017 (Minutes No. 254 as of 03.03.2017) and approved the Action Plan for the implementation of the environmental policy for 2017-2019 (Extract from the minutes of the meeting of the Board of Directors of PJSC IDGC of Siberia No. 255/17 as of 14.11.2017).

The basic principles of the environmental policy of PJSC IDGC of Siberia are as follows:

- Continuous improvement of environmental protection and environmental management system
- Complying with the established standards of impact on the environment
- Compliance of Company activity with all statutory requirements
- Openness and accessibility of environmental information to the public
- Informing all employees of PJSC IDGC of Siberia and other interested parties on environmental aspects of Company activity
- Regular analysis of the impact of the Company activities on the environment, taking into account the results of such analysis for establishing and reviewing environmental goals and objectives
- Constant financial and organizational support of the environmental policy
- Involvement of Company personnel and constant improvement of a level of their competence in environmental issues

Compliance with the Requirements of the Environmental Law in a Part of Execution of the Required Authorization Documents.

In 2018, 14 projects of Waste Generation and Disposal Targets were developed for the total amount of RUB 565.8 thsd. No Waste Generation and Disposal Targets shall be developed in 2019.

In 2018, 5 projects of maximum permissible discharges were developed for the total amount of RUB 1,056.00 thsd, including:

- in branch of PJSC IDGC of Siberia – Omskenergo – 2 projects for the sum of RUB 390.00 thsd
- in branch of PJSC IDGC of Siberia – Chitaenergo – 1 project for the sum of RUB 410.00 thsd
- in branch of PJSC IDGC of Siberia – Buryatenergo – 2 projects for the sum of RUB 256.00 thsd

The Program of Environmental Policy Implementation in 2018 was developed in every branch of PJSC IDGC of Siberia. Principles of the environmental policy are implemented by means of control over compliance with the environmental law, environmental monitoring, environmental management regulation, environmental certification, environmental and resource target programs, environmental audit and technical measures.

Branches of PJSC IDGC of Siberia exercise industrial environmental control in accordance with the Programs of Industrial Environmental Control. Total expenses for PJSC IDGC of Siberia in 2018 amounted to RUB 906.72 thsd. 228 measurements were taken.

Expenses for environmental protection, mln RUB

| Name of the indicator | 2016 | 2017 | 2018 | 2018 (plan) |
|---|-----------|-----------|-----------|-------------|
| Total | 26,183.67 | 33,380.35 | 25,056.23 | 14,632.68 |
| Current expenses | 13,091.83 | 16,690.17 | 12,528.11 | 7,316.48 |
| Protection of water resources | 5,367.62 | 5,316.31 | 4,314.03 | 477.67 |
| Protection of atmospheric air | 2,262.72 | 4,031.48 | 1,912.31 | 3,668.44 |
| Protection of the environment from wastes | 5,461.49 | 7,342.38 | 6,301.77 | 3,170.09 |

Index fluctuations are random and depend on a period of development of design documentation and implementation of measures on burial of PCB-containing equipment according to the schedule.

Expenses for prevention of impact on the environment and environmental management system, thsd RUB

| Name of the indicator | 2016 | 2017 | 2018 |
|--|-------------------------|-------------------------|-------------------------|
| Training and preparation of employees (further training, participation in conferences, etc.) | 1,009.40 (110 pers.) | 1,107.40 (135 pers.) | 2,093.85 (238 pers.) |
| External certification of management systems/recertification | – | 450.0 | 436.0 |

The Company performed certification of the integrated management system against the requirements of the international standards ISO 9001, ISO 14001, ISO 50001, ISO 45001.

Main directions for achieving the required goal for the purpose of implementation of the environmental policy of PJSC IDGC of Siberia are as follows:

- Reduction of wastes of hazard class IV – V and wastes transferred for disposal
- Decommissioning and disposal of PCB-containing equipment in accordance with the Stockholm Convention on Persistent Organic Pollutants
- Implementation and application of the best existing technologies in the sphere of waste management, subject to economic and social factors
- Cooperation with public organizations working in the sphere of preservation of the population of rare birds listed in Red Book, as well as with research and scientific organizations carrying out works in the sphere of environmental protection, participation in volunteer campaigns, holding campaigns on waste paper collection
- Improvement of the system of PJSC IDGC of Siberia readiness for action in case of occurrence of man-caused emergencies
- Environmental risk management, development and implementation of measures on their mitigation

Number of Facilities Having Negative Impact on the Environment by Categories.

As of 2018, number of facilities having negative impact on the environment and put on file amounts to 1,079 for PJSC IDGC of Siberia, including:

- In the branch of PJSC IDGC of Siberia – Altayenergo: 154 facilities of hazard class IV
- In the branch of PJSC IDGC of Siberia – Buryatenergo: 263 facilities (233 – hazard class III and 30 – hazard class IV)
- In the branch of PJSC IDGC of Siberia – Gorno-Altayskiye Power Grids: 16 facilities of hazard class IV
- In the branch of PJSC IDGC of Siberia – Kuzbassenergo – Regional Electric Grids: 90 facilities (62 – hazard class III and 28 – hazard class IV)
- In the branch of PJSC IDGC of Siberia – Krasnoyarskenergo: 298 facilities (188 – hazard class III and 110 – hazard class IV)
- In the branch of PJSC IDGC of Siberia – Omskenergo: 36 facilities (34 – hazard class IV and 2 – hazard class III)
- In the branch of PJSC IDGC of Siberia – Khakasenergo: 59 facilities of hazard class IV
- In the branch of PJSC IDGC of Siberia – Chitaenergo: 163 facilities (102 – hazard class III and 61 – hazard class IV)

Protection and Rational Use of Water Resources

Water wells in PJSC IDGC of Siberia are operated based on mineral licenses issued by territorial Subsurface Management Departments at the location of the branches. PJSC IDGC of Siberia has 26 licenses for the use of subsurface resources (wells) issued in relation to 32 wells.

The branch of PJSC IDGC of Siberia – Altayenergo – has 1 license for the use of 1 well.

The branch of PJSC IDGC of Siberia – Buryatenergo – has 7 licenses for the use of subsurface resources (wells) issued in relation to 7 wells.

The branch of PJSC IDGC of Siberia – Krasnoyarskenergo – has 10 licenses for the use of 12 wells.

The branch of PJSC IDGC of Siberia – Omskenergo – has 2 licenses for the use of 2 wells.

The branch of PJSC IDGC of Siberia – Khakasenergo – has 5 licenses for the use of 9 wells.

The branch of PJSC IDGC of Siberia – Chitaenergo – operates one water well No. 27-124 based on mineral license CHIT 03616 VE as of 10.07.2017 issued to PJSC IDGC of Siberia by the Ministry of Natural Resources for the Zabaikalye Region and valid till 31.12.2031. Well No. 27-124 is used for own production and household needs of the production department TsES.

The branch of PJSC IDGC of Siberia – Krasnoyarskenergo – reissued 2 licenses.

In 2018, for all water wells of branches of PJSC IDGC of Siberia compulsory measures on the protection and defense of water bodies were performed in accordance with the requirements of the license agreements:

- In-process control over the quality of water was performed in accordance with SanPiN 2.1.4.1175-02 "Hygienic Requirements to the Quality of Water for Non-Public Water Supply. Sanitary Protection of Sources"
- Water consumption was measured using a water gauge and technical state of water wells was checked (state of pipe casings and heads, pumping equipment, measurements of well depth) and fixed in the special Log
- State statistical reports on the form 2-TP (water sector) "Information on Water Use" were formed and submitted to territorial departments of water resources within the Yenisei Basin Management
- Water tax for water extraction from water well was paid
- Quality of ground waters was checked

The wells are used for own production and household needs, needs of the population and other enterprises. Contracts are made with all the consumers.

No polluted waste waters are discharged into water bodies at the production sites of branches of PJSC IDGC of Siberia that is why there are no treatment facilities and a circulation water system.

In 2018, water consumption decreased by 5.39% (142.792 thsd m³) as compared to 2017 (150.49 thsd m³), which was conditioned by decrease in water consumption for domestic needs.

Total amount of water extracted by sources, m³

| Name of the indicator | 2016 | 2017 | 2018 | 2018 (plan) |
|--|---------|--------|---------|-------------|
| Surface water | 0 | 0 | 0 | 0 |
| Ground waters | 220,528 | 44,190 | 28,605 | 28,605 |
| Wastewater from another organization | 0 | 0 | 0 | 0 |
| Municipal and other water supply systems | 71,504 | 96,500 | 106,087 | 106,087 |

Reduction in water consumption is conditioned by transfer of wells to third-party organizations and municipalities. The right for the use of resources is terminated, and licenses are returned to the licensing authority.

Total volume of wastes discharged, m³

| Name of the indicator | 2016 | 2017 | 2018 | 2018 (plan) |
|-----------------------|---------|---------|---------|-------------|
| Waste volume | 292,032 | 140,690 | 134,692 | 134,692 |

Such index deviations are related to the fact that during production processes variables for waste volume can form, such as decommissioning of equipment and increase in cross-cut cleanup.

Protection and Rational Use of Soils

In 2018, the following measures were implemented in branches of PJSC IDGC of Siberia:

- Contracts were made with regional operators on collection and transport of solid municipal wastes
- Production wastes were transferred for disposal, neutralization and placement. Under contracts with specialized enterprises, demercuration of waste fluorescent lamps and disposal of used machinery and worn-out tires was performed. Wastes of ferrous and non-ferrous scrap metals were transferred to third-party organizations for reclamation. Moreover, under contracts made with municipal and rural organizations servicing specialized landfills, solid wastes were transferred for placement and liquid domestic wastes were taken to treatment facilities
- Laboratory and analytical control in places of production waste accumulation was performed
- State statistical reports on the form 2-TP (wastes) "Information on Formation, Use, Neutralization, Transport and Placement of Production and Consumption Wastes" were formed and submitted to territorial departments of the Federal Supervisory Natural Resources Management Service and regional Ministries of Natural Resources. Constant supervision over places of waste accumulation is performed in terms of their compliance with the norms of the environmental law of the Russian Federation and requirements of Company internal standards
- Repair works on oil-filled equipment of 35-110 kW substations were carried out, including, among other technological activities, activities on oil leakage elimination and replacement of rubber seals
- Sites for temporary accumulation of solid municipal and solid domestic wastes were organized in all structural subdivisions of branches of PJSC IDGC of Siberia

In 2018, insignificant increase by 10.41% (5,612.515 tons) in the volume of waste production in relation to the indicators of 2017 (5,083.46 tons) took place. Such increase was caused by retirement of machinery wastes (computers, printers, CPUs, scanners, telephones and plateaus) in 2018.

Total mass of wastes by types and treatment methods, tons

| Waste class | 2016 | 2017 | 2018 |
|-------------|-----------|-----------|-----------|
| Class 1 | 2.481 | 2.503 | 1.761 |
| Class 2 | 16.139 | 12.99 | 7.947 |
| Class 3 | 134.083 | 188.966 | 164.173 |
| Class 4 | 1,324.88 | 1,505.707 | 1,989.303 |
| Class 5 | 3,847.514 | 3,373.293 | 3,449.33 |
| Total | 5,325.097 | 5,083.46 | 5,612.52 |

The wastes were transferred for placement on a landfill under a contract made with a specialized organization.

Emissions

Activity on the protection of atmospheric air is carried out in accordance with the designed and agreed projects of maximum permissible emissions and permits obtained for production sites of branches of PJSC IDGC of Siberia. Pollutant emissions into the atmospheric air originate from organized and unorganized sources, which is proved by inventory of atmospheric pollution sources held within the frames of development of projects of maximum permissible emissions. In accordance with these projects, control over compliance with the norms of pollutant emissions into the atmosphere is exercised by computational method (branch of PJSC IDGC of Siberia – Chitaenergo) with the attraction of accredited laboratories. In general in 2018 pollutant emissions into the atmosphere from stationary sources for PJSC IDGC of Siberia did not exceed the specified standards of maximum permissible emissions.

Air emissions, tons

| Name of the indicator | 2016 | 2017 | 2018 |
|----------------------------|--------|--------|--------|
| Gross volume of pollutants | 233.24 | 124.71 | 155.37 |

The following activities were performed:

- Projects of maximum permissible emissions were agreed, permits for pollutant emissions into the atmosphere were obtained
- Annual forms of statistical reports 2-TP (air) were prepared and agreed
- Stationary sources of emissions producing negative impact on the environment were registered in state bodies, and certificates of state registration of a facility producing negative impact on the environment were obtained

During automobile maintenance, control over toxicity of vehicle exhaust gases is exercised.

In 2018 in the branch of PJSC IDGC of Siberia – Altayenergo – instrumental measurements of pollutant emissions into the atmosphere were taken at 52 stationary sources under the program of industrial environmental control.

In the branch of PJSC IDGC of Siberia – Omskenergo – instrumental measurements of pollutant emissions into the atmosphere were taken under the program of industrial environmental control for the purpose of control over compliance with the standards of maximum permissible emissions at 3 stationary sources (boiler rooms at bases of the production department Eastern Electric Grids and Northern Electric Grids, in Kormilovsky Regional Electric Grids) for the amount of RUB 49.0 thsd.

Noise was studied under a contract at Pachinskaya substation, Polutornik substation, Kolmogorovskaya substation and Urskaya substation for the amount of RUB 22.08 thsd for the purpose of production control at the border of the calculated sanitary protection zone. The noise level is within the permissible limits.

Dust- and gas-trapping equipment was not used in the Company, and there was no need to install noise barriers in 2018.

Biodiversity and Land Conservation

Within the frames of the All-Russian Socioeconomic Campaign “Distribution Power Grid Complex – for Environmental Protection” and the target communication program “Let’s Preserve the Forest Energy”, in spring 2018 clean-up events were organized in the territory of all structural subdivisions of branches of PJSC IDGC of Siberia. Within the frames of such inner clean-up events, territories aligning to bases of regional electric grids, production departments and branch substations were cleared out. Aesthetics of “Power Men Alleys” is maintained in all Company branches.

Employees of the branches of PJSC IDGC of Siberia – Krasnoyarskenergo, Altayenergo and Kuzbassenergo – Regional Electric Grids – participated in the All-Russian Festival “Brighter Together”.

From 2012 on, the branch of PJSC IDGC of Siberia – Chitaenergo – constantly cooperates with Federal State Budgetary Institution “State Nature Biosphere Reserve Daursky” for the purpose of prevention of death of wild birds on overhead transmission lines.

Fauna Protection, Including Protection of Birds from Death on 6-10 kW Overhead Transmission Lines

Within the frames of compliance with the requirements of Federal Law No. 52-FZ dated 24.04.1995 “Concerning Fauna” and the schedule approved by PJSC IDGC of Siberia, in 2018 the Company procured and installed 4,984 pcs. for the total amount of RUB 3,562.44 thsd.

- Branch of PJSC IDGC of Siberia – Buryatenergo – 30 pcs. for the amount of RUB 14.1 thsd
- Branch of PJSC IDGC of Siberia – Gorno-Altayskiye Power Grids – 417 pcs. for the amount of RUB 101.3 thsd
- Branch of PJSC IDGC of Siberia – Krasnoyarskenergo – 1,021 pcs. for the amount of RUB 885.5 thsd
- Branch of PJSC IDGC of Siberia – Kuzbassenergo – Regional Electric Grids – 60 pcs. for the amount of RUB 19.00 thsd
- Branch of PJSC IDGC of Siberia – Khakasenergo – 314 pcs. for the amount of RUB 61.6 thsd
- Branch of PJSC IDGC of Siberia – Chitaenergo – 3,142 pcs. for the amount of RUB 2,480.94 thsd

Technical Measures

Performance of Obligations of the Stockholm Convention on Persistent Organic Pollutants in a Part of Decommissioning of PCB-Containing Equipment.

In 2018, PCB-containing equipment was not transferred for destruction. A plan for decommissioning and disposal of PCB-containing equipment was developed and approved at the Board of Directors of PJSC IDGC of Siberia. According to the plan, works on equipment decommissioning and transfer for disposal are planned beginning from 2019.

Use of Advanced Technologies and Solutions Aimed at Rational Use of Natural Resources and Reduction of Negative Impact Produced on the Environment during Production Activity.

According to the Regulations on Technical Policy IDGC of Siberia, one of the main strategic goals of the Company development is the minimization of negative impact produced on the environmental during construction, reconstruction, operation and repair of power facilities. At present, self-supporting insulated wires are used in the reconstruction and new construction of 0.4-10.1 kW overhead transmission lines. The use of this technology makes it possible to cut down trees and shrubs during the construction and further operation of overhead transmission lines in minimum volumes, as well as to ensure safety of birds during contact with overhead transmission lines in the territory of branches presence. During reconstruction and new construction of 110/35/10 kW substations in branches of PJSC IDGC of Siberia, modern 110 kW SF6 circuit-breakers and modern 10 and 6 kW vacuum circuit breakers are used. SF6 circuit-breakers require no column heating in winter period, thus, reducing power consumption for own needs, moreover, absence of transformer oil in SF6 and vacuum circuit-breakers increases time between repairs and considerably reduces negative impact produced on the environment.

The Program of Industrial Environmental Control

Carrying out industrial environmental control:

- In the field of waste management
- Over pollutant emissions to atmosphere from stationary sources
- Over water extraction from underground sources (wells)

In compliance with the requirements of environmental law and internal standards, the Program of Industrial Environmental Control is annually developed. According to the IEC Program, the following activities were carried out in structural divisions of branches to reduce the impact of production activities on the environment:

- Sampling (measurements) from stationary sources of emissions
- Vehicle checks for emissions of CH and CO, smoke during vehicle inspection
- Monitoring of the state of the environment (soil) in the places of temporary storage (accumulation) of industrial wastes

- Laboratory investigations of the quality of groundwater of water wells

Based on the results of the monitoring:

- Factual emissions of pollutants into the atmospheric air do not exceed the established standards for maximum permissible emissions
- Regular visual inspection shows the absence of contamination of soil with harmful substances and the absence of cluttering of places of accumulation and storage of wastes
- Water analysis of underground wells of the branches confirms the compliance of the investigated indicators with the requirements of SanPiN 2.1.4.1175-02 Hygienic Requirements to Quality of Water of Non-Centralized Water Supply Systems"

Qualification of Company Personnel

In 2018, 230 managers and specialists of PJSC IDGC of Siberia in general received training for the total amount of RUB 2,036.75 thsd under the following programs:

- "Ensuring Environmental Safety of General Economic Management Systems by Managers and Specialists";
- "Ensuring Environmental Safety during Works in the Field of Managing Wastes of Hazard Class I-IV".

Including:

- branch of PJSC IDGC of Siberia – Altayenergo: 31 managers and specialists received training for the amount of RUB 277.45 thsd;
- branch of PJSC IDGC of Siberia – Buryatenergo: 38 managers and specialists received training for the amount of RUB 324.65 thsd;
- branch of PJSC IDGC of Siberia – Kuzbassenergo – Regional Electric Grids: 55 managers and specialists received training for the amount of RUB 467.65 thsd;
- branch of PJSC IDGC of Siberia – Krasnoyarskenergo: 60 managers and specialists received training for the amount of RUB 529.500 thsd;
- branch of PJSC IDGC of Siberia – Omskenergo: 40 managers and specialists received training for the amount of RUB 274.7 thsd;
- branch of PJSC IDGC of Siberia – Chitaenergo: 13 managers and specialists received training for the amount of RUB 146.3 thsd;
- branch of PJSC IDGC of Siberia – Khakasenergo: 1 manager received training for the amount of RUB 16.00 thsd.

Environmental Audit. Information about the development, implementation and certification of the environmental management system taking into account requirements of international standard ISO 14001

In 2017, PJSC IDGC of Siberia obtained a certificate for compliance with the requirements of GOST R ISO 14001-2016 (Certificate No. 17.1665.026 as of 31.10.2017).

In 2018 within the frames of environmental management system 3 recertification audits (check by external auditors), 2 inspections, 1 environmental audit and 19 internal checks were held, based on the results of which 72 drawbacks were found.

Recertification audits for the compliance to the requirements of standard GOST R ISO 14001-2016 were held in the executive body of PJSC IDGC of Siberia and the branches Gorno-Altayskiye Power Grids and Khakasenergo. Based on the results of the recertification audit of the environmental management system, a plan of corrective and prevention actions aimed at elimination of these drawbacks was developed.

Within the environmental management system, PJSC IDGC of Siberia updated the following Company standards (CO):

- CS 5.111/0-03 "Industrial Environmental Control. Regulation"
- CS 3.019/0-07 "Submission of Accounting Documents. Regulation"
- CS 5.030/0-01 "Formation of Environmental Goals and Programs in the Sphere of Environmental Protection. Regulation"

Moreover, registers of important environmental aspects of Company branches were updated in 2018.

