

Environmental responsibility



We have been actively engaged in reducing our environmental footprint, by decreasing emissions and lowering the energy intensity of our production processes. We understand that chemical production presents certain environmental risks, and we are therefore improving EuroChem's environmental policy and management system. During 2005-2010 we spent an aggregate RUB 4.6 billion on environmental and industrial safety.

Our Company

Economic sustainability

Environmental responsibility

Social responsibility

Results and attachments

Our actions to minimize our impact on the environment and the results achieved. An overview of environmental management and projects in the sphere of emissions reduction, equipment upgrading, environmental monitoring, re-cultivation, and environmental risk mitigation.

42 EuroChem's environmental policy in brief

43 Environmental management system

44 Environmental impact management

46 **Case study 2:** Deployment of air quality monitoring units

48 The development of the Company's environmental programs

49 Main environmental projects at EuroChem facilities

Key facts

RUB 917.9m

2010 expenditure on environmental protection and industrial safety.

- **20%** – increase in environmental protection and industrial safety spending
- **4.5%** – decrease in effluent discharge
- **3.0%** – decrease in energy consumption for heating



Phosphate and potash fertilizers need to be applied to tomato plants during planting and before flowering. As the plants bloom, potash applications should be increased. Agricultural producers throughout the world successfully use EuroChem fertilizers for applications such as tomato growing.
See pages 12-13 for additional product information

EuroChem's environmental policy in brief

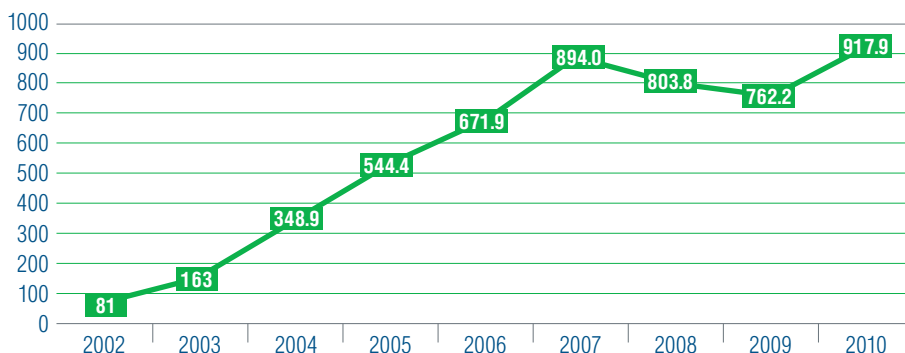
Our environmental policy

- is based on EuroChem's corporate policy management system
- is founded on the principle of reducing our environmental footprint
- is geared towards the permanent improvement of environmental performance and compliance with international standards

EuroChem's HSE policy

- to avoid harm to employees and the public
- to comply with all relevant legislation
- to protect the environment
- to use raw materials and power efficiently
- to be publicly accountable
- to be an industry leader taking advantage of the latest technologies
- to view safety and environmental protection as a key performance indicator
- to set and achieve targets, to constantly improve performance and to reduce risks
- to engage each and every employee of the Company, including outsourced personnel, in achieving these goals

Investments in environmental and industrial safety (RUB m)



Despite EuroChem's increasing economic growth rates, our environmental impact continues to decrease. As we modernize our production processes, our environmental footprint diminishes. We strive to produce goods which not only comply with, and exceed, our customers' requirements, but are also safe for the environment, our employees and the public.

EuroChem's management system is certified to ISO 9001 (quality), ISO 14001 (environment), and OHSAS 18001 (occupational health and safety).

Environmental measures are embedded throughout the Company's business processes. All facilities implement industrial and environmental protection controls.

Key environmental projects Key achievements

- the re-cultivation of the phospho-gypsum spoil heaps and the creation of a closed-loop water system at EuroChem-BMU
- the re-cultivation and water protection measures at Kovdorskiy GOK
- the deployment of environmental monitoring stations in Tuapse, Nevinnomyssk, and Adygea

1 Environmental policy in place, geared towards leading international standards

2 Controlled environmental management and environmental risk management systems

3 Upgrading and modernization of production processes to reduce the environmental impact of operations

4 Transparency through full environmental disclosure

5 Active dialogue with local communities and environmental organizations

Environmental management system

Our Company

Economic sustainability

Environmental responsibility

Social responsibility

Results and attachments

Our environmental impact decreases as our environmental policy and management systems improve. Our environmental contributions continue to increase year by year.



Our responsibilities

- constant improvement in efficiency of the main production processes as a result of:
 - use of advanced technologies and the introduction of energy and resource conservation methods
 - use of modern and reliable equipment
 - reduction of the risks associated with industrial safety and HSE
 - improvements in personnel qualifications and development
- focus on preventing a negative impact on quality, industrial safety, or HSE performance
- keeping employees, contractors and other stakeholders informed about our quality, industrial safety, and HSE requirements and targets
- the development of a corporate culture uniting all employees under a common idea of professional leadership

Within EuroChem's management system, the Company:

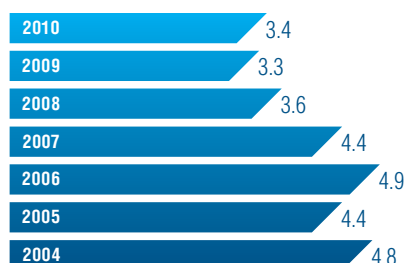
- complies with all regulatory requirements
- analyzes, monitors and complies with all customer requirements
- constantly seeks to improve its management system
- sets and enforces standards for employees, suppliers and contractors in quality management, industrial safety, and HSE

Environmental impact management

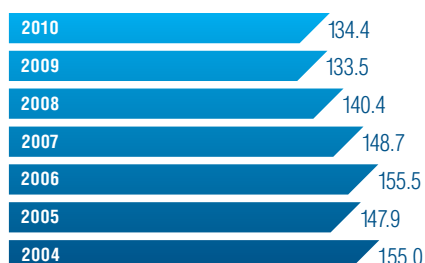
Environmental impact management

Environmental impact	Business segments	Management of our environmental impact Growth/decrease (+/-) of specific indicators in relation to 2009
Atmospheric emissions	Nitrogen	-10.5%
	Phosphate	-1.0%
Effluent discharge	Nitrogen	+1.4%
	Phosphate	-7.4%
Water consumption	Nitrogen	+6.9%
	Phosphate	-3.9%
Waste generation	Nitrogen	-13.0%
	Phosphate	-8.7%
Energy consumption	Nitrogen	+2.2%
	Phosphate	-0.5%
Heat generation	Nitrogen	-5.5%
	Phosphate	0.0%

Non-recycled water consumption 2004-2010
(m³ per one tonne of production)



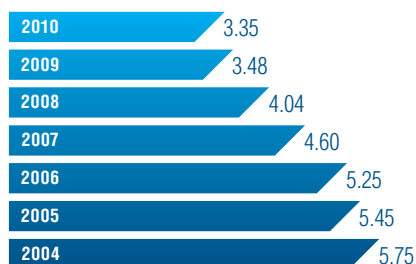
Energy consumption 2004-2010
(kW/h per one tonne of production)



Atmospheric emissions 2004-2010
(kg/year per tonne of production)



Effluent discharge 2004-2010
(m³ per tonne of production)



Key environmental management measures in 2010

Environmental category	Facilities	Measures	Achievements
Energy efficiency	EuroChem-BMU	Upgrade of the sulphuric acid production facility to increase annual capacity to 720,000 tonnes	Recapturing steam and installing an HRS system due to generate savings of 187.2 Gcal/year. Currently being implemented
	Phosphorit	Refurbishment of power generating units	Repairs have eliminated emergency stoppages at the power generation and production units
	Phosphorit	Replacement of obsolete sulphuric acid production equipment	Upgrading pumping facilities will improve the use of generated heat. Currently being implemented
	Novomoskovskiy Azot	Upgrade of the nitrogen production plant to bring daily production to 1,650 tonnes and to reduce power consumption at the No.3 nitrogen facility	Daily output of 1,660 tonnes at the No.3 nitrogen facility achieved, with a median annual natural gas consumption coefficient of 1,188 m ³ /tonne and annual median electric power consumption of 0.10198 MW/tonne
	Nevinnomysskiy Azot	Refurbishment of the UKL-7 plant with the replacement of GTT-3M by GTU-8 in plant No.5	The replacement of a turbine compressor with a highly efficient gas turbine GTU-8 unit will reduce energy consumption during weak nitric acid production. Currently being implemented
	Nevinnomysskiy Azot	Installation of frequency transformers	Planned decrease in power consumption of 8,263,900 kWh/year. Currently being implemented
Emissions	Novomoskovskiy Azot	Introduction of selective cleaning processes at two of the plant's nitric acid production units	Decrease in emissions by 357 tonnes/year
	Kovdorskiy GOK	Conduct research to strengthen the quarry slopes by applying polymer sheeting and turf, increasing operational safety and improving the environmental situation	Reduction in emissions. See page 48
Water usage	EuroChem-BMU	Construction of closed-loop water system	Elimination of effluent into surface waters. Currently being implemented
	Nevinnomysskiy Azot	Installation of reverse osmosis unit	Decrease in discharge of pollutants by 600 tonnes. Currently being implemented
	Novomoskovskiy Azot	Transfer of storm water and wastewater drainage from K-1 chamber to in-house waste unit	Decrease in effluent discharge to the Shatskoe reservoir
	Phosphorit	Survey of biological and mechanical waste treatment units	Decrease in pollutants following the upgrade of waste treatment units
Waste	EuroChem-VolgaKaliy	Construction of modern solid waste landfill	Minimize environmental impact of landfill operations
ISO14001+standards	EuroChem-BMU	Installation of an atmospheric monitoring station (Khanskaya)	Improved environmental monitoring and dialogue with local residents
	Nevinnomysskiy Azot	Development of the 'Volchia Balka' sanitary zone	Reduced impact of industrial waste disposal

Deployment of air quality monitoring units

Case study 2

EuroChem is rolling out air quality monitoring units around its facilities. Implemented with the support of local and state authorities, NGOs, and the media, the units allow detailed monitoring of atmospheric pollution.

EuroChem is installing air quality monitoring stations around its production facilities. The stations allow the Company to comprehensively evaluate air quality and take appropriate measures to improve it. The stations provide real-time air quality data and measure the levels of a number of atmospheric pollutants. Additionally, meteorological systems collect data such as temperature, wind speed and direction, pressure, and humidity levels.

The installation of these stations is part of EuroChem's commitment to reduce its environmental impact in the regions where it operates.

Another two monitoring stations are set to be deployed in 2011, in the village of Mirny and in the settlement of Dolgogusevsky Khutor, both near EuroChem-BMU.

Development of air quality monitoring networks

Nevinnomyssk and Kochubeyevo

The stations are designed to monitor air quality in real time – to stream information to local authorities and community portals.

The Ministry of Natural Resources and Environment, in collaboration with Gidromet's Stavropol offices, monitors atmospheric emissions from industry and transport in the Nevinnomyssk and Kochubeyevo districts and oversees the operation of the stations. The City of Nevinnomyssk provides security for the stations and ensures utility service connection.

Khanskaya

The unit automatically measures the concentration of nitrogen oxides, ammonia, and sulphur dioxide. In addition, wind speed and direction, temperature, barometric pressure, and relative humidity are recorded.

Tuapse

Real-time monitoring of air quality to European standards. Data is continuously streamed to local authorities and community portals.

RUB 2.8m

Investment

RUB 3.83m

Investment

RUB 35.0m

Investment



The air quality monitoring units are deployed in more sensitive areas.



EuroChem has equipped the stations with leading-edge atmospheric analysis equipment.

The development of the Company's environmental programs

Key facts

20%

growth in investment in environmental and industrial safety

4.5%

decrease in effluent discharge

3.0%

decrease in energy consumption for heating

Environmental results

Although total emissions increased as a result of higher production volumes, per tonne data continued to decrease. In 2010, atmospheric emissions decreased by 1%, effluent discharge dropped 4.5%, and energy consumption for heating fell by 3.0%.

Electricity consumption increased slightly by 0.1% following the commissioning of the granulating unit at Novomoskovskiy Azot and due to increased working hours at the methanol facility for the second phase of the Ammonia-3 plant.

Water consumption increased by 3% as a result of the commissioning of new plants and use in in-house power generation.

Water consumption increased at Novomoskovskiy Azot due to the launch of a new closed-loop water cycle system for the Ammonia-3 production line and the increase in steam production and consumption at Phosphorit's power generating facility.

EuroChem's actions under the Kyoto Protocol

Following Russia's ratification of the Kyoto Protocol in 2005, the Company analyzed how best to apply the provisions of the Protocol to its facilities. One of the most promising projects includes the decrease of nitrous oxide emissions at both Novomoskovskiy Azot and Nevinnomysskiy Azot. The Company is ready to participate in the carbon market should the environmental protection treaty be extended beyond its 2012 expiry date.

The reinforcement of the Kovdorskiy GOK quarry slopes



This project includes the development of measures to strengthen the quarry slopes by applying polymer sheeting and turf, increasing operational safety and improving environmental protection.

One of the problems of open pit mining in deep quarries is the long-term stability of the slopes, which are affected by drilling and blasting operations and rock weathering.

To increase the safety of the mines and to protect the environment the following solutions were suggested for the quarry:

- polymer slope retention system
- to strengthen the slopes by promoting re-vegetation under the polymer slope retention system, therefore reducing the risk of rock-fall and cushioning any detached rock.

Environmental effects: reduced rock weathering, improved air circulation, and reduced concentration of harmful pollutants in the quarry.

Main environmental projects at EuroChem facilities

Our Company

Economic sustainability

Environmental responsibility

Social responsibility

Results and attachments

Phosphorit

In 2010, the Company carried out a large-scale project involving the replacement of obsolete equipment used in the production of sulphuric and phosphoric acids. As a result, the Company was able to reduce annual emissions of hydrogen fluoride (HF) by 22.75 tonnes, sulphuric acid by 46.64 tonnes, and diphosphorus pentoxide (P_2O_5) by 30.52 tonnes. Overall, the Company has reduced emissions by 43.6% over the last five years.

Kovdor mining and beneficiation plant

This environmental project enabled EuroChem to stop drawing water from Kovdor Lake, an environmentally protected site, for Kovdorskiy GOK's production needs at its main divisions: the beneficiation plant and the cogeneration power plant. Water intake from the lake totals approximately 10.5 cubic meters a year. Switching to the use of groundwater from the mine pit will help to reduce the impact that the plant has on the environment, preserve the flora and fauna of Kovdor Lake and improve the ecological situation both around the factory and within the nearby city. The project represents an investment of RUB 22.5 million.

In 2010, measures taken included the creation of watertight diaphragms in the bottom of the industrial landfill, a settling pond together with an inner drainage system, a sewer system with a pump station to help utilize sewage for technological purposes, unpaved roads for vehicles, protective earth walls around the perimeter of the dumpsite and timely reclamation of used land by the planting of forests. Overall, three landfill phases are to be carried out, each one designed with a 15-year lifespan. Project costs are RUB 22.5 million.

Nevinnomysskiy Azot

This project consists in the reconstruction of wastewater treatment facilities at the main pumping station, which also serves the town of Nevinnomyssk. At a total cost of RUB 25 million, the Company's investment included the reconstruction of the rake room of the main pumping station in the biochemical sewage treatment and technological waste disposal shop. The installation of new grates and presses for compacting sediments and removing them from the rake room increased the efficiency of mechanical and biological treatment of wastewater as well as the operation of the treatment plants' mechanical equipment.

EuroChem also installed gas analysis systems for measuring the concentration of nitrogen oxides, carbon monoxide and oxygen in shops 1-B and 1-V. The new equipment enables the Company to monitor emissions and reduce its impact on the environment. The Company plans to reduce nitrogen oxide emissions by 5 tonnes p.a. and ammonia emissions by 7 tonnes p.a. RUB 1.9 million has been allocated for this project.

A filtration system for circulating water is being set up in shop No.5, which produces weak nitric acid.

At a cost of RUB 13.53 million, high-efficiency filters are being installed which will improve the performance of the heat transfer equipment in the absorption node, thus reducing the cost of restoring and replacing the existing equipment, improving its efficiency, reliability and operational safety, and reducing its impact on the environment.

Plans have been made to reduce the amount of waste going to landfill, reducing ammonia emissions into the atmosphere and minimizing industrial and organic runoff. The project includes the upgrade of magnesium sulphate production in shop No.18 using sludge from shop No.3A; the construction of an ammonia emissions cleaning unit in shop No.2A that uses sulphate solution; the introduction of two air quality monitoring stations for wells of organically polluted wastewater as well as for the industrial and storm sewer; and the reconstruction of the ozonation system in the biochemical treatment shop.

The implementation of this environmental protection project enables Nevinnomysskiy Azot to:

- reduce the amount of magnesium-containing sludge going into the Volchya Balka landfill by 850 metric tonnes per year, by using the sludge in the production of complex mineral fertilizers while achieving cost savings by salvaging magnesium-containing raw materials
- reduce ammonia emissions from the granulation tower of shop No.2A
- continuously monitor the quality of the Company's industrial and organic runoff
- ensure reliable and proper operation of the system for dispersing the ozone/air mixture of the biochemical treatment shop into the wastewater system, in full compliance with current regulations regarding the bacteriological purification of wastewater discharge. At the same time, both the volume of unreacted ozone entering the atmosphere and the cost of producing it will be reduced. Project costs are RUB 31.6 million.

'Clean Water for Novomoskovsk' program



A closed-loop water circulation system with secondary utilization (recycling) of the existing wastewater, which is biologically treated, is being installed at Novomoskovskiy Azot. As a result of this project, the Company will significantly reduce its own fresh water consumption and increase the volume of fresh water available to Novomoskovsk, which currently suffers from a shortage of clean drinking water. The project includes the installation of water supply facilities with a combined capacity of 60,000 m³ of drinking water per day that utilize river water from the Pronsky reservoir.

The estimated cost of this program is approximately RUB 5 billion and it is expected to take five years to complete. Funding is expected to come from the Novomoskovsk Administration and NAK Azot, as well as from the federal 'Clean Water' program.

Over the 2008–2010 period, capital expenditure on environmental needs at Novomoskovskiy Azot amounted to approximately RUB 1 billion. During the same period, effluent discharge decreased by 5% and water disposal by 674.4 m³.