ENVIRONMENTAL REVIEW

PHOSAGRO

#### **AREA, STRATEGIC GOALS AND METRICS**



<sup>1</sup> The indicator was calculated as the ratio of the (Scope 1) gross emissions under GRI 305-1 to the total output of finished and semi-finished products.



At PhosAgro Group, we attach much importance to environmental protection and safety, as well as climate risk management. Proper focus on all of these areas helps secure the Company's sustainable development and well-being of the regions across its geography.

Our Strategy to 2025 provides for strict compliance with statutory requirement on environmental responsibility and practices aimed at minimising the impact of the Company's operations throughout the whole life cycle of a fertilizer, from mine to food products.

The key priorities set out in PhosAgro's Environmental Policy are careful use of natural resources and reduction of the environmental footprint.

We had a comprehensive assessment of our operations, determining key focus areas of such impact, both direct and indirect, and weighed it against the UN Sustainable Development Goals (UN SDGs) and national goals.

on the Company's vision and expertise

In 2020, we started implementing

in GHG emissions management.

The document reviews climate

risks and opportunities extensively,

setting targets for Scope 1, 2, and

3 GHG emissions and presenting

PhosAgro carries out the **Energy** 

Efficiency Programme designed

to ensure compliance with the Climate

Strategy and the Energy Efficiency and

Energy Saving Policy tightly integrated

into the Company's Strategy to 2025.

the low-carbon transition plan.

the Climate Strategy based

# **STRATEGY**

#### SASB EM-MM-160a.1, RT-CH-410b.2

Strategy to 2025 also seeks to reduce waste generation substantially. Having developed a system for accumulating and analysing data on production and consumption waste from our operations, we are now implementing a range of projects aimed at minimising waste generation and increasing the share of recycled waste.

In the scope of the strategic objectives to **reduce air emissions**, PhosAgro is running a comprehensive programme to re-equip production facilities and cut pollutant emissions.

In addition, we developed the Water **Strategy** in 2020 to minimise our impact on water bodies by means of lean treatment of resources: less water withdrawal and waste water discharge. As part of the Strategy, we assessed water use risks and opportunities, including potential scarcity of water, set targets for water withdrawal and waste water discharge and designed a detailed action plan for each site to achieve the targets.

The Company sticks to its **biodiversity** management system comprising the assessment of potential impact,

we mapped out six strategic focus areas of environmental protection: (f) climate; (4) energy efficiency; waste:

Based on the assessment results,

des)

biodiversity

interaction with a wide range of stakeholders, as well as monitoring and reporting practices.

We believe that our requirements should be uniform both for us and our partners engaged in PhosAgro's projects. Everything we require of ourselves equally applies to our counterparties and is enshrined in the Code of Conduct for Counterparties.

### **APPROACH TO ENVIRONMENTAL MANAGEMENT**

#### GRI 3-3

Traditionally, we put a special focus on environmental matters and stand in unconditional support of the vulnerable and rare habitats across our geography, leaving them intact and carefully treating

#### **ENVIRONMENTAL MANAGEMENT** SYSTEM

Our environmental management system is integrated in the Company's overall management framework and is a key element in our approach to managing environmental responsibility.

In 2022, the environmental management system passed a recertification audit across the Company's production sites and was found to be in full compliance with ISO 14001. In 2023, it successfully underwent an inspection audit under the same standard.

PhosAgro's environmental management system embraces all management levels and all stages of the product's life-cycle, from R&D to manufacturing and finished product application by customers. This approach ensures uniform management requirements across all aspects of the Company's operations.

The facilities have also put in place a procedure to manage internal audits. Every year, they develop internal audit programmes taking into account the environmental significance of the reviewed processes, changes affecting the facility and previous audit outcomes. The audits provide input data for the Company's management to analyse environmental management efficiency.

relies on:



natural systems and resources. Our operations undergo a stringent assessment for compliance with the Environmental Policy and the Company's internal regulations.



For the full text of the document, please visit the Company's website .

# We adopted a unified approach to environmental management that



#### **Company-wide control**

Putting Strategy to 2025 into action and compliance with the Company's environmental policies are overseen by the Strategy and Sustainable Development Committee that regularly reports on the Company's progress to the Board of Directors. The Department of Ecology and Environmental Management exercises executive control over the Company's environmental activities.

#### A unified management system

The consistency of PhosAgro's activities aimed at environmental protection and strengthening of the Company's environmental performance results from continuous development of the environmental management system built in line with the ISO 14001 standards.

#### Strict compliance

with applicable statutory and regulatory requirements.



For PhosAgro's Environmental Policy, see the Company's website

#### **ENVIRONMENTAL MANAGEMENT FRAMEWORK**

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	Board of Directors level
Board of Directors	Strategy and Sustainable Development Committee
Defines the Company's environmental policy and sets strategic goals to ensure environmental protection and reduce the negative impact of its operations	<ul> <li>Maintains and regularly assesses PhosAgro's internal sustainability regulations and monitors their development, relevance, quality and efficiency as well as compliance with applicable laws and internal sustainability objectives</li> <li>Engages with key stakeholders and fosters healthy and sustainable communities across all regions of operation</li> <li>Prepares recommendations to the Board of Directors on determining the Company's strategic sustainability objectives</li> </ul>
	Group Management level
Department of Ecology and Environmental Management of JSC Apatit	Responsible for general management, organisation and coordination of efforts to continuously enhance environmental management
	Operational level
Environmental Control and Management Service	Officers in charge of environmental protection
ulfils commitments to the ongoing environmental improvement and eduction of the environmental footprint	<ul> <li>Production units, which have the greatest environmental impact, have introduced a procedure for identifying and assessing risks and opportunities. Based on the results, we develop measures to bring risks pertaining to significant environmental aspects to an acceptable level</li> <li>Managers and experts responsible for making operational and other decisions that may adversely affect the environment take a specially designed training course in environmental safety</li> </ul>

Our strategic environmental protection goals are set out in the Company's Strategy to 2025, as well as Water and Climate strategies. Their achievement is included in the KPIs of managers and senior executives.

#### **COMPLIANCE WITH STATUTORY** AND REGULATORY REQUIREMENTS

Environmental compliance is key to running a responsible business.

PhosAgro Group's environmental management practices ensure our compliance with the applicable environmental and nature conservation regulations and regulators' decrees. To that end, the in laboratory testing.

#### Spending on environmental protection, RUB mln

#### Item

Current environmental protection expenses (form 4-OS) Investments in fixed assets aimed at environmental protect Environmental impact payments Environmental fines and damages Total

The Company takes steps to remedy the harm caused by an emergency in 2019 by committing RUB 1,584,000 to the reproduction of aquatic biological resources in 2023.

and hence no fines.

Company has in place an internal and external control framework, which includes internal audit and external compliance reviews, a reporting system designed in accordance with legislative requirements, and a staff training system.

All our facilities that have an adverse environmental impact are included in dedicated state registers, with relevant categories assigned to them. PhosAgro has all necessary permits in place for each of these facilities.

None of PhosAgro's enterprises uses ozone-depleting substances in the production process. A small amount (not more than 250 kg/year) of carbon tetrachloride (CCI4) is used

In 2021, in order to prevent adverse effects of cross-border handling of Russian chemical products, the Russian Ministry of Industry

and Trade initiated a flagship pilot in the chemical sector, which gave rise to innovative development proposals and support measures for exporters of chemical products. The key pilot objectives were to determine the baseline chemical footprint of products and develop a plan to reduce (and, ultimately, eliminate) the negative impact of the used hazardous chemicals on human health and the environment. In 2023, the Company participated in the project to measure the chemical footprint of products.

We do not undertake cross-border hazardous waste transportation and our production sites are not situated in protected areas. Hence, there are no significant restrictions on our operations.

> For more information on the project, see page 96 of the Customers and Product Management section.

2021	2022	2023
5,510.3	6,534.6	7,394.921
4,168.8	2,396.7	3,544.013
179.291	192.573	204.927
4.258	2.464	1.584
9,860.7	9,126.120	11,145.445
	2021 5,510.3 4,168.8 179.291 4.258 9,860.7	202120225,510.36,534.64,168.82,396.7179.291192.5734.2582.4649,860.79,126.120

No audits of Apatit by local bodies of Rosprirodnadzor were held in 2023. There were no administrative

proceedings involving the Company,

#### Environmental impact payments, RUB mln

	2021	2022	2023
Atmosphere			
Maximum permissible emissions	2.440	2.797	2.815
Temporarily permitted emissions	0.000	0.000	0.000
O-limit	0.018	2.355	1.756
Aquatic environment			
Standard permissible discharge	3.886	4.864	4.366
Temporarily permitted discharge			
O-limit	0.000	0.000	0.000
Waste			
Limit	172.091	182.606	195.990
O-limit	0.000	0.000	0.000
Total	178.416	192.620	204.927
Including o-limit	0.018	2.355	1.756
Share of o-limit in total payments, %	0.010	1.220	0.860



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**ASSESSMENT, ANALYSIS,** AND MONITORING

In 2023, the increase in the Company's

environmental impact payments was

driven by a higher indexation rate

environmental impact payments

(vs 1.22% in 2022). They resulted

from exceeding the permissible

by one of the emission sources

at the Cherepovets facility.

emission limit for nitrogen oxides

used in the calculations. Over-limit

payments accounted for 0.86% of total

Continuous improvement is inherent in our environmental management. The Company identifies areas

for improvement by reviewing its management system using an effective mechanism, which includes external and internal audits of the environmental management system, activities to monitor and assess the Company's performance, including by a wide range of stakeholders, and the analysis and assessment of PhosAgro's performance by the Company's management. These efforts enable us to work out corrective action plans and proposals on how to develop and improve the system.

Stakeholder engagement is essential for the Company's planning. Public discussions are a legitimate and effective mechanism for establishing

dialogue with stakeholders using a discussion platform to express their opinions and make suggestions on the initiatives under consideration. This mechanism has a positive impact on the decision-making process and improves its efficiency. Engaging the general public and a wide array of stakeholders in discussion plays an important role and helps ensure that all points of view are considered.



PhosAgro Group public discussions coverage

Item	2021	2022	2023
Number of public discussions	15	12	17
Average number of participants per discussion	27.2	6	22

When assessing the Company's performance, much attention is paid to the analysis of ESG ratings and investor feedback.



#### **RISKS AND OPPORTUNITIES**

Environmental risk management is an integral part of the Company's risk governance framework. The general approaches to managing risks are set our in the Strategic Risks section.

The following strategic risks affect our environmental protection objectives

7	environmental risk;	13	regulatory risk;	

For more information, see the Strategic Risks section on page 68

#### THE ENVIRONMENTAL PROTECTION RISKS INCLUDE



 $(\checkmark$ 



# (up)

The Company develops corrective measures as necessary and unlocks opportunities to mitigate those risks. Below you can find more information about what we do on this front.

energy efficiency issues.

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#### SASB RT-CH-110a.2 / EM-MM-110a.2

2023 highlights Our targets 1 3 Reduce gross GHG emissions Scope 1, 2, 3 gross emissions In 2023, we used green energy (Scope 1, 2, 3) **()** 210.7 to produce kt of CO<sub>2</sub>-eq. by 2028 vs 2018 up 12.7% vs 2018 2 Scope 1 emissions of CO<sub>2</sub>-eq. Reduce per unit GHG emissions (Scope 1) 128.5 kg/t by **31**% by 2028 vs 2018 down 15% vs 2018

#### Gross and per unit GHG emissions (Scope 1 and 2) across the Group, kt of CO<sub>2</sub>-eq.

Item	2018	2020	2021	2022	2023	Goal 2028
Gross GHG emissions (Scope 1), kt	4,624.6	4,856.5	4,775.8	4,909.0	4,778.9	4,175.5
Gross GHG emissions (Scope 2), kt	924.1	978.3	893.3	821.6	829.7	794.7
Per unit GHG emissions (Scope 1), kg/t	150.5	143.6	135.5	133.1	128.5	109.1

PhosAgro has LEAD status under the UN Global Compact and is a participant of the Climate Ambition initiative.

Starting 2021, the Company has been making annual climate disclosures in line with the TCFD standards and key requirements of the new IFRS S2, which enables the most thorough disclosure of the climate-related

aspects of PhosAgro Group's strategy, risks and opportunities, management approach, results, and indicators.

The Company's representatives are members of climate change and sustainable development task and expert groups instituted by government authorities and non-governmental organisations, and are actively engaged in discussions on current global challenges.

#### **STRATEGY AND MANAGEMENT** APPROACH

### GRI 3-3

The Company focuses on climate change in line with the double materiality principle: on the one hand, it identifies and assesses the impact of its operations on climate all along the value chain from extraction of raw materials to consumption of finished

products. On the other hand. it projects how climate change affects PhosAgro's business, strategy, and financial planning.

Climate matters feature prominently in PhosAgro's strategic and investment decisions, as well as in its day-to-day management. For instance, in the reporting year, we applied

PhosAgro's Climate Strategy was adopted in 2020. It is a comprehensive document setting out the Company's climate policy in the face of growing climate change and uncertainty.

#### Main principles of PhosAgro Group's Climate Strategy:

- setting up targets to reduce GHG emissions in line with the Science Based Targets initiative; using climate scenario analysis;
- integrating climate risks into the comprehensive risk management framework for investment and day-to-day business activities;
- utilising technology-related measures along with proper organisation and management, as well as sound social and personnel policy, to reduce GHG emissions;

- - promoting awareness of the Company's climate initiatives and plans, as well as cooperation in specific areas;
  - engaging stakeholders to reduce GHG emissions along the value chain.

# goals:

- increasing output;

the internal carbon price mechanisms developed in 2022 in the evaluation of investment projects. The Company has identified, assessed, and prioritised climate risks, establishing their short, medium and long term consequences for its production and business processes. We make our strategic plans and day-to-day management decisions with full awareness of the nature

and extent of climate impact (both environmental and political) on the Company's business, strategy, and financial planning. The Group develops and takes consistent steps to reduce its carbon footprint and closely interacts with partners across its value chain (suppliers and consumers) and other stakeholders domestically and worldwide.



• identifying not only risks, but also attractive climate-related investment opportunities and making long-term plans for them;

### The Strategy has set the following

- to minimise GHG emissions while
- to improve energy efficiency
- and environmental performance
- of the key production processes;

- to reduce energy and carbon intensity per unit of output;
- to develop innovative fertilizers and efficient plant nutrition systems to reduce Scope 3 GHG emissions from the use of fertilizers by farmers:
- to enter into new emerging markets for green products;
- to retain and expand the existing market niches by ensuring PhosAgro Group's competitive edge in terms of energy and carbon intensity.

The Company is currently focused on creating particular metrics reflecting the impact of climate action in production and management processes on financial indicators. To that end, we assessed the impact of the carbon border adjustment mechanism EU CBAM on PhosAgro's operating expenses. The mechanism covers Russian industrial products, including mineral fertilizers. In 2023, the Company established a working group responsible for developing a way to assess the carbon footprint of products under the EU CBAM . The working group created

an effective mechanism to measure

of fertilizer based on a transparent

carbon footprint per each tonne

As part of the project

and approved:

authority);

• a mechanism

put to use).

implementation in 2023,

the Company developed

• guidelines and methodology

for calculating the carbon

(validated by a reputable

international certification

methodology compliant with the EU carbon border adjustment mechanism;

for the transition to low-

• rules for using the internal

carbon price (adopted and

carbon energy sources and

footprint of products

calculation methodology for GHG emissions, which covers production processes and semiproduct flows fully in line with the CBAM guidelines.

#### Low-carbon transition plan

The low-carbon transition plan was developed in 2020 based on the specialised research data and aims to support economic development of PhosAgro Group that builds on the priority of keeping GHG emissions to a minimum. It is implemented to ensure that the GHG emission reduction targets are delivered across all scopes.

thousand coniferous seedlings,

5 thousand deciduous seedlinas were planted additionally at the carbon farm in 2023

#### Actions to deliver the Climate Strategy

In 2023, we continued to implement initiatives under the climate project.

The Company's experts continued to explore options for absorbing greenhouse gases in order to select the most suitable ones. In 2023, we also launched the Carbon Footprint Compensation project aimed at absorbing (compensating for) GHG emissions, with a carbon footprint compensation farm being set up in the Vologda region. In 2023, we planted additional 10 thousand coniferous and 15 thousand.

#### **RISKS AND OPPORTUNITIES**

GRI 201-2

PhosAgro identifies its climate risks and opportunities based on climate change. The process is influenced by physical (changes in natural processes or phenomena) and transitional factors of various nature (changes in the policy and regulation with a view to fulfilling low-carbon transition).



#### Risks

**R1** – disruptions in production processes and logistics operations due to increasing acute climatic effects and other climate-related factors.

R2 - flaws in supply chains, construction design, health and safety; negative environmental footprint and reduced flows of ecosystem services; lower resilience of infrastructure and communications due to increasing climatic effects.

**R3** – PhosAgro Group's failure to comply with regulations reducing its negative environmental footprint (following

#### Climate risk priority map



As part of our comprehensive risk management framework, we identify, assess and manage climate risks. Covered value chain stages - direct

#### **Opportunities**

the adoption of the carbon border adjustment mechanism).

**R4** – deterioration of the Company's sustainability reputation.

**R5** – increased costs and losses (as a result of customers' failure to meet their obligations, rising prices for feedstock, materials and services, higher borrowing rates) and shrinking revenues (as a result of a decline in sales, customers, countries and regions of operation). **01** – boosting PhosAgro Group's appeal as an environmentally and climatically responsible supplier of products with a positive climate profile.

**02** – improved logistics driven by the new export opportunities amid shortened seasonal freeze-up of rivers and lakes due to climate change.

**O3** – new financial products that open up new sources of cheaper funding (such as green bonds) for companies that embraced environmental and climate sustainability.

operations up and down the value chain. Climate risk management process is baked in the company-wide risk management processes.

#### **KEY INITIATIVES IN 2023**

Focus areas	Climate-related risk and opportunities	Description and results
Introduce HR actions to support the implementation of PhosAgro's Climate Strategy, including additional training to improve staff competence and raise staff awareness in climate change	R1, R2, O1	Our employees take part in events dedicated to sustainable development and corporate climate responsibility
Establish a task group on reduction of GHG emissions and negative effect of climate change on the efficiency of management and production processes	R1, R2, R3, O1	Based on the outcomes of the Climate Agenda project, we continued to consider and implement thoroughly researched and technically feasible initiatives and proposals to reduce the Company's climate footprint, minimise risks and maximise opportunities related to growing climate change impacts (technology, equipment, energy generation, operations, etc.). Additionally, in 2023, a dedicated task group set the stage for implementing the EU CBAM, with carbon footprint calculation methodologies and procedures put in place and carbon footprint assessed for 4Q of 2023
Develop a set of technological measures to mitigate the negative impact of production processes on climate	R1, R2	Technical and technological initiatives were developed to reduce direct GHG emissions. To this end, we engaged one of the global leaders among consulting firms
Approve a comprehensive plan of interaction with value chain participants	<mark>R1, R2, R3, R4, R5</mark> , O1, O2, O3	A plan of interaction with value chain participants was developed and adopted for implementation (company- customer and supplier-customer interactions)
Harmonise strategic documents (the Company's Development Strategy to 2025), financial planning and other policies and procedures with the low- carbon transition strategy and plan	R1, R2, R3, R4, R5, O1, O2, O3	Climate impact matters and the risks and opportunities arising from climate change were integrated into personnel trainings and added as matters disclosed in the report, data book, and considered by the Board committee and Board of Directors, which helps to embed this topic into PhosAgro's culture
Arrange for identification, assessment, management and monitoring of climate-related risks	<mark>R1, R2, R3, R4, R5, 01, 02,</mark> 03	Climate change risks were integrated into PhosAgro's risk management framework
Factor in climate change impacts in industrial engineering projects to build new facilities and upgrade transport infrastructure	R1, R2	At present, there is no need to proceed with this initiative. Reference documents used in engineering provide a sufficient margin of safety, with no factors driving accelerated climate changes observed



## Climate scenario analysis

#### The Company views climate scenario analysis as a tool to make its climate strategy resilient to uncertainties and risks related to climate change. As part of the climate strategy development in 2020, we adopted climate scenarios and determined respective scenario parameters that are most probable and significant for the Company in the short, medium and long term.

PhosAgro Group assessed the impact of climate-related risks and opportunities on its operations under two climate change scenarios: global warming of 2°C and 4°C. The key features of the scenarios are:

• 2°C scenario is expected to result in stringent climate policy measures that will increase market volatility (goods, services, finances, etc.). This is projected to bring about low-carbon transition, putting in place mechanisms of a low-carbon economy that will slow down physical climate-related impacts going forward;

• 4°C scenario is expected to result in less stringent climate policy measures as compared to the 2°C scenario, triggering faster physical climate-related changes.

Experts assessed the 2°C scenario as the most probable, hence it was selected as the basis for setting

targets, evaluating risks and opportunities, and developing plans under the low-carbon transition.

PhosAgro identified projected changes in climate risks and opportunities under the adopted climate scenarios based on risks, opportunities, scenario parameters, and time frames. In doing so, the Company focused on its operations, strategy, and financial planning.

Processes to identify and assess climate change risks are being integrated throughout the value chain – from design, procurement and apatite-nepheline ore mining to finished product delivery.

Focus areas	opportunities	Description and results	Focus areas	Climate-related risk and opportunities	Description and results
Support R&D developments related to the use of low-carbon energy and low-carbon production Explore options for GHG capture and select the most efficient ones	R3, R4, <mark>R5, O1</mark>	In 2023, the mining and processing plant of Apatit (its Kirovsk branch) purchased 300 mln kWh under the agreement with TGC-1, with the energy generated by small hydroelectric power plants. Therefore, the facility used green energy for 18.3% of its output.	Introduce regular climate-related reporting in accordance with Russian and international standards	R3, R4, O1	Since 2020, PhosAgro has based its climate reporting on the TCFD standards. Climate reporting for 2021 was verified for the first time, and the 2022 reporting was submitted to the Energy Efficiency state information system, also for the first time.
to be employed by the Company	employed by the Company employed by the Company is employed by the Company	In 2023, we made the following progress on the carbon farm project implemented jointly by the Russian Academy of Sciences, PhosAgro, and the government of the Vologda region since 2021:			The carbon footprint data collected under the carbon border adjustment mechanism (CBAM) was sent to our counterparties in the EU.
		<ul> <li>completed the monitoring of forest areas of the carbon farm (built databases of nature studies to measure the carbon sequestration capacity of the test areas with spontaneously growing trees and those with manmade forests; developed model forecasts and compared the modelling results);</li> <li>developed recommendations to roll out the study results to other areas in the Vologda region;</li> <li>based on the analysis of satellite forest image time series</li> </ul>	Introduce an automated system to collect and process primary climate data	R3, R4, O1	We introduced a software solution for automated collection of input data and calculation of GHG emissions (total volumes by site and product). The Company developed a methodology for calculating the carbon footprint of products and had it validated by a reputable international certification authority
<ul> <li>and additional forest data, identified parts of agricultural lands in the Cherepovets district with spontaneous forest growth;</li> <li>performed an unmanned aerial vehicle (UAV) survey and developed digital orthophotos and digital models of test fields in order to assess forest vegetation biometric properties;</li> <li>created a layout for a unified database of ground surveys of vegetation and soil of the carbon farm's test agricultural fields;</li> <li>performed a reconnaissance survey of the test fields created in 2022 and planted tree seedlings (in 2023, we planted additional 10 thousand coniferous and 15 thousand deciduous young trees);</li> <li>monitored agronomic and environmental efficiency of fertilizers applied for mixtures of perennial grasses and developed feasibility proposals as regards their use in the Vologda region's agriculture to reach carbon neutrality;</li> <li>defined the effects and aftereffects of the mineral, organic, and organomineral fertilizer systems applied in grain-grass crop rotation on carbon sequestration, yields, and crop quality.</li> </ul>	<ul> <li>and additional forest data, identified parts of agricultural lands in the Cherepovets district with spontaneous forest growth;</li> <li>performed an unmanned aerial vehicle (UAV) survey and developed digital orthophotos and digital models of test fields in order to assess forest vegetation biometric properties;</li> </ul>	Collaborate with international organisations and join climate initiatives	R4, 01	The Company participates in Climate Ambition, an initiative launched under the UN Global Compact; supports the TCFD; and takes part in task and expert groups of government authorities and non-governmental organisations, and the COP28 (Conference of the Parties to the UN Framework Convention on Climate Change) events	
	<ul> <li>created a layout for a unified database of ground surveys of vegetation and soil of the carbon farm's test agricultural fields;</li> <li>performed a reconnaissance survey of the test fields created in 2022 and planted tree seedlings (in 2023, we planted additional 10 thousand coniferous and 15 thousand deciduous young trees);</li> <li>monitored agronomic and environmental efficiency of fertilizers applied for mixtures of perennial grasses and developed feasibility proposals as regards their</li> </ul>	Develop innovative products that help reduce GHG emissions generated by the fertilizer use	R3, R4, R5, O1	Together with R&D centres of the Russian Academy of Sciences develops products with a proven positive climate profile (for instance, lower GHG emissions from their use in agriculture). This is achieved through better plant uptake and reduced losses of nutrients (such as nitrogen) from the soil in the form of oxides	
	<ul> <li>use in the Vologda region's agriculture to reach carbon neutrality;</li> <li>defined the effects and aftereffects of the mineral, organic, and organomineral fertilizer systems applied in grain-grass crop rotation on carbon sequestration, yields, and crop quality.</li> </ul>	Develop solutions to replace heat from natural gas combustion	R1, R3, R5, O1	NIUIF developed solutions to replace heat from natural gas combustion. It proposed flexible ways to optimise the use of heat generated as a result of chemical neutralisation of phosphoric and sulphuric acids by ammonia and thus partially replace the heat from flue gases feeding the drum drier.	
					NIUIF also developed solutions with heating the air supplied to combustion devices and used at the fertilizer drying stage, which helps reduce natural gas consumption. The above solutions have been implemented in the production of mineral fertilizers at section 2 of the Cherepovets phosphate facility. The actual effect is to be determined in 2024

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#### **PLANS FOR 2024**

Focus areas	Climate-related risk and opportunities	Description, current status, and expected outcomes
Improve technological measures to mitigate the negative impact of climate change on production processes	R1, R2	Taking measures to mitigate climate change risks for PhosAgro's production processes, updating the list of measures as necessary
Implement technological measures to mitigate the negative impact of production processes on climate	R1, R2	The economic analysis of the majority of measures to reduce direct GHG emissions developed in 2021–2023 showed their insufficient ROI. The Company decided to further enhance technological solutions and keep looking for other promising technologies in this field
Prepare feasibility studies (business projects) for innovative climate-resilient products based on carbon dioxide utilisation. Develop production in high- potential areas	R3, R4, R5, O1	Diversifying production to facilitate expansion into new markets and improve the climate-related performance on the back of new products better meeting consumer needs and having a positive climate profile
R1, R2, O2 R1, R2, O2		Mitigating climate change risks to the Group's operating processes. Work is in progress to assess the risks and identify actions needed to manage them
Introduce an automated system to collect and process primary climate data	R3, R4, O1	Fine-tuning the software solution for automated collection of input data and calculation of GHG emissions (total volumes by site and product), including for the CBAM application purposes



#### **METRICS AND TARGETS**

PhosAgro's climate metrics are aligned with the goals of the Climate Strategy approved by its Board of Directors.

The Company is working to expand and enhance the quality of climaterelated measurements. Most metrics are locked on targets which are aligned with the goals of the Climate Strategy and other commitments of the Company.

The metrics are monitored and reported annually to stakeholders.

The Company's primary focus is on GHG emissions (carbon dioxide  $CO_2$ , methane  $CH_4$  and nitrous oxide

### Direct (Scope 1) GHG emissions, CO<sub>2</sub>-eq. GRI 305-1, 305-4, SASB RT-CH-110a.1 / EM-MM-110a.1

### Assets Kirovsk branch Per unit emissions, Kirovsk branch kg per S Balakovo branch Per unit emissions, Balakovo branch kg per S Volkhov branch Per unit emissions, Volkhov branch kg per S Cherepovets site (Apatit) Per unit emissions, Cherepovets site (Apatit) kg per S Total gross emissions Total per unit emissions kg per S

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- $N_2O$ ) in all three Scopes (1, 2, and 3). The Company calculates greenhouse gas emissions in accordance with the international guidelines:
- 2006 IPCC (Intergovernmental
- Panel on Climate Change)
- Guidelines for National Greenhouse Gas Inventories;
- the Greenhouse Gas Protocol: Scope 2 Guidance;
- the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised

Edition);

 ISO 14064-1 – Specification with Guidance at the Organisation Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals. Calculations are based on global warming projections of the IPCC report "Climate Change 2021: The Physical Science Basis".

The Company's efforts include end-to-end monitoring of raw data (Scopes 1, 2, and 3) and analysis of supply chain participants' data (Scopes 2 and 3).

The targets are set in line with minimum qualitative and quantitative criteria based on RCP 2.6, a representative concentration pathway for reduction of global anthropogenic emissions, in order to keep global temperature rise below 2°C by 2100.

	2021	2022	2023
kt	665.8	690.9	657.8
r tonne of finished and emi-finished products	56.7	57.7	55.9
kt	238.0	236.6	232.7
r tonne of finished and emi-finished products	39.4	41.5	37.9
kt	155.2	191.5	193.3
r tonne of finished and emi-finished products	135.0	71.8	72.4
kt	3,716.7	3,790.0	3,695.1
r tonne of finished and emi-finished products	227.7	229.1	222.4
kt	4,775.8	4,909.0	4,778.9
tonne of finished and emi-finished products	135.5	133.1	128.5

#### UoM

#### Indirect (Scope 2) GHG emissions, CO2-eq.

#### GRI 305-2, 305-4

Assets	2021	2022	2023
Gross emissions of the Kirovsk branch, kt	622.5 <sup>1</sup>	588.2 <sup>1</sup>	577.2 <sup>1</sup>
GHG emissions of the Kirovsk branch, kg per tonne of finished and semi-finished products	53.1	49.1	49.0
Gross emissions of the Balakovo branch, kt	45.3	51.9	46.0
GHG emissions of the Balakovo branch, kg per tonne of finished and semi-finished products	7.5	9.1	7.5
Gross emissions of the Volkhov branch, kt	80.1	44.6	17.8
GHG emissions of the Volkhov branch, kg per tonne of finished and semi-finished products	69.6	16.7	6.6
Cherepovets site (Apatit), gross emissions, kt	145.4	136.9	188.7
GHG emissions of the Cherepovets site (Apatit), kg per tonne of finished and semi-finished products	8.9	8.3	11.3
Total gross emissions, kt	893.3	821.6	829.7
Total GHG emissions, kg per tonne of finished and semi-finished products	25.343	22.282	22.317

## Note

Greenhouse gas emissions were calculated in line with the Guidelines for Climate Impact Management of PJSC PhosAgro and other Group Entities (using the IPCC methodology). Energy indirect GHG emissions (Scope 2) are related to the production of electricity and

heat brought in from third parties to meet the Company's needs.

In 2022, we changed our approach to calculating Scope 2 GHG emissions related to electricity consumption. In 2020-2021, the methodology relied on emission factors defined by the International

Energy Agency (IEA), while starting 2022, we use the energy indirect GHG emission factor for the First Synchronous Zone of the Russian Energy System defined by the Trading System Administrator of the Wholesale Electricity and Capacity Market.

#### Calculation of other indirect GHG emissions

GRI 305-3			GHG emissions, t of $CO_2$ -eq.		Sha	Share in total other indirect emissions, %		
Category	2021	2022	2023	2021	2022	2023		
Purchased goods and services	1,963,324	2,425,375	2,672,424	16.21	18.28	19.65		
Fuel- and energy- related activities not included in Scope 1 or Scope 2	407,740	350,275	427,877	3.37	2.64	3.14		
Processing of sold products	704,402	720,223	642,002	5.28	5.43	4.72		
Use of sold products	9,035,283	9,768,958	9,859,766	74.60	73.65	72.49		
Total	12,110,749	13,264,831	13,602,069	100.00	100.00	100.00		

<sup>1</sup> Including electricity from renewable energy sources.

#### Scope 3 GHG emissions, CO<sub>2</sub>-eq.

GRI 305-3, 305-4			
Category	2021	2022	2023
Total gross emissions of production assets, kt	12,110.749	13,264.831	13,602.069
Total GHG emissions of production assets, kg per tonne of finished and semi-finished products	343.579	359.767	365.857

#### GRI 305-5

We have chosen 2018 as the base year for calculations because it was the Company's first GHG inventory year and we needed to set GHG reduction targets for all three scopes based on the available emission data. In 2018, GHG emissions were as follows: direct GHG emissions (Scope 1) – 4,624.6 kt of CO2-eq., indirect GHG emissions (Scope 2) – 924.1 kt of CO2-eq., and other indirect GHG emissions (Scope 3) – 11,413.8 kt of CO2-eq. In 2023, per unit GHG emissions (Scope 1) declined by 21.9 kg/t or 14.6% compared to 2018, driven by growing output, whereas gross GHG emissions (Scope 1) increased by 3% vs 2018. Excluding the output growth factor,

#### List and description of existing metrics introduced for the monitoring of performance under the climate strategy

#### Metric

Gross global emissions (Scopes 1 and 2) per currency unit (GRI 305-4)<sup>1</sup>, t of CO<sub>2</sub>-eq. / USD mln

Gross global emissions (Scope 1 and 2) per FTE (GRI 305-4 t of CO<sub>2</sub>-eq. / FTE

Electricity purchased per unit of finished and semi-finished '000 kWh/t

Energy efficiency improvement costs, RUB mln

Share of feedstock suppliers providing necessary input data on GHG emissions (Scope 3), %

<sup>2</sup> The indicator was calculated as the ratio of the sum of Scope 1 and 2 gross emissions under GRI 305-1 and GRI 305-2 respectively to the total number of full-time employees under GRI 2-7.

gross emissions decreased by 815 kt compared to 2018. The mix of semifinished products used in fertilizer production had the most significant impact on the reduction of Scope 1 GHG emissions, as part of direct emissions related to manufacturing of semi-finished products decreased due to replacing some of the Company's own products (for example, ammonia) with third-party feedstock.

Per unit GHG emissions (Scope 2) declined by 25.8% compared to the baseline year of 2018, while gross GHG emissions (Scope 2) (excluding the output growth factor) decreased by 288 kt vs 2018. The reduction was achieved thanks to the green

Scope 3 greenhouse gas emissions were calculated for four categories after an expert review identified them to be the most significant emission sources for the Company.

electricity procured by the Kirovsk branch of Apatit, as well as energy efficiency initiatives.

Total GHG emissions (Scope 3) increased by 19.2% vs the baseline year. Key growth drivers in 2023 were as follows: an increase in the volumes of purchased feedstock and fuel consumed at subsidiaries and affiliates that are not included in Scope 1 and Scope 2 emissions, as well as higher product sales. Excluding the output growth factor, Scope 3 GHG emissions declined by 205 kt vs the baseline year.

	2021	2022	2023
of total revenue	993.100	693.500	1,072.4
4) <sup>2</sup> ,	309.400	288.800	256,9
products,	0.066	0.062	0.064
	17.400	3,044.100	371.900
а	2.700	7.500	9.500

<sup>1</sup> The indicator was calculated as the ratio of the sum of Scope 1 and 2 gross emissions under GRI 305-1 and GRI 305-2 respectively to PhosAgro Group revenue according to consolidated financial statements converted into USD mln at monthly average USD/RUB exchange rates.

# **2** ENERGY EFFICIENCY

### Our targets

Reduction of Scope 2 GHG emissions

to **794.7** kt of CO<sub>2</sub>-eq.

by 2028 as a result of implementing the Energy Efficiency Programme

In 2023, the Company implemented a comprehensive project to assess the energy management system for alignment with best practices and

ISO 50001. The assessment covered all of the Company's production facilities where teams combining external experts and key employees of each facility performed an in-depth analysis of processes, risks, and opportunities, identified growth areas, and developed action plans

to tackle bottlenecks. The assessment

and submitted for the management's

the processes and complex elements

employees and managers underwent

management system, setting targets

for reducing energy consumption,

of the energy management system,

relevant training with inputs from

findings were thoroughly analysed

In order to better understand

consideration.

# 2023 highlights

self-sufficiency in electricity down 0.9% vs 2022

Scope 2 — 829.7<sub>kt of</sub> CO<sub>2</sub>-ea. up 0.99% y-o-y

#### Electricity generated by the Company's own heat and power plants, mln kWh

Production site	2022	2023	Growth, %
Cherepovets site	787.93	807.70	2.50
Balakovo branch	340.83	384.53	12.90
Volkhov branch	184.89	251.86	36.30 <sup>1</sup>
Total	1,313.65	1,444.09	10.00

and managing changes as part of the continuous improvement of the energy management system.

In the reporting year, the amount of electricity generated internally by heat and power plants in Cherepovets, Balakovo, and Volkhov went up 10% v-o-v.

As a result, the Company's production facilities were 42.5% self-sufficient in terms of electricity needs in 2023 (vs 42.9% in 2022, flat y-o-y).

Going forward, the Company will continue developing in-house power generation. A project to build a new

exhaust gas turbine at the Balakovo branch is currently at the design

technology at the Company's facility in Balakovo. With the manufacturer's

stage.

In 2023, we completed tests of a solar power generation lab completing an extensive study of the prototype solar panels, which had operated at the facility for 18 months, PhosAgro gained important knowledge essential for the technology's further roll-out across the Company's facilities.

#### **STRATEGY AND MANAGEMENT** APPROACH

#### GRI 3-3, 302-4

In 2023, the Company continued to follow the Climate Strategy and the Energy Efficiency and Energy Saving Policy approved by the Board of Directors. We reviewed and updated the list of initiatives set out in the Energy Efficiency Programme, which is tightly integrated into the Company's Strategy to 2025.

manner;

key goals:

#### The Company pays particular attention to managing energy efficiency risks.



A sufficient and reliable energy supply is a material aspect and major concern for us. We thoroughly explore all opportunities to transition to renewable energy: among other things, in 2023, we continued to purchase electricity generated by hydroelectric power plants.

The initiatives set out in the Programme are aimed at improving energy efficiency, developing energy management at each production site, and achieving objectives in the following focus areas:

• in-house power generation through utilisation of sulphuric acid production steam;

energy losses).

<sup>1</sup> The increase is driven by longer operation of the Volkhov branch HPP at design capacity: 12 months in 2023 vs seven months in 2022 (the HPP was commissioned in May 2022).

external experts. In 2023, PhosAgro's executives resolved to establish a stand-alone unit within the Company responsible for building a unified energy

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The Energy Efficiency and Energy Saving Policy sets out the following

continuously improving energy efficiency;

> using energy resources in a sustainable and efficient

streamlining the energy management process for all types of operating activities.





**Risk of Scope 2 GHG emissions** to be included in carbon regulation in the EU and other

jurisdictions. The Company's energy efficiency directly affects Scope 2 GHG emissions, which poses a potential risk, for example after fullscale implementation of carbon border adjustment mechanisms.



Market availability of electricity from renewable energy sources. The Company continuously monitors the market to ensure a sufficient supply of electricity from renewable energy sources.

• introduction of technologies aimed at loss reduction and energy savings (e.g. LED lighting, frequency converters, less heat

In addition, the Company actively studies and tests promising solutions, including by increasing the share of renewable energy sources both

as part of pilot projects at PhosAgro's own facilities and through green electricity purchases.

In 2023, we implemented comprehensive energy efficiency projects at all of our sites.

#### **KEY INITIATIVES IN 2023**

Project	Description and results	Expenditures, RUB mln	Completion
Cherepovets site	Upgrade of the lighting system to LED at block 2.70 of the mineral fertilizer production site. Ca. 0.5 mln kWh of annual reduction in electricity consumption	52.2	4Q 2023
Cherepovets site	Upgrade of the lighting system to LED at the nitrogen facility (Ammonia-2). Ca. 0.06 mln kWh of annual reduction in electricity consumption	41.1	4Q 2023
Volkhov branch	Upgrade of the shop lighting system to LED at sulphuric acid production unit 235. Ca. 0.02 mln kWh of annual reduction in electricity consumption	13.0	4Q 2023
Volkhov branch	Audit of compressed air production and distribution systems. Developing measures to reduce compressed air consumption	6.6	3Q 2023
Kirovsk branch	Upgrade of the lighting system to LED at apatite-nepheline beneficiation plant 2. Ca. 4.8 mln kWh of annual reduction in electricity consumption	49.0	2Q 2023
Kirovsk branch	Upgrade of the Rasvumchorrsky mine's compressor station. Lower cost of compressed air production as a result of reductions in per unit electricity consumption	210.0	4Q 2023

#### **INITIATIVES PLANNED FOR 2024**

Project	Description and results	Expenditures, RUB mln	Project schedule
Cherepovets site	Technical upgrade of the operating system and automated process management system of turbine generator 6 at the phosphate facility's HPP. 1.600 m <sup>3</sup> reduction in natural gas consumption. Annual savings of RUB 48 mln	65.0	2024
Kirovsk branch	Developing a methodology and piloting the transition to fuel oil pressure of 12 kgf/cm2 for the drum drier furnace. Saving diesel fuel by increasing combustion completeness, target: 1%	24.0	2024
Kirovsk branch	Pump replacement and installation of additional frequency drives at the flotation mill section of apatite-nepheline beneficiation plant 3. Electricity savings resulting from the use of frequency drives, target: 5%	89.0	2024–2025
Balakovo branch	Enhancement of in-house power generation from the sulphuric acid production exhaust steam. 135 mln kWh annual replacement of purchased electricity	1,820.0	2024–2025
Volkhov branch	Upgrade of the facility's street lighting system to LED. Ca. 0.07 mln kWh of annual reduction in electricity consumption	1.5	2024



#### **METRICS AND HIGHLIGHTS**

The energy efficiency metrics are used to monitor the Company's progress towards its energy efficiency improvement target and are set forth in PhosAgro's Energy Efficiency Programme and Action Plan, which helps keep track of electricity generation and consumption, energy intensity, etc.

#### PhosAgro Group's energy consumption

#### GRI 302-1, 302-3, SASB RT-CH-130a.1 / EM-MM-130a.1

#### Item

Electricity
Purchased electricity, including
Purchased from renewable sources

Electricity purchased per unit of finished and semifinished products

204 205

The energy efficiency metrics are based on PhosAgro's raw data and are calculated in accordance with the approved statistical methodologies. The Company prepares its energy efficiency reports in accordance with the GRI 302: Energy 2016 standard.

In 2023, the volume of carbon-free electricity used in the production of phosphate rock at the Kirovsk branch grew to 300 mln kWh. Thus, about 18.3% of the plant's output is covered by green electricity generated by the hydroelectric power plants of TGC-1.

Total electricity consumption is attributable to the expansion of the processing facilities.

_	Total for production assets		
Unit	2021	2022	2023
mln kWh	2,326.630	2,303.260	2,396.250
mln kWh	299.000	300.000	300.000
'000 kWh / t	0.066	0.062	0.064

			Total for	production assets
Item	Unit	2021	2022	2023
Heatenergy				
Purchased (in hot water)	'000 Gcal	438.220	352.070	423.360
Supplied (in hot water)	'000 Gcal	161.230	187.490	104.800
Exhaust steam	'000 Gcal	8,538.810	8,923.700	9,229.870
Per unit consumption of heat energy	'000 Gcal	0.250	0.246	0.257
Natural gas <sup>1</sup>				
As feedstock for ammonia production	mln m <sup>3</sup>	1,926.100	1,968.060	1,969.340
As fuel, etc.	mln m <sup>3</sup>	730.120	771.720	745.510
Total	mln m <sup>3</sup>	2,656.220	2,739.780	2,715.050
Consumption per unit of finished and semi-finished products <sup>2</sup>	'000 m <sup>3</sup> / t	0.021	0.021	0.020
LNG				
Consumption	t	2,951.570	2,380.300	2,782.060
Fuel oil				
Consumption	t	151,291.800	152,895.500	146,764.100
Heating oil				
Consumption	t	779.400	766.400	789.800
Diesel fuel				
Consumption	t	55,695.870	58,276.730	57,109.120

### PhosAgro Group's energy consumption, GJ<sup>3</sup>

GRI 302-1, 302-3

Item	2021	2022	2023
Internal use of electricity	8,375,878.00	8,291,723.00	8,626,491.00
Internal use of heat energy	36,910,017.00	38,050,823.00	39,977,375.00
Internal consumption of natural gas (excluding gas consumed as feedstock during production processes)	28,474,611.00	30,097,257.00	29,074,904.00
Internal consumption of LNG	160,565.00	129,488.00	151,344.00
Internal consumption of fuel oil	6,671,968.00	6,742,692.00	6,472,297.00
Internal consumption of heating oil	36,008.00	35,407.00	36,489.00
Internal consumption of diesel fuel	2,539,731.00	2,657,419.00	2,604,176.00
Total internal consumption	83,168,778.00	86,004,809.00	86,943,076.00
Total energy consumption per unit of finished and semi-finished products, GJ/t	2.36	2.33	2.34

<sup>1</sup> Calculations of total energy consumption include only gas consumed as fuel, whereas gas consumed as feedstock for ammonia production is provided for illustrative purposes and excluded from further calculations of total energy consumption (in GJ), as it is not used as an energy resource.

<sup>2</sup> The Company excludes natural gas used as feedstock for ammonia production from the calculation of per unit energy consumption.

<sup>3</sup> To convert energy consumption values into joules, the coefficients on the Berkeley Institute (USA) website were used (https://w.astro.berkeley. edu/~wright/fuel\_energy.html).

**3** WASTE

# Target By 2025, increase the share of recycled and decontaminated hazard class 1–4 waste to **40.00**%

#### **STRATEGY AND MANAGEMENT APPROACH**

#### GRI 3-3, 306-1

PhosAgro's Development Strategy to 2025 stipulates an increase in the share of recycled hazard class 1-4 waste to 40%.





# 2023 highlights

40.17% and decontaminated

ир 3.6% у-о-у

Having developed a system for accumulating and analysing data on production and consumption waste from our operations, we are now implementing a range of projects aimed at minimising waste generation and increasing the share of recycled waste.

PhosAgro's waste management is monitored on a regular basis and discussed by the Strategy and Sustainable Development Committee before being communicated to the Board of Directors.

The management system covers:

- an inventory of resources that are used to manufacture products and become waste afterwards;
- data on the amount of waste generated from our own operations, including future waste in the form of products or their part provided to customers;

waste characteristics;

- properties that limit or prevent the recycling (recovery) of the material or product or limit its useful life;
- continuous monitoring of known and potential negative characteristics of certain materials after they become waste; measures to remove environmental and health hazards;
- identification of activities and processes that generate significant amounts of waste.

#### **KEY INITIATIVES IN 2023**

#### GRI 306-2

**Consistent efforts** to grow the share of recycled and decontaminated hazard class 1–4 waste, which helped increase recycling and decontamination of relevant waste in 2023.

### Promotion of phosphogypsum

Balakovo branch equipped road and rail loading areas for phosphogypsum, which is used as an ameliorant agent in farming.

We keep testing this new product to discover its different applications. For instance, in 2023, we held a series of trials of neutralised phosphogypsum on acidic soils together with Pryanishnikov Institute of Agrochemistry and Saratov State Agrarian University. The trial findings were comparable to the results of lime treatment, while the application rate per 1 ha was three times lower.

We also tested the safety of phosphogypsum used as a component for cattle and poultry bedding. Bedding with phosphogypsum content is 20% dryer. It also serves as a sulphatebased disinfectant, which helps reduce the number of mastitis cases and paw and hoof diseases by 50%.

Phosphogypsum was also tested as an ameliorant for urban areas reducing the deterioration of soils and perennial plants caused by anti-icing reagents, which

are primarily based on sodium salts (toxic for plants). Phosphogypsum offsets the salt effect and preserves urban soils and vegetation.

An important driver behind the further expansion of phosphogypsum use in Russia's agriculture is its inclusion on the list of subsidised products (for plastering of solonetz soils) as part of the Amelioration Development and Soil Fertility Preservation Programme starting 2024.

We also promote the use of phosphogypsum in construction. To that end, we implement a joint project with two large cement plants -Volga-Cement and Cementum, Saratov region – to partially replace natural gypsum with phosphogypsum in cement production.

Phosphogypsum application in road construction is also gaining momentum. For instance, commercial organisations and agricultural producers use it to build private driveways, ramps, manure storage areas, etc. They apply hemihydrate phosphogypsum to reinforce soils and produce durable road pavement (similar to lean concrete) for category 3-5 roads. Phosphogypsum improves

road throughput capacity, doubles

In 2023, the Company sold

73 kt of phosphogypsum.

**Collecting used bags** (fertilizer packaging waste) from PhosAgro-Region's

packaging sacks (in collaboration with Chempack).

customer farmers and their further processing into recycled feedstock for new

permitted axle load, boosts rutting resistance, and prevents soil heaving during abrupt changes in temperature thanks to its low thermal conductivity.

In addition to expanding phosphogypsum sales geography (for instance, PhosAgro plans to start shipping it to the Volgograd, Astrakhan, Penza and Tambov regions, and the Republic of Udmurtia), the Company's plans for 2024 include active promotion of phosphogypsum in urban soil amelioration, road repairs and construction, and production of building blocks and paving slabs (relevant trials are currently in progress). On top of that, together with the Scientific Research Institute for Road Construction, we started developing a technical certificate (preliminary national standard) for phosphogypsum used in road pavement and soil reinforcement.

#### **METRICS AND HIGHLIGHTS**

#### SASB RT-CH-150a.1

Share of recycled and decontaminated hazard class 1-4 waste<sup>1</sup>, % '25 💻 - 40.00 Target '23 🗕 40.17 '22 -38.80 '21 – 39.10 The reduction in class 5 waste generation was due to lower generation of waste from mining at the Kirovsk branch resulting from reduction of mining operations on the back of better

#### Waste generation by hazard class, †

#### GRI 306-3, SASB RT-CH-410b.1

excavation quality.

Waste hazard class	
1	
2	
3	

#### Waste by type and disposal method, $t^2$ GRI 306-4, 306-5

#### Disposal method

4

5

Total

#### PhosAgro Group's waste reused internally

- Hazardous waste
- Non-hazardous waste
- Total waste landfilled
- Hazardous waste
- Non-hazardous waste

<sup>1</sup> The Group specific disclosure was calculated as ratio of class 1-4 waste recycled and decontaminated to the total volume of class 1-4 waste. <sup>2</sup> Hazardous means hazard class 1–4 waste; non-hazardous means hazard class 5 waste.



 2021	2022	2023 (actual)
5.63	4.22	3.82
3.86	0.39	3.23
1,698.52	1,436.71	1,278.12
192,698.46	195,057.45	253,064.94
132,227,604.70	120,229,530.98	94,372,377.65
132,422,011.17	120,426,029.77	94,626,727.75

2021	2022	2023
19,203,406.7	27,753,191.6	26,418,490.4
74,266.9	74,456.8	99,800.9
19,129,139.8	27,678,734.8	26,318,689.5
112,392,381.5	93,400,262.0	65,294,928.0
119,050.2	120,688.6	153,525.5
112,273,331.3	93,279,573.4	65,141,402.5

Disposal method	2021	2022	2023
Including landfilled at the Company's waste disposal facilities	112,386,304.7	93,390,463.8	65,285,342.7
Hazardous waste	113,463.9	110,976.1	143,988.9
Non-hazardous waste	112,272,840.8	93,279,487.7	65,141,353.8
Third-party recycled	72,278.0	63,010.9	83,219.2
Hazardous waste	1,432.2	1,449.9	1,808.1
Non-hazardous waste	70,845.8	61,561.0	81,411.1
Third-party decontaminated	332.5	299.8	612.2
Hazardous waste	332.5	263.1	563.2
Non-hazardous waste	0.0	36.7	49.0
Third-party processed	2,756.7	2,880.6	3,027.4
Hazardous waste	2.2	45.1	314.2
Non-hazardous waste	2,754.5	2,835.5	2,713.2

#### Disposal of beneficiation waste and overburden at Kirovsk branch

#### SASB EM-MM-150a.1, EM-MM-150a.2

		Reused			andfilled at waste	disposal facilities
	2021	2022	2023	2021	2022	2023
Apatite-nepheline ore processing waste (tailings)	12,535,665.7	13,065,273.3	12,984,017.0	13,483,863.3	12,865,355.7	12,812,723.0
Rocks and overburden mix	3,360,586.0	11,276,148.0	9,916,198.0	90,494,219.0	72,281,414.0	43,680,591.0

#### Waste generation, tonne per tonne of finished and semi-finished products

Production site	2021	2022	2023
Kirovsk branch	10.300	9.100	7.000
Balakovo branch	0.900	0.900	0.900
Volkhov branch	0.003	0.001	0.001
Cherepovets site (Apatit)	0.400	0.400	0.400
Total	3.800	3.300	2.500

The decrease in indicators is due to:

1. The formation of rocks duringunderground works on sections that do not contain valuable minerals decreased due to the higher quality of mining techniques, driving waste generation down.

### Waste generation (hazard class 1-4), kg per tonne of finished and semi-finished products

Production site	2021	2022	2023
Kirovsk branch	0.5	0.8	0.7
Balakovo branch	21.3	21.1	28.7
Volkhov branch	0.6	0.5	0.7
Cherepovets site (Apatit)	3.6	4.0	4.1
Total	5.5	5.3	6.8

2. The increase in hazardous waste generation of classes I-IV at Balakovo branch was due to large-scale cleaning of treatment facilities.

# **4** AIR

Our targets

23.7% reduction in emission intensity by 2025 vs 2018

#### **STRATEGY AND MANAGEMENT** APPROACH

### GRI 3-3

PhosAgro Group has developed and now maintains an emissions management process that includes assessment of planned activities, discussion of relevant matters with a wide range of stakeholders, as well as monitoring and disclosing pollutant emissions. To effectively reduce its environmental impact, PhosAgro is running a programme to re-equip production facilities and cut pollutant emissions.

Air quality in sanitary protection areas near the Company's production sites complies with applicable hygienic requirements.



PHOSAGRO

# 2023 highlights

The 2025 target

to reduce GHG emissions was by and large

RUB bln was invested throughout the duration of the Clean Air Initiative,



#### PhosAgro takes part

in the government's Clean Air initiative, which aims to drastically reduce air pollution in major industrial cities across Russia. As part of the initiative, the Company implemented a number of measures at its Cherepovets site, which helped reduce per unit pollutant emissions by 20.5% vs the 2017 level (project launch) as early as in 2023.

### **KEY INITIATIVES IN 2023**

Apatit's Cherepovets site implemented four out of five planned activities as part of the Clean Air national project.



Activities under the Comprehensive Plan to Reduce Pollutant Emissions at the Cherepovets site	Status	Environmental efficiency, t	Year	Actual expenditures, RUB mln
Upgrade of the SK-600/3 sulphuric acid plant	Completed	892	2018–2019	2,733.225
Deployment of new tailing gas pre-heating equipment for unified acid line 7	Completed	105	2019	10.975
Upgrade of technological system No. 3, block 2.70 at the mineral fertilizer production site	Completed	62.3	2020	776.62
Technical upgrade of the low-capacity absorption unit, blocks 7.00 and 7.01 at the mineral fertilizer production site	Completed	402.6	2021–2022	321.84
Catalyst replacement at contact process units of the SK-600/1 and SK-600/2 technological systems at the sulphuric acid facility	In progress	910 t reduction achieved in sulphur dioxide emissions (partial catalyst replacement at SK-600/2 and SK-600/1)	2021–2024	182.18
Projects in addition to the Comprehensive Plan's activities				
Upgrade of the process to return synthesis and purge gas to the fuel gas system without sending ammonia- containing gases to burners of the steam superheater at Ammonia-1 and 2 production lines	In progress	Effect to be determined in 2025	2023–2025	8.970
Upgrade of the complex mineral fertilizer production	Implemented	50t annual reduction of NOx emissions	2023	394.819
Diesel locomotive fleet upgrade	Implemented	Effect to be determined in 2025	2023	207.230

#### At the Volkhov branch,

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the key activities of 2021–2023 to reduce the negative impact on the environment, including air, were implemented as part of an investment project to develop the Volkhov site: technical solutions to reduce per unit emissions and concentrations of pollutants at the sanitary protection zone boundaries near residential areas were provided for back at the stages of new construction and upgrades. The considerable reduction in per

At the **Balakovo** branch, upgrade of the wet-process phosphoric acid production unit and reconstruction of the SK-20 sulphuric acid production

chosen the right approach.

unit emissions confirms that we have

unit in 2023 were implemented in combination with a revamp of gas recovery equipment, which ensured the reduction of per unit pollutant emissions to the atmosphere.

At the **Kirovsk** branch, the 2023 activities to minimise dust emissions from tailing dumps of beneficiation facilities included:

- chemical stabilisation using binding agents (PSKh-18, Lukoil, bitumen emulsion) for dusty surfaces in the beach area of tailing dumps:
- at apatite-nepheline beneficiation plant 2 across
- 443 ha,at apatite-nephelinebeneficiation plant 3 across
- 557 ha;

 chemical stabilisation for dusty surfaces on service roads of tailing dumps:

- at apatite-nepheline beneficiation plant 2 across 88 ha,
- at apatite-nepheline beneficiation plant 3 across 109 ha;
- extra nutrition of crops planted in the past years on the dam slopes and in the beach area of tailing dumps across 30 ha;
- covering operating roads

   of the tailing dump at apatite nepheline beneficiation plant 3 with
   crushed stone across 50 ha;
- piloting five new anti-dusting agent prototypes.

#### **METRICS AND HIGHLIGHTS**



#### GRI 305-7, SASB RT-CH-120a.1 / EM-MM-120a.1

#### NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions, t

Pollutants	2021	2022	2023
Total			
Kirovsk branch	10,120.30	10,141.30	10,056.80
Balakovo branch	6,876.00	7,323.80	8,217.00
Volkhov branch	1,165.80	1,575.00	1,203.40
Cherepovets site (Apatit)	10,065.30	10,193.50	10,235.00
Total	28,227.40	29,234.60	29,712.20
Solids			
Kirovsk branch	4,939.80	5,011.10	4,969.60
Balakovo branch	425.80	497.10	745.50
Volkhov branch	528.60	234.90	214.60
Apatit (Vologda region)	1,055.10	771.70	768.00
Total	6,949.30	6,514.80	6,697.70
Sulphur dioxide			
Kirovsk branch	3,308.20	3,373.40	3,273.70
Balakovo branch	3,975.40	4,227.20	4,723.70
Volkhov branch	206.70	320.50	351.50
Cherepovets site (Apatit)	3,029.20	3,770.90	3,736.60
Total	10,519.50	11,692.00	12,085.50
Carbon monoxide			
Kirovsk branch	777.00	798.10	908.20
Balakovo branch	933.10	949.40	927.60
Volkhov branch	115.30	106.30	153.40
Cherepovets site (Apatit)	1,274.80	1,324.20	1,332.60
Total	3,100.20	3,178.00	3,321.80

<sup>1</sup> The Group specific disclosure was calculated as the ratio of pollutant emission to the output of products and semi-finished products.



Integrated Report

Pollutants	2021	2022	2023
Nitrogen oxides (NOx as NO2)			
Kirovsk branch	1,067.80	931.20	859.50
Balakovo branch	760.70	765,10	759.40
Volkhov branch	207.60	330.70	224.40
Cherepovets site (Apatit)	2,401.80	2,491.90	2,467.60
Total	4,437.90	4,518.90	4,310.90
Hydrocarbons (w/o VOCs)			
Kirovsk branch	8.00	8.00	7.60
Balakovo branch	2.60	2.60	2,60
Volkhov branch	0.00	0.00	0.00
Cherepovets site (Apatit)	38.10	38,10	4.0
Total	48.70	48.70	14.20
Volatile organic compounds			
Kirovsk branch	19.00	19.00	38.10
Balakovo branch	340.70	340.00	339.50
Volkhov branch	5,00	6.20	5.80
Cherepovets site (Apatit)	2.00	2.80	12.90
Total	366.70	368.00	396.3
Other gaseous and liquid pollutants			
Kirovsk branch	0.50	0.50	0.1
Balakovo branch	437.70	542.40	718.70
Volkhov branch	102.60	576.40	253.70
Cherepovets site (Apatit)	2,264.30	1,793.90	1,913.30
Total	2,805.10	2,913.20	2,885.80

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5	WATER
RT-CI	H-140a.2 / EM-MM-140a.2

Reduction of waste water discharges into surface water bodies to Actual per in 2023 4.16 m³/t of finished and semi-finished products by 2025 down 31.10% vs 2018	Our targets Reduction in water withdrawal to 5.16 m <sup>3</sup> /t of finished and semi-finished products by 2025 down 29.30% vs 2018	2023 hig Water with 6.0 down 5.8%
	Reduction of waste water discharges into surface water bodies to <b>4.16</b> m <sup>3</sup> /t of finished and semi-finished products by 2025 down 31.10% vs 2018	Actual pertin 2023

#### **STRATEGY AND MANAGEMENT** APPROACH

#### GRI 3-3, 303-1

Water is an essential resource for the Company. There is no shortage of water sources in the regions where our facilities are based. According to the Water Risk Atlas and Water Risk Filter, all PhosAgro production sites are located in areas with low or moderate fresh water scarcity. However, access to clean water is a major issue facing the world.

#### **RISKS AND OPPORTUNITIES**

#### SASB RT-CH-140a.3

The main risks related to water consumption are water quality deterioration in water bodies across PhosAgro's footprint and bodies.

processes.

Going forward, we plan to improve waste water management by focusing on maximum reuse of water through closed-loop water recycling systems and better treatment of effluents discharged into water bodies in addition to ongoing monitoring of water bodies in the regions of operation.

# hlights

5 б **у-о-у** 



the Company's non-compliance with statutory requirements for limiting one's negative impact on water

PhosAgro has implemented closedloop water recycling systems at its sites in Volkhov and Balakovo to reuse water in production

The regulatory risks include tightened waste water quality requirements, as well as restrictions on the amount of water consumed and discharged into both water

#### bodies and centralised waste water

systems. There were no incidents of non-compliance associated with water quality permits, standards, and regulations in 2023.

To mitigate these risks, in 2020 we adopted the Water Strategy that sought to reduce water consumption and discharge and improve waste water quality.

The strategy is implemented at all PhosAgro sites, and we regularly analyse these measures to determine whether they are sufficient and effective enough to achieve our targets.

To identify the impact of the Company's operations on water bodies, we monitor these bodies in accordance with adopted programmes by engaging our own certified laboratory and external certified laboratories.

At the Cherepovets site, we continued to implement the second stage of the water use optimisation programme as part of our production upgrade initiative for 2020-2025.

#### Phosphate facility:

1

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A base case design developed Key technical solutions implemented; for A Waste Water Treatment Unit design works are in progress with a Source Water Capacity for the Technical Upgrade of an Acidic of at Least 400 m<sup>3</sup>/h. Design Waste Water Treatment Station with works on the facility (construction, Production Capacity Increase; networks, auxiliary systems)

# 3

2

(2)

The development of engineering documentation completed for A Saline Waste Water Sewerage at the Phosphate Facility of Apatit.

# (4)

Engineering documentation implemented for The Technical Upgrade of a Water Treatment Station in a Utility and Drinking Water Supply System with Arrangements Made to Dehydrate Sludge Water.

# Nitrogen facility:

1

are in progress;

A base case design implementation in progress for a waste water treatment unit at the nitrogen facility of Apatit (until 4Q 2024).

Engineering surveys and design works in progress for the system of reception and accumulation, transportation and

At the Kirovsk branch, measures are taken to reduce water consumption:



#### **METRICS AND HIGHLIGHTS**

# Discharge of waste water into surface water bodies, m<sup>3</sup> per tonne of products and semi-finished products<sup>1</sup>



#### Total water withdrawal by source, '000 m<sup>3</sup>

#### GRI 303-3, SASB RT-CH-140a.1 / EM-MM-140a.1

#### Item

#### Surface water

Total water withdrawal from surface sources, including:

- process water
- drinking water (internal use)
- drinking water (for supplies to third parties)
- mining and pit waters
- drainage water
- rainwater

#### Ground water

Water withdrawal from ground-water sources

#### Total water received from third-party suppliers, including

- process water received from suppliers
- water from municipal supply (internal use)
- water from municipal supply (for supplies to third parties
- waste water from other waste water discharge systems

#### Total

#### Measurement of total and per unit water withdrawal, including and excluding mining and pit waters

tem	2021	2022	2023
Total water withdrawal, including mining and pit waters, '000 m <sup>3</sup>	228,456.00	236,873.00	224,903.00
Per unit water withdrawal, including mining and pit waters <sup>2</sup> , m <sup>3</sup> per tonne	6.48	6.42	6.05
Total water withdrawal, excluding mining and pit waters, '000 m³	120,823.00	125,122.00	119,878.00
Per unit water withdrawal from surface sources, excluding mining and pit waters <sup>3</sup> . m <sup>3</sup> per tonne	3.43	3.39	3.22

<sup>1</sup> The Group specific disclosure was calculated as the ratio of the volume of waste water discharged into surface water bodies, including mine and pit waters, to the total output of products and semi-finished products. <sup>2</sup> The Group specific disclosure was calculated as the ratio of total water withdrawn, including mining and pit waters, to the total output of products

- and semi-finished products.
- <sup>3</sup> The Group specific disclosure was calculated as the ratio of total water withdrawn, excluding mining and pit waters, to the total output of products and semi-finished products.



Water withdrawal, m<sup>3</sup> per tonne of products and semi-finished products<sup>1</sup>



	2021	2022	2023
	175,943	182,276	176,760
	60,747	62,163	63,029
	1,193	1,187	1,093
	557	632	527
	107,633	111,751	105,024
	3,171	2,401	2,742
	2,642	4,142	4,345
	2,912	3,357	3,507
g:	49,600	51,240	44,636
	28,373	28,644	30,359
	9,126	8,400	7,022
5)	47	32	30
	12,054	14,164	7,225
	228,456	236,873	224,903

### Total water discharge by source, '000 m<sup>3</sup>

GRI 303-4			Total
Item	2021	2022	2023
Water discharge into surface water bodies			
Total water discharge into surface water bodies, including:	187,012	194,447	175,618
mining and pit waters	107,633	111,751	105,024
drainage water	3,171	2,401	2,742
waste water from other waste water discharge systems	11,673	13,782	6,872
Supplies to third parties			
Total water supplies to third parties:	4,222	4,406	4,019
waste water to the public water discharge system (after use)	3,238	3,219	3,109
waste water to the public water discharge system (unused)	381	523	353
water supplies to third parties from surface sources	557	632	527
water supplies to third parties from municipal sources	47	32	30
Total	191,234	198,853	179,637

### Measurement of total and per unit waste water discharge, including and excluding mining and pit waters

Item	2021	2022	2023
Total water discharge into surface water bodies, including mining and pit waters, '000 m <sup>3</sup>	187,012.00	194,447.00	175,618.00
Per unit water discharge into surface water bodies, including mining and pit waters <sup>1</sup> , m <sup>3</sup> per tonne	5.31	5.27	4.72
Total water discharge into surface water bodies, excluding mining and pit waters, '000 m <sup>3</sup>	79,379.00	82,696.00	70,594.00
Per unit water discharge into surface water bodies, excluding mining and pit waters <sup>2</sup> , m <sup>3</sup> per tonne	2.25	2.24	1.90

### Treated effluents (reused in the production cycle)

Asset	2021	2022	2023
Total, mln m³	244.7	241.7	227.9
Share of reused water, %	87.0	86.0	83.0

<sup>2</sup> The Group specific disclosure was calculated as the ratio of the volume of waste water discharged into surface water bodies, excluding mine and pit waters, to the total output of products and semi-finished products.

#### Water consumption, '000 m<sup>3</sup>

### GRI 303-5

Water consumption	
Total water discharge (all sources)	
Total water withdrawal (all sources)	
Item	

# Water discharge, mln m<sup>3</sup> GRI 303-4

Item	2021	2022	2023
Waste water discharge into surface water bodies			
Kirovsk branch	173.9	180.0	162.4
Balakovo branch	-	-	-
Volkhov branch	-	-	-
Cherepovets site (Apatit)	13.1	14.4	13.2
Total	187.0	194.4	175.6
Discharged without treatment (% of total water discharge)			
Kirovsk branch	0.0	0.0	0.0
Balakovo branch	0.0	0.0	0.0
Volkhov branch	0.0	0.0	0.0
Cherepovets site (Apatit)	0.0	0.0	0.0
Total	0.0	0.0	0.0

#### Waste water discharge

Item		Receiving water body
Kirovsk branch		
Discharge 1	Discharge from ANBP-3	Zhemchuzhnaya River
Discharge 2	Discharge from ANBP-2	Belaya River
Discharge 3	Rainwater at ANBP-2	Belaya River
Discharge 4	Mining waters of the combined Kirovsky, Central and Rasvumchorrsky mines	Lake Bolshoi Vudyavr
Discharge 5	Mining waters of the Koashva and Njorkpahk open pits	Lake Kitchepahk
Discharges 6, 9	Waters of water-lowering wells of the Vostochny mine	Vuonnemyok River
Cherepovets site (Apatit)		
Effluents from the phosphate facility		Rybinsk Reservoir
Effluents from the nitrogen facility		Rybinsk Reservoir

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#### Total

2023

2021	2022	2023
228,456	236,873	224,903
191,234	198,853	179,637
37,222	38,020	45,266
	2021 228,456 191,234 37,222	2021         2022           228,456         236,873           191,234         198,853           37,222         38,020

## Popping water body

## **6** BIODIVERSITY

#### Our targets

Preservation of biodiversity in regions of PhosAgro Group's operation at a level securing sustainability

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#### STRATEGY AND MANAGEMENT APPROACH

The Company's Environmental Policy

sets forth PhosAgro's obligations

to preserve biodiversity, natural

landscapes and habitats across

its footprint and prevent its projects

from causing any harm to the same.

Before building any new production

facilities or renovating existing ones,

PhosAgro conducts an environmental

impact assessment (EIA) based

of the local flora, fauna and landscapes, as well as research, analysis and consideration of public attitudes towards biodiversity

on the results of engineering and

environmental surveys. Assessment

### GRI 3-3

# **KEY INITIATIVES IN 2023**

2023 highlights

123,915

juvenile fish was released in 2023

For a number of years, the Company has been conducting research to develop biodiversity protection programmes, including the evaluation of the current state and development of a list of indicators for future biodiversity monitoring.

Going forward, we plan to integrate the comprehensive biodiversity programmes of the Company's branches into a single system based on a unified approach to assessment and monitoring. This work is underway and it will be finalised as we complete research projects at each of PhosAgro's assets.

#### For a number of years, the Company has been working to preserve biodiversity and replenish biological resources. Since 2020, the Company has been developing comprehensive biodiversity protection programmes in partnership with research institutions. The effort is aimed at assessing and restoring environmental conditions across the Company's footprint and establishing its priorities in protecting biodiversity based on indicator species monitoring.

# Comprehensive biodiversity protection programmes

### GRI 304-2, 304-3

Comprehensive biodiversity protection programmes were developed for the Volkhov branch, two of the Kirovsk branch's facilities and the Cherepovets production site.

In 2022, we completed a comprehensive environmental study of the area within the footprint of the Kirovsky mine. As part of the efforts to develop biodiversity protection programmes in 2023, the Company joined forces with the Kola Science Centre of the Russian Academy of Sciences to conduct a comprehensive environmental study of the area within the footprint of the Rasvumchorrsky mine (Kirovsk branch, Murmansk region).

The research revealed that the biota of terrestrial ecosystems within the footprint of the Rasvumchorrsky

#### GRI 304-3

#### Juvenile fish and pike larvae, released into water bodies across the Company's geographies

Water body	2021	2022	2023
Volgograd Reservoir, Saratov region	55,838	60,838	35,838
Sukhona River, Vologda region	22,933	11,743	_
Umba River, Murmansk region	5,000	-	_
Rybinsk Reservoir, Vologda and Yaroslavl regions	_	70,404	11,142
Saratov Reservoir, Saratov region	28,151	28,151	53,151
Lake Ladoga, Leningrad region		1,584	1,539
Nakhimovskoye Lake, Leningrad region	28,715	-	-
Sheksna Reservoir, Vologda region	3,500	3,000	-
Kovdozero Reservoir, Murmansk region	-	11,502	-
Imandra Reservoir	-	-	15,520
Onega River	-	-	6,725
Total	144,137	187,222	123,915



#### **METRICS AND HIGHLIGHTS**

mine includes over 650 species of fungi, liverworts, lichens, mosses and vascular plants, as well as 135 bird and 12 mammal species. The diversity of bird and mammal species was strongly affected and disturbed by human activities in the area. The study also found four fish species within the footprint of the Rasvumchorrsky mine. Lake Bolshoi Vudyavr currently fits the habitat requirements for these species, as it offers ample food supplies for both salmonids (brown trout, Arctic char) and European smelt.

In 2024, we plan to launch a comprehensive environmental study of the area within the footprint of the Vostochny mine.

# Investment in biodiversity protection programmes, RUB mln 13.7



# **CONTRIBUTING TO** LOCAL COMMUNITIES

## **AREA, STRATEGIC GOALS AND HIGHLIGHTS OF 2023**



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Preservation and promotion of orthodox values, spiritual ideas, respect for our legacy and



Reconstruction of the Church of the Vernicle Image of the Saviour commenced in Kirovsk

Preserving the history of the nation, industry, or facility for all generations; supporting continuity of generations, inclusive traditions, respect for the older generation, veterans, and vulnerable

**4,500** events held by career guidance and exhibition

centres

Supporting Russian sports at the international, national and regional levels, and promoting sports in regions where

Total financial support exceeded

