



## 2019 HIGHLIGHTS

### EMISSIONS INTO THE ATMOSPHERE

PhosAgro's emissions management system seeks to comply with national air pollution regulations, ensure air quality in sanitary protection areas near production sites, and upgrade the Company's capacities using the best available techniques.

**PhosAgro's strategic goal** is to achieve a 5% reduction in pollutant emissions per tonne by 2025.

To deliver on this target, in November 2019, the Board of Directors' Sustainable Development Committee approved a list of initiatives designed to contribute to achieving the objective. In particular, the Company:

1. implements environmental programmes under the nationwide Clean Air initiative in line with the Comprehensive Plan to Reduce Pollutant Emissions in Cherepovets approved by the Deputy Prime Minister of Russia on 28 December 2018;
  - 1.1. upgrades the SK-600/3 sulphuric acid facility to decrease sulphur dioxide emissions by 0.892 kt, with RUB 315,177,000 spent in 2019 and RUB 2,710,719,000 for the entire project implementation period;
  - 1.2. deploys new tailing gas pre-heating equipment for the UKL-7 plants to reduce atmospheric emissions by 0.105 kt, with RUB 9,417,000 spent in 2019.
2. upgrades equipment at the Volkhov branch to reduce pollutant emissions, including absorption system upgrade at the second site, and introduction of absorption acidification systems at three sites of the mineral fertilizer production unit.
3. takes measures to prevent dust emissions from tailings at the Kirovsk branch.

### Pollutant emissions, kg/t<sup>1</sup>

2017	2018	2019
1.131	1.048	0.888



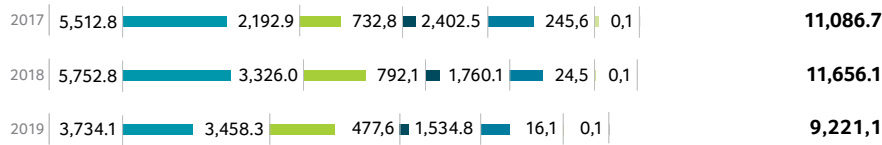
The Group takes part in the nationwide Clean Air initiative, which aims to drastically reduce air pollution in major industrial cities.

<sup>1</sup> Tonnes of finished and semi-finished products

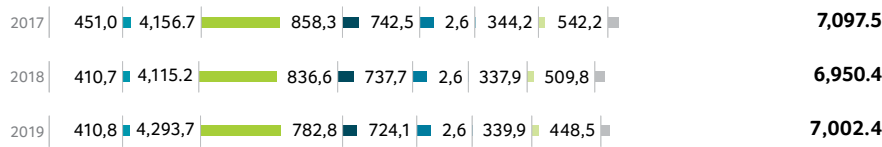


### Emissions of NO<sub>x</sub>, SO<sub>x</sub> and other major pollutants, t

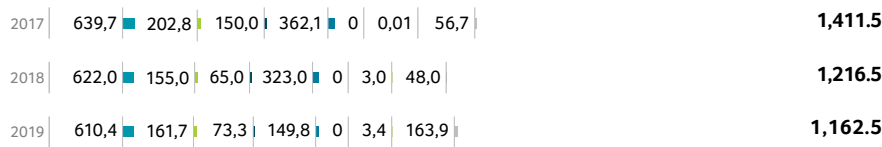
#### Kirovsk branch of Apatit



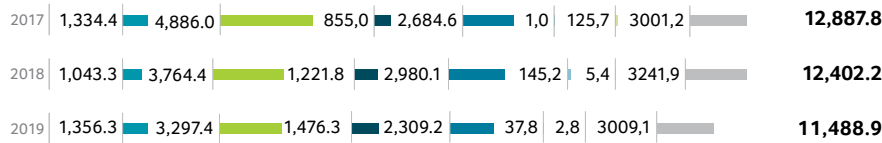
#### Balakovo branch of Apatit



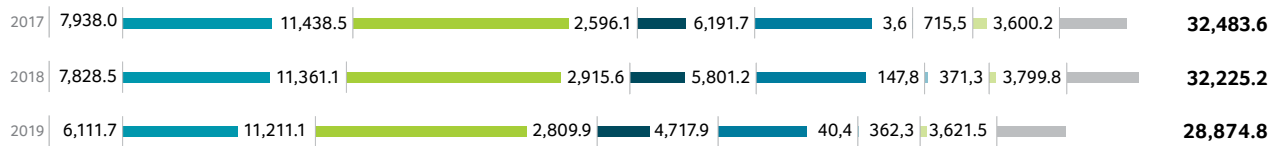
#### Volkhov branch of Apatit



#### Apatit



#### Total



- Solids
- Sulphur dioxide
- Carbon monoxide
- Nitrogen oxides (NO<sub>x</sub> as NO<sub>2</sub>)
- Hydrocarbons(w/o VOCs)
- Volatile organic compounds (VOCs)
- Other gaseous and liquid pollutants

In 2019, gross pollutant emissions, including NO<sub>x</sub> and SO<sub>2</sub>, were down across the Group. The reduction was due to the measures implemented by the Company and the favourable weather conditions.



## GREENHOUSE GASES

The Group is committed to tackling greenhouse gas emissions and climate change.

### GHG emissions<sup>1</sup>, kg/t<sup>2</sup>

2015	2016	2017	2018	2019
125.34	141.47	145.95	157.97	143.27

**PhosAgro's strategic goal** in this area was approved by the Sustainable Development Committee of the Board of Directors in November 2019 and envisioned achieving the level of 142 kg of CO<sub>2</sub> equivalent per tonne of finished and semi-finished products by 2025.

To deliver on this objective the Company is implementing a number of projects

- elaborates a low carbon transition strategy and plan;
  - develops an action plan for the low carbon transition strategy;
  - defines GHG emission targets;
  - conducts climate change scenario analysis;
  - works out a plan for engagement with members of the value chain and the engagement assessment framework.
- The deadline is set for Q3 2020.



PhosAgro takes part in the Carbon Disclosure Project (CDP) to reduce greenhouse gas emissions. The Company received a C score for its first submission to CDP made in July 2019.

## Greenhouse gas emissions

### Total GHG emissions, t

	Apatit	Balakovo branch of Apatit	Volkhov branch of Apatit	Kirovsk branch of Apatit	Total
2017	3,354,121	164,299	103,538	569,194	4,191,152
2018	3,995,830	157,886	118,396	583,144	4,855,256
2019	3,746,069	152,632	121,325	636,303	4,656,329

### GHG emissions per unit of output, kg/t<sup>2</sup>

2017	272.432	30.718	183.86	54.244	145.948
2018	295.235	28.427	181.497	53.042	157.973
2019	261.915	25.650	197.368	54.702	143.272

<sup>1</sup> Greenhouse gas emissions are given in CO<sub>2</sub> equivalent. The calculation includes the following list of gases: CO<sub>2</sub>, CH<sub>4</sub>, NO<sub>2</sub>.  
<sup>2</sup> Tonnes of finished and semi-finished products



## WASTE

Waste management is an integral part of PhosAgro's comprehensive environmental management system.

**Our strategic goal to 2025** is to increase the share of recycled and decontaminated hazard class 1–4 waste to 40%.

To achieve the targets, the Company is implementing a number of initiatives approved in November 2019 by the Board of Directors' Sustainable Development Committee:

1. upgrading the aluminium fluoride plant at the Cherepovets site to ensure the use of all the fluorine extracted as part of phosphate rock processing; reduce lime consumption in treating effluents; and decrease the amount of solid waste generation with RUB 9,761,000 spent in 2019;
2. at the Kirovsk branch, we have launched waste disposal and decontamination facilities, including the UDT-1 thermal treatment facility and the thermal waste decontamination unit with high-temperature burning of exhaust gases; the project will contribute to elimination of waste disposal sites and make possible the recycling of all kinds of waste (tires, railway sleepers, and timber) belonging to PhosAgro and other companies in the region.

## Share of recycled and decontaminated hazard class 1–4 waste, %

2017	2018	2019
26.3	26.8	34.5

We place major emphasis on safe operation of tailings, which are special hydraulic structures and equipment for storage and disposal of mineral processing wastes.

Based on the safety requirements for hydraulic structures approved by the Federal Service for Environmental, Technological and Nuclear Oversight (Rostekhnadzor) in 2018, the Company's tailings have the highest safety level. This means that they fully meet the design requirements and applicable rules and regulations. The state of structures and foundations corresponds to the requirements. The tailings are operated in accordance with existing industrial safety laws and regulations as well as instructions of supervisory bodies.

## Waste generation, kg/t<sup>1</sup>

	2013	2014	2015	2016	2017	2018	2019
Total	4.566	3.456	3.578	3.653	3.152	3.225	3.466
Kirovsk branch	10.845	8.333	8.881	8.950	7.615	8.042	8.710
Balakovo branch	0.828	0.869	0.725	0.881	0.898	0.884	0.894
Volkhov branch	0.005	0.005	0.004	0.004	0.004	0.005	0.002
Cherepovets	0.454	0.462	0.470	0.483	0.472	0.428	0.421

## Waste generation (hazard class 1–4), kg/t<sup>1</sup>

	2013	2014	2015	2016	2017	2018	2019
Total	159.467	169.423	6.970	10.978	8.871	5.779	6.113
Kirovsk branch	3.684	2.991	0.896	0.458	0.308	0.632	0.635
Balakovo branch	828.231	868.426	24.579	29.498	28.951	22.239	19.495
Volkhov branch	1.382	1.631	0.881	0.616	0.925	0.913	2.187
Cherepovets	10.205	7.791	4.763	12.203	7.810	3.441	5.168

<sup>1</sup> Tonnes of finished and semi-finished products



## Waste, t

	Reused	Landfilled	Third party				
			Third-party recycled	Third-party decontaminated	Third-party landfilled	Third-party stored	Third-party processed
<b>Kirovsk branch of Apatit</b>							
2017	29,633,656.5	50,252,148.4	21,526.6	340.1	2,606.7	–	–
2018	21,274,068	67,117,451	16,933.2	9.8	5,279.8	–	–
2019	19,656,977	81,635,022.6	15,665.9	165.9	4,197.1	–	–
<b>Balakovo branch of Apatit</b>							
2017	22,312	4,780,492.2	11,649.7	1.7	222.3	–	–
2018	6,099	4,898,612.7	9,879.1	26.4	372	–	1,381.5
2019	16,580.3	5,302,285.7	4,720.5	4.5	257	–	2,906.1
<b>Volkhov branch of Apatit</b>							
2017	–	–	1,490.1	0.3	652.9	–	–
2018	–	–	115.5	0.4	603.7	–	1,998.9
2019	–	–	43.9	0.3	1,345	–	–
<b>Apatit</b>							
2017	3,013,524.1	2,778,641.4	18,469.3	457.2	134.4	–	–
2018	2,970,411.4	2,767,144.9	12,984.1	39.6	–	0.7	–
2019	3,195,192.6	2,856,356.6	17,266.3	100.6	125.7	–	–
<b>Total</b>							
2017	32,669,492.5	57,811,281.9	53,135.8	799.3	3,616.3	–	–
2018	24,250,578.5	74,783,208.5	39,911.9	76.2	6,255.5	0.7	3,380.5
2019	22,868,749.9	89,793,664.9	37,696.5	271.4	5,924.8	0	2,906.1

Production growth has resulted in increased waste disposal.

## Waste generation by hazard class, t

	Total	I class	II class	III class	IV class	V class
<b>Kirovsk branch of Apatit</b>						
2018	88,413,741.67	0.24	0	237.414	6,710.49	88,406,793.53
2019	101,313,438.09	0.494	9.039	334.52	7,047.985	101,306,046.05
<b>Balakovo branch of Apatit</b>						
2018	4,909,840.64	2.074	0.048	38.027	123,472.40	4,786,328.10
2019	5,321,693.716	2.091	0.555	8.453	116,008.999	5,205,673.618
<b>Volkhov branch of Apatit</b>						
2018	2,718.53	0.425	0	0	594.9	2,123.20
2019	1,389.20	0.3	0	0	1,345	43.90
<b>Apatit in Cherepovets</b>						
2018	5,798,521.75	4.741	1.252	981.185	45,581.40	5,751,953.20
2019	6,020,722.293	4.751	1.17	1,595.652	72,323.84	5,946,796.88
<b>Total</b>						
2018	99,124,822.59	7.48	1.3	1,256.626	176,359.19	98,947,198.03
2019	112,657,243.30	7.636	10.764	1,938.625	196,725.824	112,458,560.4





## WATER

Our waste water management approach is focused on maximum reuse of water through closed-loop water recycling system and proper treatment of effluents discharged into water bodies in addition to continuous monitoring of water bodies in the regions of operation and aquatic life recovery.

**The Company's strategic goal** is to reduce waste water discharge per tonne of output by 20% compared to 2018.

To deliver on our targets, PhosAgro implements a variety of programmes approved by the Board of Directors' Sustainable Development Committee in November 2019, including:

1. the Optimisation of Water Use by Apatit in Cherepovets During Production Upgrade in 2020–2025 – a targeted programme with RUB 176 m in funding for phase 1 only;
2. the Discharge Reduction and Effluent Quality Improvement at the Kirovsk Branch of Apatit in 2019–2020 – a targeted programme which includes construction of a chemicals dosing facility to treat effluents from the ANBP-2 tailings.

## Waste water discharge, $m^3/t^1$

	2017	2018	2019
	7.476	6.039	4.684

## Pollutant discharge, $kg/t^2$

	2016	2017	2018	2019
	1.3	1.0	0.8	0.614

## Treated effluents (reused in the production cycle), $mln m^3$

	2018	2019
TOTAL	221.98	238.87
Kirovsk branch of Apatit	202.83	219.52
Balakovo branch of Apatit	9.36	9.52
Volkhov branch of Apatit	1.62	1.07
Apatit (Cherepovets site)	8.16	8.77

## Water consumption, $ths m^3$

	2018	2019
TOTAL	34,510	33,763
Kirovsk branch of Apatit	9,864	5,563
Balakovo branch of Apatit	7,632	8,256
Volkhov branch of Apatit	1,936	2,168
Apatit (Cherepovets site)	15,078	17,776

<sup>1</sup> Excluding supplies to third parties

<sup>2</sup> Tonnes of finished and semi-finished products

303-40

1030  
303-10

303-50



**The Company's strategic goal** is to reduce waste water discharge per tonne of output by 20% from 2018 to 2025 to achieve 4.8  $m^3$  per tonne of finished and semi-finished products. The relevant steps towards this goal were approved by the Sustainable Development Committee of the Board of Directors in November 2019.



PhosAgro supports aquatic life recovery.

0303-2

### Number of fish released into water bodies in the regions of operation as part of environmental protection initiatives in 2019

	Cherepovets site	Balakovo branch of Apatit		Kirovsk branch of Apatit	
Aquatic life species	Juvenile carp	Juvenile carp	Juvenile silver carp	Sterlet yearling	Juvenile Atlantic salmon (2 yrs)
Quantity	6,500	30,000	25,000	84,353	2,130
Water body	Gorky Reservoir	Volgograd Reservoir		Sukhona River	Umba River

### Water discharge in 2019, mln m<sup>3</sup>

	Kirovsk branch of Apatit	Balakovo branch of Apatit	Volkhov branch of Apatit	Apatit	Total
Waste water discharge	137.4	0	0	14.8	152.2
Discharged without treatment (% of total water discharge)	2.6	0	0	0	2

0303-3

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

Indicator	Kirovsk Branch of Apatit		Apatit (Cherepovets)		Balakovo Branch of Apatit		Volkhov Branch of Apatit		Total	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
<b>Surface water</b>										
Total water withdrawal from surface sources, including:	144,920	111,106	22,110	24,291	7,201	7,619	2,069	2,163	176,300	145,179
process water	28,741	27,596	19,387	21,161	7,201	7,619	1,861	1,940	57,191	58,315
drinking water (internal use)	0	0	935	885	0	0	0	0	935	885
drinking water (for supplies to third parties)	0	0	498	466	0	0	0	0	498	466
mining water	111,213	79,933	0	0	0	0	0	0	111,213	79,933
drainage water	4,965	3,577	0	0	0	0	0	0	4,965	3,577
rainwater	0	0	1,290	1,779	0	0	208	223	1,498	2,002
<b>Ground water</b>										
Water withdrawal from ground-water sources:	2,196	1,964	0	0	742	879	0	0	2,938	2,842
<b>Water received from third party suppliers</b>										
Total water received from third party suppliers, including:	37,129	32,334	7,661	9,572	0	0	138	177	44,927	42,082
process water received from suppliers	18,367	19,016	7,125	8,530	0	0	0	0	25,491	27,546
water from municipal supply (internal use)	9,263	7,824	457	560	0	0	138	177	9,857	8,560
water from municipal supply (for supplies to third parties)	0	0	23	34	0	0	0	0	23	34
waste water from other waste-water discharge systems	9,500	5,494	56	448	0	0	0	0	9,556	5,943
<b>TOTAL</b>	<b>184,246</b>	<b>145,404</b>	<b>29,770</b>	<b>33,863</b>	<b>7,944</b>	<b>8,498</b>	<b>2,206</b>	<b>2,339</b>	<b>224,166</b>	<b>190,104</b>

Total water discharge by source and by site, *ths m<sup>3</sup>*

303-4

Indicator	Kirovsk Branch of Apatit		Apatit (Cherepovets)		Balakovo Branch of Apatit		Volkhov Branch of Apatit		Total	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
<b>Water discharge into surface waters</b>										
Total water discharge into surface waters:	171,787	137,386	13,694	14,837	0	0	141	0	185,621	152,223
mining water	111,213	79,933	0	0	0	0	0	0	111,213	79,933
drainage water	4,965	3,577	0	0	0	0	0	0	4,965	3,577
waste water from other waste-water discharge systems	9,500	5,494	0	0	0	0	0	0	9,500	5,494
<b>Supplies to third parties</b>										
Total water supplies to third parties:	2,595	2,455	999	1,251	312	242	129	171	4,035	4,118
waste water to the public water discharge system (after use)	2,595	2,455	422	302	312	242	129	171	3,458	3,170
waste water to the public water discharge system (unused)	0	0	56	448	0	0	0	0	56	448
water supplies to third parties from surface sources	0	0	498	466	0	0	0	0	498	466
water supplies to third parties from municipal sources	0	0	23	34	0	0	0	0	23	34
<b>TOTAL</b>	<b>174,382</b>	<b>139,841</b>	<b>14,692</b>	<b>16,087</b>	<b>312</b>	<b>242</b>	<b>270</b>	<b>171</b>	<b>189,656</b>	<b>156,341</b>

## ENERGY EFFICIENCY

To compensate for the energy intensive nature of our business, at PhosAgro we are constantly seeking ways to improve productivity and use resources more efficiently. Crucial to this effort is gaining a thorough understanding of how we consume energy.

To this end, the Company focuses its work in the following key areas:

- increasing energy efficiency;
- expanding our own power-generation capacities;
- recycling waste to generate heat by using exhaust gases from gas turbines to produce steam;
- optimising energy use from different sources.

In 2019, PhosAgro's production facilities were

**40.2%** self-sufficient in electricity. We continued our work to increase efficiency across the Group's production sites.

## PhosAgro energy consumption in 2019

103  
302-1  
306-1

	Electricity, ths kWh	Natural gas, mln m <sup>3</sup>	Liquefied natural gas, t	Heat energy, ths Gcal	Fuel, ths tons	Diesel, ths tons	Total cost, RUB bln
Total consumption	3,735	2,704	3,135	11,331	154	47	
own generation	1,500			10,924			
purchased	2,235			407			
Consumption per tonne of output	0.115	0.083	0.096	0.349	0.005	0.001	
Cost, RUB bln	10.286	12.058	0.091	10.74	2.54	2.100	37.810

302-1  
302-3



**PhosAgro energy consumption in 2018<sup>1</sup>**

	Electricity, ths kWh	Natural gas, mln m <sup>3</sup>	Liquefied natural gas, t	Heat energy, ths Gcal	Fuel, ths tons	Diesel, ths tons	Total cost, RUB bln
Total consumption	3,651	2,667	2,705	10,968	148	40	
Own generation	1,485			10,580			
Purchased	2,166			388			
Consumption per tonne of output	0.119	0.087	0.088	0.357	0.005	0.001	
Cost, RUB bln	8.919	11.470	0.076	10.00	2.20	1.769	34.436

**REDUCTION IN ELECTRICITY CONSUMPTION****Our programmes**

Facility. Project	Effect	Project costs	Project Deadlines
<b>Kirovsk</b> Upgrade of the lighting system to LED at ANBP-3 of Apatit's Kirovsk Branch	The project helped achieve a 0.505 MW reduction in electric capacity used for industrial lighting at ANBP-3 of Apatit's Kirovsk Branch compared to 2018, which accounts for around 0.3% of total consumption.	RUB 0.082 bln	Q4 2019
<b>Cherepovets</b> Launch of SK 3300 sulphuric acid production plant	The new SK 3300 plant produces enough process steam to ensure full generating capacity utilisation at Apatit's thermal power station, which, in turn, leads to lower natural gas consumption by its boilers.	RUB 10.5 bln	Q1 2020
<b>Balakovo. Kirovsk</b> Construction of a 100 kW solar power station	The solar power station pilot running at two production sites of the holding company is geared towards assessing the potential of renewable solar energy and the viability of a further scale-up.	RUB 0.01 bln	Q3 2020
<b>Volkhov</b> Construction of a thermal power station with a 34 MW high-efficiency electric turbine and a water treatment system at Apatit's Volkhov Branch	The utilisation by the thermal power station at Apatit's Volkhov Branch of the process steam that is a by-product of the sulphuric acid production plant will help solve the problem of supplying all of the site's consumers with low-grade steam and significantly reduce the need for the purchase of electricity from third-party power distribution companies.	RUB 3 bln	Q2 2021

<sup>1</sup> The heat and electricity data provided in the Company's 2018 annual report may differ from those disclosed in this table because the Company harmonised calculation methods for power consumption across all its production assets in the reporting year.