ENVIRONMENTAL MANAGEMENT

Ensuring environmental safety in the context of fast-growing production and stronger economic performance will remain TMK's strategic priority in the medium and longer term.

In its operations, TMK is guided by international environmental protection initiatives and treaties, and complies with local environmental standards and regulations. Our efforts during the year, as in the previous years, were focused on improving the environmental performance of production processes, reducing consumption of water resources, and minimizing the amount of landfilled waste.

Financing environmental initiatives helps TMK's plants to comply with the local environmental protection and safety laws, standards, and regulations.

37 MLN $

TMK'S TOTAL ENVIRONMENTAL EXPENDITURES IN 2017 INCREASED BY +50% y-o-y

6

COMPANY'S PLANTS CONFIRMED THEIR COMPLIANCE WITH ISO 14001:2015

-10% y-o-y

TOTAL POLLUTANT EMISSIONS

-5% y-o-y

OVERALL WATER CONSUMPTION

-2.4% y-o-y

GREENHOUSE GAS EMISSIONS

TMK SUPPORTED THE YEAR OF THE ENVIRONMENT HELD IN RUSSIA IN 2017 AS A NATION-WIDE INITIATIVE

TMK WAS AWARDED THE PROACTIVE ENVIRONMENTAL POLICY DURING THE YEAR OF THE ENVIRONMENT AWARD BY THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT OF THE RUSSIAN FEDERATION

ENVIRONMENTAL MANAGEMENT SYSTEM

We are consistently managing our environmental efforts to ensure continuous improvement of our environmental performance and manage environmental risks across TMK's facilities. Eleven of the Company plants have implemented an ISO 14001 compliant environmental management system. All the certified plants were audited and confirmed compliance with the standard during the year. Volzhsky Pipe Plant, Sinarsky Pipe Plant, TAGMET, TMK-ARTROM, TMK-RESITA, and TMK-Geneva were certified for compliance with updated ISO 14001:2015. The remaining plants are implementing initiatives to train staff and update documents to adopt the new standard.

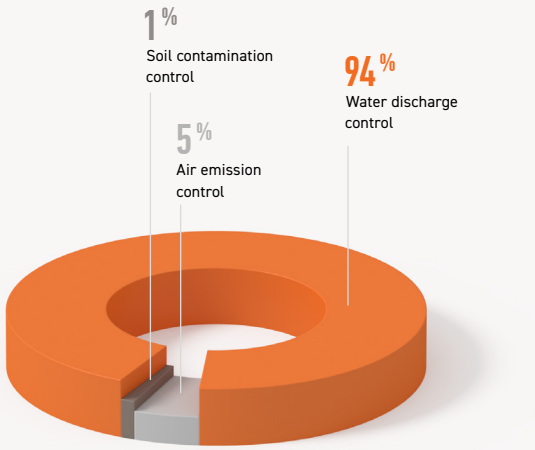
10 MLN $

TMK INCREASED ITS INVESTMENT IN ENVIRONMENTAL PROTECTION AND MANAGEMENT INITIATIVES IN 2017 BY ×2,8 y-o-y

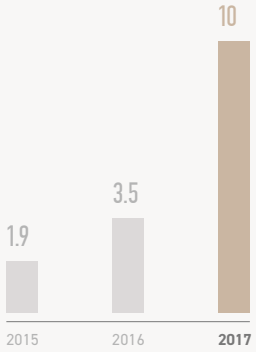
ENVIRONMENTAL INVESTMENTS: TRANSITION TO THE BEST AVAILABLE TECHNOLOGIES

Environmental projects are an essential component of the Company's development programs, including the effective Strategic Investment Program.

Environmental investments by TMK



Environmental investments by TMK, *$ million*



KEY CAPEX PROJECTS AND THEIR RESULTS

During 2017, TMK implemented 23 capex projects to ensure legal compliance and environmental protection.

Russian division

- Seversky Pipe Plant is renovating its aeration station and biological treatment plant; it also upgraded the aeration tanks, reduced the negative impact on the Severushka River, and completed the advanced wastewater treatment facility project to reuse up to 100 thousand cu m of treated water in a water recycling system.
- TAGMET assembled dust control and gas cleaning units at the ferro-alloy and lumps preparation facility of its EAF shop.
- The combined heat and power (CHP) plant at Sinarsky Pipe Plant completed technical upgrades of its boiler facility including a redesign of exhaust pipe No. 4 to comply with the environmental legislation.
- Sinarsky Pipe Plant launched the construction of cooling tower No. 2 for the treated water recycling system.

American division

- Koppel plant upgraded its EAF shop gas cleaners, improving the overall performance of its gas cleaning systems.
- Geneva plant implemented a series of dust control measures and reduced overall dust.

TMK joined a major, nation-wide initiative the Year of the Environment, held in Russia in 2017. Five of TMK's environmental investment initiatives were included in the Framework Action Plan for the Year of the Environment approved by the Russian Government.

Initiative	Environmental benefits
Seversky Pipe Plant installed noise suppressors on the roof fans and in the smoke exhauster room in the electric arc furnace (EAF) shop	Noise pollution levels reduced by 2 dB–4 dB
Seversky Pipe Plant built a heat treatment facility with water treatment and recycled water supply	Up to 20 million cu m of treated water reused
Seversky Pipe Plant built an advanced wastewater treatment facility	Up to 100 thousand cu m of treated water reused
Volzhsky Pipe Plant purchased two water treatment units for the water recycling system, installed downstream of the LDP expanding and hydraulic testing equipment	Reuse of treated water in the water recycling system
TAGMET built a facility to treat chemical effluents	Up to 180 thousand cu m of treated water reused

We focused our initiatives on the sustainable use of water and minimising the impact of operations on water bodies. The initiatives were included in the quadripartite agreements signed by TMK with the Russian Ministry of Natural Resources and Environment, Federal Service for Supervision of Natural Resources (Rosprirodnadzor), and the regional administrations of the Volgograd, Sverdlovsk, and Rostov Regions. The Company's spending on these initiatives will total $17 million by 2019, with $8 million already spent in 2017.

150

LOCAL AND CORPORATE-WIDE INITIATIVES IMPLEMENTED AT OUR RUSSIAN DIVISION PLANTS IN THE YEAR OF THE ENVIRONMENT

Technical and organizational initiatives to mitigate and/or prevent negative environmental impacts from operations

12 SOIL CONTAMINATION CONTROL

9 SUSTAINABLE USE OF NATURAL RESOURCES AND ENERGY

18 AIR EMISSION CONTROL

38 WATER DISCHARGE CONTROL

54 EDUCATIONAL, TRAINING, AND VISIBILITY INITIATIVES

19 INITIATIVES TO PROTECT THE ENVIRONMENT ACROSS TMK'S FOOTPRINT, LAND IMPROVEMENTS/RECLAMATIONS

TMK WAS AWARDED THE **PROACTIVE ENVIRONMENTAL POLICY** DURING THE YEAR OF THE ENVIRONMENT AWARD BY THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT OF THE RUSSIAN FEDERATION.

EMISSIONS CONTROL

TMK's facilities comply with the legislation covering air emissions inventory, regulation, and control, as well as operations in adverse weather conditions. Our emissions control activities ensure compliance with the prescribed air emissions limits.

Key initiatives to reduce air emissions implemented by TMK facilities

01

Improving the performance of gas cleaning units

02

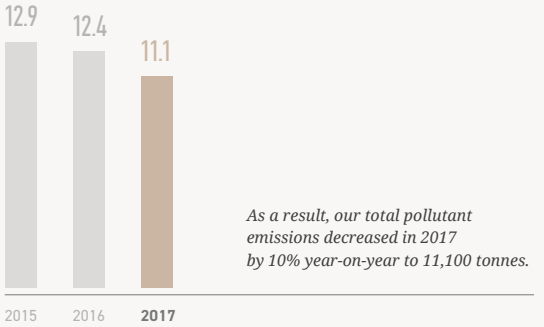
Air emissions control in adverse weather conditions

03

Containing, redirecting and cleaning dust and gas flows

Our total expenditure on atmospheric emissions control measures was $2.4 million, which funded the implementation of a range of organizational and technical initiatives, improvement of treatment technologies, and routine maintenance and overhauls of treatment facilities.

Total pollutant emissions by TMK, *thousand tonnes*



As a result, our total pollutant emissions decreased in 2017 by 10% year-on-year to 11,100 tonnes.

2.4 MLN $

TMK SPENT ON ATMOSPHERIC EMISSIONS CONTROL MEASURES

We make efforts to ensure a comfortable environment for people living in areas adjacent to sanitary protection zones around our plants. To that end, we both install high-performance gas cleaning equipment and implement noise control measures. In 2017, Seversky Pipe Plant and TAGMET (Russian division), TMK-ARTROM (European division), and Camanche (American division) developed additional measures to reduce noise pollution.

Key initiatives:

Volzhsky Pipe Plant replaced 6,480 bag filters to ensure reliable operation of the gas cleaning system at EAF-150.

Seversky Pipe Plant upgraded exhaust hood and gas duct of the exhaust gas cleaning system of the mandrel mill at TPTs-1.

SinHPPP (the combined heat and power plant at Sinarsky Pipe Plant) outfitted its steam boilers with stationary gas analyzers for continuous monitoring of O_2, CO_2, NO_2, and SO_2 concentrations.

TAGMET purchased equipment and repaired its dust control and gas cleaning systems.

TMK-INOX launched an upgrade of dust control and gas cleaning equipment at the grinding line.

TMK-RESITA implemented a series of measures to improve dust suppression levels.

CLIMATE RESPONSIBILITY

TMK builds its growth strategy taking into account its hydrocarbon footprint, with hydrocarbon aspects incorporated into the risk management system and business processes.

We compile an inventory of greenhouse gas (GHG) emissions on an annual basis.

As required by the local carbon legislation, European division plants timely submit verified GHG reports and control plans to the regulator, fully complying with the applicable requirements. Russian division plants prepare GHG inventories on a voluntary basis.

TMK implements measures to improve energy efficiency and reduce fuel and energy consumption, optimizes operations, and upgrades technologies, which resulted in a 2.4% reduction of total GHG emissions vs. 2016.

-2.4 % y-o-y

GHG EMISSIONS

WATER MANAGEMENT

Under TMK's Environmental Policy, the Company's water management strategy focuses on reducing water consumption and mitigating negative impact on water bodies. A recycling water supply system is essential for any of TMK's new, upgraded or renovated facilities.

Key initiatives to mitigate negative impact on water bodies implemented by TMK facilities

01

Building and upgrading treatment facilities

02

Organizational measures to prevent spills, leaks, and unsustainable use of water

03

Enhancing water recycling and reuse systems

Subject to permits, TMK's facilities abstract water from surface and underground sources to supply water for production, general and drinking usage, process use, and public needs.

16 MLN $

SPENT ON SUSTAINABLE WATER USE AND WATER DISCHARGE CONTROL IN 2017.

Consistent water management activities in 2017 enabled TMK to reduce (year-on-year):

95.46 % SHARE OF RECYCLED WATER SUPPLY

-5 % OVERALL WATER CONSUMPTION

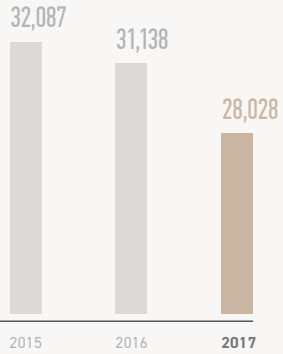
-10 % WASTEWATER

-8 % WATER INTAKE FROM SURFACE WATER BODIES

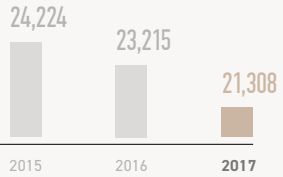
-14 % WASTEWATER DISCHARGE TO WATER BODIES

Wastewater discharge during the year was within the permitted limits and complied with the prescribed limits of permissible impact on water bodies.

TMK's total wastewater, *thousand cubic meters*



TMK's water intake from surface water bodies, *thousand cubic meters*



Key water management initiatives and results across TMK's facilities:

Russian division

- Volzhsky Pipe Plant cleaned the wastewater pit at TPTs-3 and reduced the levels of oil sediment in the water discharge.
- Sinarsky Pipe Plant implemented a range of technical and organizational measures to reduce fresh water consumption and wastewater disposal and discharge.
- Seversky Pipe Plant upgraded its wastewater treatment systems, including cleaning bottom deposits in the biological treatment system, use of chemical wastewater treatment, and stocking silver carp and grass carp in botanical sites, resulting in improved disposed wastewater treatment.
- TAGMET repaired and cleaned its fish-protection systems, preventing negative impact on aquatic biological resources.

American division

- The Koppel plant improved its disposed wastewater quality control system, and upgraded the blooming mill filtering system to capture solid particles.

WASTE MANAGEMENT

The existing industrial waste management system is focused on practical procedures to reduce, recycle, and reuse waste, as well as reduce waste disposal.

Our production and consumption waste management is in line with approved industrial guidelines and standards in place at TMK's facilities. Volzhsky Pipe Plant and Seversky Pipe Plant developed and rolled out specialized industrial waste management software solutions. Our waste disposal and temporary storage sites are subject to industrial environmental monitoring.

In 2017:

5.3 MLN $

TO MINIMIZE THE IMPACT OF OUR WASTE GENERATION ON THE ENVIRONMENT

1.2 MLN $

LAND PROTECTION EXPENSES, INCLUDING LAND RECLAMATION

TOTAL WASTE GENERATION FROM TMK'S OPERATIONS INCREASED IN 2017 BY 3% YEAR-ON-YEAR TO 598 THOUSAND TONNES DUE TO INCREASED PRODUCTION BY FOREIGN-BASED DIVISIONS. AT THE SAME TIME, OUR SPECIFIC WASTE GENERATION WAS REDUCED BY 4% YEAR-ON-YEAR.

Key results of TMK's consistent waste management activities in 2017:

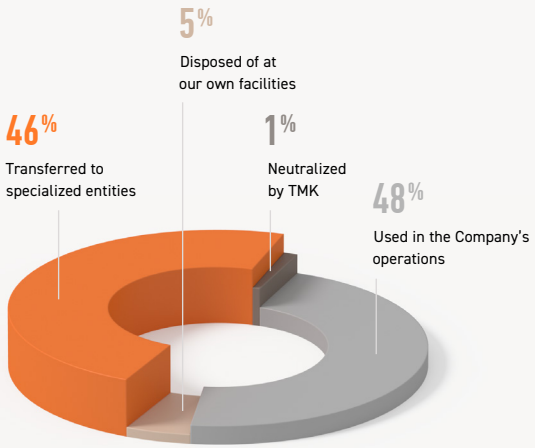
5% of the total waste was disposed of at our own designated facilities, which clearly demonstrates high efficiency of our waste management.

48% of the total waste was used in the Company's operations

46% of the total waste was transferred to specialized entities, including

20% were sold as raw materials to other industries.

TMK's waste management



TMK contributes to the Government efforts to fulfil Russia's obligations under the Stockholm Convention on Persistent Organic Pollutants ratified by the Russian Federation. The Company developed a Program for Disposal of PCB-Containing Equipment (equipment containing polychlorinated biphenyls).

TMK decommissioned (and transferred for disposal) a total of 951 units of PCB-containing electrical equipment in 2017 (15 transformers and 936 condensers).

Key waste management initiatives and results across TMK's facilities:

- Sinarsky Pipe Plant reclaimed basins 2 and 3 of its sludge collector to recover 8.66 hectares of disturbed land.
- Volzhsky Pipe Plant is building a new waste disposal pit for hazard class 4 and 5 wastes, and implemented a landfill operation area greening project.
- TMK-ARTROM upgraded its sludge filter press and chip storage unit to prevent soil contamination.