

ENVIRONMENTAL PROTECTION

In the line of its work, Rusagro maintains a high profile on observing the Russian environmental legislation, ensuring rational use of natural resources, assimilating environmentally-friendly technologies, as well as ensuring biological and veterinary security of its livestock division. The Company adheres to the practice of reusing the raw materials and mitigates the negative environmental impact of the production activities of all business areas.

Rusagro's environmental management system has been developed in compliance with Russian environmental legislation. In addition to ensuring full compliance with all the requirements of the current environmental and health protection legislation, the Company seeks to minimise the negative impact on people, natural resources and the environment.

The principles of achieving a sustainable balance between production jobs and environmental protection form the mainstay of the Company's activities, enabling it to limit financial and reputational risks, identify the areas of concern at early stages, and make the best decisions. The Company is open for dialogue with the community and other stakeholders on environmental protection and rational use of natural resources.

Rusagro is anxious to contribute to environmental conservation by implementing the following measures:

- Reducing the environmental footprint in all business segments;
- Producing more eco-friendly products;
- Facilitating rational use of natural resources – both those included in production and those found in the Company's presence regions;
- Implementation of the best technologies available.

In 2020, the growing production volumes pushed up the Company's rates for waste water (+3%) emissions and the power consumption (+13%); on the other hand, volume of greenhouse gas (GHG) (-1%), solid waste (-15%), water consumption (-4%), and heat consumption (-0.5%) posted a decrease.

EMISSIONS OF GREENHOUSE GASES AND POLLUTANTS

Rusagro's Industrial Environmental Monitoring Programme involves regular monitoring of pollutant emission sources and necessary measures taken to reduce the environmental impact. The enterprises utilise wastewater treatment plants that meet the requirements of the applicable environmental laws, and in case the production works are subject to upgrade and modernisation, new air pollution control equipment and dust & gas catchers are installed. The major sources of the Company's greenhouse gases are boiler houses.

As estimated by Rusagro, the greenhouse gas emissions in 2020 totalled 721 thousand tonnes (-1% vs 2019). The Sugar Business and Meat Business revised the emissions calculation approach in 2020, which was used to verify the data for 2019 and 2020. In this regard, the data for 2016–2018 are not representative for the dynamic analysis of greenhouse gas emissions and are not presented in this report. Further, as there is no approved calculation methodology, the total indicator for the Company does not contain data from the Oil and Fats Business, which are planned to be prepared and published in the next reporting period.

Based on the current projections, the bulk of greenhouse gas emissions falls on the Sugar Business – their volume is estimated at 648 thousand tonnes (-2%). To a high degree, they are generated during the operation of the heat and power sections, the pulp drying station and the lime-gas section. The total greenhouse gas emissions were driven down by the shorter processing season as compared to the previous year.

The volume of emissions in the Meat Business amounted to 72 thousand tonnes (+5%), including 68 thousand tonnes of carbon dioxide and 4 thousand tonnes of methane. The bulk of emissions results from burning of natural gas to ensure the life functions of animals at pig farms and to heat the premises. The increase in indicator derives from new pig farms reaching their full capacity and the expansion of meat processing volumes.

Greenhouse gas emissions in the Agriculture Business amounted to 0.8 thousand tonnes (-9%).

The greenhouse gas emissions are reduced through the ongoing projects to improve the energy resources consumption efficiency. For the reduction of methane emissions, the Meat Business employs biodegradating agents, which accelerate the decomposition of manure runoffs and reduce the content of ammonia and hydrogen sulphide in the working zone air and at the sources of pollutant emissions in production buildings.

**GHG emissions of Rusagro,
tht tonnes**



WATER CONSUMPTION AND WATER DISCHARGES

WATER CONSUMPTION

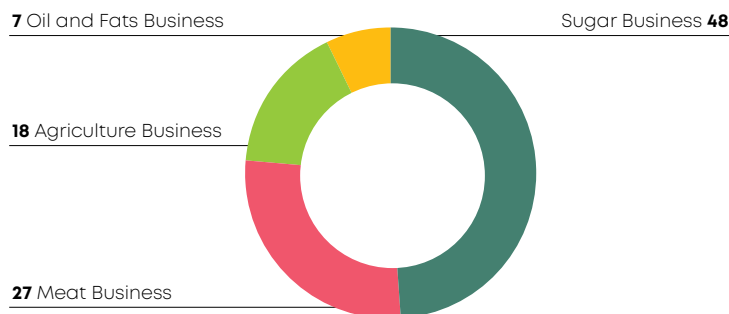
The volumes of water consumption and discharges of industrial water are directly related to the technological characteristics of the production process of each Business, its production capacities and product yield. At 2020-end, 48% of the water consumed by Rusagro fell on the Sugar Business, where about 10% of the water goes to washing beets sugar is made from. The Meat Business accounted for 27% of the Company's water consumption – here water is used to feed livestock and wash pig farms and vehicles. In the Agriculture Business (18% of water consumption in 2020), water demand is mainly driven by the use of irrigation systems. Since water in the Oil and Fats Business mainly satisfies technical needs, the product output requires the least water consumption as compared with other businesses of the Company.

In 2020, Rusagro reduced water consumption by 4% – to 20.9 million cu. m. as compared to the previous year. The key reasons behind this drop include lower water losses due to smaller leaked amount and a higher rate of condensate return at plants in the Oil and Fats Business, as well as a decreased water demand due to fewer operating fat and oil plants and a shorter sugar beet processing season. Thus, in the Oil and Fats Business, water consumption fell by 40% – to 1.6 million cu. m., in Sugar Business – by 8% - to 10.0 million cu. m. Meanwhile, water consumption in the Meat and Agriculture Businesses increased by 14% and 10%, respectively, driven by new pig farms reaching the full capacity and dry weather.

48%

Rusagro's water consumption used for the needs of the Sugar Business

Breakdown of Rusagro's water consumption by businesses in 2020, %



MEASURES TO REDUCE WATER CONSUMPTION

Rusagro's Sugar Business has in place a three-year strategy to reduce water consumption and valid balances of water consumption and wastewater disposal. Internal audit, as well as external audit of process heating systems, are held twice a year.

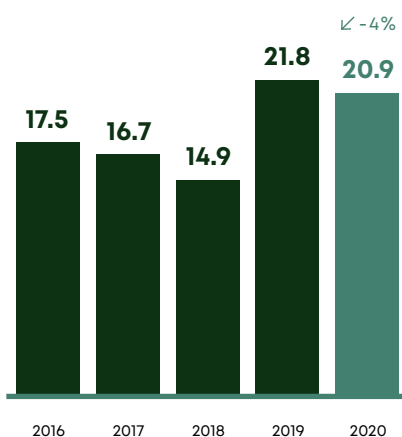
↙ - 4%

20.9

mn cu. m

Water consumption by Rusagro in 2020

Rusagro's consumption of water, mn cu. m



The Sugar Business undertakes the following water efficiency measures:

1. replacing river water with recycling water for cooling equipment during technological processes by increasing the capacity of the closed-loop recycling water supply system, resulting in 20% water savings;
2. re-use of river water for washing, washers and make-up of circulating water supply, resulting in 30% water savings;
3. automation of river water consumption processes to avoid overflows in case levels in storage tanks are exceeded and to ensure water consumption exactly as needed;
4. installation of water metering units for accurate measurement, identification of deviations, development and implementation of loss cutting measures and verification of achieved positive outcomes;
5. regular monitoring and detailed analysis of water use deviations.

The Meat Business undertakes the following water efficiency measures:

1. installing the well dispatching system, which will allow on-line monitoring of water supply from each well to the plant, timely detection of water leaks, and repair of leaky pipes;
2. transition from the reactive maintenance of equipment to scheduled preventive repair and maintenance.

The Agriculture Business undertakes the following water efficiency measures:

1. more accurate assessment of the needs of irrigated fields for additional moisture;
2. maintaining engineering structures in good condition;
3. water savings in washing equipment and household use.

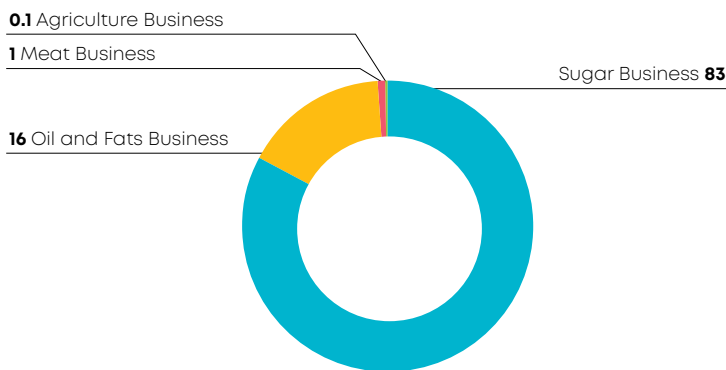
The Oil and Fats Business undertakes the following water efficiency measures:

1. adoption of water recycling systems;
2. repairs of leaky water supply pipelines, valves and process equipment;
3. maximisation of the condensate return to the boiler room for reuse of softened water;
4. prohibition of misuse of water and implementation of water management measures;
5. audits and monitoring of water consumption by production units.

WASTEWATER DISCHARGE

In 2020, 10.9 million cu.m of process and waste water were discharged (up 3% year-on-year). The bulk of the discharged water (83%) is generated from the production activities of the Company's Sugar Business, which does not use water in the production of the final product and discharges 100% of the water consumed. The Oil and Fats Business also spews out all the water it consumes, accounting for 16% of the Company's emissions. Emissions from the Meat and Agriculture Businesses are minimal (1.1% in total) and are mainly attributable to vehicle washing and household use.

Breakdown of Rusagro's wastewater discharge by businesses in 2020, %



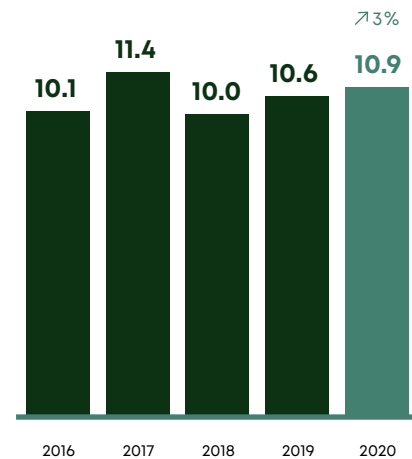
↑3%

10.6

mn cu. m

Wastewater discharge by Rusagro in 2020

Rusagro's process and waste water discharges, mn cu.m



MEASURES TO TREAT WASTE WATER

In **the Sugar Business**, the process and waste water is routed to filtration beds, where water is biologically purified through sedimentation, land filtration, and water evaporation. The productivity of the filtration fields is maintained through their regular cleaning and plowing works. The discharged waters are safe for the environment – to confirm their safety, the Company monitors the quality of river water by taking water samples from observation wells.

The Oil and Fats Business adopted several water treatment technologies, depending on the specific nature of production sites and the composition of wastewater. Industrial effluents are preliminarily cleaned of fats by means of grease traps and then purified by storm water treatment plants by means of a sand and oil trap. Local treatment facilities with the cleaning principle based on pressure flotation involving chemical reagents are also in use.

The Meat Business has in place biological treatment plants for wastewater treatment. The technology involves mechanical, physical-chemical, biological treatment and disinfection of wastewater. Wastewater of the feed mill is discharged into the municipal sewer and that of the meat processing plant – into evaporation ponds. There is no discharge of untreated wastewater into sewerage lines or water bodies, and there is no discharge of wastewater into surface water bodies.

Under a sewerage contract, **the Agriculture Business** transfers wastewater to the municipal wastewater treatment plants for mechanical and chemical-biological treatment. Treated wastewater is safe for the environment.

WASTE MANAGEMENT

SOLID WASTE

In 2020, the volume of solid waste at all Rusagro's enterprises amounted to 719.9 thousand tonnes, down 15% year-on-year. The reduction occurred across all business segments, except for Oil and Fats Business. Here, higher production of unrefined oil resulted in bigger volumes of by-products – husks; due to limited demand, only part of this by-product was pelletised and sold to third-party companies.

Almost all (98%) of the Company's waste are of Class 4 (low hazard) and Class 5 (almost non-hazardous) of environmental impact. In 2020, their total volume fell by 15% and amounted to 719.8 thousand tonnes, including 704.7 thousand tonnes of Class 5 waste. Waste of Classes 1, 2 and 3 accounted for 0.02% of the total waste volume – 157 tonnes, which is 39% (+44 tonnes) above the 2019 level because of the increased amount of Class 2 and 3 wastes in the Agriculture Business. The list of Class 4 and 5 wastes, as well as the methods of their disposal or reuse vary with the specifics of production, and the waste of the first three classes mainly comprises mercury lamps, lead-acid batteries and waste petroleum products and is handed over to specialised contractors on a regular basis.

Each business division of the Company employs its own environmentally friendly methods of disposal and reuse of solid waste generated during the production of core products. Waste that is not safe for unassisted recycling, such as batteries, lamps, paper, cardboard, polyethylene, scrap metal, is sold or transferred to enterprises that take in recyclables for further use or recycling as stipulated by government regulations. No solid waste is stored at production sites.

98%

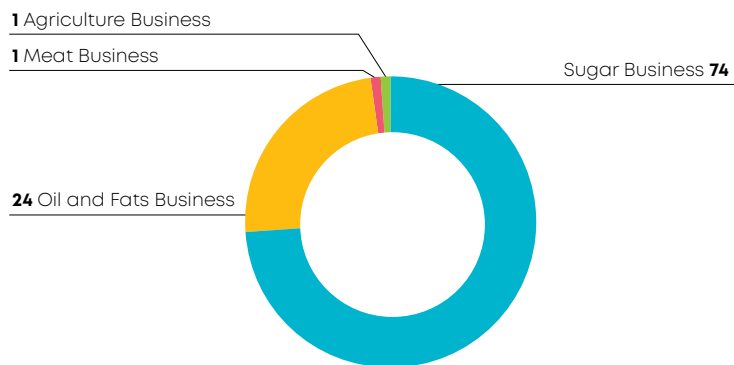
of Rusagro's solid waste is of Class 4 and 5

Breakdown of Rusagro's total solid wastes by classes, tonnes

	2016	2017	2018	2019	2020	Change 2020/2019, %
Class 1	8	6	3	3	3	-23
Class 2	35	41	44	21	37	76
Class 3	240	241	104	89	118	33
Class 4	5,150	5,153	4,788	20,788	15,048	-28
Class 5	808,216	854,979	867,463	822,375	704,720	-14
Total	813,648	860,421	872,403	843,276	719,926	-15

About three quarters (74%) of all solid waste of the Company resulted from the production activities of the Sugar Business. At the end of 2020, their volume decreased by 21% – to 532.9 thousand tonnes due to a shorter sugar beet processing season and improved efficiency of pulp processing equipment.

Breakdown of Rusagro's solid waste by businesses in 2020, %



Solid waste disposal methods at Rusagro, tonnes

	2016	2017	2018	2019	2020
Re-use	284,740	399,833	264,681	270,442	289,313
Separation of valuable components	276,144	360,606	294,118	218,156	190,716
Landfilling	2,200	12,991	14,059	30,265	18,024
Storage at the plant's site	3	0	1	3	0
Other methods	242,954	77,055	287,610	315,046	215,831
Total	806,041	850,486	860,468	833,911	713,885

MEASURES TO TREAD

SOLID WASTE

Waste from **the Sugar Business** mainly consists of raw pulp, lime and dirt from filtration fields, which are classified as Class 5 and have a minimal environment impact, since they are either reused by the Company or utilised to extract valuable components:

- Raw pulp is worked into granulated pulp, which is sold to farms as an addition to cattle feed. Unlike the traditional method, under which the raw pulp fermented in the pits generates bacteria and microorganisms that can enter the soil, the dried and granulated pulp has no negative environment impact and creates additional value for the Company.
- The dirt from the filtration fields contains particles of earth, sand and microparticles of other impurities, which, getting into the soil, afflict minimal damage to the environment. To reduce the amount of dirt, the Company enhanced the quality of flume water by removing dry sludge through mechanical sludge dewatering from a circular settling tank. The fields are regularly cleaned, and the remaining dirt is plowed down into fields that are not used in crop production.
- The lime is a common soil amendment, as its nutrient content is close to that of the manure and suitable for chalking or sweetening of sour lands. There are plans for 2021 to officially register this waste as fertilizer to participate in the state soil chalking programme.

The volume of solid waste from **the Oil and Fats Business** in 2020 amounted to 171.2 thousand tonnes, which is equivalent to 24% of all solid waste of the Company. An 18% year-on-year rise in their volume was driven by increased husk production (due to higher sunflower seed processing) amid limited demand for pelleted husk.

Virtually all wastes of the Oil and Fats Business (99.98%) consist of Class 4 and 5 wastes, which account for 11.2 and 160.0 thousand tonnes of solid waste, respectively. Depending on the type of waste, the Company applies methods of reuse or environmentally friendly disposal that have minimal damage to the environment:

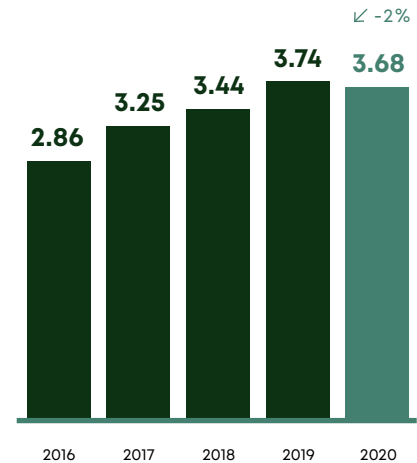
- Sunflower husk is used as fuel for own boiler house or is added to the meal;
- Wastes from grease skimmers containing vegetable fatty products are used to enrich the meal with mineral matters;
- Soap stocks formed during the refining of vegetable oil are used as raw materials for our own soap making shops.

The volume of solid waste in **the Meat** and **Agriculture Businesses** amounted to 2% of all Rusagro's solid waste – this is about 15.8 thousand tonnes, which, as in other businesses, mainly include Class 4 and 5 waste (99%). Such waste in the Meat Business mainly consists of solid municipal waste, sweepings from the territory, construction debris and activated sludge from treatment facilities, in the Agriculture Business – grain post-cleaning waste, clean wood, sawdust, containers for mineral fertilisers and plant protection agents, previously used grain crop storage sleeves (bags). Both businesses curtailed these two classes of solid waste year-on-year – by 25 and 23%, respectively.

LIQUID WASTE

In addition to solid waste, Rusagro also generates liquid waste as a result of the life activities of pigs and the use of water for washing pig farms; this waste falls under fourth hazard class. In 2020, despite the growth in livestock, the amount of this waste decreased by 2% and amounted to 3.7 million tonnes. This became possible due to a change in the process of washing equipment at pig farms, resulting in lower water consumption and smaller runoffs in the manure storage yard. Furthermore, new treatment facilities were moved to operations at Rusagro's meat processing plant in the Tambov Region, thus totally removing the liquid waste.

Total weight of Rusagro's liquid waste, mn tonnes



MEASURES TO TREAT LIQUID WASTE

Manure effluents, which constitutes the bulk of the liquid waste generated by **the Meat Business**, is applied to the fields as organic fertiliser. To that end, manure is accumulated in baths in production buildings during the life of animals. The manure is mixed with water and biodegradating agents and then drained through the sewage system into the lagoons, where the liquid effluents are accumulated and neutralised to the Class 4 waste. By agreement with the owners of the fields, manure is applied into the soil to a depth of at least 20 cm. The closed method of manure application, i.e. the injection method, reduces the ammonia concentration in the air. In the winter, the introduction of manure is prohibited.

Manure serves as a fertiliser and improves the soil quality, but in case of errors during technological operations it can also bring negative environmental impact risks. With a view to avoiding such a situation, we developed technological regulations for manure application. As early as in winter, the Company prepares equipment for application, repair and replacement, develops and approves application schedules and rates. Another measures taken in the winter period are as follows: the heads of the transport department and environmental engineers conducts operational control over the compliance with the application procedure, the fields are plowed around the perimeter in order to prevent leaks outside the field and they are timely disked in case of a rupture of the hose system and manure flowing to the surface.

The negative environment impact risks during application of manure are mitigated through the registration of liquid organic fertilisers resulting from the life activities of animals as an organic fertiliser at the Ministry of Agriculture of Russia. Technical regulations for the production and application of organic fertilisers to the soil have been developed and approved, and their registration roadmap is currently underway.

PROTECTION OF SOILS AND WATER BODIES

Land assets are an important source of income for Rusagro and their long-term productivity has a direct impact on the Company's success. In 2020, Rusagro cultivated 559 thousand hectares of agricultural land, and the Agriculture Business became the most lucrative of all the Company's business divisions. The sustainable results are ensured through a number of effective measures being taken and high-tech solutions being developed to increase the field management accuracy.

The Agriculture Business implements the following measures to prevent soil degradation: crop rotation and soil deoxidisation by placing lime into soils of the Central Federal District territory and dolomite powder into soils of the Primorye Territory. The Company adheres to the principles of rational use of the mineral fertiliser complex – the application rates of fertilisers are adapted to the specific content of nutrients in a particular field. Decision-making on the need to use chemicals are facilitated through the analysis of soils and the state of plants – the protection of water bodies is ensured with permits for water intake from surface water bodies issued by local competent authorities and with relevant protection measures developed and ongoing.

BIOSECURITY AND VETERINARY SAFETY

Rusagro adheres to the latest standards on growing quality livestock and reducing the risk of disease. The Company's pig-breeding farms are fitted with modern high-tech equipment and comply with the top biosecurity status: Compartment IV (protection level of a pig-breeding plant). To ensure the high biosecurity level, the Meat Business relies on the following principles:



Physical separation – the land, where the pig farms are located, is controlled by the Group. Within a 10-kilometre radius from its farms, there are no other livestock farms or household animal breeding enterprises. The distance between the farms is one to three kilometres, which help to prevent the spread of infection.



AIAO (All-in / all-out) production – animals of different generations and different production functions are kept separately to prevent the spread of diseases.



Restricted access – access to the areas inside the pig farms is stringently controlled and restricted. Each production facility is equipped with showers: every visitor is required to shower before entering and exiting, and also to leave all personal belongings outside and use specialised clothing and footwear. The vehicles can enter the territory of the pig farms only after they have been washed and disinfected. The incoming and outgoing employees, visitors, and vehicles must be registered.



Feed quality control – all feed ingredients are subject to constant laboratory control, which includes the assessment of quality and purity, and monitoring for pathogenic elements, infections, and toxic substances. All feed is heat-treated in order to prevent the spread of disease through the feed.



Strict sanitary procedures – the production areas at the farms are regularly cleaned and disinfected. The Company uses the AIAO (All-in / all-out) system, which implies that any production area may only be occupied by animals of the same generation. Once the growing stage is completed, the area is thoroughly cleaned and disinfected. All technological vehicles get access to the production sites after being washed with foam detergents, disinfection, and heat treatment, involving a specially equipped drying machine. Vehicles are permitted for washing by quality inspectors and a veterinary laboratory, which performs bacteriological examinations after disinfection; quality inspectors and the veterinary laboratory exercise control over all stages.



Vaccination – the animals are regularly vaccinated to prevent all known diseases.



Disease monitoring – The Company's veterinarians constantly monitor the data on the spread of any disease and follow the latest scientific achievements in biosecurity and veterinary safety. The Group makes every effort to rapidly respond to any outbreaks of disease in the country by immediately interrupting feed purchases and supplies of animals to the affected regions.

Thanks to adherence to these principles, Rusagro minimised the impact of the negative epidemiological situation in Russia. Thus, the Company suffered from ASF (African swine fever) only two times – one time in 2017 and one time in 2018; as a result, 17 and 14 thousand animals were disposed of, respectively, which is a negligible quantity if compared with the size of the total livestock. Some of the losses were compensated by insurance payments.