

# Environment in 2021

30 June 2022

 **9.3%**

Increase in the amount of municipal waste collected separately compared to the previous year

In 2021, there was an increase noticed in water withdrawal for the needs of the national economy<sup>1</sup> and population by approximately 7% compared to the previous year, the amount of generated industrial and municipal wastewater increased by approximately 6%, there was a reduction of emission of particulate pollutants from plants of significant nuisance to air quality by 2%, and there was an increase in emitted of gaseous pollutants by 13%. There was a reduction of the amount of generated waste by 1%.

## Water and wastewater

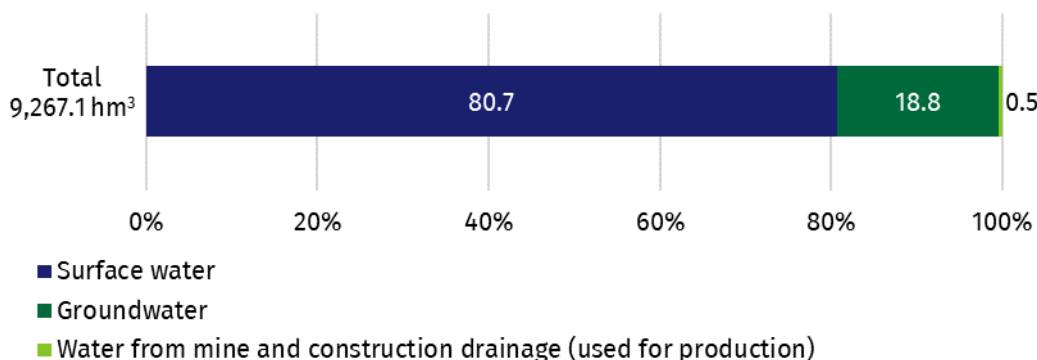
### Water withdrawal and consumption

In 2021, there was increase in water withdrawal observed, for needs of the national economy and population, by approximately 7% compared to the previous year (from 8.7 km<sup>3</sup> to 9.3 km<sup>3</sup>). The largest share of water withdrawal (approximately 68%) was for production purposes (6.3 km<sup>3</sup>, compared to 5.9 km<sup>3</sup> in 2020). Water withdrawal for the purpose of filling in and refilling fishponds increased by 5% and it was above 0.8 km<sup>3</sup>. However, water withdrawal for the purpose of exploitation of water supply network increased by 7% compared 2020, and it was approximately 2.1 km<sup>3</sup>.

The main source of water supply for the national economy was surface water. In 2021, the withdrawal of surface water amounted to 7.5 km<sup>3</sup> and it covered 81% of the needs. Surface water was mainly used for production purposes in industry. The withdrawal of groundwater was 1.7 km<sup>3</sup> and has maintained a value similar to last years.

In 2021, water withdrawal amounted to 9.3 km<sup>3</sup>

**Figure 1. Structure of water withdrawal for the needs of the national economy and population by source in 2021**



In 2021, water consumption was 8.8 km<sup>3</sup>, which was 106% of the total consumption of water recorded the previous year. As during the years before, the largest share of water consumption for the needs of the national economy and population was recorded by industry 72% (6.4 km<sup>3</sup>). Consumption of water by the fishing industry was approximately 10% (0.8 km<sup>3</sup>) of the total amount of water consumption for the purpose of the national economy. Water consumption by the municipal sector, for the purpose of operation of the water supply network, amounted to 1.6 km<sup>3</sup> (approximately 19%). In 2021, water consumption by households, from

In 2021, 8.8 km<sup>3</sup> of water was consumed (106% of the consumption recorded during the previous year)

<sup>1</sup> Excluding agriculture and forestry

the water supply system, was similar to the level recorded in the previous year, and it amounted to 1.3 km<sup>3</sup>.

### Wastewater

In 2021, the amount of generated industrial and municipal wastewater, that required treatment, was at a similar level than in the previous year, and it amounted to 2.3 km<sup>3</sup>, while the amount of untreated wastewater was 0.1 km<sup>3</sup>. The amount of wastewater treated in wastewater treatment plants, with increased biogene removal, amounted to 1.17 km<sup>3</sup>, which was 55% of treated wastewater, while the amount of wastewater treated with the use of mechanical treatment technology amounted to 0.49 km<sup>3</sup> (23% of treated wastewater). Some part of wastewater that required treatment (6%) was not subjected to the processes of treatment. In 2021, the amount of wastewater discharged without treatment was 124.3 hm<sup>3</sup>, compared to 124.5 hm<sup>3</sup> the previous year.

In 2021, there was an decrease in the number of industrial wastewater treatment plants (from 876 in 2020, to 851 in 2021). The number of municipal wastewater treatment plants (3,276) decreased, compared to the previous year (3,281). In 2021, the share of population connected to wastewater treatment plants was 75%, while in urban areas it was approximately 95%, and in rural areas it was 46%.

### Liquid waste

Due to insufficiently developed sewage infrastructure, some residents continued to use household wastewater disposal systems. In 2021, the number of septic tanks was 2.1 million, similar to the previous year. The amount of liquid waste, collected and delivered to wastewater treatment plants or dump stations, was 37.6 hm<sup>3</sup> compared to 36.7 hm<sup>3</sup> in 2020.

### Pollution and protection of air

In 2021, the amount of emission of particulates, from plants of significant nuisance to air quality, i.e. plants with the highest level of emission of pollutants into the air in the country (1,841 plants) amounted to approximately 22 thousand tonnes and it declined by 2% compared to the previous year. Emission of pollutants was mainly the result of fuel combustion processes (54% of dust emission was from plants of significant nuisance to air quality). The main source of emission was industrial processing (51%) and also the entities that produce and supply electricity, gas, steam and hot water (39%).

In 2021, the gaseous pollutants emission from plants of significant nuisance to air quality was at a level of 210 million tonnes and it increase by 13% compared to 2020. Over 99% of the above-mentioned emissions were carbon dioxide and 0.1% each: sulphur dioxide, carbon oxide and nitrogen oxides. The predominant sources of industrial emission of gaseous pollutants were the entities that operated in the field of generation and supply of electricity, gas, steam and hot water (almost 70%) and industrial processing plants (28%).

In 2021, the amount of wastewater discharged without treatment was 124.3 hm<sup>3</sup>

In 2021, the number of septic tanks was 2.1 million

In 2021, there was a decline recorded in the amount of emission of particulate pollutants by 2%, compared to the previous year

In 2021, there was an increase in the amount of emitted gaseous pollutants by 13%, compared to the previous year

**Table 1. Emission and air pollutant reduction from plants of a significant nuisance to air quality**

Specification	2020	2021
Number of plants	1,856	1,841
Emission of pollution in thousand tonnes:		
particulate pollutants	22.6	22.2
of which from combustion of fuels	12.3	12.0
gaseous pollutants	186,155.8	209,490.2
of which carbon dioxide	185,028.7	208,385.8
sulphur dioxide	181.3	180.9
nitrogen oxides (expressed as NO <sub>2</sub> )	169.6	179.7
Level of reduction of generated pollution in %		
particulate pollutants	99.9	99.9
gases (without carbon dioxide)	70.4	73.5

In 2021, with the use of air pollution control devices, 18.9 million tonnes (99.9%) of particulate and 3.1 million tonnes (73.5%) of gases (excluding CO<sub>2</sub>) emitted by plants of significant nuisance to air quality, were retained. In 2021, the amount of retained or neutralised pollution, according to particular types of gaseous pollutants were: 92.8% of sulfur dioxide, 76.4% of hydrocarbons, 46.4% of nitrogen oxides, 37.8% of carbon monoxide, 44.9% of other pollutants (mainly ammonia, carbon disulphide, fluorine, hydrogen sulphide, organochlorine compounds).

## Nature and landscape protection

Poland belongs to the group of European countries of high biodiversity, both in terms of the number of species and environmental values. At the end of 2021, the area of the sites under legal protection (including that parts of Natura 2000 sites located within the boundaries of areas under legal protection) was over 10.1 million ha, which was, similarly to 2020, 32.3% of the total area of the country.

The indicator of areas of the sites under legal protection per capita was 2,655 m<sup>2</sup>, compared to 2,641 m<sup>2</sup> in 2020.

In 2021, the area of special natural value under legal protection was 32.3% of site the total area of the country

**Table 2. The area of special natural value under legal protection in 2021**

Specification	The number of objects	Total area			
		in thousand ha	percentage	% of the total area of the country	per capita in m <sup>2</sup>
<b>TOTAL</b>	<b>10,878</b>	<b>10,109.1</b>	<b>100.0</b>	<b>32.3</b>	<b>2,654.7</b>
National parks	23	315.1	3.1	1.0	82.8
Nature reserves	1,506	171.0	1.7	0.5	44.9
Landscape parks <sup>a</sup>	126	2,521.2	24.9	8.1	662.1
Protected landscape area <sup>a</sup>	389	6,927.5	68.5	22.2	1,819.2
Ecological areas	8,323	55.2	0.5	0.2	14.5
Documentation sites	182	1.0	0.0	0.0	0.3
Nature and landscape complexes	329	118.1	1.2	0.4	31.0

<sup>a</sup> With the exception of nature reserves and other forms of nature protection located within the boundaries of landscape parks and protected landscape areas.

At the end of 2021, 35,043 natural monuments were registered, which was an increase by 145 objects compared to 2020.

Apart from forms of nature protection, including biodiversity, the creation of green areas are also a way of protecting the natural environment and its components. In 2021, the area of publicly accessible strolling-recreational parks amounted to 24.4 thousand ha, and the area of lawns 12.6 thousand ha, which is an increase in the area of strolling-recreational parks by 0.5 thousand ha and the area of lawns by 0.1 thousand ha compared to 2020.

## Waste

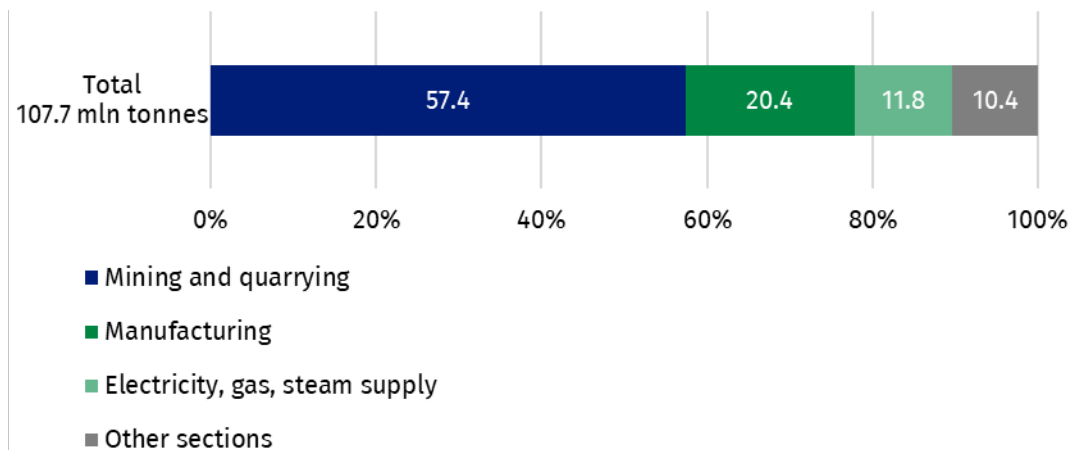
### Industrial waste

In 2021, 107.7 million tonnes of industrial waste was generated (a decline by 2% compared to the previous year).

The main sources of waste, as in the previous years, were: mining and quarrying (61.9 million tonnes), manufacturing (22.0 million tonnes), electricity, gas, steam supply (12.7 million tonnes).

A decline of 2% was recorded in the amount of generated industrial waste, compared to the previous year

**Figure 2. Structure of generated waste by types of activities in 2021**



The largest share in the amount of generated waste was wastes resulting from exploration, mining, quarrying and physical and chemical treatment of minerals (60%), and waste from thermal processes (19%).

The predominant ways of treating waste that was generated in 2021 were recovery (47.5%) and landfilling (43.8%).

At the end of 2021, the amount of landfilled waste (accumulated) at the facilities of plants was 1,811 million tonnes. The non-reclaimed landfill area (excluding municipal waste) was nearly 8.1 thousand ha, out of which landfills, mine waste treatment facilities, including heaps accounted for 54.4%, and tailings ponds accounted for 45.6%. During the year, 2.7 ha of the waste landfill area was reclaimed.

**Municipal waste**

In 2021, 13.7 million tonnes of municipal waste were collected (an increase by 4.2% compared to 2020). There was 358 kg of collected municipal waste per capita recorded, on average, an increase of 16 kg compared to the previous year.

11.7 million tonnes of waste were collected from households, which was 85.8% of the total amount of generated municipal waste.

The share of recovered industrial waste was 47.5%

There was an increase recorded, of 4.2%, in the amount of generated municipal waste, compared to the previous year

**Table 3. Generated municipal waste**

Specification	2020	2021	
	in thousand tonnes		2020 = 100
<b>Total</b>	13,116.9	13,673.6	104.2
Received or collected separately	4,974.6	5,439.5	109.3
Mixed	8,142.3	8,234.0	101.1

In 2021, there were 2,279 municipal waste separate collection points in operation. Municipal waste collection service was provided by 1,318 entities.

In 2021, collected municipal waste was designated for the following processes:

- recovery – 8,207.0 thousand tonnes (60.0%), including:
  - recycling – 3,680.7 thousand tonnes (26.9%),
  - biological treatment processes (composting or digestion) – 1,824.3 thousand tonnes (13.3%),
  - incineration with energy recovery – 2,702.0 thousand tonnes (19.8%),
- disposal – 5,466.6 thousand tonnes (40.0%), including:
  - incineration without energy recovery – 170.8 thousand tonnes (1.2%),
  - landfilling – 5,296.8 thousand tonnes (38.7%).

The share of municipal waste that was designated for recovery was 60%

At the end of 2021, there were 265 landfills in operation that received municipal waste and they covered a total area of 1,667 ha. Almost 94% of those landfills were equipped with de-gassing facilities, as a result of which approximately 98,913 thousand MJ of thermal energy

and approximately 109,921 thousand kWh of electricity was recovered. In 2021, 8 landfills, of a total area of approximately 31 ha, were closed down. In 2021, 10,542 uncontrolled landfill sites were closed down, out of which a total of approximately 73 thousand tonnes of municipal waste was collected. At the end of 2021, 2,246 uncontrolled landfill sites were reported.

In 2021, 10,542 uncontrolled landfill sites were closed down

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**Related information**

[Environment 2021](#)

**Data available in databases**

[Local Data Bank](#)

**Terms used in official statistics**

[Environment protection](#)

[Consumption of water](#)

[Wastewater](#)

[Liquid waste](#)

[Air pollution protection](#)

[Protection of nature](#)

[Waste](#)