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Water use and protection against water pollution, 2019

– Previous results –

In 2019, 4 232 million m^3 of water was used in the industry sections. The majority of water was used for cooling purposes in electric power generation. The used water increased by 1.2% in relation to the previous year.

From a total of 4 232 million m^3 of water abstracted in the industry sections, 99.6% included water from own abstraction (99.2% surface water, 0.8% groundwater), and 0.4% from public water supply system.

Water used for industry purposes, observed by sections and in relation to the previous year, recorded the following trend in 2019: Mining and quarrying – 11.6% increase; Manufacturing – 6.2% decrease; Electricity, gas, steam and air conditioning supply – 1.4% increase.

Out of total water used for industry purposes, 97.6% included water used for Electricity, gas, steam and air conditioning supply, 2.0% for Manufacturing and 0.3% for Mining and quarrying.

From a total quantity of 119 million m^3 of wastewater[1] in industry, 47.0% included water from the section, 42.3% from the section Electricity, gas, steam and air conditioning supply, and 10.7% from Mining and quarrying.

In 2019, a total of 46 million m^3 water was purified, of which 38.3% by primary treatment, 12.5% by secondary treatment and 49.2% by tertiary treatment. The largest share of purified water in the industry section was that of the division Manufacture of basic metals, 40.5%, followed by Manufacture of chemicals and chemical products, 12.6%, Manufacture of food products with 10.9% and Electricity, gas, steam and air conditioning supply, 8.9%. The share of purified water in all the remaining divisions of the industry section was 27.1%.

1. Water used in industry

Republic of Serbia million m^3

Sections (CA)	2018	2019
Water use – total[1)]	**4 181**	**4 232[2)]**
Mining and quarrying	13	14
Manufacturing	91	86
Electricity, gas , steam and air conditioning supply	4 077	4 132

[1)] Division of Waste collection, treatment and disposal activities; materials recovery is included.

[2)] Hydroelectric power plant flowing water amounted to 155.859 million m^3.

[1] Water for cooling purposes is not included in the calculation of wastewater according to the new Eurostat methodology for reporting on Inland water.

2. Water discharged from industry, 2019

Republic of Serbia million m^3

Sections (CA)	Total	Untreated water	Treated water
Discharged water[1)2)]	**119**	**73**	**46**
Mining and quarrying	13	11	2
Manufacturing	56	16	40
Electricity, gas, steam and air conditioning supply	50	46	4

[1)] Flowing water from hydroelectric power plants is not included.

[2)] Division of Waste collection, treatment and disposal activities; materials recovery is included.

3. Purified water from industry, 2019

Republic of Serbia million m^3

	Purified water			
	Total	Primary treatment	Secondary treatment	Tertiary treatment
Total	**46**	**18**	**6**	**23**
Mining and quarrying	2	1	1	-
Manufacturing	40	13	4	23
Electricity, gas, steam and air conditioning	4	4	0	-

Primary treatment of wastewater by physical and/or chemical procedure indlucdes the collection of suspended particles, and other processes in which BOD[2] is reduced by at least 20% before being discharged. It also covers the total suspended particles of incoming wastewaters reduced to by least 50%.

Secondary treatment of wastewater includes biological treatment with secondary collection of by other processes, which result in BOD reduction of at least 70% and COD[3] reduction of at least 75%.

Tertiary treatment is the next wastewater treatment process after the secondary treatment of nitrogen and/or phosphorous and/or any other pollutant affecting the quality and specific use of water: microbiological contamination, colour, etc. The minimum degree of efficiency defining the tertiary treatment are: organic pollution reduced up to at least 95% for BOD and 85% for COD, being: at least 70% nitrogen removal, at least 80% phosphorous removal and microbiological removal until a coliform density of 1000 in 100 ml is reached.

Methodological explanations on water usage and protection against pollution are to be found on the website of the Statistical Office of the Republic of Serbia:

http://www.stat.gov.rs/en-US/istrazivanja/methodology-and-documents/?a=25&s=2501.

Data series on water usage and protection against pollution are available within the Statistical Office database: http://data.stat.gov.rs/?caller=2501&languageCode=en-US as well as in Statistical Office's publications: http://www.stat.gov.rs/en-US/oblasti/zivotna-sredina.

Since 1999 the Statistical Office of the Republic of Serbia does not dispose of certain data for AP Kosovo and Metohija, therefore they are not included in the scope of data for the Republic of Serbia (in total).

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[2] BOD characterizes the biological activity of wastewater and represents the main indicator of pollution of wastewaters. The degree of water contamination of organic compounds is defined by the amount of oxygen that is required for oxidation by aerobic microorganisms. This amount of oxygen is called biochemical oxygen demand (BOD). The required amount of oxygen is proportional to the amount of organic matter present.

[3] COD is a chemically required quantity of oxygen for the oxidation of organic compounds and inorganic salts, and represents the indicator of waterwater contamination.