

Amount of waste generated from industry 2018

The release comprises selected statistical data on the amount of waste generated and treated from industry in 2018. Waste from industry covers following sectors: B (Mining and quarrying); C (Manufacturing); D (Electricity, gas, steam and air-conditioning supply) and E (Water supply, sewerage, waste management and remediation).

In 2018 industry sectors generated 759 908.7 tons of waste, of that 423 159.5 tons of non-hazardous waste and 336 749.2 tons of hazardous waste.

Of the total 759 908.7 tons of waste generated in industry, mining and quarrying sector has generated 367 983.9 tons, i.e. 48.4%; manufacturing sector 50 924.7 tons, i.e. 6.7%; sector of electricity, gas, steam and air-conditioning supply 336 816.3 tons, i.e. 44.3% and sector of water supply, sewerage, waste management and remediation 4 138.8 tons, i.e. 0.6%.

By sectors, relation between non-hazardous and hazardous waste was moving: mining and quarrying sector 8.9% non-hazardous waste, 91.1% hazardous waste, manufacturing sector 97.4% of non-hazardous waste, 2.6% of hazardous waste, sector of electricity, gas, steam and air-conditioning supply, non-hazardous waste almost 100% and in sector of water supply, sewerage, waste management and remediation 96.6% non-hazardous waste, 3.4% hazardous waste.

Of the total generated and stored waste in the amount of 784 701.9 tons in 2018, companies in the industry have internal disposed 86.5%, internal treated 5.1% of waste, temporarily stored 4.0% of waste, 4.0% delivered to other companies in Montenegro and exported 0.4%.

In internal treatment the most common operation is backfilling with 92.3%, incineration for energy purposes with 5.5%, and recycling with 2.2%. In 2018, companies in the industry sector internal disposed 678 342.2 tons of waste, with the most abundant D5 specially engineered landfill with 98.9%.

Industrial enterprises in Montenegro in 2018 are directly exported 3 100.2 tons of waste, of which 85.3% is waste from wood processing, 7,6% packaging, 6.6 anodes and other waste 0.5%.

Table 1. Industrial waste generated by sectors, 2018

	Mining and quarrying	Manufacturing	Electricity, gas, steam and air-conditioning supply	Water supply, sewerage, waste management and remediation	Total
Non-hazardous waste	32 812.1	49 601.2	336 703.7	4 042.5	423 159.5
Hazardous waste	335 171.8	1 323.5	112.6	141.3	336 749.2
TOTAL	367 983.9	50 924.7	336 816.3	4 138.8	759 908.7

Table 2. Industrial waste generated by Rulebook on waste catalogue, 2018

		tons		
Types of waste per groups		Non-hazardous	Hazardous	Total
01	Wastes resulting from exploration, mining, quarrying, physical and chemical treatment of minerals	35 532.2	335 094.0	370 626.2
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	3 514.9	-	3 514.9
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	24 779.2	7.7	24 786.9
04	Wastes from the leather, fur and textile industries	7.7	-	7.7
07	Wastes from organic chemical processes	-	0.0	0.0
08	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), sealants and printing inks	0.5	1.5	2.0
10	Wastes from thermal processes	348 074.0	919.6	348 993.6
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics	595.8	7.3	603.1
13	Oil wastes and wastes of liquid fuels (except edible oils, 05 and 12)	-	106.0	106.0
14	Waste organic solvents, refrigerants and propellants (except 07 and 08)	-	1.3	1.3
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	578.6	14.5	593.1
16	Wastes not otherwise specified in the list	1 304.1	406.3	1 710.4
17	Construction and demolition wastes (including excavated soil from contaminated sites)	938.8	-	938.8
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	-	51.7	51.7
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use	3 065.0	121.8	3 186.8
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	4 768.7	17.5	4 786.2
TOTAL		423 159.5	336 749.2	759 908.7

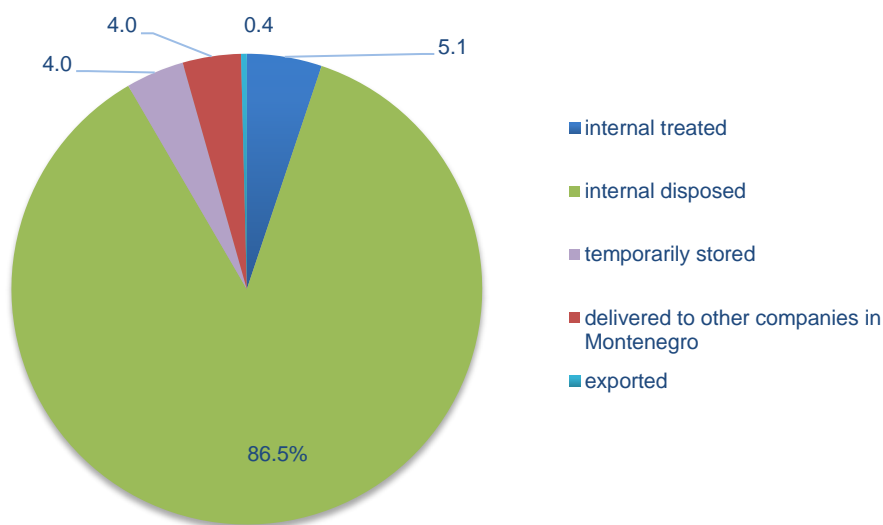
Table 3. Industrial waste generated by Statistical classification of waste, 2018

		tons				
Description - Type of waste EWC/Stat Version 4		Character of the waste ¹	Mining and quarrying	Manufacturing	Electricity, gas, steam and air-conditioning supply	Water supply, sewerage, waste management and remediation
01.1	Spent solvents	1	-	1.3	-	-
01.2	Acid, alkaline or salt wastes	1	-	181.2	-	0.1
01.3	Used oils	1	64.8	26.1	1.1	13.3
01.4, 02, 03.1	Chemical wastes	0	0.1	3 754.7	0.0	0.2
01.4, 02, 03.1	Chemical wastes	1	3.5	57.8	7.9	0.1
03.2	Industrial effluent sludges	0	-	525.9	-	-
03.2	Industrial effluent sludges	1	-	-	-	106.8
03.3	Sludges and liquid wastes from waste treatment	1	-	15.0	-	-
06.1	Metallic waste, ferrous	0	30.0	330.1	265.7	0.8
06.2	Metallic waste, non-ferrous	0	-	568.2	54.5	-
06.3	Metal wastes, mixed ferrous and non-ferrous	0	-	3 098.6	-	28.1
07.1	Glass waste	0	-	326.3	-	0.1
07.2	Paper and cardboard wastes	0	2.3	613.7	0.2	20.3
07.3	Rubber wastes	0	59.6	24.8	0.1	19.5
07.4	Plastic wastes	0	-	31.4	-	11.5
07.5	Wood wastes	0	-	24 787.2	-	0.2
07.5	Wood wastes	1	-	7.7	-	-
07.6	Textile wastes	0	-	6.0	-	-
07.7	Waste containing PCB	1	0.2	0.7	-	0,0
08 (excluding 08.1, 08.41)	Discarded equipment (excluding Discarded vehicles and batteries and accumulators wastes)	0	0.5	5.4	33.2	-
08 (excluding 08.1, 08.41)	Discarded equipment (excluding Discarded vehicles and batteries and accumulators wastes)	1	6.1	5.9	28.6	17.9
08.1	Discarded vehicles	0	-	-	-	1.5
08.1	Discarded vehicles	1	-	-	66.5	-
08.41	Batteries and accumulators wastes	0	0.0	0.1	-	0.6
08.41	Batteries and accumulators wastes	1	3.2	2.7	1.5	3.1
09.1	Animal and mixed food waste	0	0.6	2 459.8	-	-
09.2	Vegetal wastes	0	-	421.4	-	-
09.3	Slurry and manure	0	-	581.6	-	-
10.1	Household and similar wastes	0	-	308.3	-	-
10.2	Mixed and undifferentiated materials	0	0,0	1 630.7	-	315.2
11	Common sludges	0	-	-	-	3 582.1
12.1	Mineral waste from construction and demolition	0	-	30.0	-	0.3
12.2, 12.3, 12.5	Other mineral wastes	0	32 500.0	4 090.7	-	51.8
12.2, 12.3, 12.5	Other mineral wastes	1	335 094.0	286.6	7.0	0.0
12.4	Combustion wastes	0	15.0	6 006.3	336 350.0	10.3
12.4	Combustion wastes	1	-	738.5	-	-
12.7	Dredging spoils	0	204.0	-	-	-
Total			367 983.9	50 924.7	336 816.3	4 183.8

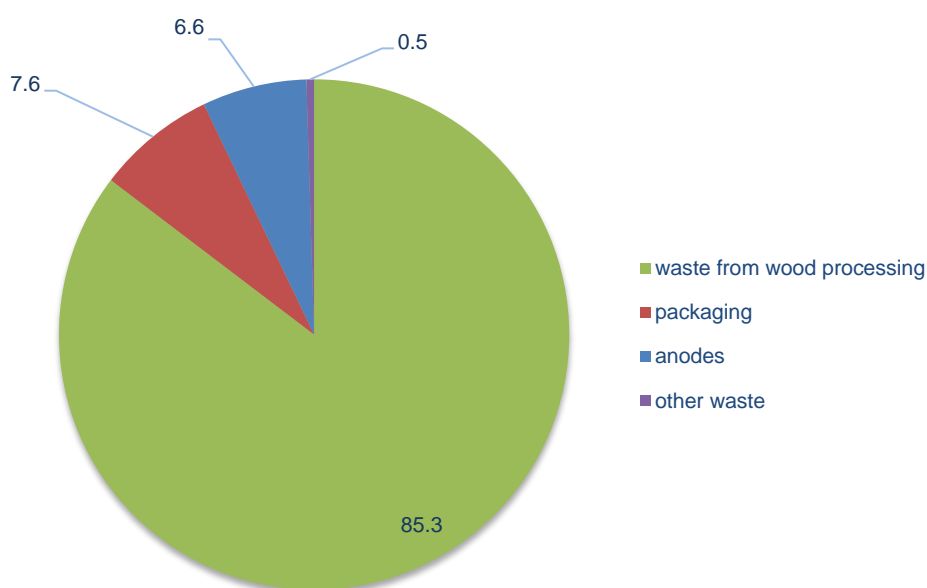
Table 4. Treatment of waste in industrial companies, 2018

	tons				
	Internal treatment and disposed	Permanent storage	Delivered to another companies in Montenegro	Exported from Montenegro	Total
Non-hazardous waste	382 834.8	29 689.1	30 985.7	3 085.2	446 594.8
Hazardous waste	335 913.4	1 787.5	391.2	15.0	338 107.1
TOTAL	718 748.2	31 476.6	31 376.9	3 100.2	784 701.9

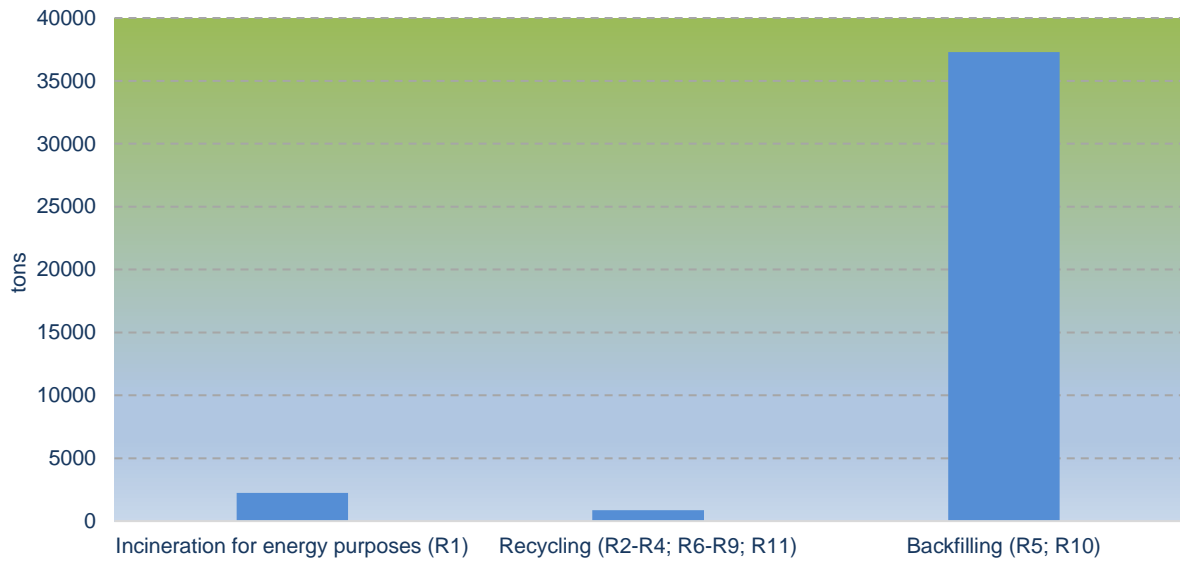
Graph 1. Management of industrial waste, 2018



Graph 2. Export of industrial waste, 2018



Graph 3. Treatment procedures of industrial waste, 2018



METHODOLOGICAL NOTES

The data on industrial waste in 2018 were collected by Surveys on waste generated in the industry. Reporting method is used for data collection, and the geographical aspects covered are business entities that carry out its production activities in the whole territory of Montenegro. The report includes all businesses with 10 or more employees whose primary activity is defined in the sectors: B-Mining and quarrying sector, C-Manufacturing, D- Electricity, gas, steam and air-conditioning supply, and E- Water supply, sewerage, waste management and remediation i.e. areas 05-39 of the Classification of Activities 2010.

Data on industrial waste for 2018 were processed using statistical methods of imputation and weighting, in order to obtain greater coverage and international comparable data.

For the data collection is used of *Rulebook on waste catalogue and waste classification* (Official Gazette of Montenegro 64/11) which is compliant the European List of Wastes (LOW), and contains more than 800 types of waste systematized according to their characteristics and place of origin in 20 groups. Of these 20 groups, the most is based on activities in which waste is generated, while some groups are based on materials and processes.

The Waste Catalogue (LoW) is a list of waste according to the properties and place of origin, classified in groups, subgroups and types of waste from industries whose operations generate waste.

Statistical Waste Catalogue EWC-Stat is a list of waste according to material. It is classified on 51 types of waste and divided into hazardous and non-hazardous waste. International reporting is done according to EWC-Stat.

Waste is any substance or object, which the holder has discarded or intends to discard or is obliged to discard in accordance with the law.

The original waste producer is any person whose activities produce waste.

The holder of waste is the producer of waste or any legal or natural person that owns waste

Industrial waste is waste generated in production processes in industry and crafts, and differs from municipal waste in their composition and characteristics.

Hazardous waste is waste containing elements or compounds having one or more of the following hazardous properties: explosiveness, reactivity, flammability, irritability, harmful, toxic, infectious, carcinogenic, corrosiveness, mutagenicity, teratogenicity, eco-toxicity, the property of abrasion and the property of release of toxic gases by chemical or biological reaction and sensitivity / irritability, as well as waste from which, after a delay, other matter may arise that has any of the hazardous properties.

Non-hazardous waste is waste whose composition and properties do not have any of the characteristics of hazardous waste.

Waste treatment is the procedure for processing of and/or disposal of waste, including preparation prior to treatment and/or disposal.

Backfilling means a recovery operation where waste is used in excavated areas (such as underground mines, gravel pits) for the purpose of slope reclamation or safety or for engineering purposes in landscaping and where the waste is substituting other non-waste materials which would have had to be used for the purpose.

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