MONTENEGRO
STATISTICAL OFFICE
R E L E A S E
No: 133
Podgorica, 28 December 2018

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Amount of waste generated from industry 2017

The release comprises selected statistical data on the amount of waste generated and treated from industry in 2017. 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 2017 industry sectors generated 667 266.9 tons of waste, of that 369 070.1 tons of non-hazardous waste and 298 196.8 tons of hazardous waste.

Of the total 667 266.9 tons of waste generated in industry, mining and quarrying sector has generated 311 123.9 tons, i.e. 46.6%; manufacturing sector 40 274.8 tons, i.e. 6.0%; sector of electricity, gas, steam and air-conditioning supply 309 867.7 tons, i.e. 46.4% and sector of water supply, sewerage, waste management and remediation 6 000.5 tons, i.e. 1.0%.

By sectors relation between hazardous and non-hazardous waste was moving: mining and quarrying sector 95.3% hazardous waste, 4.7% non-hazardous waste, manufacturing sector 96.1% of non-hazardous waste, 3.9% of hazardous waste, sector of electricity, gas, steam and air-conditioning supply, non-hazardous waste almost 100% as in sector of water supply, sewerage, waste management and remediation

Of the total generated and stored waste in the amount of 686 262.2 tons in 2017, companies in the industry have internal disposed 89.5%, internal removed 3.4% of waste, temporarily stored 3.6% of waste, 2.4% delivered to other companies in Montenegro and exported 1.1%.

In internal treatment the most common operation is backfilling with 83.0%, incineration for energy purposes with 8.2%, followed by recycling with 6.4%, while other methods account for 2.4%. In 2017, companies in the industry sector internal disposed 614 024.8 tons of waste, with the most abundant D12 permanent storage with 50.2%.

Industrial enterprises in Montenegro in 2017 are directly exported 7 297.5 tons of waste, of which 75.7% is waste from wood processing, 10.0% paper, cardboard and glass packaging, 9.0 anodes and metal and other waste 5.3%.

Table 1. Industrial waste generated by sectors, 2017

tons

	Mining and quarrying	Manufacturing	Electricity, gas, steam and air-conditioning supply	Water supply, sewerage, waste management and remediation	Total
Non-hazardous waste	14 603.4	38 718.2	309 809.6	5 938.9	369 070.1
Hazardous waste	296 520.5	1 556.6	58.1	61.6	298 196.8
TOTAL	**311 123.9**	**40 274.8**	**309 867.7**	**6 000.5**	**667 266.9**

Table 2. Industrial waste generated by Rulebook on waste catalogue, 2017

tons

	Types of waste per groups	Non-hazardous	Hazardous	Total
01	Wastes resulting from exploration, mining, quarrying, physical and chemical treatment of minerals	5 364.3	296 472.0	301 836.3
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	2 099.7	-	2 099.7
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	11 032.0	-	11 032.0
04	Wastes from the leather, fur and textile industries	7.5	-	7.5
07	Wastes from organic chemical processes	0.7	-	0.7
08	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), sealants and printing inks	0.4	9.7	10.1
10	Wastes from thermal processes	321 223.2	945.8	322 169.0
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics	544.0	17.7	561.7
13	Oil wastes and wastes of liquid fuels (except edible oils, 05 and 12)	-	98.3	98.3
14	Waste organic solvents, refrigerants and propellants (except 07 and 08)	-	3.3	3.3
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	1 196.2	6.4	1 202.6
16	Wastes not otherwise specified in the list	4 400.5	577.8	4 978.3
17	Construction and demolition wastes (including excavated soil from contaminated sites)	15 249.9	20.1	15 270.0
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	13.1	0.0	13.1
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	3 103.6	44.0	3 147.6
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	4 835.0	1.7	4 836.7
	TOTAL	**369 070.1**	**298 196.8**	**667 266.9**

Table 3. Industrial waste generated by Statistical classification of waste, 2017

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	-	3.3	-	-
01.2	Acid, alkaline or salt wastes	1	-	235.4	-	0.1
01.3	Used oils	1	42.3	42.0	-	13.2
01.4, 02, 03.1	Chemical wastes	0	0.1	3 858.7	0.0	0.5
01.4, 02, 03.1	Chemical wastes	1	3.2	6.0	9.2	0.7
03.2	Industrial effluent sludges	0	-	2 997.5	-	-
03.2	Industrial effluent sludges	1	-	-	-	42.7
06.1	Metallic waste, ferrous	0	3.0	105.5	1 051.8	4.9
06.2	Metallic waste, non-ferrous	0	1.5	523.4	33.5	-
06.3	Metal wastes, mixed ferrous and non-ferrous	0	-	2 920.5	-	16.9
07.1	Glass waste	0	-	263.5	-	0.2
07.2	Paper and cardboard wastes	0	2.0	1 181.9	11.8	5.0
07.3	Rubber wastes	0	30.1	27.6	7.8	32.1
07.4	Plastic wastes	0	-	47.5	-	1,7
07.5	Wood wastes	0	-	10 978.3	1.1	0.4
07.6	Textile wastes	0	-	11.2	0.5	-
07.7	Waste containing PCB	1	-	0.1	-	0.4
08 (excluding 08.1, 08.41)	Discarded equipment (excluding Discarded vehicles and batteries and accumulators wastes)	0	0.0	0.6	3.8	0.3
08 (excluding 08.1, 08.41)	Discarded equipment (excluding Discarded vehicles and batteries and accumulators wastes)	1	1.3	1.8	22.6	0.8
08.1	Discarded vehicles	0	-	-	-	3.0
08.1	Discarded vehicles	1	-	-	1.2	-
08.41	Batteries and accumulators wastes	0	0.6	0.1	-	1.2
08.41	Batteries and accumulators wastes	1	1.7	4.2	1.5	2.4
09.1	Animal and mixed food waste	0	0.5	764.3	-	-
09.2	Vegetal wastes	0	-	275.4	-	-
09.3	Slurry and manure	0	-	847.3	-	-
10.2	Mixed and undifferentiated materials	0	1.0	2 610.1	-	322.7
10.2	Mixed and undifferentiated materials	1	-	-	6.6	-
10.3	Sorting residues	1	-	-	-	1.3
11	Common sludges	0	-	11.0	-	4 405.0
12.1	Mineral waste from construction and demolition	0	-	34.8	13.2	214.1
12.2, 12.3, 12.5	Other mineral wastes	0	1 800.0	5 376.6	-	70.3
12.2, 12.3, 12.5	Other mineral wastes	1	296 472.0	553.4	17.0	0.0
12.4	Combustion wastes	0	14.6	5 882.4	308 686.1	-
12.4	Combustion wastes	1	-	710.4	-	-
12.6	Soils	0	-	-	-	420.6
12.7	Dredging spoils	0	12 750.0	-	-	440.0
	Total		**311 123.9**	**40 274.8**	**309 867.7**	**6 000.5**

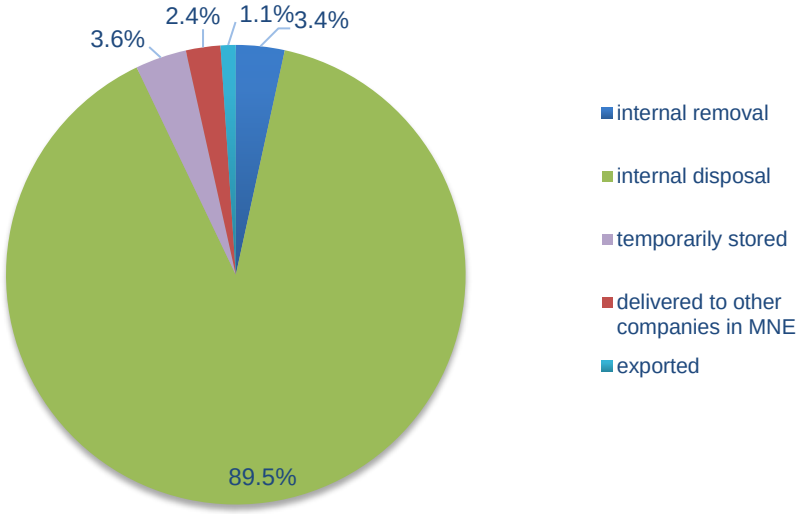
[1] 1 - hazardous waste; 0 - non-hazardous waste

Table 4. Treatment of waste in industrial companies, 2017

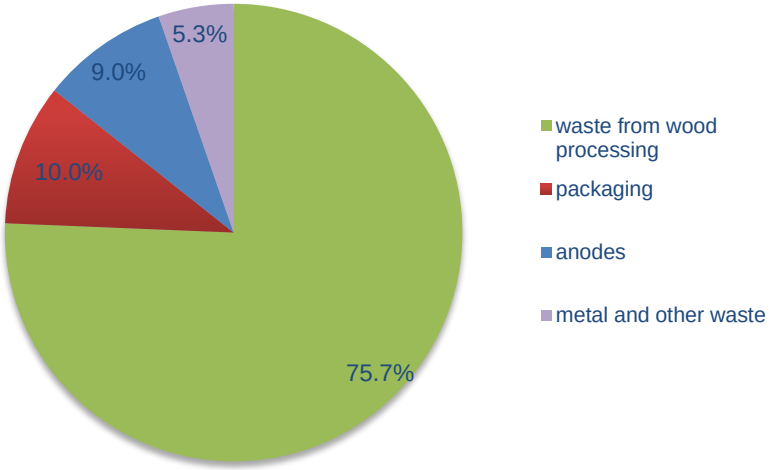
tons

	Internal treatment	Temporary storage	Delivered to another companies in Montenegro	Exported from Montenegro	Total
Non-hazardous waste	339 934.8	23 361.7	16 491.9	7 297.1	387 085.5
Hazardous waste	297 594.2	1 408.1	174.0	0.4	299 176.7
TOTAL	**637 529.0**	**24 769.8**	**16 665.9**	**7 297.5**	**686 262.2**

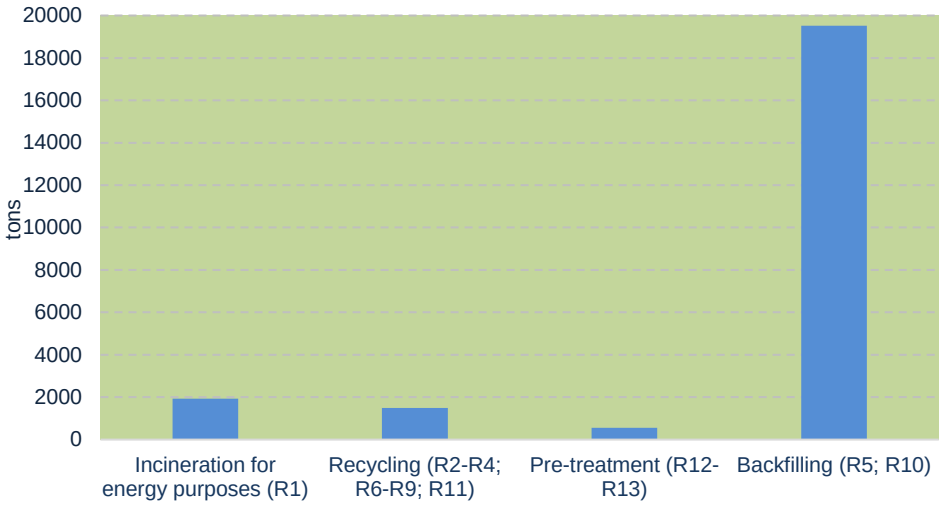
Graph 1. Management of industrial waste, 2017



Graph 2. Export of industrial waste, 2017



Graph 3. Treatment procedures of industrial waste, 2017



METHODOLOGICAL NOTES

The data on industrial waste in 2017 were collected by statistical 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 2017 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.

Published and printed by Statistical Office of Montenegro (MONSTAT)
81000 Podgorica, IV Proleterske 2, Phone (+382) 20 230 811, Fax (+382) 20 230 814

The release prepared by:

Department for environmental statistics and forestry

Tel. +382 20 230 937
e-mail: **contact@monstat.org**