

**Top Ten of Biggest
Environmental Polluters
According to Data of Integrated
Pollutant Release and Transfer Register
(PRTR) of Bosnia
and Herzegovina**

Report for the year

2016



Groups of chemicals covered in the register according to dangerous health effects

1.

Carcinogenic and probably or potentially carcinogenic substances

2.

Carcinogenic substances

3.

Carbon monoxide (CO)

4.

Greenhouse gases

5.

Gases causing acid rain

6.

Polycyclic aromatic hydrocarbons (PAH)

7.

Particulate matter (PM₁₀)



Table 1

Carcinogenic and Probably or Potentially Carcinogenic Substances

The order of factories according to the quantity of substances and their compounds classified by the International Agency for Research on Cancer (IARC) as **carcinogenic (1)**, **probably carcinogenic (2A)**, and **potentially carcinogenic (2B) to humans**, contained in total releases into air according to the data published in PRTR for the year 2016. **Group 1** covers the following chemical substances or their compounds reported in PRTR: *Arsene, asbestos, benzene, ethylene oxide, chromium, cadmium, polychlorinated biphenyls (PCB), and vinyl chloride*. **Group 2A and Group 2B** covers the following chemical substances and their compounds reported in PRTR: *1,2,3,4,5,6-hexachlorocyclohexane (HCH), 1,2-dichlorethane (DCE), bis(2-ethylhexyl) phthalate (DEHP), dichlorodiphenyltrichloroethane (DDT), dichloromethane (DCM), ethylbenzene, heptachlor, hexachlorobenzene (HCB), chloroalkanes (C10-13), chlordane, chlordecone, lindane, mirex, naphthalene, nickel, lead, mercury, tetrachlorethylene, tetrachloromethane (TCM), toxaphene, trichlorethylene, and trichlormethane*.

Order	Organization/company	Factory	Quantity [kg]
1.	ArcelorMittal d.o.o. Zenica	Department Aglomeracija	125.9



Table 2

Carcinogenic Substances

The order of factories according to the quantity of substances and their compounds classified by the International Agency for Research on Cancer (IARC) as **carcinogenic (1)**, contained in total releases into air according to the data published in PRTR for the year 2016. Group 1 covers the following chemical substances or their compounds reported in PRTR: *Arsene, asbestos, benzene, ethylene oxide, chromium, cadmium, polychlorinated biphenyls (PCB), and vinyl chloride.*

Order	Organization/company	Factory	Quantity [kg]
1.	ArcelorMittal Zenica d.o.o.	Department Aglomeracija	1,895.9



Table 3

Carbon Monoxide

Industrial plants releasing the greatest amount of the reprotoxic **carbon monoxide** in the year 2016.

Order	Organization/company	Factory	Quantity [kg]
1.	Tvornica cementa Kakanj d.d.	Cement factory	843,429
2.	Verdić Commerce d.o.o. Mostar	Verdić Commerce d.o.o. Mostar	775,938



Table 4

Greenhouse Gases

The order of factories according to the quantity of **greenhouse gases** (*carbon dioxide, nitrous oxide, methane*) in terms of their potential to contribute to the greenhouse effect in total releases **into air** according to the data published in PRTR for the year 2016. The figures are in tons. First places are affected by emissions of carbon dioxide only.

Order	Organization/company	Factory	Quantity [t]
1.	JP EP BIH, TE Kakanj	Block 5	467,259
2.	JP EP BIH, TE Kakanj	Block 6	409,660
3.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 3	227,342
4.	Verdić Commerce d.o.o. Mostar	Verdić Commerce d.o.o. Mostar	154,304
5.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 6	143,025
6.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 4	118,970
7.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 5	111,296
8.	KJKP Sarajevogas d.o.o. Sarajevo	Gas pipeline	2,111.4

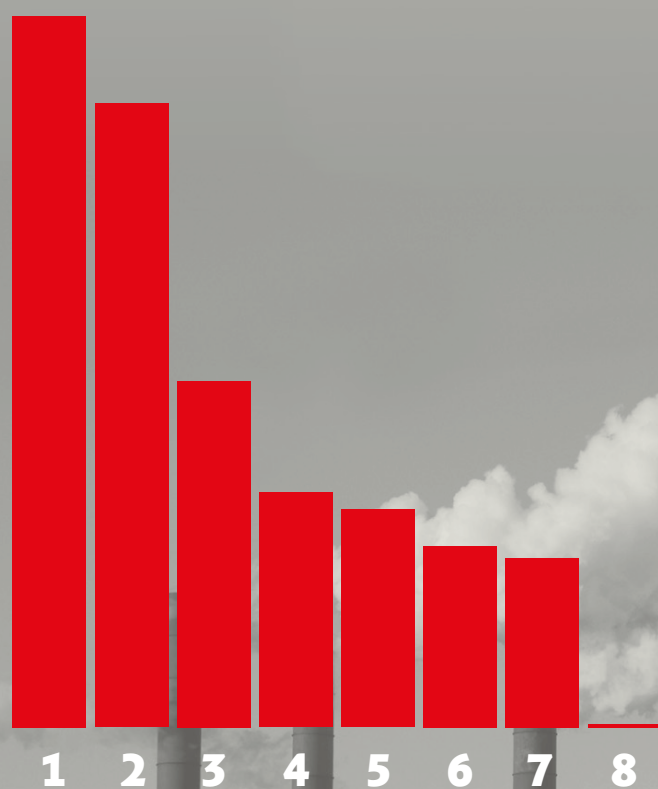


Table 5

Gases Causing Acid Rain

The following industrial plants released the greatest amount of **gases causing acid rain** (*ammonia, nitrogen oxides, sulphur oxides, hydrogen fluoride oxides, and hydrogen chloride oxides*) in the year 2016:

Order	Organization/company	Factory	Quantity [kg]
1.	JP EP BIH, TE Kakanj	Block 7	43,390,000
2.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 6	30,806,260
3.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 4	20,199,700
4.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 5	17,980,000
5.	JP EP BIH, TE Kakanj	Block 5	17,842,000
6.	JP EP BIH, TE Kakanj	Block 6	15,164,000
7.	ArcelorMittal Zenica d.o.o.	Department Energetika	3,984,863
8.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 3	3,305,770
9.	Sisecam Soda d.o.o. Lukavac	Industrial inorganic chemistry	2,737,130
10.	Verdić Commerce d.o.o. Mostar	Verdić Commerce d.o.o. Mostar	2,396,568

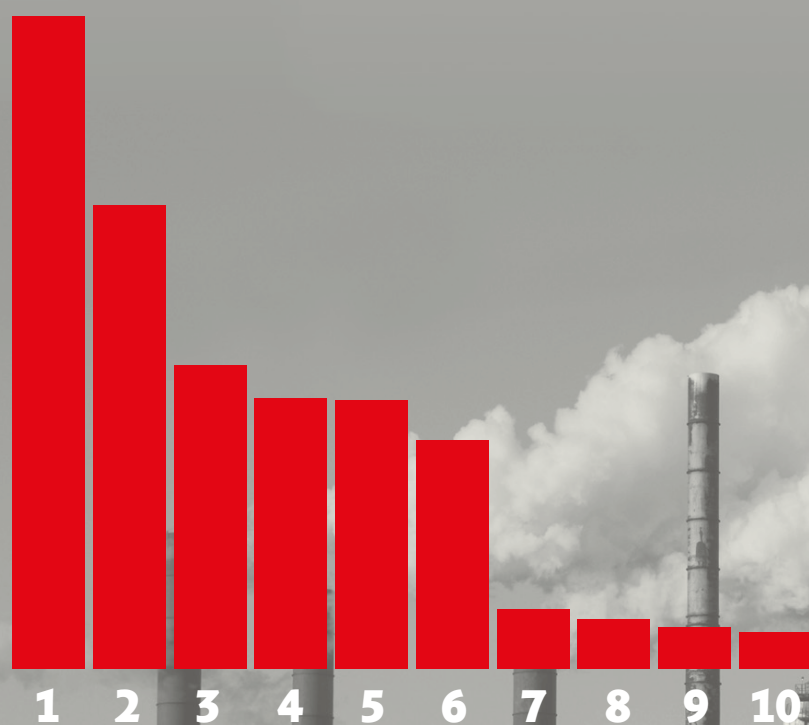
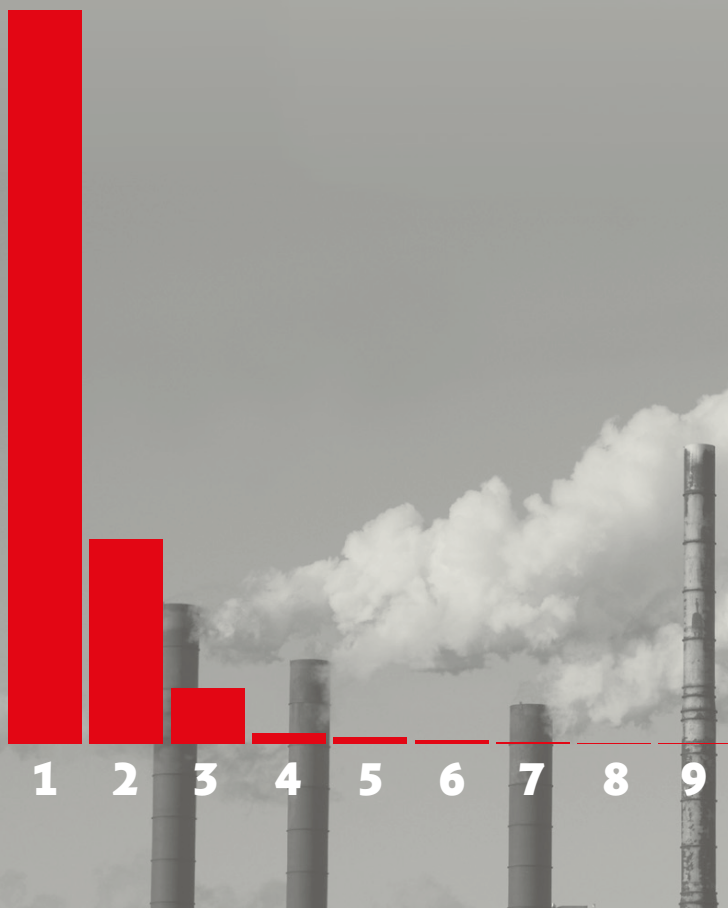


Table 6

Polycyclic Aromatic Hydrocarbons (PAH)

The following industrial plants released the greatest amount of **polycyclic aromatic hydrocarbons (PAH)** into the air in the year 2016.

Order	Organization/company	Factory	Quantity [kg]
1.	Verdić Commerce d.o.o. Mostar	Verdić Commerce d.o.o. Mostar	199,877
2.	Hercegovačka pivovara d.o.o. Mostar	Brewery	55,640
3.	Suton d.o.o. Široki Brijeg	Printing industry	15,088
4.	ArcelorMittal Zenica d.o.o.	Department Aglomeracija	2,837
5.	Inka d.o.o. Ljubuški	Technical stone processing plant	1,747
6.	Coca-Cola HBC B-H d.o.o. Sarajevo	Coca-Cola HBC B-H	903
7.	Gramat d.o.o.	Stone pit Sklop	300.8
8.	TBG BH d.o.o. Kakanj	Branch Lukavac – Betonara	148.7
9.	HP INVESTING d.o.o. Mostar	Concrete manufacture	109.9

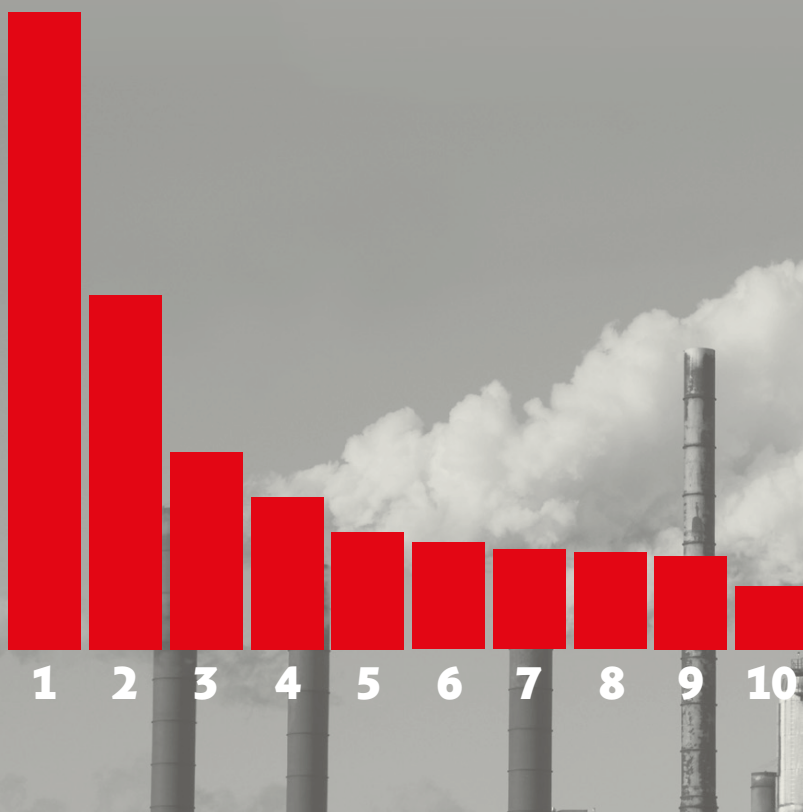


We consider the first three figures of table 6 to be a mistake. The reported emission are unusually high given the type of facility and it is very probable that the figures were falsely reported in kilograms instead of grams. We did not succeed to verify the figures as the authorities responsible did not answer on our request.

Table 7 Particulate Matter (PM10)

The following industrial plants released the greatest amount of **particulate matter into the air** in the year 2016:

Order	Organization/company	Factory	Quantity [kg]
1.	ArcelorMittal Zenica d.o.o.	Department Aglomeracija	914,377
2.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 4	508,790
3.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 5	283,140
4.	ArcelorMittal Zenica d.o.o.	Department Energetika	218,347
5.	JP Elektroprivreda BiH	Tuzla thermal power plant, Block 6	168,220
6.	ArcelorMittal Zenica d.o.o.	Department Koksara	153,519
7.	Sisecam Soda d.o.o. Lukavac	Industrial inorganic chemistry	143,410
8.	Verdić Commerce d.o.o. Mostar	Verdić Commerce d.o.o. Mostar	138,981
9.	ArcelorMittal Zenica d.o.o.	Blast furnace	133,654
10.	Natron-Hayat.d.o.o. Maglaj	Paper manufacture	91,176



Comments:

Values exceeding safe threshold limits for Bosnia and Herzegovina are related to only 28 factories in Bosnia and Herzegovina and cover only 11 substances (cadmium, lead, PAH, HCl, SO₂/SO_x, NO₂/NO_x, CO, methane, CO₂, PM10, PCDD/F).

For comparison: in the Czech Republic, 1,309 facilities reported emissions in 2016 and the reports included 39 atmospheric pollutants, 29 water pollutants, 0 soil pollutants, 31 substances of transfers in wastewater, and 24 substances of transfers in wastes.

In the Czech Republic, all companies report their emissions in the event of their exceeding the threshold limit. Transfers in wastes are reported as well. Compared to E-PRTR (The European Pollutant Release and Transfer Register), the Czech factories also report styrene and formaldehyde emissions. The data for the Czech Republic is publicly available at: <http://www.irz.cz>

