

Pollutants of the PRTR - Situation in Germany -

Reporting years 2007 - 2021



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1 Introduction

Germany, as well as the European Union and its other Member States, has signed the UNECE Protocol on PRTRs and thus committed itself to establish a national Pollutant Release and Transfer Register (PRTR) open to the public. In Germany, it was established based on the European PRTR Regulation (EG) 166/2006 and the German Law on PRTR (SchadRegProtAG). The PRTR compiles annual releases of pollutants into air, water and land, the off-site transfers in waste water and the off-site transfer of hazardous and non-hazardous waste from certain industrial activities. A report about these releases becomes due if the applicable capacity thresholds as well as thresholds for releases or waste are exceeded. If no threshold is given in the E-PRTR Regulation (see Annex A), reporting for this pollutant is not required. The E-PRTR Regulation lists a total of 91 pollutants. German PRTR data are regularly published on the Internet www.thru.de.

The present volume contains a compact overview for each pollutant listed in the Regulation if at least one facility reported releases or transfers in the current reporting year.

For each pollutant, the information is summarized in one table and two figures, grouped by releases to air, water and land and the off-site transfers in waste water. (Releases to land are defined only as a pollutant being disposed of by land treatment or deep injection.) The table shows how the total amount of each pollutant is divided into industrial sectors and the number of reporting facilities for the most recent reporting year. The first figure illustrates the number of facilities as time series, divided into industrial sectors. The second figure shows how releases and off-site transfers in waste water have developed over time, also divided into industrial sectors. Both figures contain the five sectors (max.) with the highest amounts of pollutants reported for the most recent reporting year.



Further comprehensive information about the German PRTR can be found on the web site www.thru.de, where the complete dataset for all reporting years since 2007 can also be downloaded as SQLite database and as *xlsx*, *xlsb*, *csv* or *ods* files. Information about the European PRTR is available at industry.eea.europa.eu.

This volume is updated regularly as new data becomes available. Please send questions or feedback to [mail\(at\)thru.de](mailto:mail(at)thru.de).

The information on the off-site transfer of hazardous and non-hazardous waste in PRTR is presented in a separate volume and is also available for download at www.thru.de.

2 Releases to air, water and land

The following chapters cover only releases of pollutants to air, water and land.

2.1 1,2-dichlorethane (EDC)

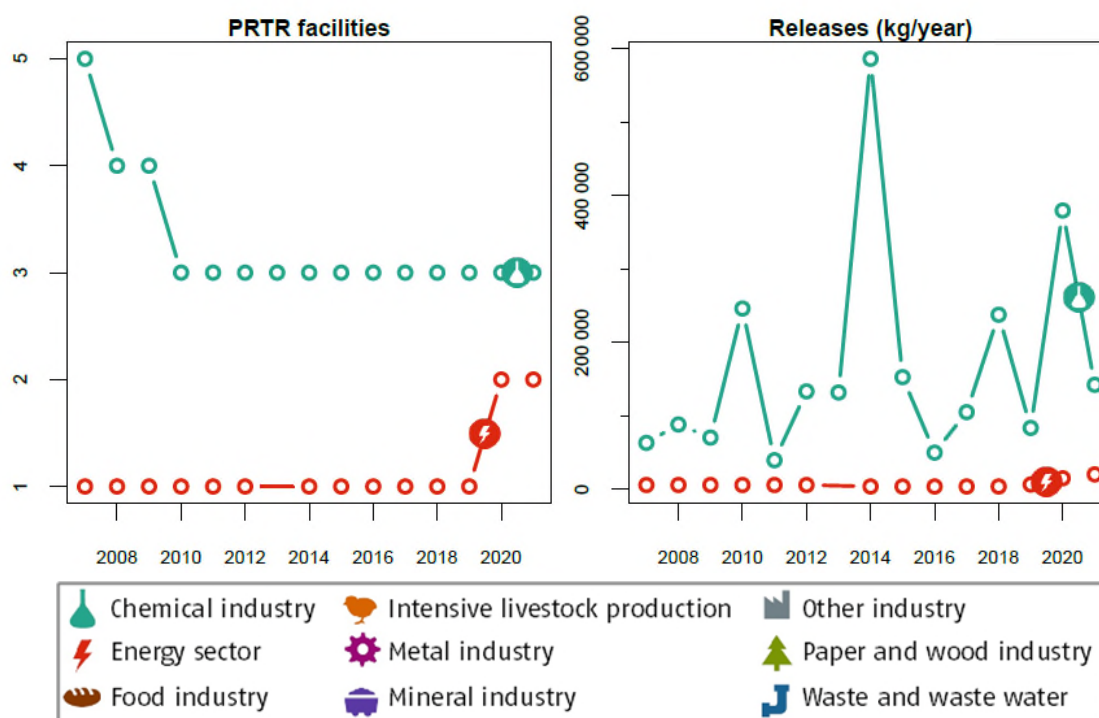
2.1.1 Releases to Air

The threshold is **1 000 kg “1,2-dichloroethane (EDC)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 1: For the reporting year 2021 - Number of facilities and their releases of the pollutant “1,2-dichloroethane (EDC)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	3	60	124 460	87.4
Energy sector	2	40	20 560	12.6
Total	5	100	163 020	100

Figure 1: Annual number of facilities (left) and their releases (right) of the pollutant “1,2-dichloroethane (EDC)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

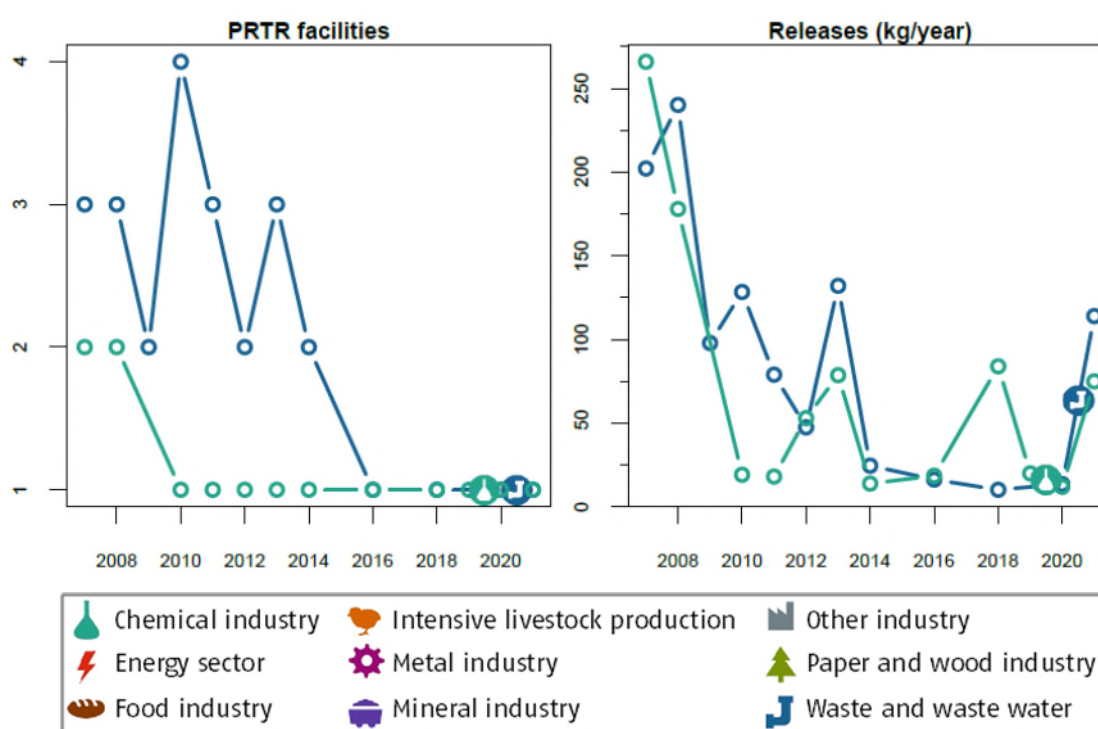
2.1.2 Releases to Water

The threshold is **1 000 kg “1,2-dichloroethane (EDC)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 2: For the reporting year 2021 - Number of facilities and their releases of the pollutant “1,2-dichloroethane (EDC)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	50	114	60.3
Chemical industry	1	50	75	39.7
Total	2	100	189	100

Figure 2: Annual number of facilities (left) and their releases (right) of the pollutant “1,2-dichloroethane (EDC)” to Water, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.1.3 Releases to Land

The threshold is **1 000 kg “1,2-dichloroethane (EDC)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “1,2-dichloroethane (EDC)” to **Land** in **2021**.

2.2 1,2,3,4,5, 6- hexachlorocyclohexane (HCH)

2.2.1 Releases to Air

The threshold is **10 kg “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” to **Air** in **2021**.

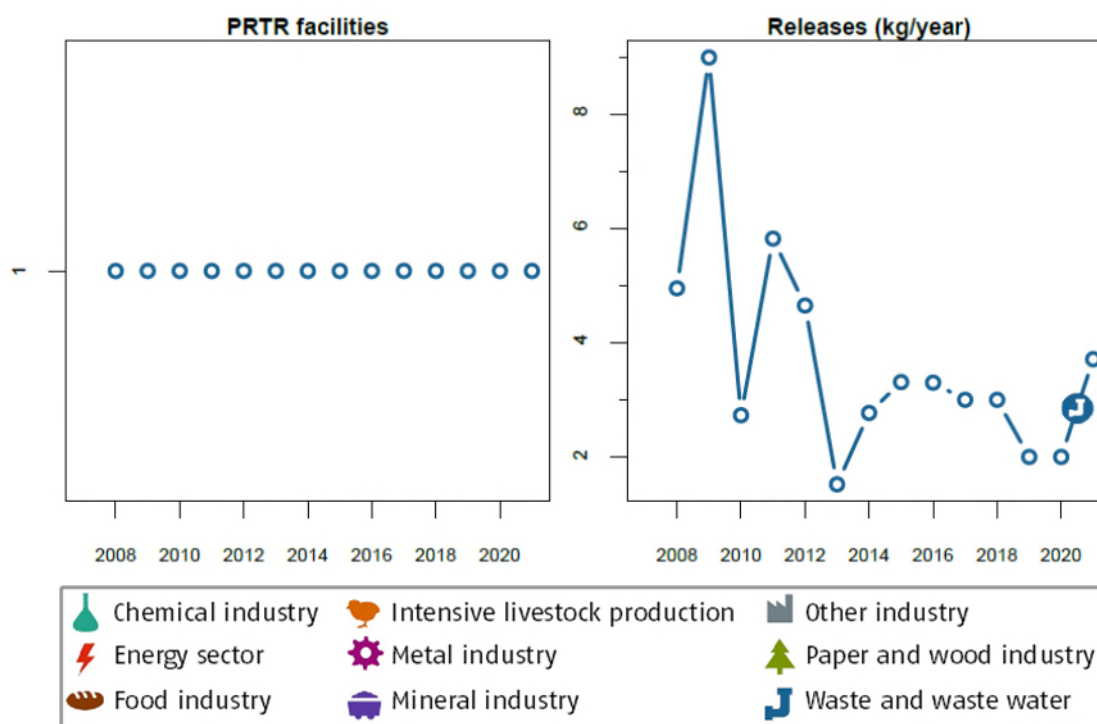
2.2.2 Releases to Water

The threshold is **1 kg “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 3: For the reporting year 2021 - Number of facilities and their releases of the pollutant “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	3.71	100
Total	1	100	3.71	100

Figure 3: Annual number of facilities (left) and their releases (right) of the pollutant “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.2.3 Releases to Land

The threshold is **1 kg “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “1,2,3,4,5,6-hexachlorocyclohexane (HCH)” to **Land** in **2021**.

2.3 Ammonia (NH₃)

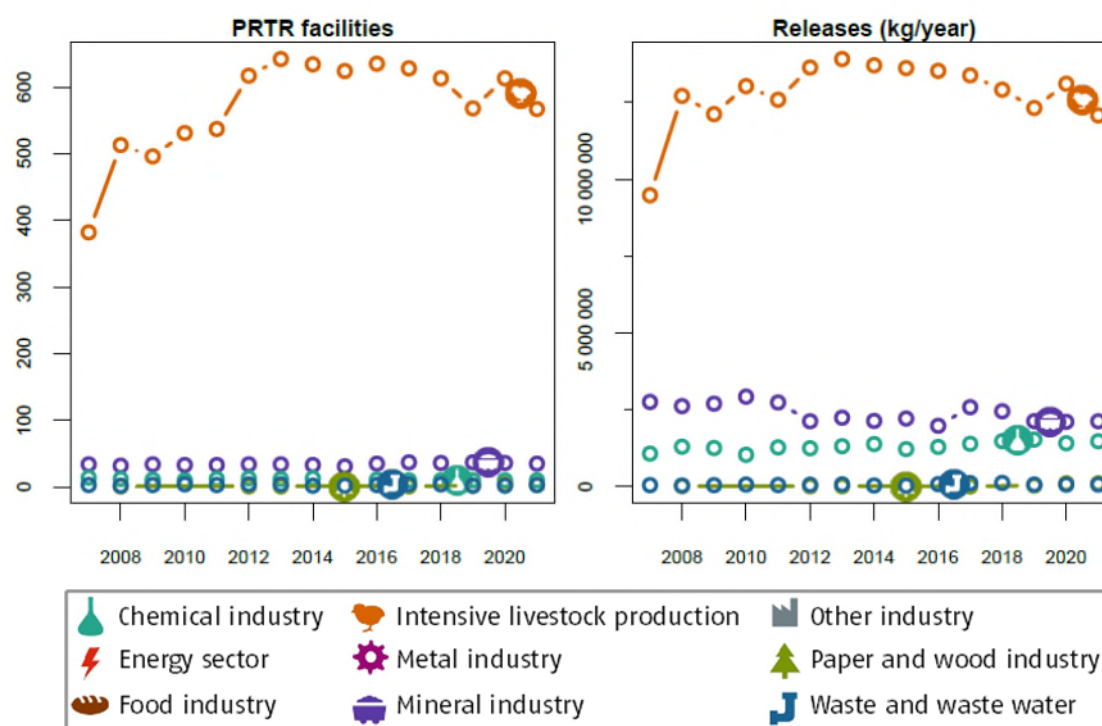
2.3.1 Releases to Air

The threshold is **10 000 kg “Ammonia (NH₃)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 4: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Ammonia (NH₃)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Intensive livestock production and aquaculture	567	91.0	12 073 100	75.8
Mineral industry	35	5.62	2 125 700	13.3
Chemical industry	10	1.61	1 467 100	9.27
Paper and wood industry	3	0.482	108 400	0.680
Waste and waste water management	3	0.482	66 900	0.420
Energy sector	3	0.482	52 000	0.326
Food industry	2	0.321	28 700	0.180
Total	623	100	15 930 900	100

Figure 4: Annual number of facilities (left) and their releases (right) of the pollutant “Ammonia (NH₃)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.4 Anthracene

2.4.1 Releases to Air

The threshold is **50 kg “Anthracene” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “**Anthracene**” to **Air** in **2021**.

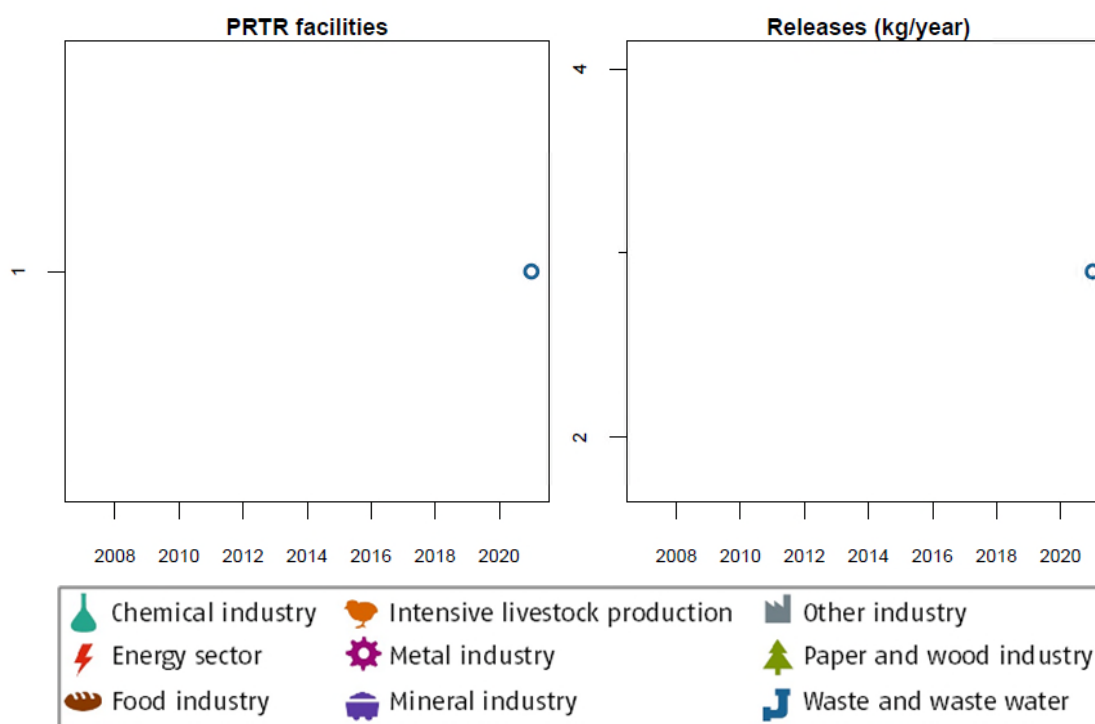
2.4.2 Releases to Water

The threshold is **1 kg “Anthracene” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 5: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Anthracene” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	2.9	100
Total	1	100	2.9	100

Figure 5: Annual number of facilities (left) and their releases (right) of the pollutant “Anthracene” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.4.3 Releases to Land

The threshold is **1 kg “Anthracene” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Anthracene” to **Land** in **2021**.

2.5 Arsenic and compounds (as As)

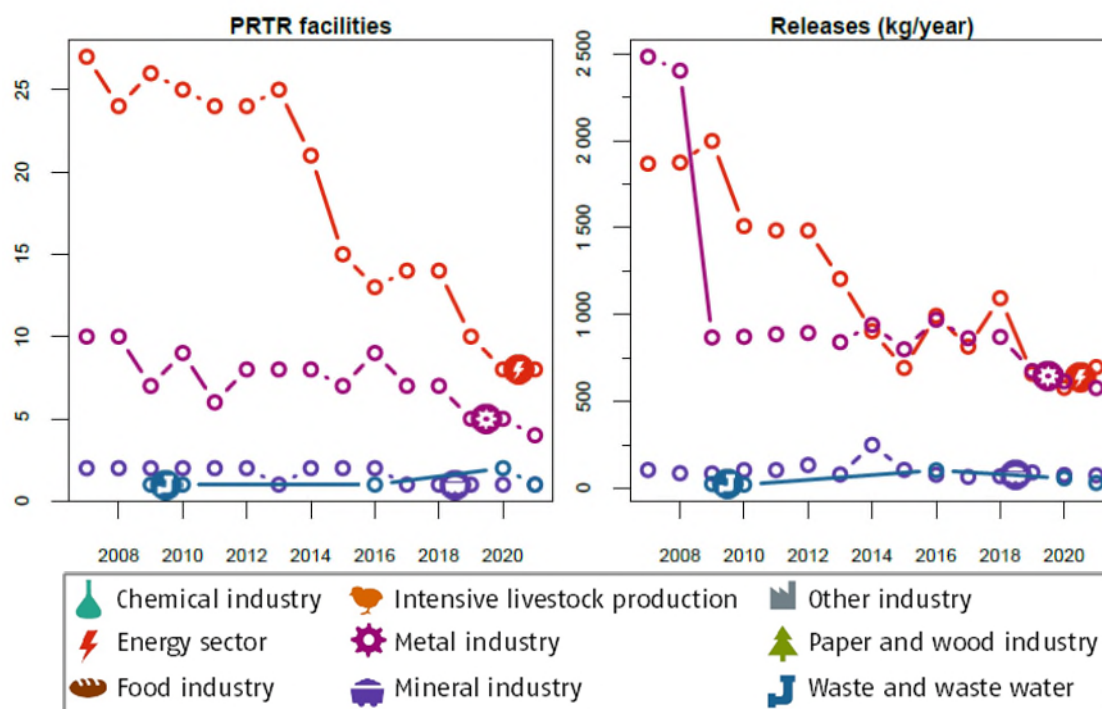
2.5.1 Releases to Air

The threshold is **20 kg “Arsenic and compounds (as As)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 6: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Arsenic and compounds (as As)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	8	57.1	697	50.5
Metal industry	4	28.6	577	41.8
Mineral industry	1	7.14	74,9	5.43
Waste and waste water management	1	7.14	31.1	2.25
Total	14	100	1 380	100

Figure 6: Annual number of facilities (left) and their releases (right) of the pollutant “Arsenic and compounds (as As)” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

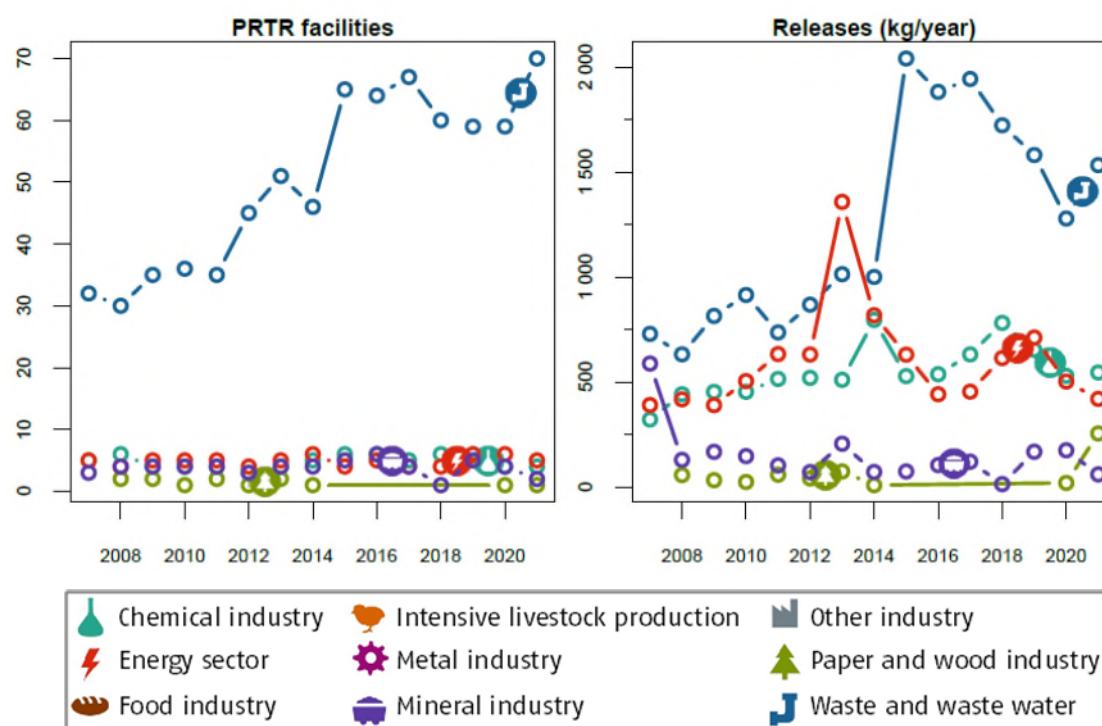
2.5.2 Releases to Water

The threshold is **5 kg “Arsenic and compounds (as As)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 7: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Arsenic and compounds (as As)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	70	83.3	1 533	53.9
Chemical industry	4	4.76	546	19.2
Energy sector	5	5.95	420	14.8
Paper and wood industry	1	1.19	255	8.96
Mineral industry	2	2.38	60,0	2.11
Metal industry	2	2.38	31.6	1.11
Summe	84	100	2 845	100

Figure 7: Annual number of facilities (left) and their releases (right) of the pollutant “Arsenic and compounds (as As)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

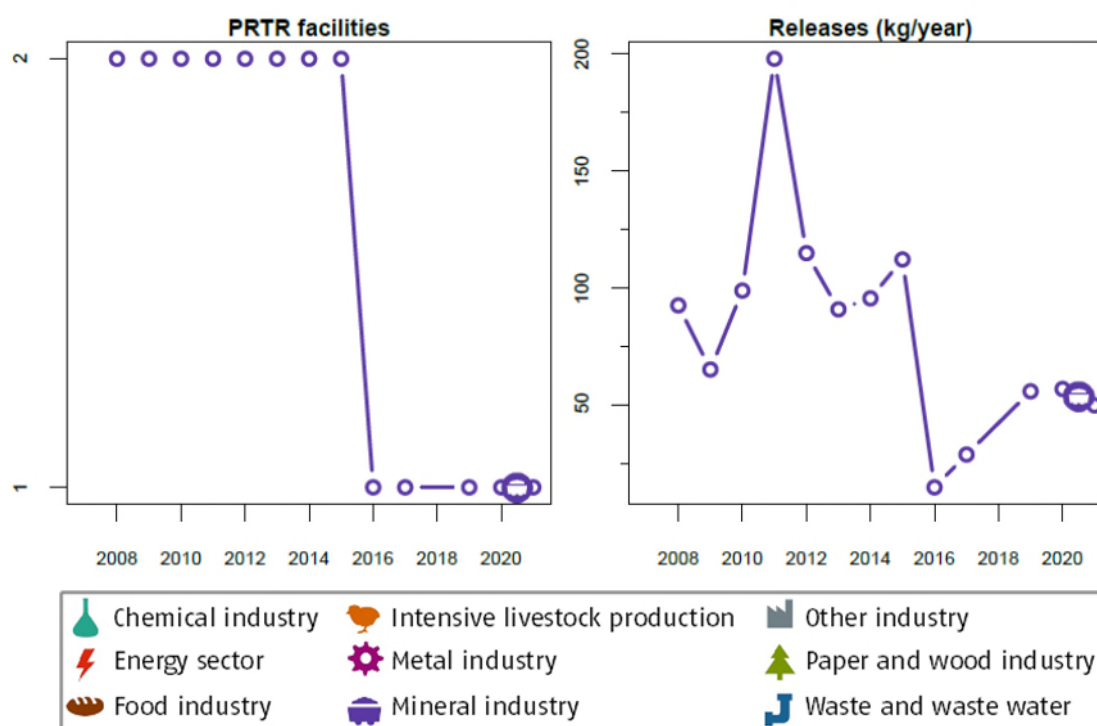
2.5.3 Releases to Land

The threshold is **5 kg “Arsenic and compounds (as As)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 8: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Arsenic and compounds (as As)” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	1	100	50	100
Total	1	100	50	100

Figure 8: Annual number of facilities (left) and their releases (right) of the pollutant “Arsenic and compounds (as As)” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.6 Atrazine

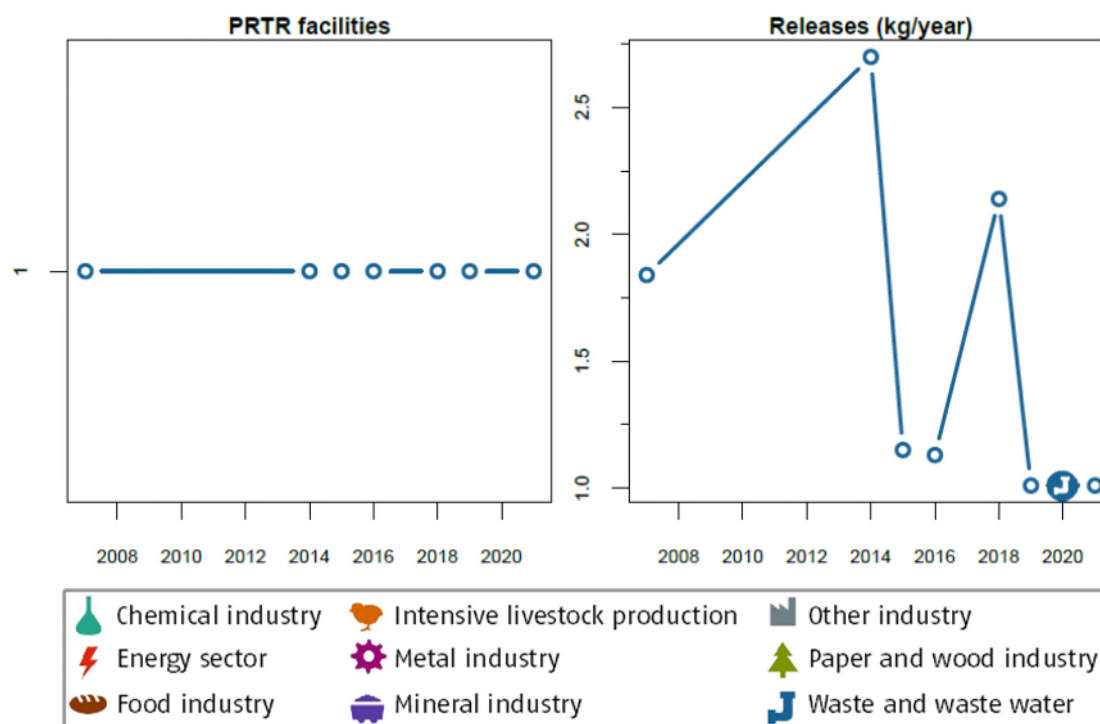
2.6.1 Release to Water

The threshold is **1 kg “Atrazine” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 9: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Atrazine” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	1.01	100
Total	1	100	1.01	100

Figure 9: Annual number of facilities (left) and their releases (right) of the pollutant “Atrazine” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.6.2 Releases to Land

The threshold is **1 kg “Atrazine” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Atrazine” to **Land** in **2021**.

2.7 Benzene

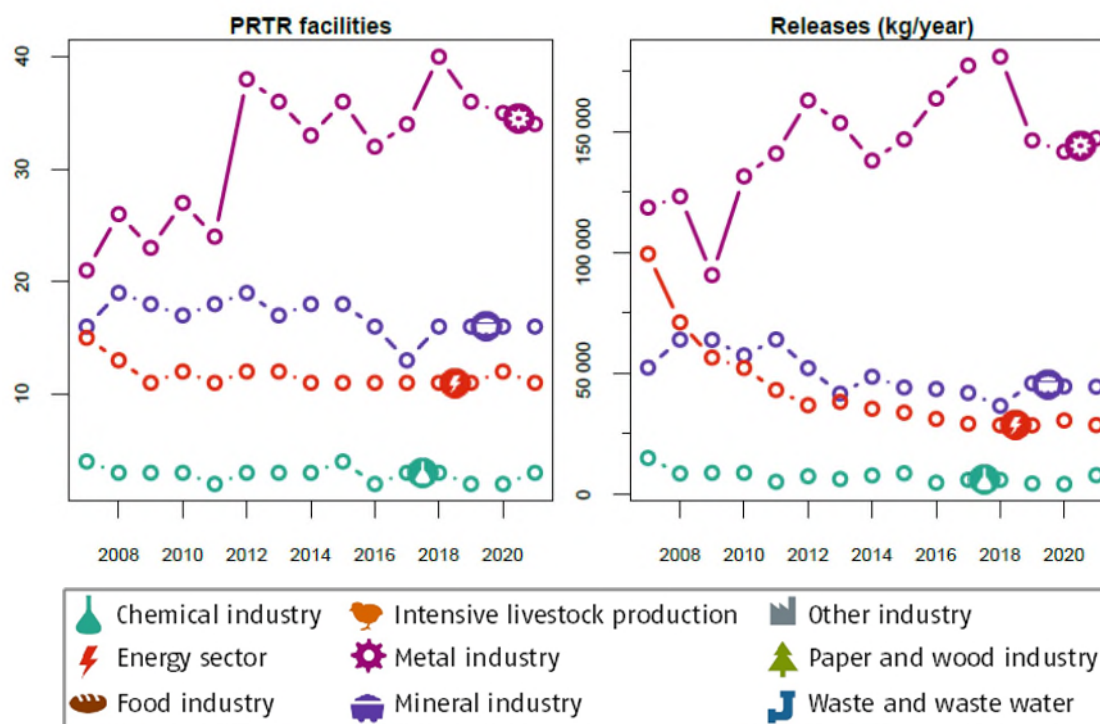
2.7.1 Releases to Air

The threshold is **1 000 kg “Benzene” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 10: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Benzene” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	34	53.1	147 160	64.5
Mineral industry	16	25.0	44 440	19.5
Energy sector	11	17.2	28 590	12.5
Chemical industry	3	4.69	7 850	3.44
Total	64	100	228 040	100

Figure 10: Annual number of facilities (left) and their releases (right) of the pollutant “Benzene” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.7.2 Releases to Water

The threshold is **200 kg “Benzene” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Benzene” to **Water** in **2021**.

2.7.3 Releases to Land

The threshold is **200 kg “Benzene” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Benzene” to **Land** in **2021**.

2.8 Brominated diphenylethers (PBDE)

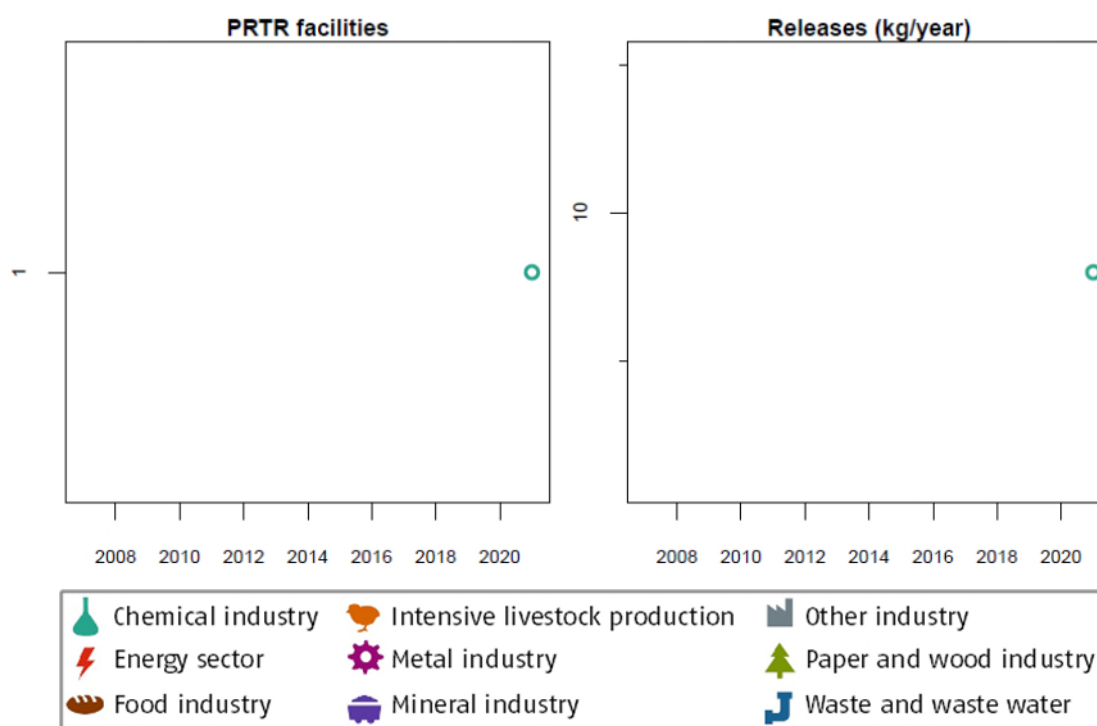
2.8.1 Releases to Water

The threshold is **1 kg “Brominated diphenylethers (PBDE)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 11: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Brominated diphenylethers (PBDE)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	9	100
Total	1	100	9	100

Figure 11: Annual number of facilities (left) and their releases (right) of the pollutant “Brominated diphenylethers (PBDE)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.8.2 Releases to Land

The threshold is **1 kg “Brominated diphenylethers (PBDE)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “**Brominated diphenylethers (PBDE)**” to **Land** in **2021**.

2.9 Cadmium and compounds (as Cd)

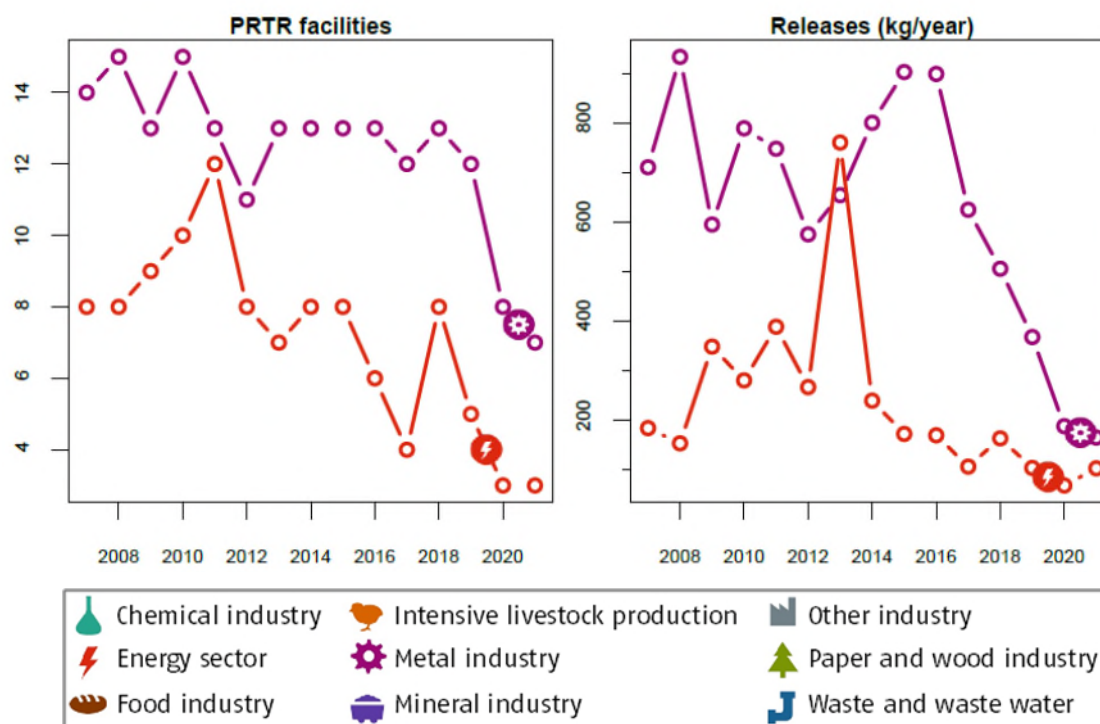
2.9.1 Releases to Air

The threshold is **10 kg “Cadmium and compounds (as Cd)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 12: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Cadmium and compounds (as Cd)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	7	70	165	61.6
Energy sector	3	30	103	38.4
Total	10	100	268	100

Figure 12: Annual number of facilities (left) and their releases (right) of the pollutant “Cadmium and compounds (as Cd)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

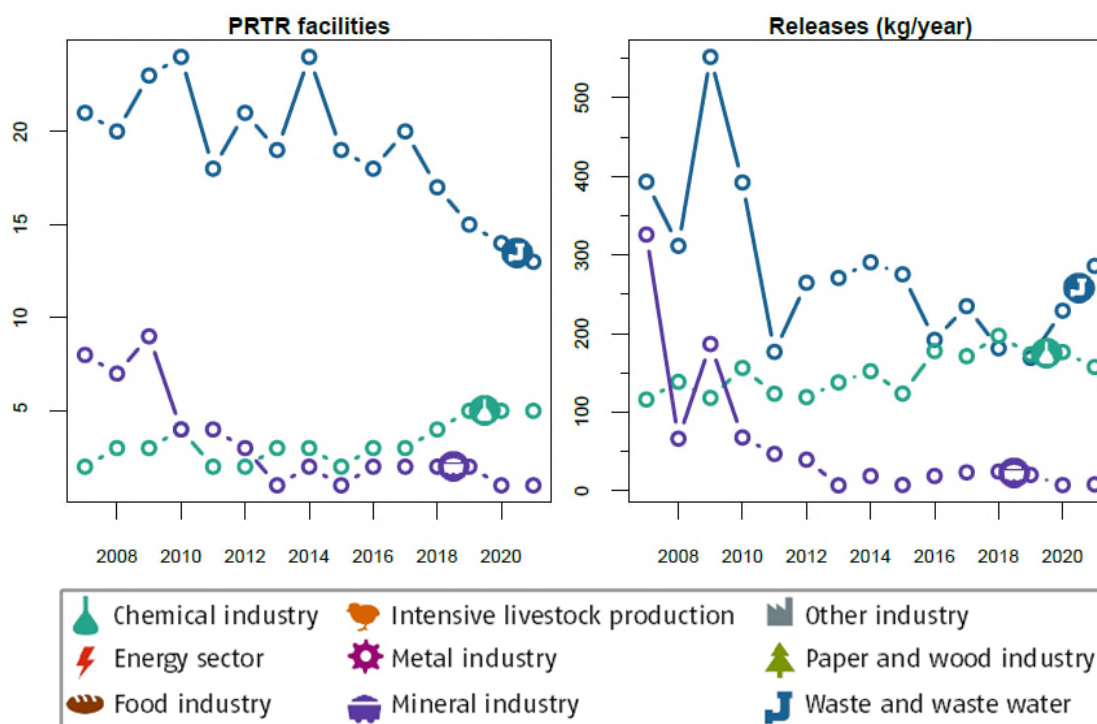
2.9.2 Releases to Water

The threshold is **5 kg “Cadmium and compounds (as Cd)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 13: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Cadmium and compounds (as Cd)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	13	68.4	286	63.4
Chemical industry	5	26.3	157	34.9
Mineral industry	1	5.26	8	1.77
Total	19	100	451	100

Figure 13: Annual number of facilities (left) and their releases (right) of the pollutant “Cadmium and compounds (as Cd)” to Water, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.9.3 Releases to Land

The threshold is **5 kg “Cadmium and compounds (as Cd)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Cadmium and compounds (as Cd)” to **Land** in **2021**.

2.10 Carbon dioxide (CO₂)

2.10.1 Releases to Air

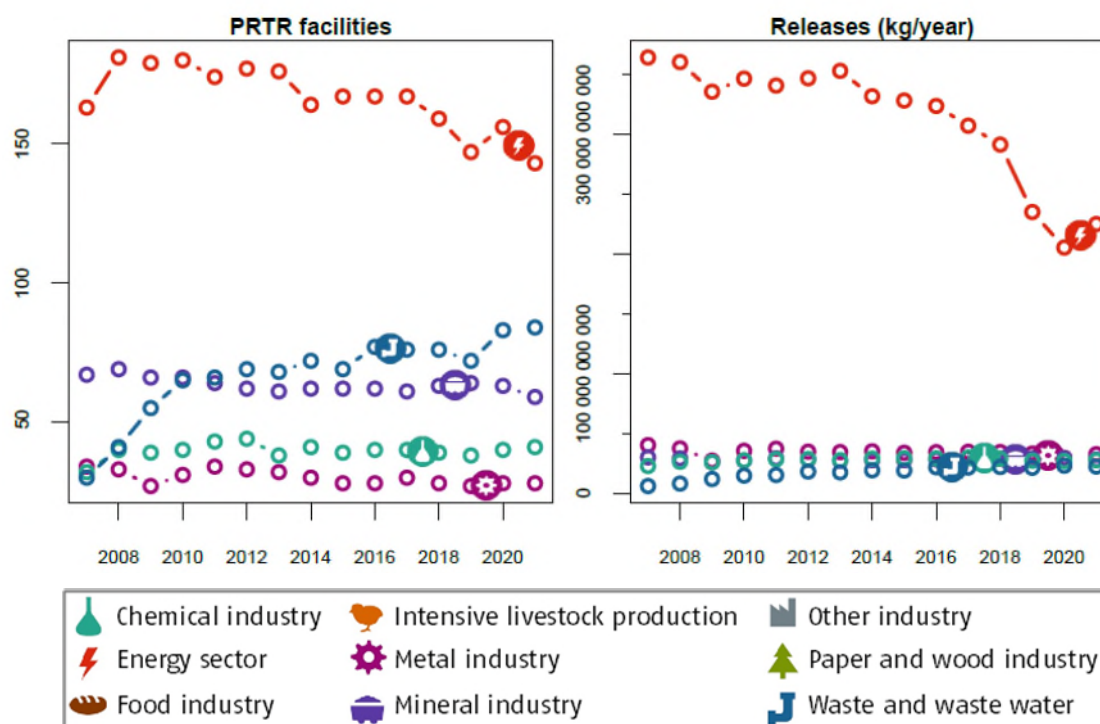
The threshold is **100 000 000 kg “Carbon dioxide (CO₂)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 14: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Carbon dioxide (CO₂)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	143	36.5	225 323 000 000	65.2
Metal industry	28	7.14	32 837 000 000	9.49
Mineral industry	59	15.1	28 358 000 000	8.20
Chemical industry	41	10.5	27 742 000 000	8.02
Waste and waste water management	84	21.4	22 457 000 000	6.49

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Paper- and wood industry	25	6.38	7 420 000 000	2.15
Food industry	10	2.55	1 358 000 000	0.393
Other industry	2	0.510	340 000 000	0.098
Total	392	100	324 171 000 000	100

Figure 14: Annual number of facilities (left) and their releases (right) of the pollutant “Carbon dioxide (CO₂)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.11 Carbon monoxide (CO)

2.11.1 Releases to Air

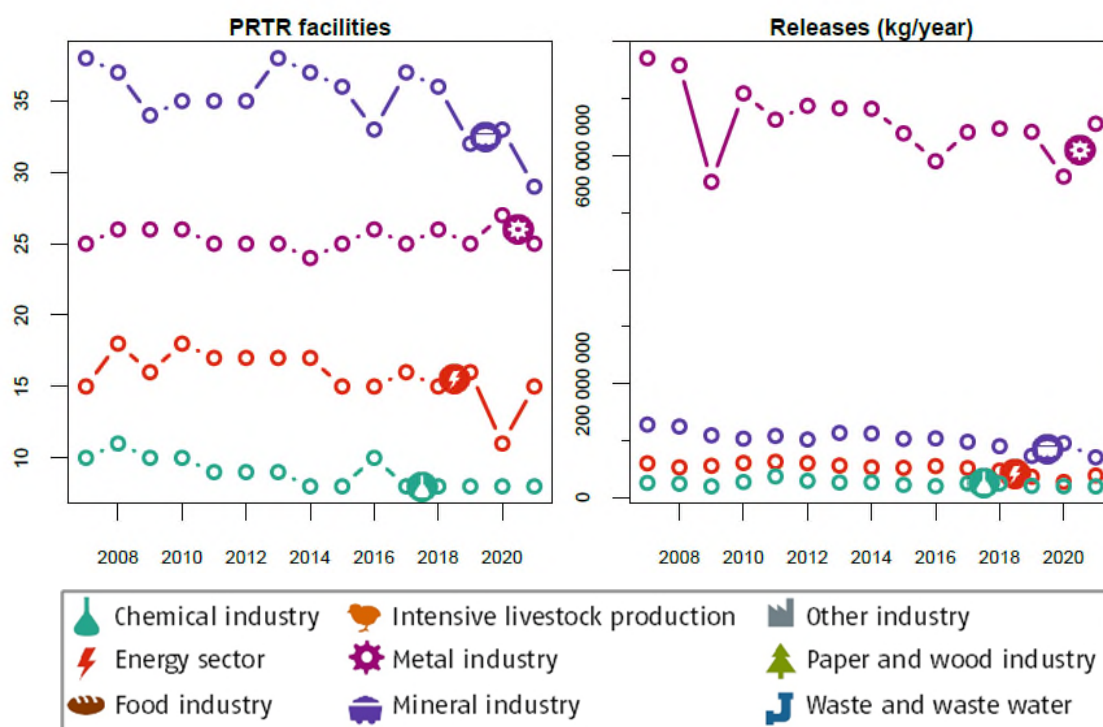
The threshold is **500 000 kg “Carbon monoxide (CO)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 15: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Carbon monoxide (CO)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	25	32.5	656 177 000	83.6
Mineral industry	29	37.7	70 608 000	8.99
Energy sector	15	19.5	38 761 000	4.94

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	8	10.4	19 691 000	2.51
Total	77	100	785 237 000	100

Figure 15: Annual number of facilities (left) and their releases (right) of the pollutant “Carbon monoxide (CO₂)” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.12 Chlorides (as total Cl)

2.12.1 Releases to Water

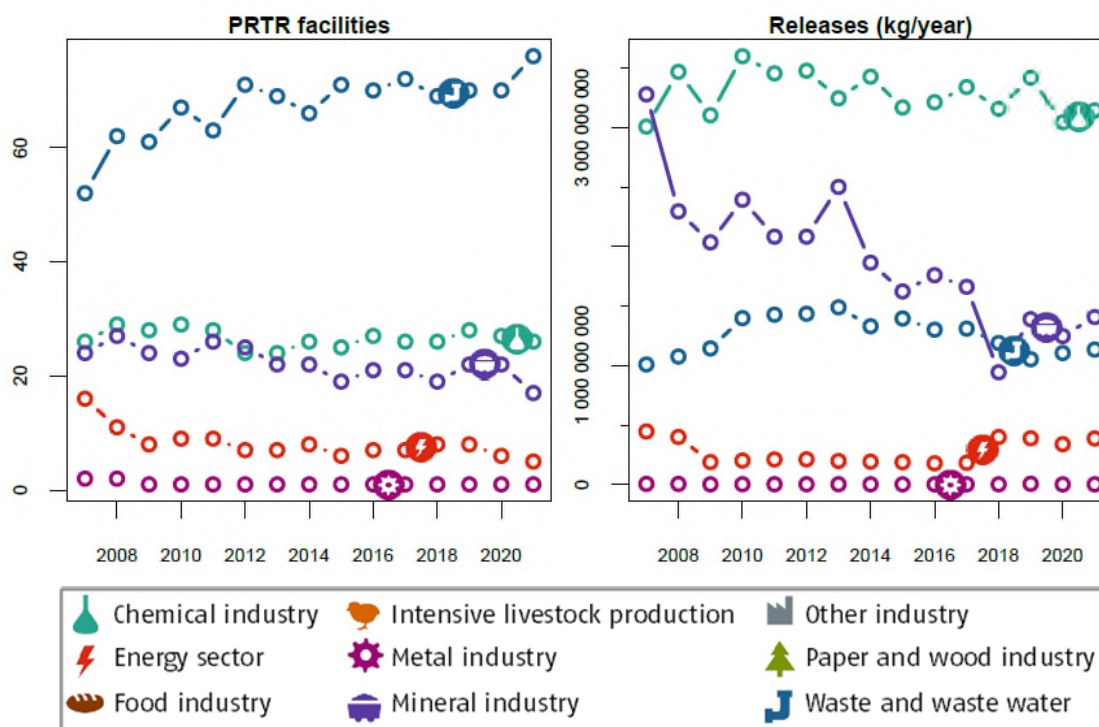
The threshold is **2 000 000 kg “Chlorides (as total Cl)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 16: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chlorides (as total Cl)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	26	20.8	3 145 470 000	51.7
Mineral industry	17	13.6	1 408 870 000	23.2
Waste and waste water management	76	60.8	1 135 650 000	18.7
Energy sector	5	4.0	388 610 000	6.39
Metal industry	1	0.8	3 210 000	0.0528

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Total	125	100	6 081 810 000	100

Figure 16: Annual number of facilities (left) and their releases (right) of the pollutant “Chlorides (as total Cl)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

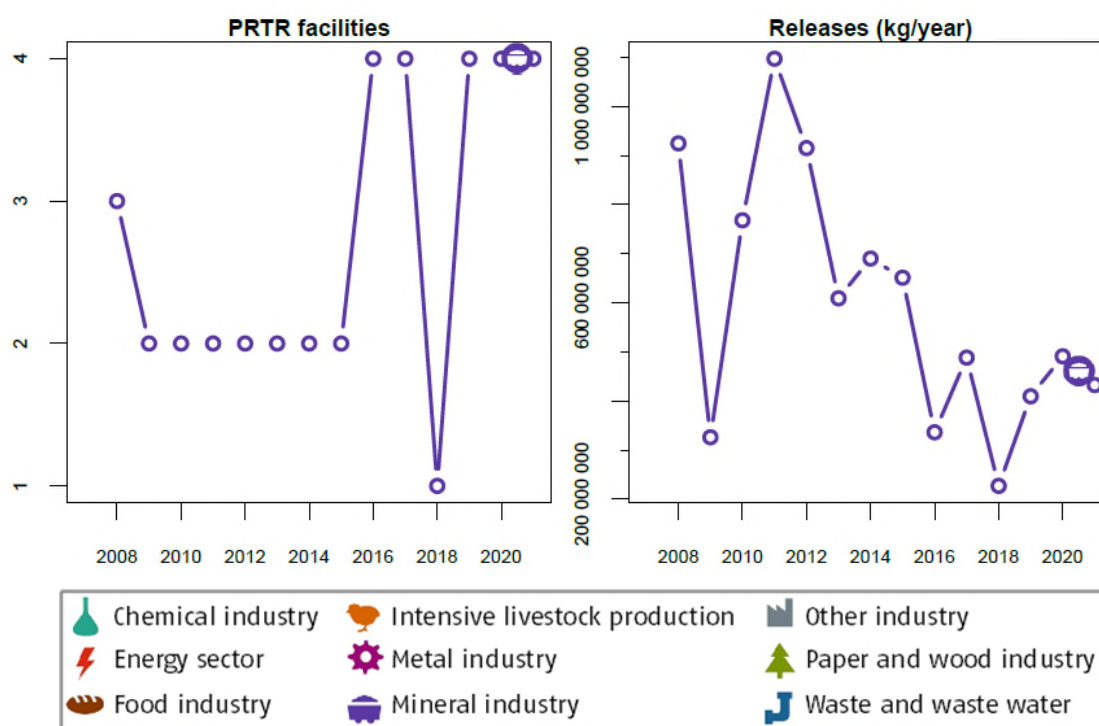
2.12.2 Releases to Land

The threshold is **2 000 000 kg “Chlorides (as total Cl)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 17: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chlorides (as total Cl)” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	4	100	432 500 000	100
Total	4	100	432 500 000	100

Figure 17: Annual number of facilities (left) and their releases (right) of the pollutant “Chlorides (as total Cl)” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.13 Chlorine and inorganic compounds (as HCl)

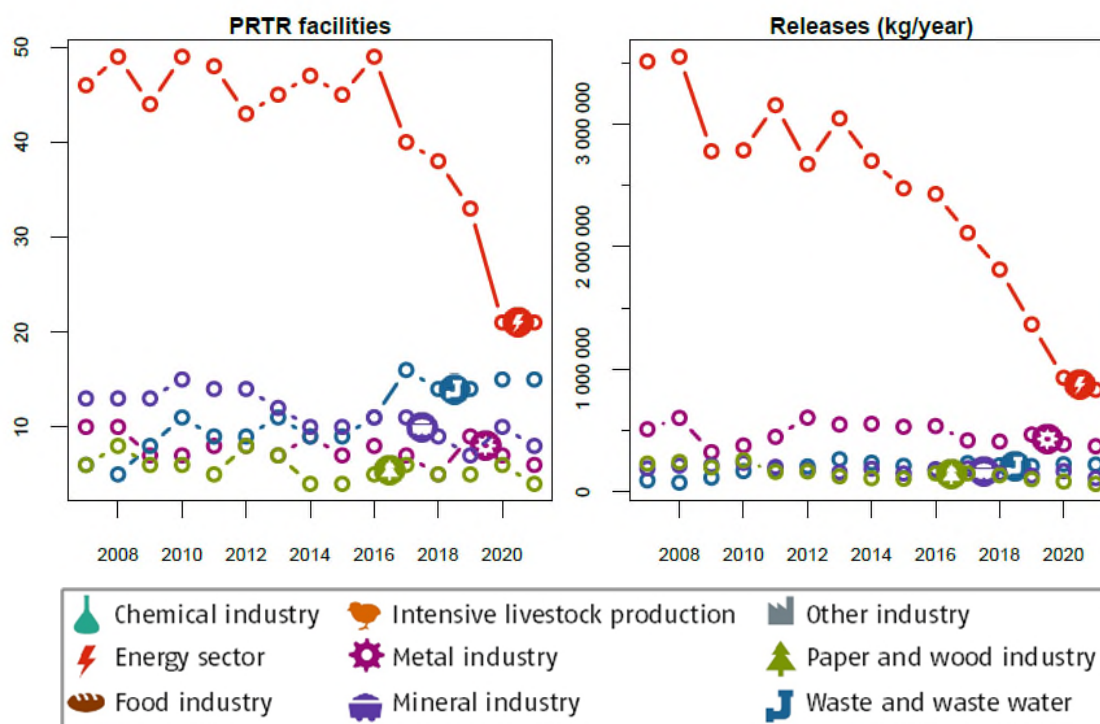
2.13.1 Releases to Air

The threshold is **10 000 kg “Chlorine and inorganic compounds (as HCl)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 18: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chlorine and inorganic compounds (as HCl)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	21	38.9	833 000	51.7
Metal industry	6	11.1	373 500	23.2
Waste and waste water management	15	27.8	224 700	13.9
Mineral industry	8	14.8	113 200	7.03
Paper- and wood industry	4	7.41	66 700	4.14
Total	54	100	1 611 100	100

Figure 18: Annual number of facilities (left) and their releases (right) of the pollutant “Chlorine and inorganic compounds (as HCl)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.14 Chloro-alkanes, C10-C13

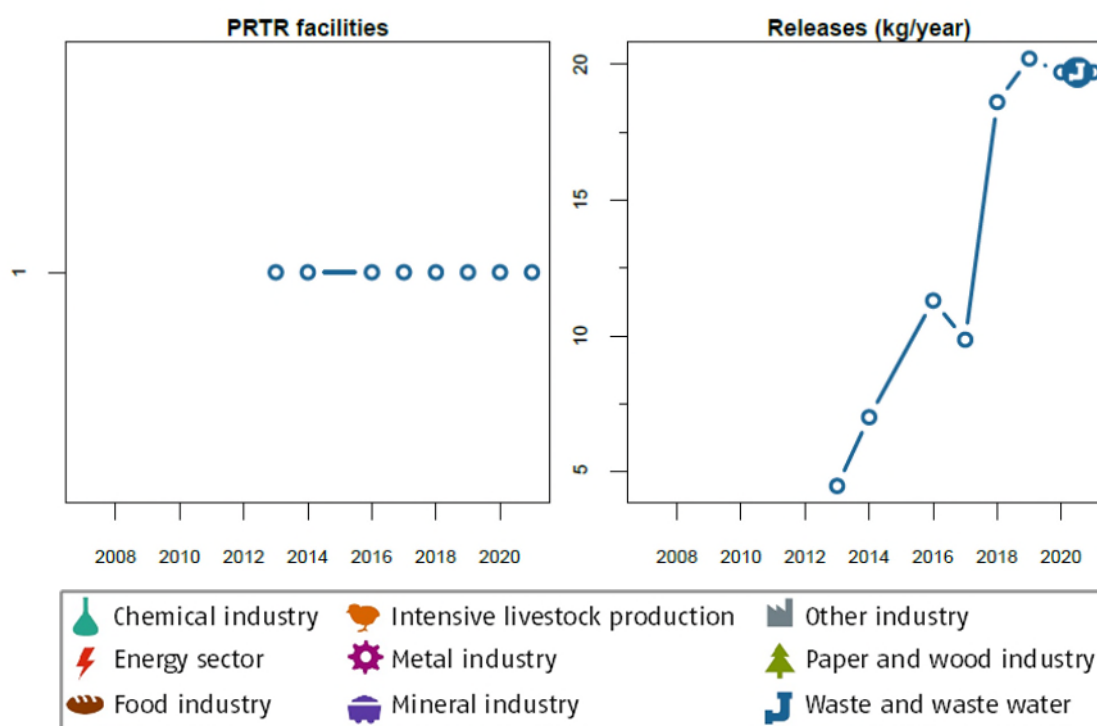
2.14.1 Releases to Water

The threshold is **1 kg “Chloro-alkanes, C10-C13” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 19: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chloro-alkanes, C10-C13” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	19.7	100
Total	1	100	19.7	100

Figure 19: Annual number of facilities (left) and their releases (right) of the pollutant “Chloro-alkanes, C10-C13” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.14.2 Releases to Land

The threshold is **1 kg “Chloro-alkanes, C10-C13” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Chloro-alkanes, C10-C13” to **Land** in **2021**.

2.15 Chlorofluorocarbons (CFCs)

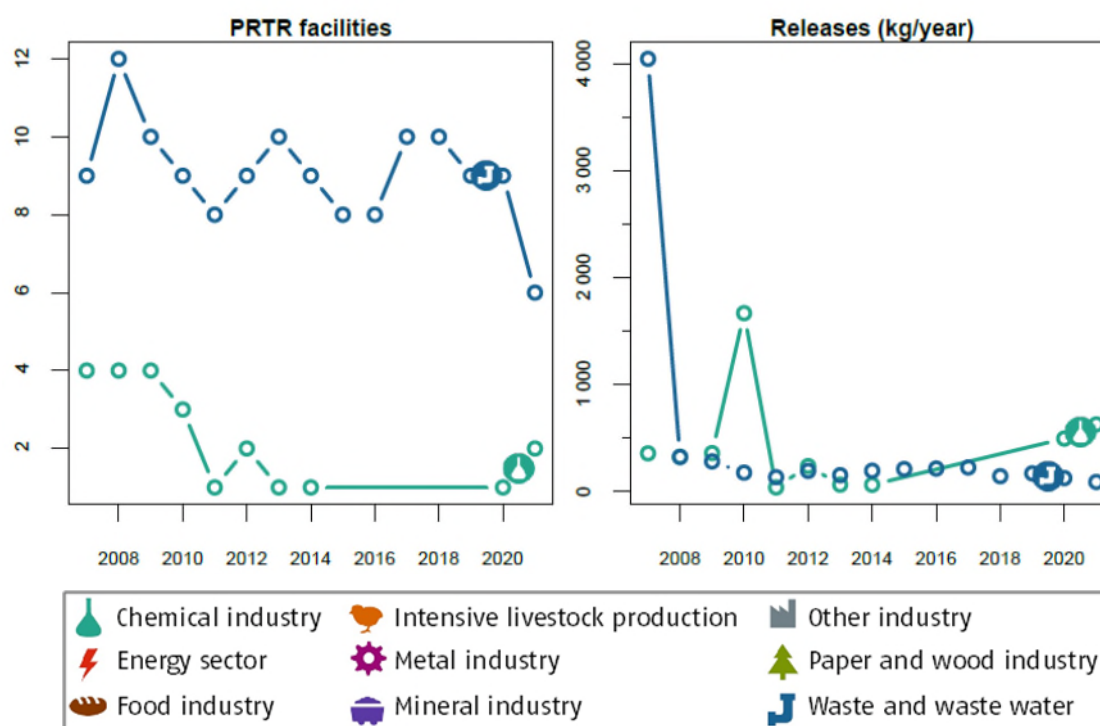
2.15.1 Releases to Air

The threshold is **1 kg “Chlorofluorocarbons (CFCs)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 20: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chlorofluorocarbons (CFCs)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	25	625	87.9
Waste and waste water management	6	75	86,2	12.1
Total	8	100	711	100

Figure 20: Annual number of facilities (left) and their releases (right) of the pollutant “Chlorofluorocarbons (CFCs)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.16 Chromium and compounds (as Cr)

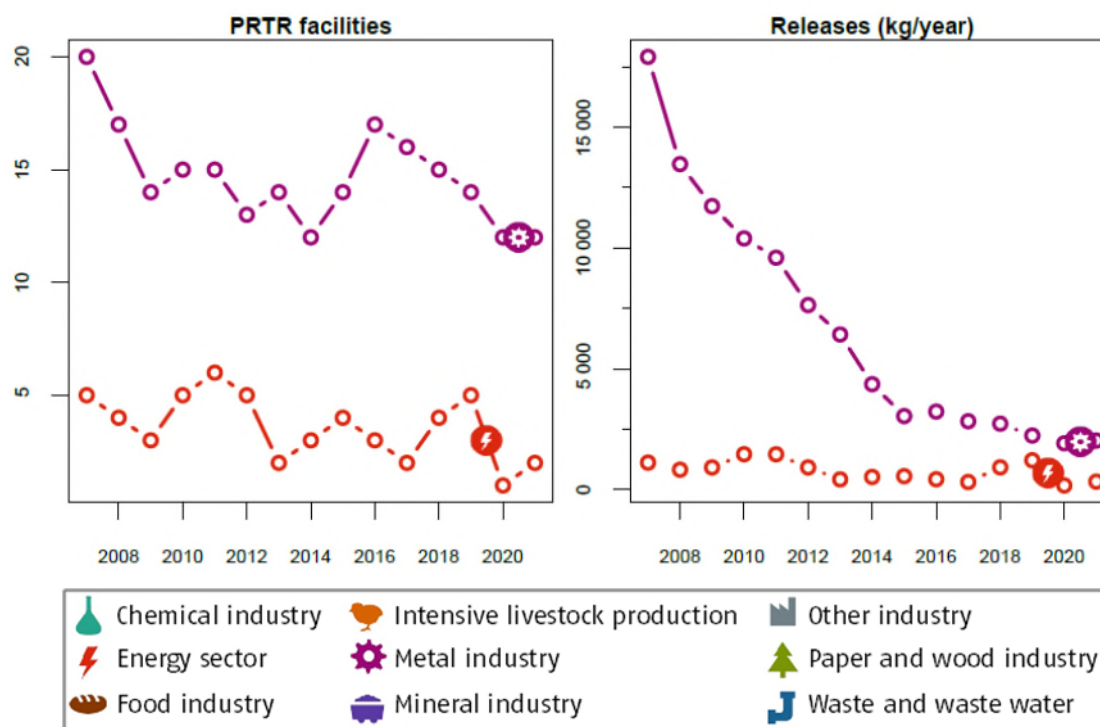
2.16.1 Releases to Air

The threshold is **100 kg “Chromium and compounds (as Cr)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 21: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chromium and compounds (as Cr)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	12	85.7	2 031	86.1
Energy sector	2	14.3	329	13.9
Total	14	100	2 360	100

Figure 21: Annual number of facilities (left) and their releases (right) of the pollutant “Chromium and compounds (as Cr)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

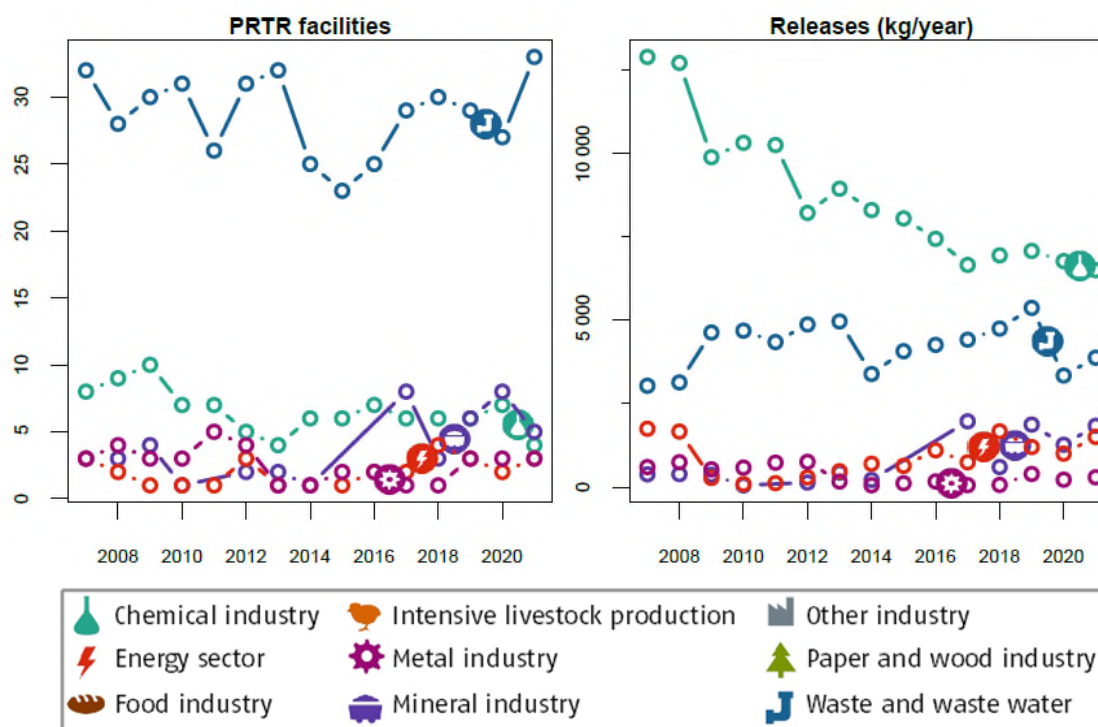
2.16.2 Releases to Water

The threshold is **50 kg “Chromium and compounds (as Cr)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 22: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Chromium and compounds (as Cr)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	4	8.16	6 500	46.1
Waste and waste water management	33	67.3	3 880	27.5
Mineral industry	5	10.2	1 841	13.0
Energy sector	3	6.12	1 510	10.7
Metal industry	3	6.12	299	2.12
Other industry	1	2.04	81,8	0.58
Total	49	100	14 112	100

Figure 22: Annual number of facilities (left) and their releases (right) of the pollutant “Chromium and compounds (as Cr)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.16.3 Releases to Land

The threshold is **50 kg “Chromium and compounds (as Cr)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Chromium and compounds (as Cr)” to **Land** in **2021**.

2.17 Copper and compounds (as Cu)

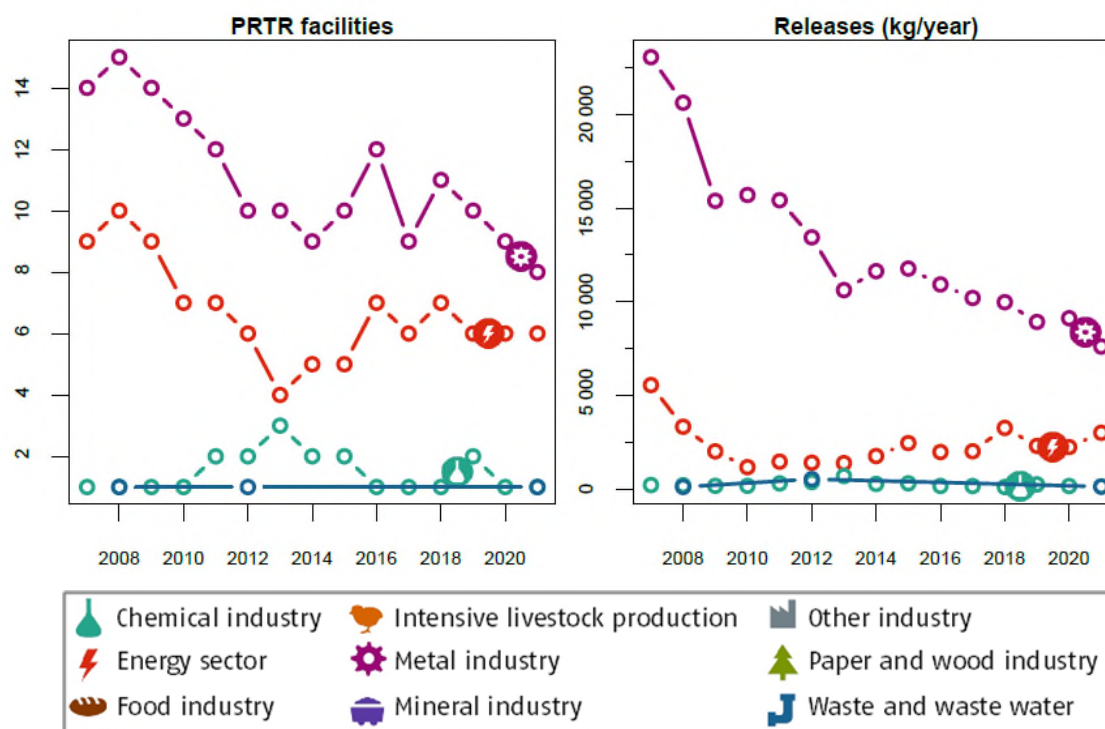
2.17.1 Releases to Air

The threshold is **100 kg “Copper and compounds (as Cu)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 23: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Copper and compounds (as Cu)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	8	50.0	7 608	70.0
Energy sector	6	37.5	3 001	27.6
Chemical industry	1	6.25	136	1.25
Waste and waste water management	1	6.25	126	1.16
Total	16	100	11 738	100

Figure 23: Annual number of facilities (left) and their releases (right) of the pollutant “Copper and compounds (as Cu)” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

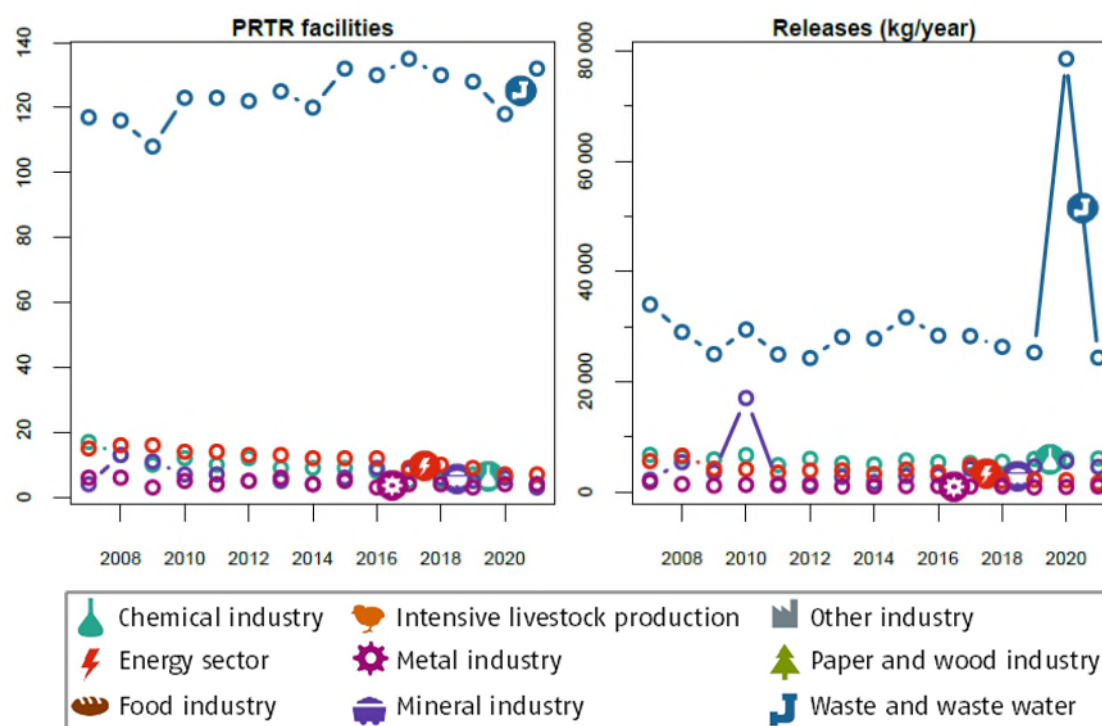
2.17.2 Releases to Water

The threshold is **50 kg “Copper and compounds (as Cu)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 24: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Copper and compounds (as Cu)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	132	85.7	24 334	64.1
Chemical industry	4	2.60	6 044	15.9
Mineral industry	3	1.95	4 540	12.0
Energy sector	7	4.55	1 648	4.34
Metal industry	4	2.60	998	2.63
Paper- and wood industry	4	2.60	385	1.01
Total	154	100	37 948	100

Figure 24: Annual number of facilities (left) and their releases (right) of the pollutant “Copper and compounds (as Cu)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

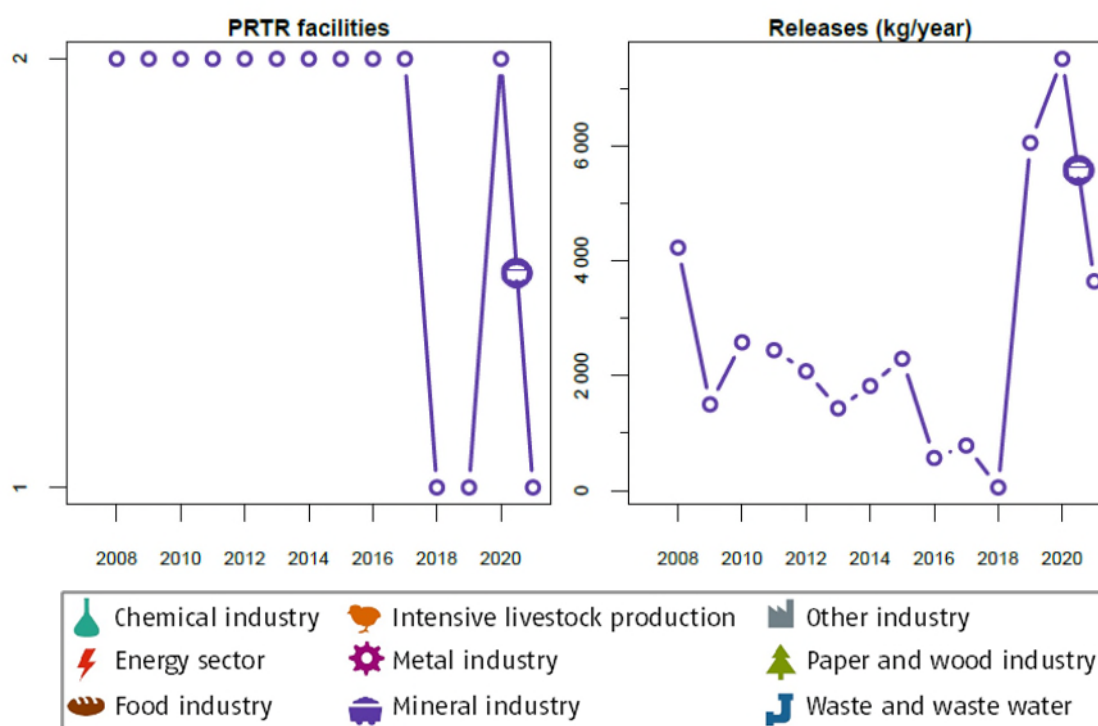
2.17.3 Releases to Land

The threshold is **50 kg “Copper and compounds (as Cu)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 25: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Copper and compounds (as Cu)” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	1	100	3 640	100
Total	1	100	3 640	100

Figure 25: Annual number of facilities (left) and their releases (right) of the pollutant “Copper and compounds (as Cu)” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.18 Cyanides (as total CN)

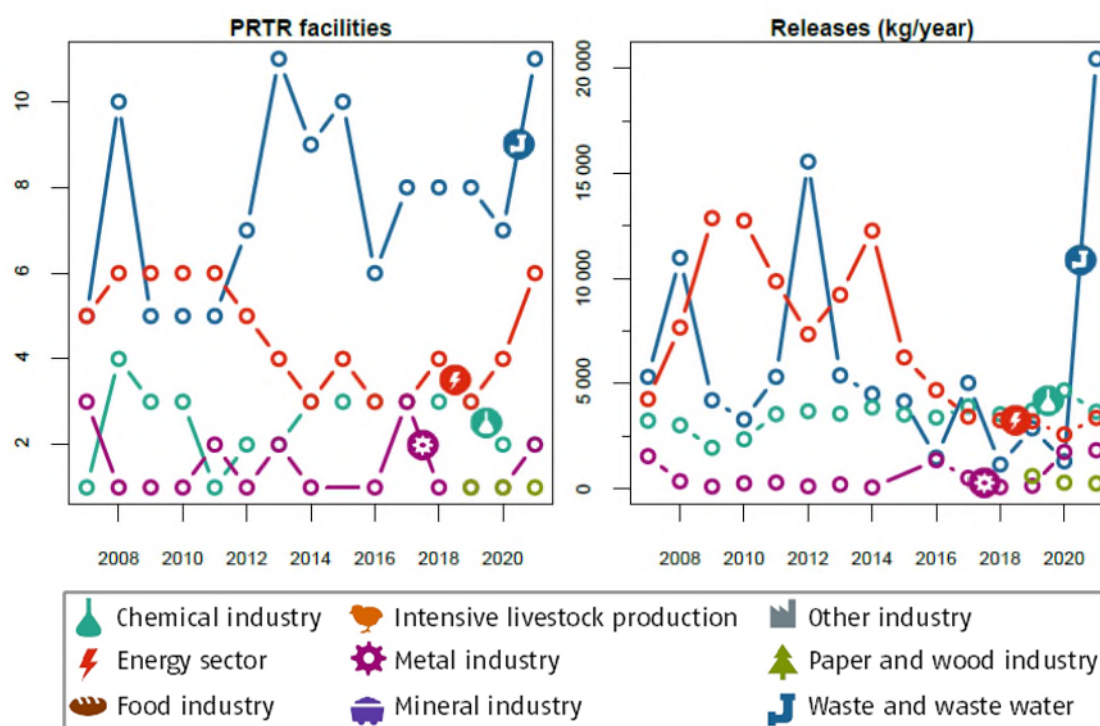
2.18.1 Releases to Water

The threshold is **50 kg “Cyanides (as total CN)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 26: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Cyanides (as total CN)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	11	50	20 446	69.1
Chemical industry	2	9.09	3 665	12.4
Energy sector	6	27.3	3 375	11.4
Metal industry	2	9.09	1 831	6.19
Paper- and wood industry	1	4.55	255	0.862
Total	22	100	29 572	100

Figure 26: Annual number of facilities (left) and their releases (right) of the pollutant “Cyanides (as total CN)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.18.2 Releases to Land

The threshold is **50 kg “Cyanides (as total CN)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Cyanides (as total CN)” to **Land** in **2021**.

2.19 Di-(2-ethyl hexyl) phthalate (DEHP)

2.19.1 Releases to Air

The threshold is **10 kg “Di-(2-ethyl hexyl) phthalate (DEHP)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Di-(2-ethyl hexyl) phthalate (DEHP)” to **Air** in **2021**.

2.19.2 Releases to Water

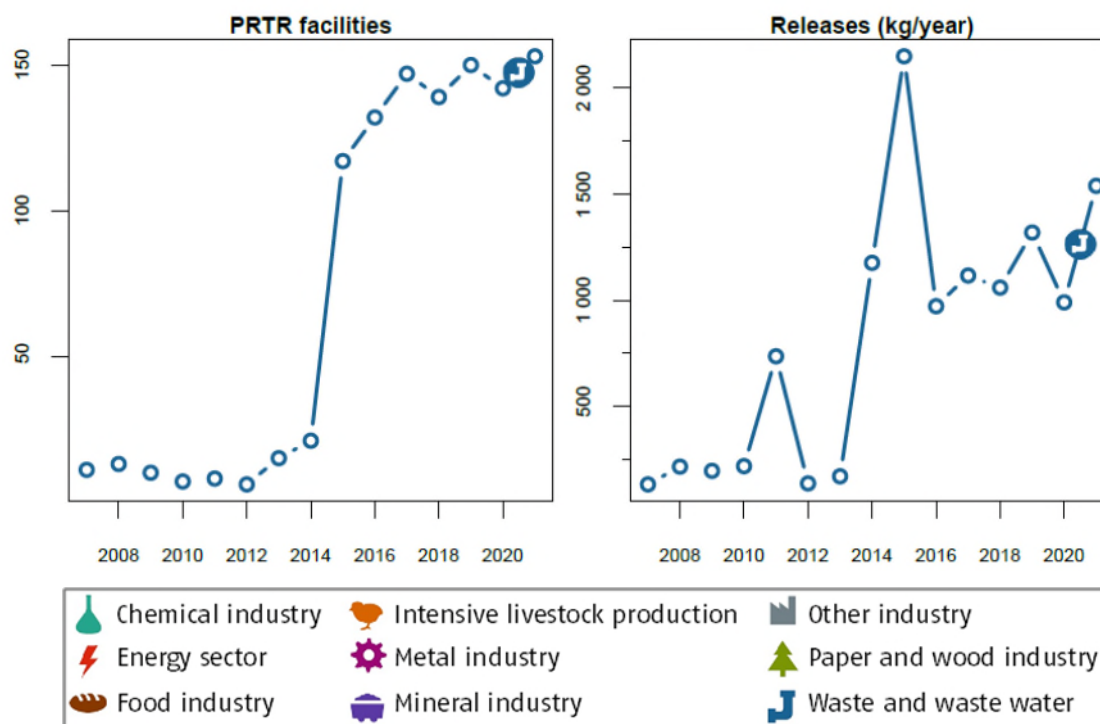
The threshold is **1 kg “Di-(2-ethyl hexyl) phthalate (DEHP)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 27: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Di-(2-ethyl hexyl) phthalate (DEHP)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	153	100	1 539	100

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Total	153	100	1 539	100

Figure 27: Annual number of facilities (left) and their releases (right) of the pollutant “Di-(2-ethyl hexyl) phthalate (DEHP)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.19.3 Releases to Land

The threshold is **1 kg “Di-(2-ethyl hexyl) phthalate (DEHP)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Di-(2-ethyl hexyl) phthalate (DEHP)” to **Land** in **2021**.

2.20 Dichloromethane (DCM)

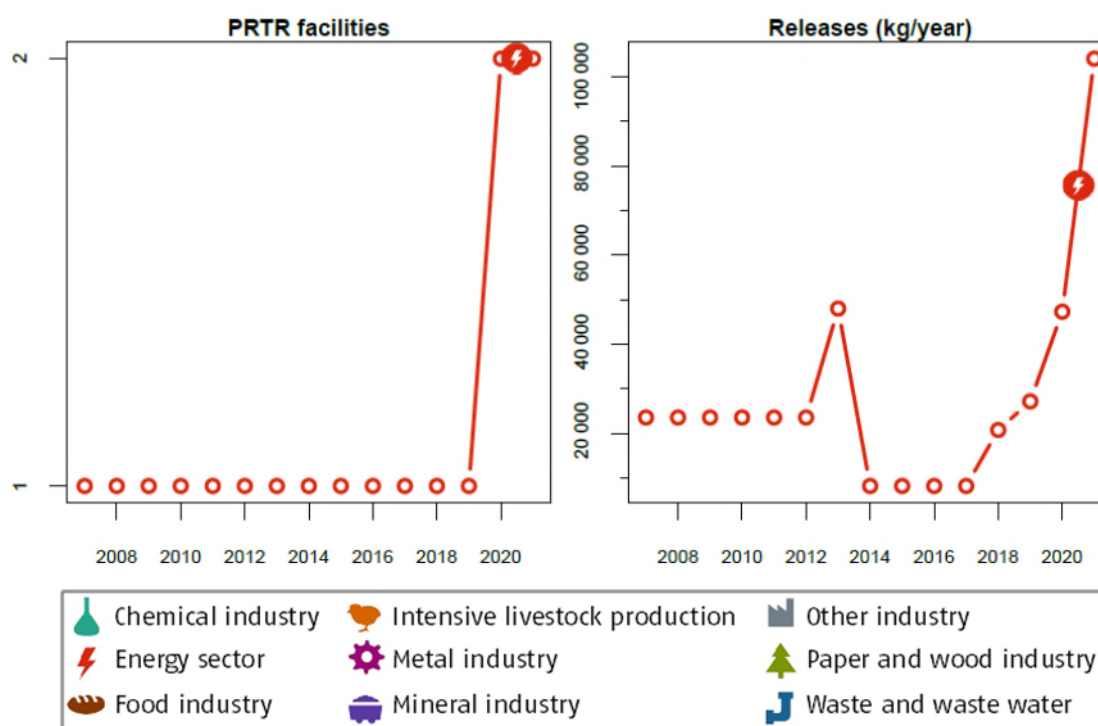
2.20.1 Releases to Air

The threshold is **1 000 kg “Dichloromethane (DCM)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 28: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Dichloromethane (DCM)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	2	100	104 000	100
Total	2	100	104 000	100

Figure 28: Annual number of facilities (left) and their releases (right) of the pollutant “Dichloromethane (DCM)” to Air, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

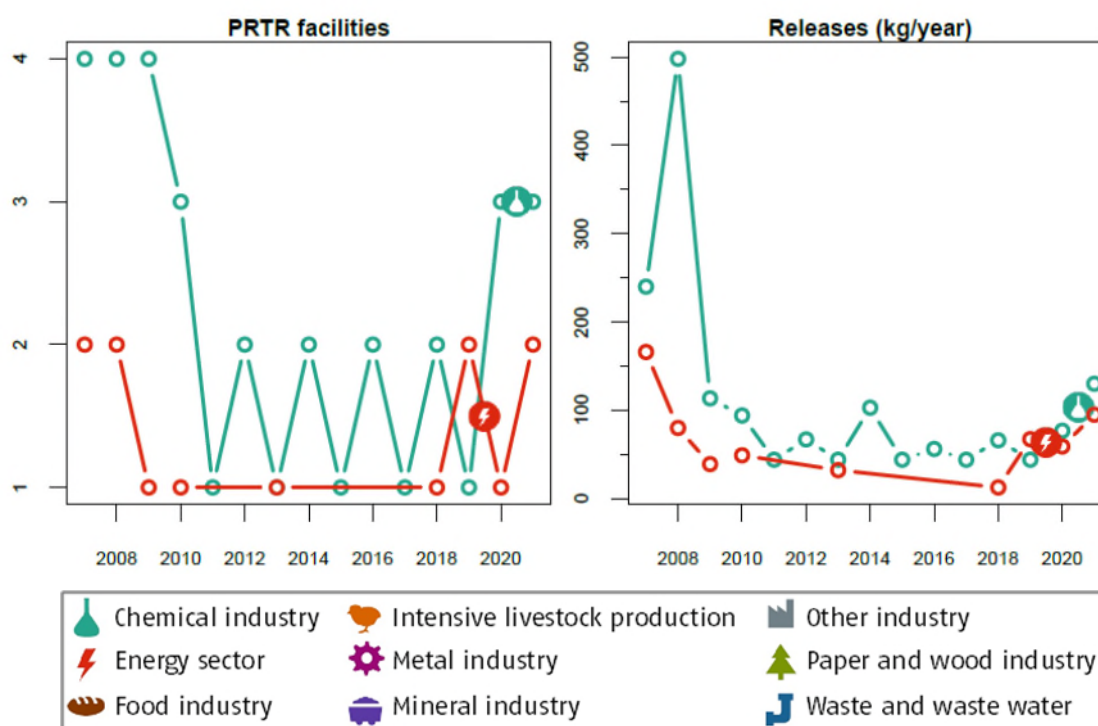
2.20.2 Releases to Water

The threshold is **10 kg “Dichloromethane (DCM)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 29: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Dichloromethane (DCM)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	3	60	130	57.8
Energy sector	2	40	95	42.2
Total	5	100	225	100

Figure 29: Annual number of facilities (left) and their releases (right) of the pollutant “Dichloromethane (DCM)” to Water, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.20.3 Releases to Land

The threshold is **10 kg “Dichloromethane (DCM)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Dichloromethane (DCM)” to **Land** in **2021**.

2.21 Diuron

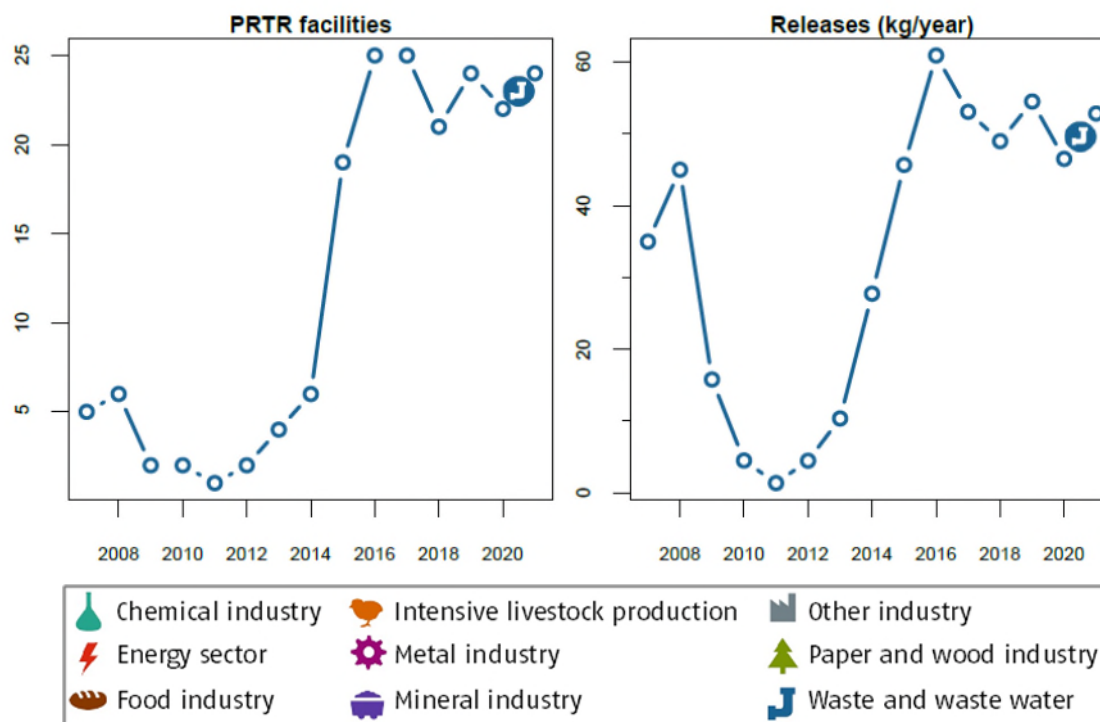
2.21.1 Releases to Water

The threshold is **1 kg “Diuron” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 30: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Diuron” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	24	100	52.8	100
Total	24	100	52.8	100

Figure 30: Annual number of facilities (left) and their releases (right) of the pollutant “Diuron” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.21.2 Releases to Land

The threshold is **1 kg “Diuron” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Diuron” to **Land** in **2021**.

2.22 Fluoranthene

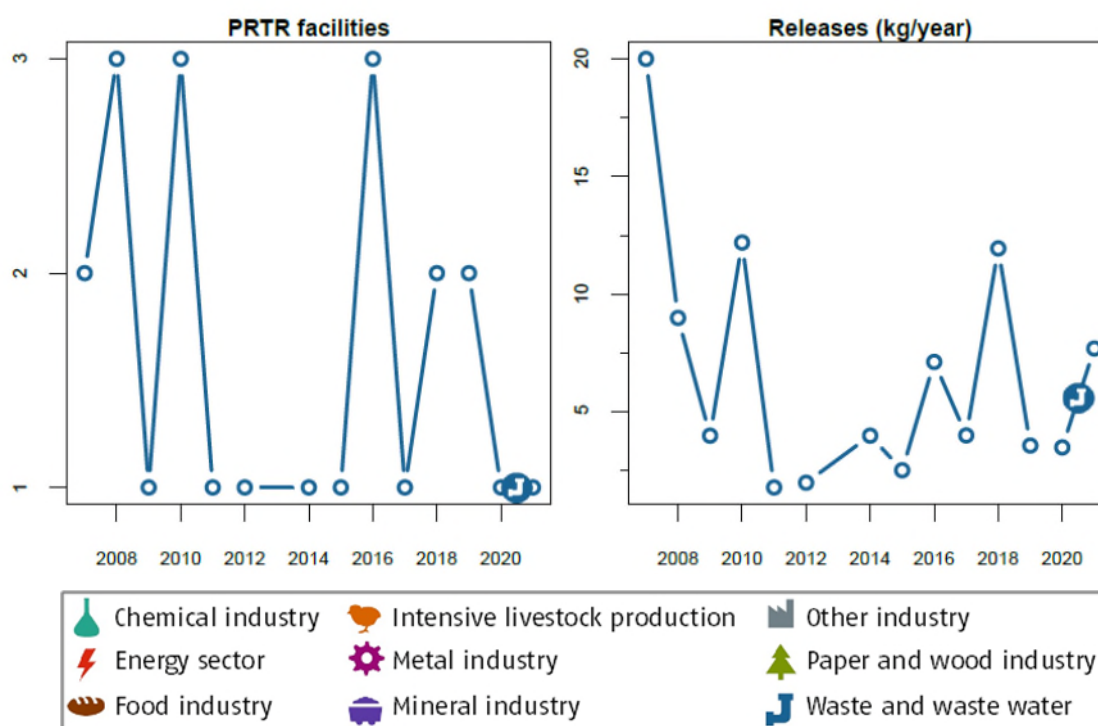
2.22.1 Releases to Water

The threshold is **1 kg “Fluoranthene” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 31: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Fluoranthene” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	7,7	100
Total	1	100	7.7	100

Figure 31: Annual number of facilities (left) and their releases (right) of the pollutant “Fluoranthene” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.23 Fluorides (as total F)

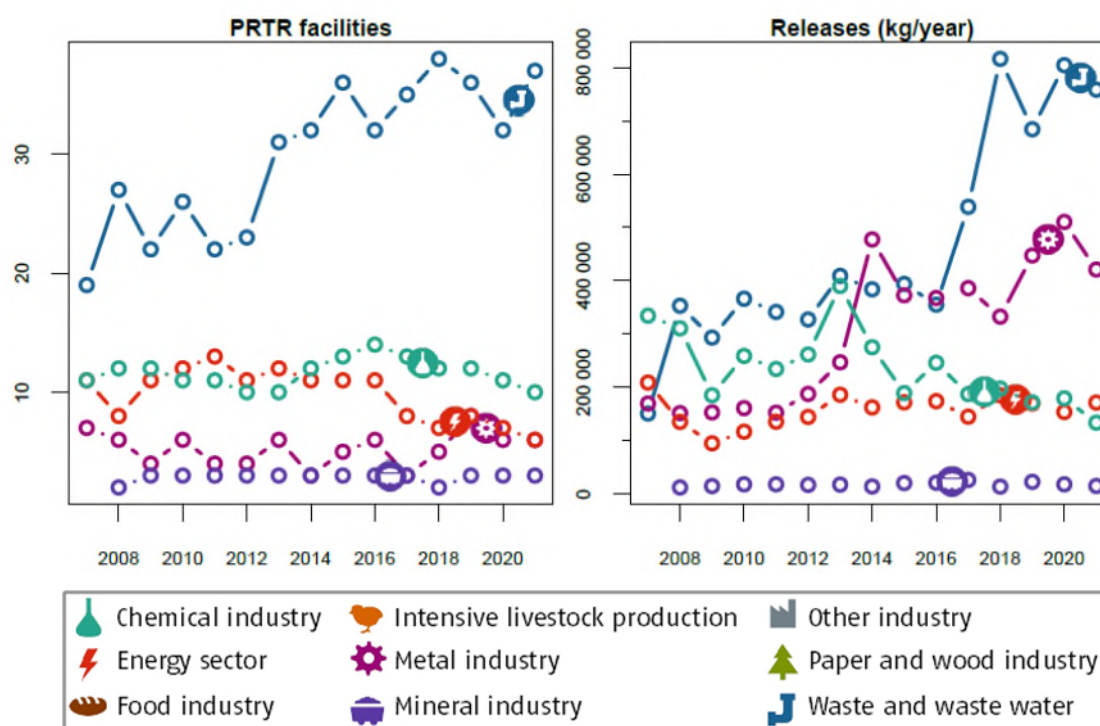
2.23.1 Releases to Water

The threshold is **2 000 kg “Fluorides (as total F)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 32: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Fluorides (as total F)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	37	59.7	758 470	50.6
Metal industry	6	9.68	421 100	28.1
Energy sector	6	9.68	171 570	11.4
Chemical industry	10	16.1	133 820	8.92
Mineral industry	3	4.84	15 060	1.09
Total	62	100	1 500 020	100

Figure 32: Annual number of facilities (left) and their releases (right) of the pollutant “Fluorides (as total F)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.23.2 Releases to Land

The threshold is **2 000 kg “Fluorides (as total F)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “**Fluorides (as total F)**” to **Land** in **2021**.

2.24 Fluorine and inorganic compounds (as HF)

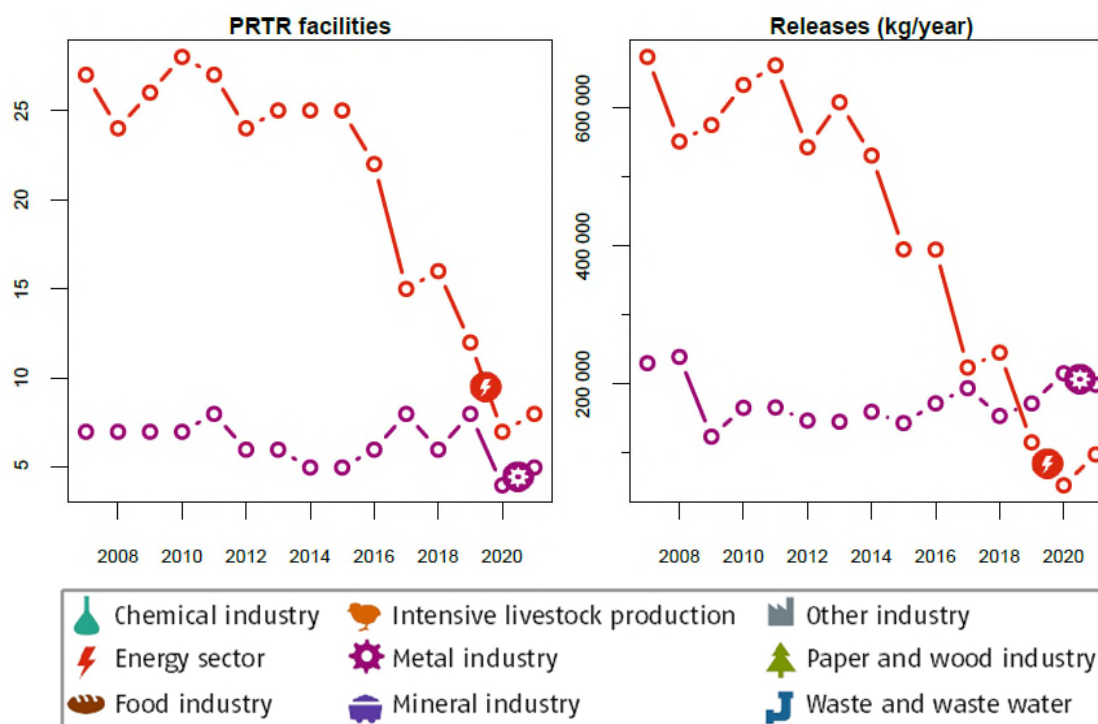
2.24.1 Releases to Air

The threshold is **5 000 kg “Fluorine and inorganic compounds (as HF)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 33: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Fluorine and inorganic compounds (as HF)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	5	38.5	198 510	67.1
Energy sector	8	61.5	97 280	32.9
Total	13	100	295 790	100

Figure 33: Annual number of facilities (left) and their releases (right) of the pollutant “Fluorine and inorganic compounds (as HF)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.25 Halogenated organic compounds (as AOX)

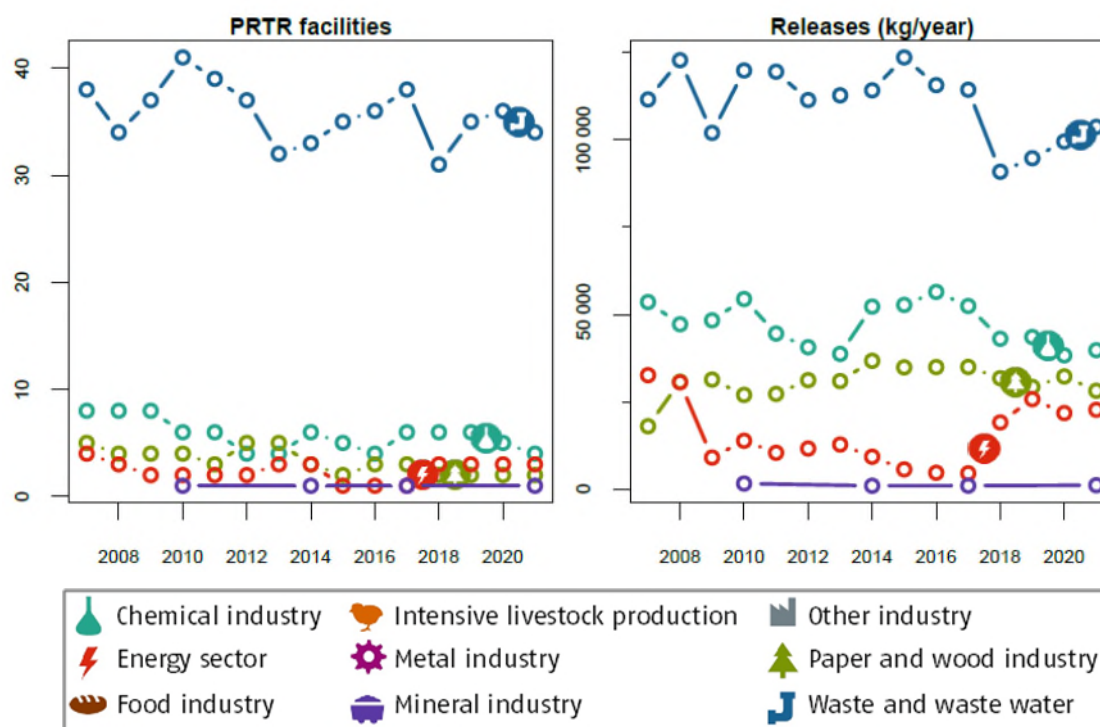
2.25.1 Releases to Water

The threshold is **1 000 kg “Halogenated organic compounds (as AOX)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 34: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Halogenated organic compounds (as AOX)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	34	77.3	103 650	53.0
Chemical industry	4	9.09	39 810	20.4
Paper- and wood industry	2	4.55	28 200	14.4
Energy sector	3	6.82	22 760	11.6
Mineral industry	1	2.27	1 190	0.608
Total	44	100	195 610	100

Figure 34: Annual number of facilities (left) and their releases (right) of the pollutant “Halogenated organic compounds (as AOX)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.25.2 Releases to Land

The threshold is **1 000 kg “Halogenated organic compounds (as AOX)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “**Halogenated organic compounds (as AOX)” to Land** in **2021**.

2.26 Hydrochlorofluorocarbons (HCFCs)

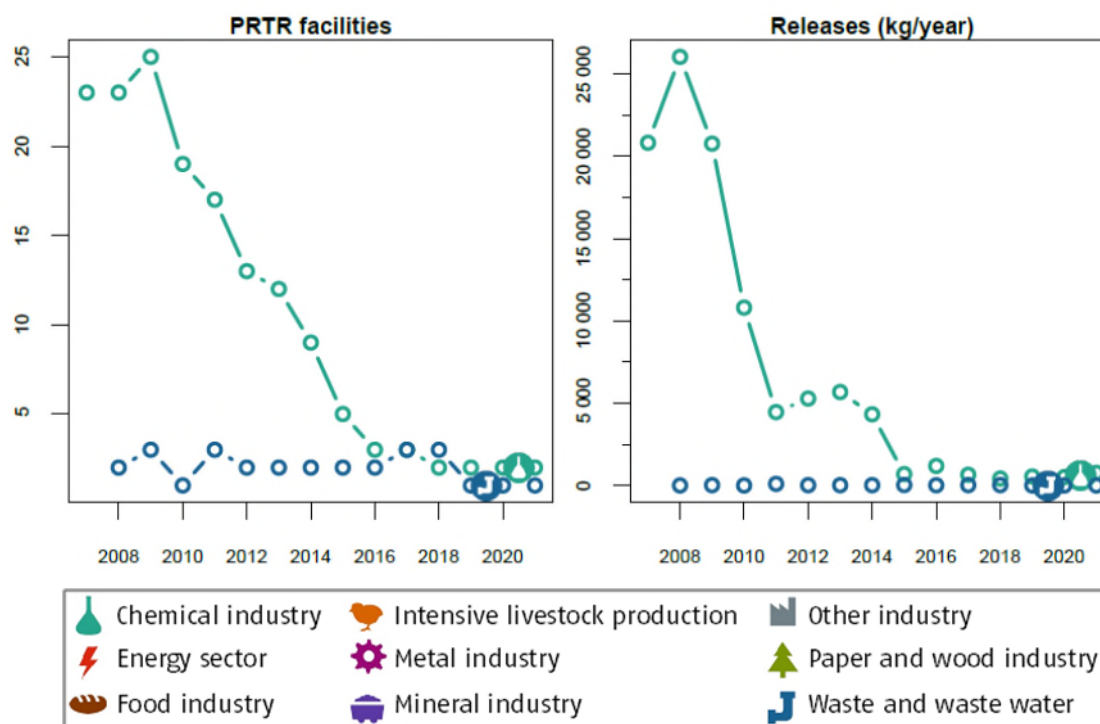
2.26.1 Releases to Air

The threshold is **1 kg “Hydrochlorofluorocarbons (HCFCs)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 35: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Hydrochlorofluorocarbons (HCFCs)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	66.7	770	99.8
Waste and waste water management	1	33.3	1.9	0.246
Total	3	100	772	100

Figure 35: Annual number of facilities (left) and their releases (right) of the pollutant “Hydrochlorofluorocarbons (HCFCs)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.27 Hydro-fluorocarbons (HFCs)

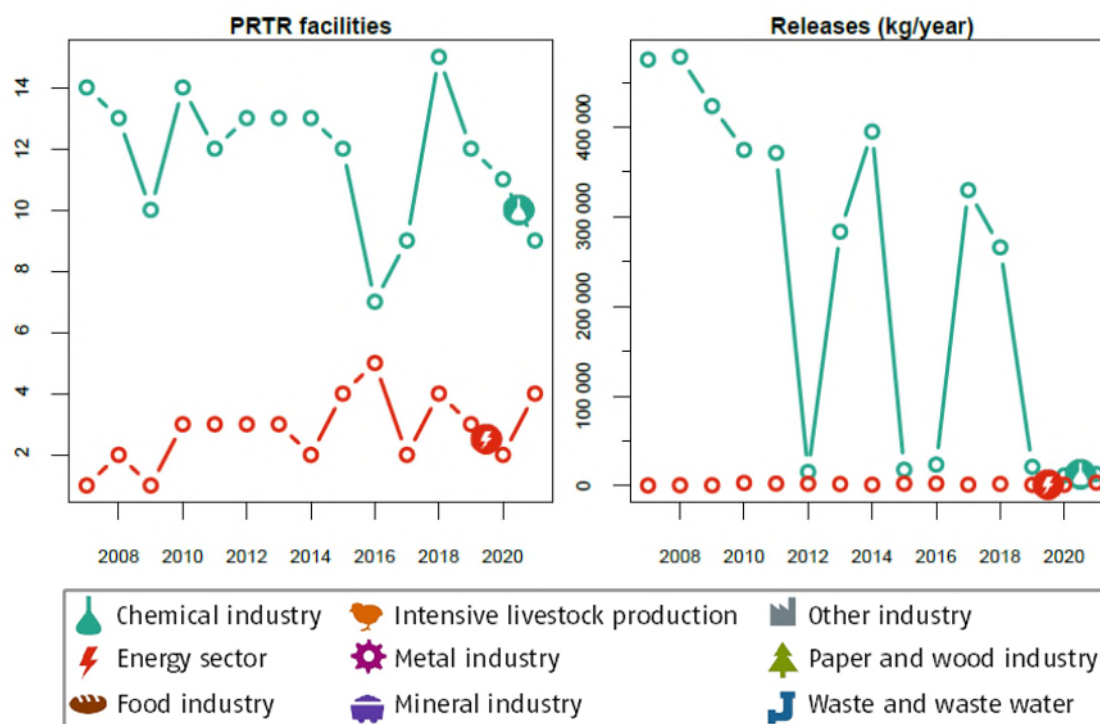
2.27.1 Umweltmedium Luft

The threshold is **100 kg “Hydro-fluorocarbons (HFCs)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 36: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Hydro-fluorocarbons (HFCs)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	9	69.2	13 137	78.8
Energy sector	4	30.8	3 537	21.2
Total	13	100	16 674	100

Figure 36: Annual number of facilities (left) and their releases (right) of the pollutant “Hydro-fluorocarbons (HFCs)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.28 Hydrogen cyanide (HCN)

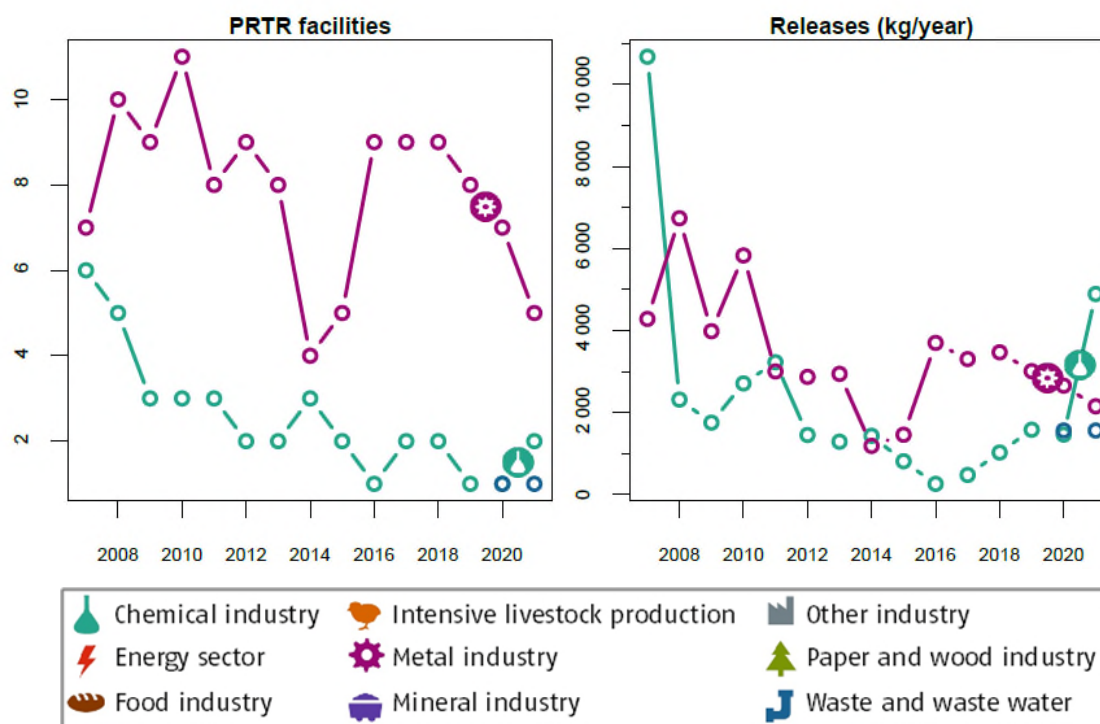
2.28.1 Releases to Air

The threshold is **200 kg “Hydrogen cyanide (HCN)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 37: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Hydrogen cyanide (HCN)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	25	4 890	56.8
Metal industry	5	50	2 152	25.0
Waste and waste water management	1	12.5	1 560	18.1
Total	8	100	8 602	100

Figure 37: Annual number of facilities (left) and their releases (right) of the pollutant “Hydrogen cyanide (HCN)” to Air, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.29 Isoproturon

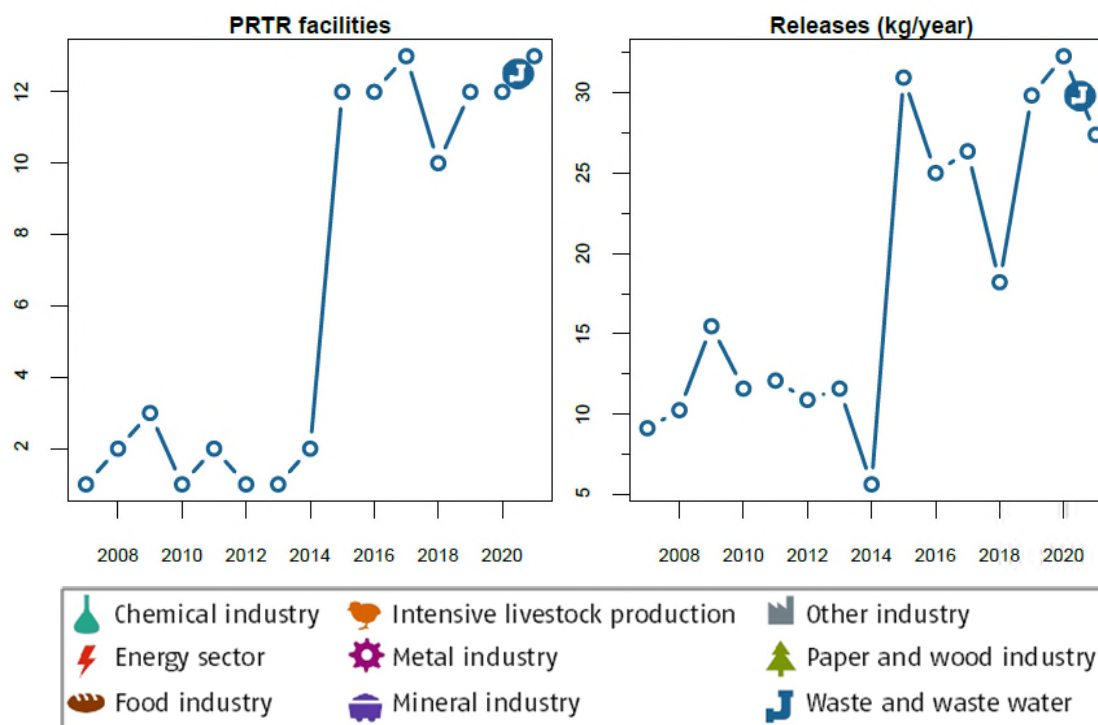
2.29.1 Releases to Water

The threshold is **1 kg “Isoproturon” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 38: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Isoproturon” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	13	100	27.4	100
Total	13	100	27.4	100

Figure 38: Annual number of facilities (left) and their releases (right) of the pollutant “Isoproturon” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.29.2 Releases to Land

The threshold is **1 kg “Isoproturon” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Isoproturon” to **Land** in **2021**.

2.30 Lead and compounds (as Pb)

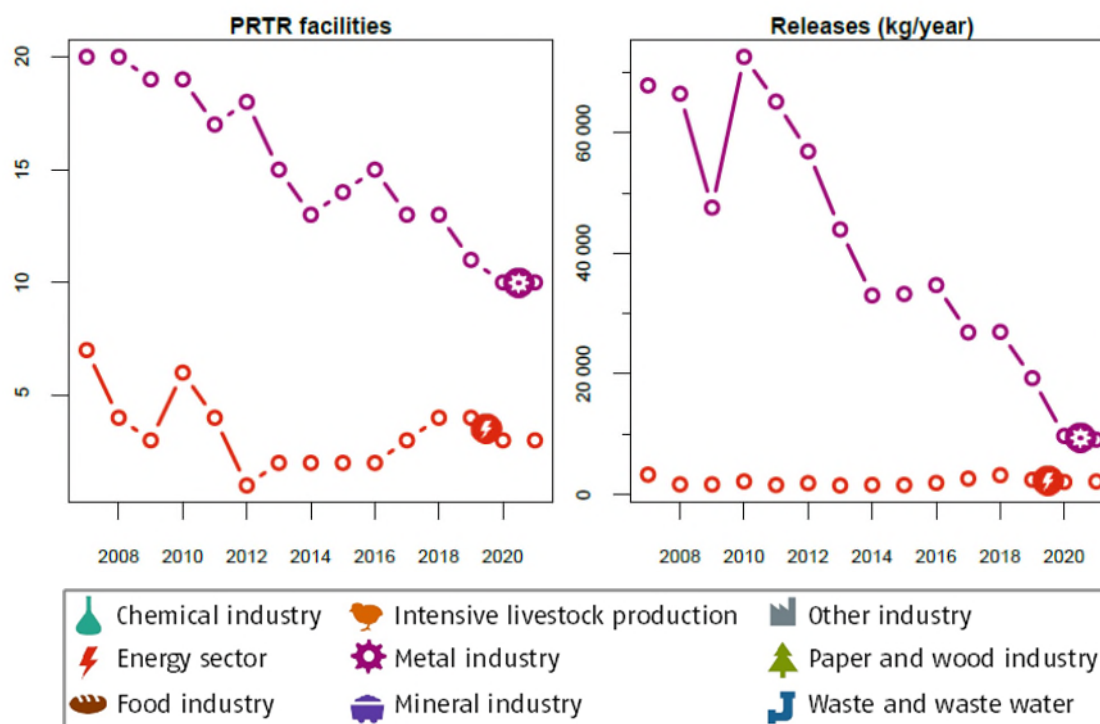
2.30.1 Releases to Air

The threshold is **200 kg “Lead and compounds (as Pb)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 39: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Lead and compounds (as Pb)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	10	76.9	9 073	80.9
Energy sector	3	21.3	2 137	19.1
Total	13	100	11 210	100

Figure 39: Annual number of facilities (left) and their releases (right) of the pollutant “Lead and compounds (as Pb)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

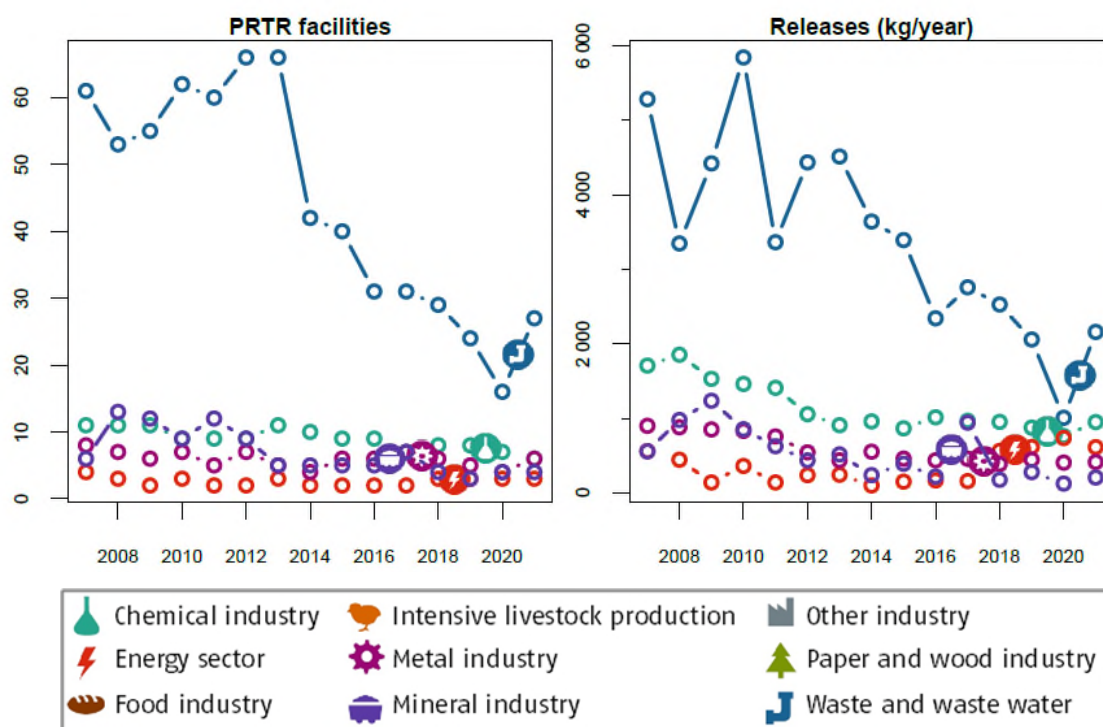
2.30.2 Releases to Water

The threshold is **20 kg “Lead and compounds (as Pb)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 40: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Lead and compounds (as Pb)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	27	56.2	2 160	49.1
Chemical industry	6	12.5	951	21.6
Energy sector	3	6.25	614	14.0
Metal industry	6	12.5	414	9.41
Mineral industry	4	8.33	207	4.70
Paper- and wood industry	2	4.17	53.4	1.21
Total	48	100	4 400	100

Figure 40: Annual number of facilities (left) and their releases (right) of the pollutant “Lead and compounds (as Pb)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

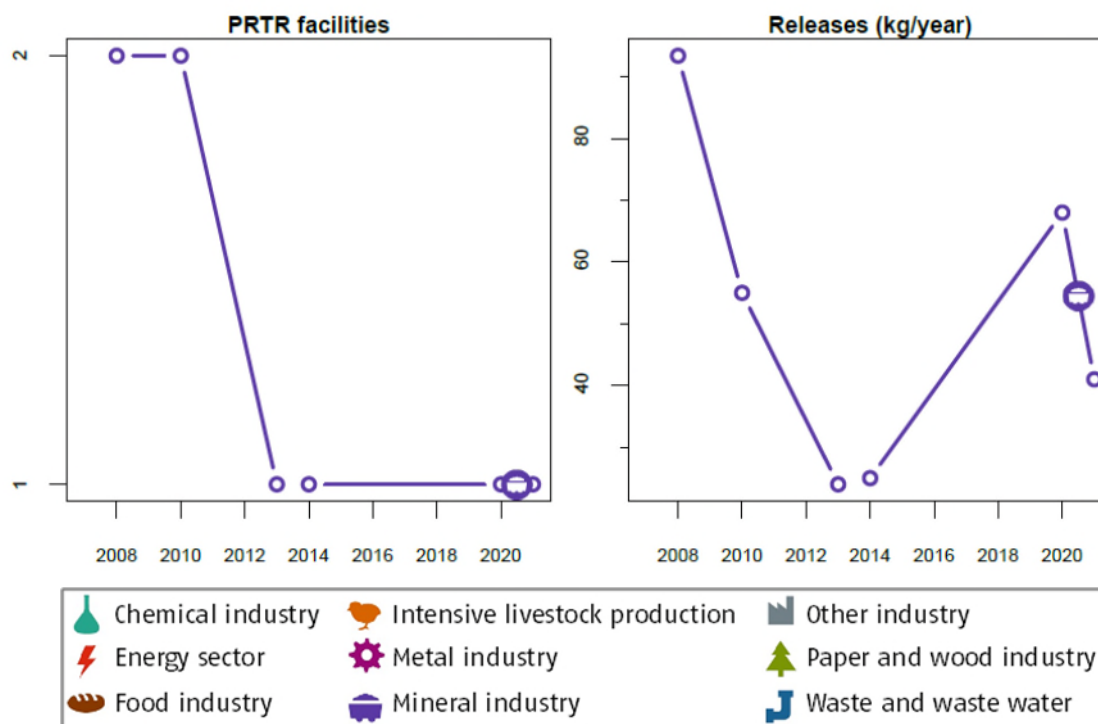
2.30.3 Releases to Land

The threshold is **20 kg “Lead and compounds (as Pb)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 41: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Lead and compounds (as Pb)” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	1	100	41	100
Total	1	100	41	100

Figure 41: Annual number of facilities (left) and their releases (right) of the pollutant “Lead and compounds (as Pb)” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.31 Mercury and compounds (as Hg)

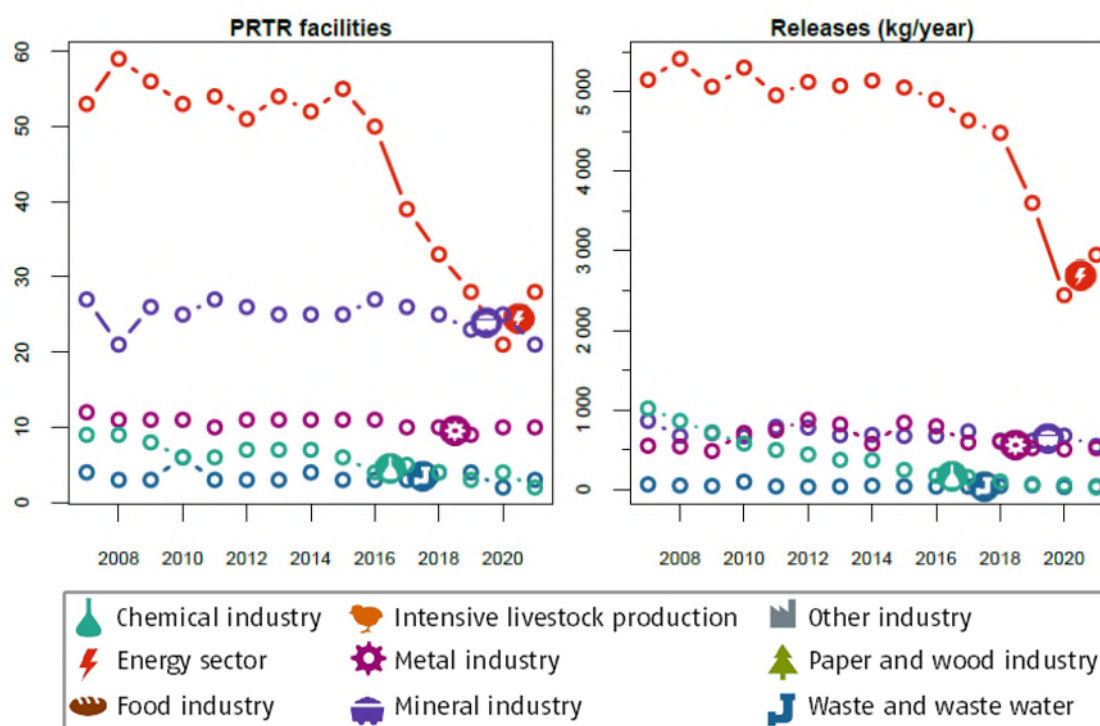
2.31.1 Releases to Air

The threshold is **10 kg “Mercury and compounds (as Hg)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 42: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Mercury and compounds (as Hg)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	28	43.8	2 948	72.2
Mineral industry	21	32.8	548	13.4
Metal industry	10	15.6	520	12.7
Waste and waste water management	3	4.69	41,0	1.004
Chemical industry	2	3.12	26,4	0.647
Total	64	100	4 083	100

Figure 42: Annual number of facilities (left) and their releases (right) of the pollutant “Mercury and compounds (as Hg)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

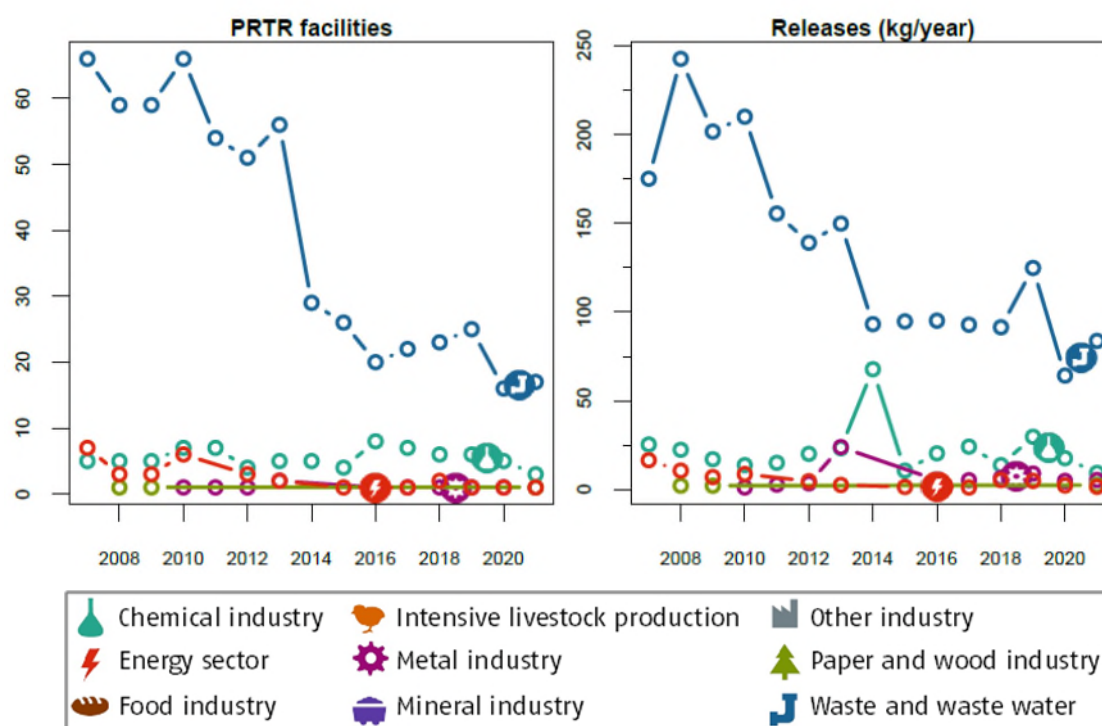
2.31.2 Releases to Water

The threshold is **1 kg “Mercury and compounds (as Hg)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 43: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Mercury and compounds (as Hg)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	17	73.9	83.7	81.6
Chemical industry	3	13.0	9.40	9.17
Metal industry	1	4.35	5.38	5.25
Paper- and wood industry	1	4.35	2.50	2.44
Energy sector	1	4.35	1.55	1.51
Total	23	100	103	100

Figure 43: Annual number of facilities (left) and their releases (right) of the pollutant “Mercury and compounds (as Hg)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.31.3 Releases to Land

The threshold is **1 kg “Mercury and compounds (as Hg)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Mercury and compounds (as Hg)” to **Land** in **2021**.

2.32 Methane (CH₄)

2.32.1 Umweltmedium Luft

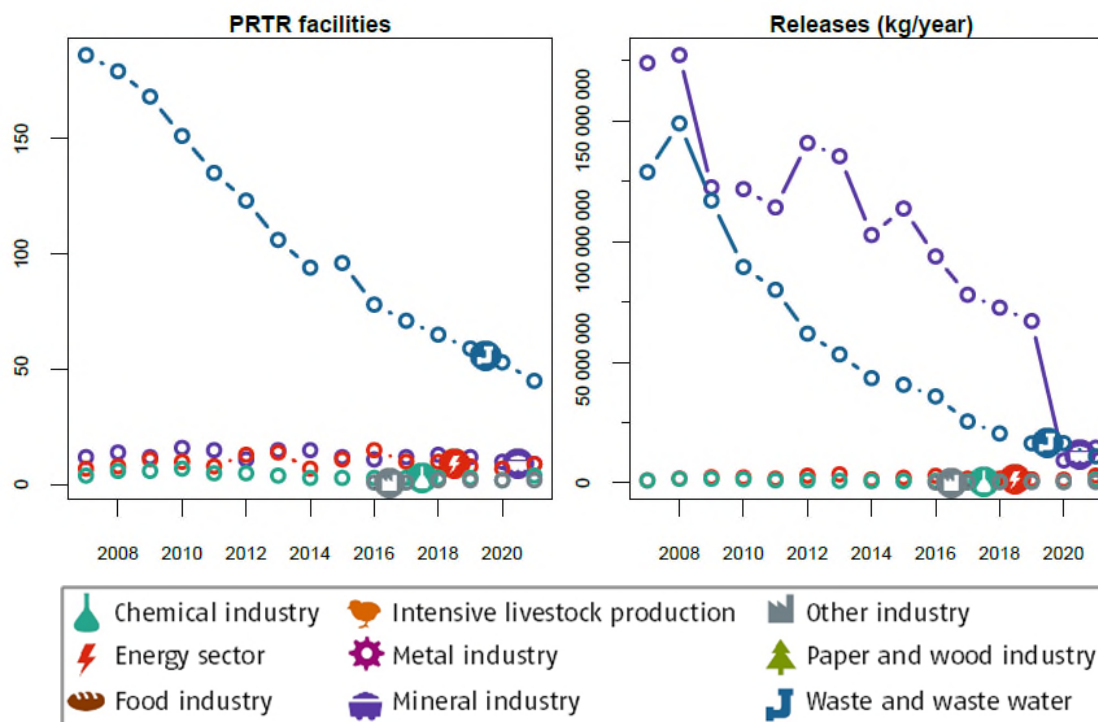
The threshold is **100 000 kg “Methane (CH₄)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 44: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Methane (CH₄)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	9	12.7	14 540 000	47.6
Waste and waste water management	45	63.4	10 992 000	36.0
Energy sector	9	12.7	2 958 000	9.69
Chemical Industry	4	5.63	1 436 000	4.71
Other Industry	2	2.82	375 000	1.23

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Paper- and wood industry	1	1.41	112 000	0.367
Intensive livestock production and aquaculture	1	1.41	104 000	0.341
Total	71	100	30 517 000	100

Figure 44: Annual number of facilities (left) and their releases (right) of the pollutant “Methane (CH₄)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.33 Naphthalene

2.33.1 Releases to Air

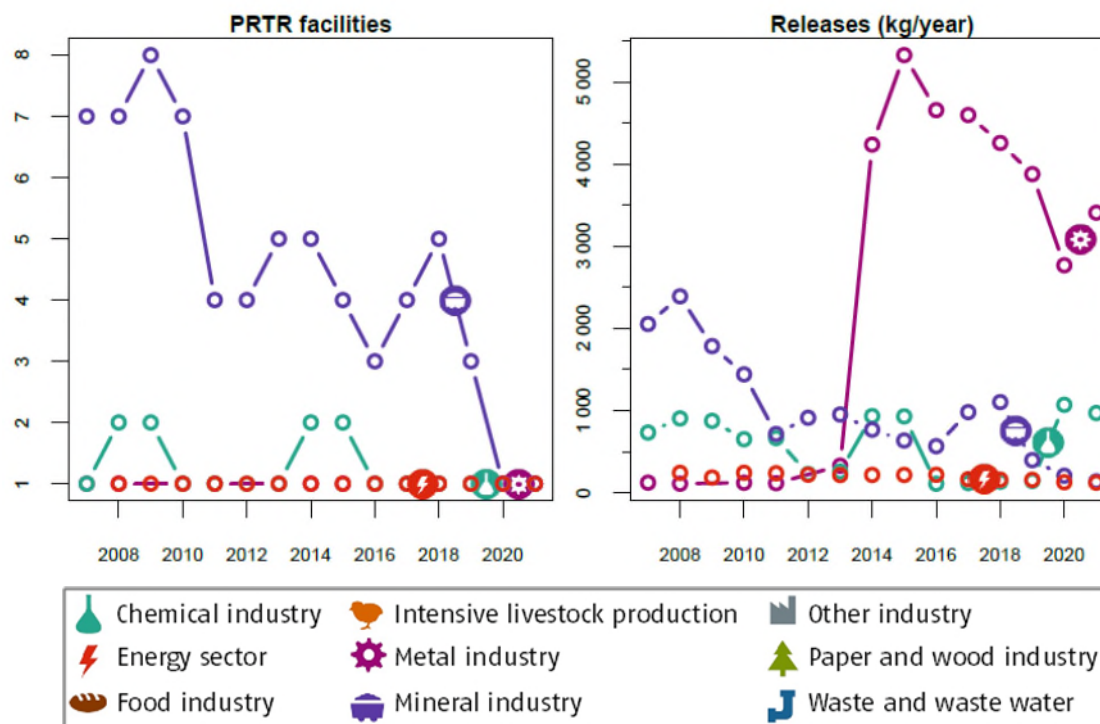
The threshold is **100 kg “Naphthalene” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 45: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Naphthalene” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	1	25	3 410	73.5
Chemical industry	1	25	970	20.9
Mineral industry	1	25	137	2.95
Energy sector	1	25	121	2.61

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Total	4	100	4 638	100

Figure 45: Annual number of facilities (left) and their releases (right) of the pollutant “Naphthalene” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

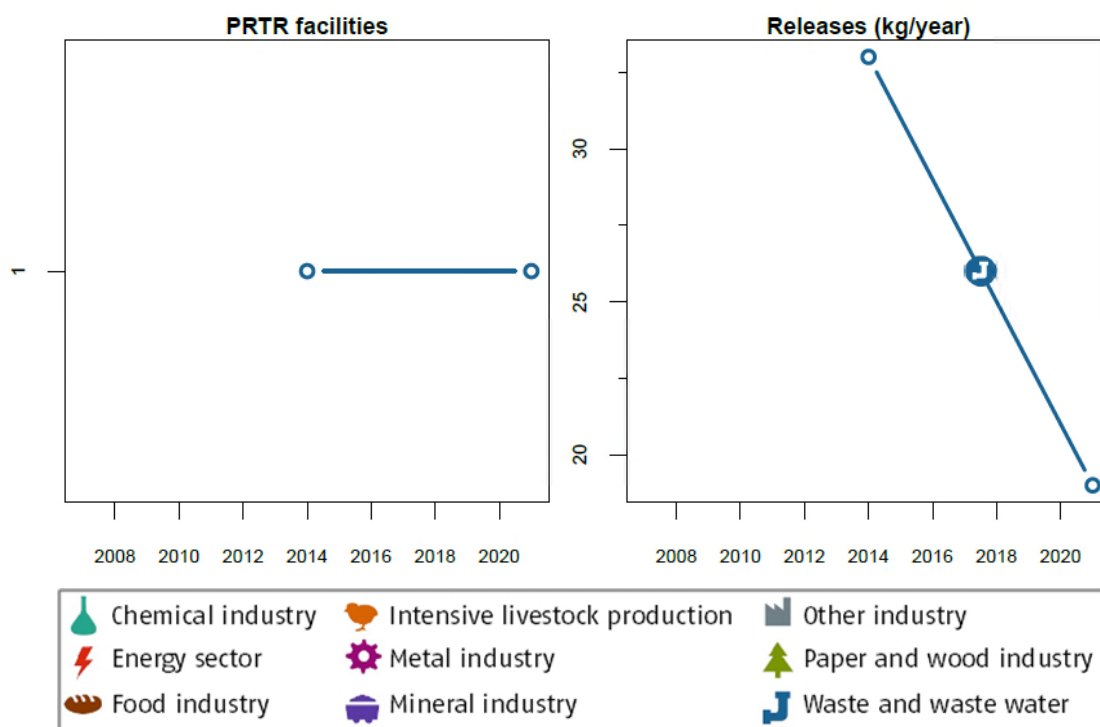
2.33.2 Releases to Water

The threshold is **10 kg “Naphthalene” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 46: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Naphthalene” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	19	100
Total	1	100	19	100

Figure 46: Annual number of facilities (left) and their releases (right) of the pollutant “Naphthalene” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.33.3 Releases to Land

The threshold is **10 kg “Naphthalene” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Naphthalene” to **Land** in **2021**.

2.34 Nickel and compounds (as Ni)

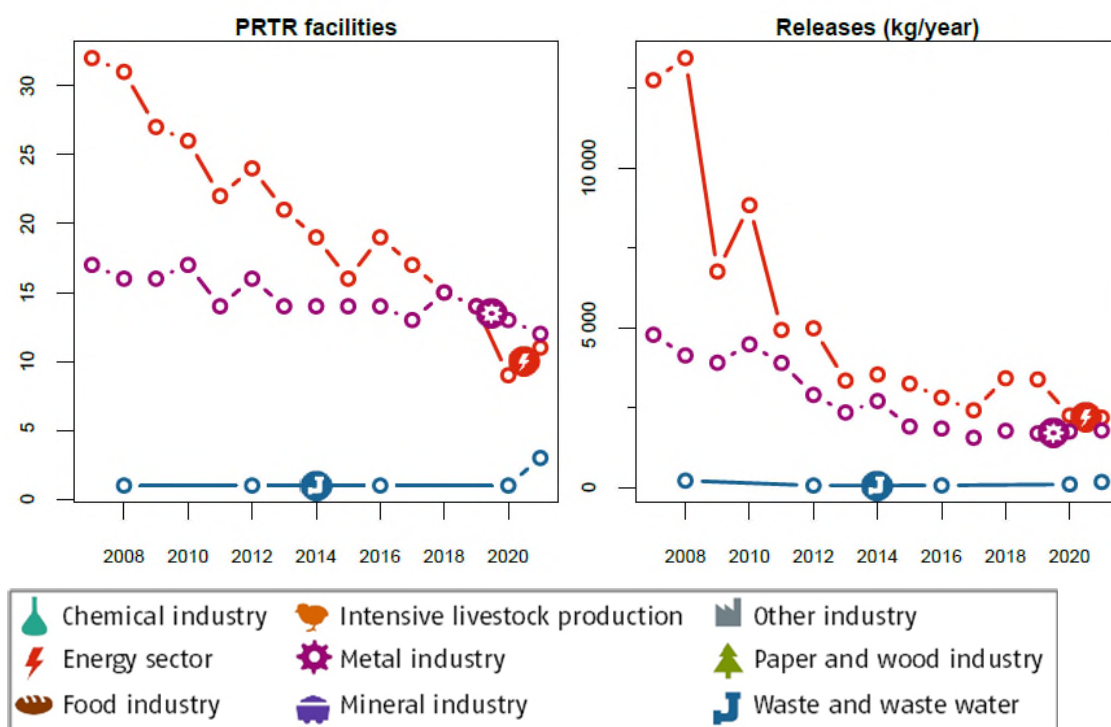
2.34.1 Releases to Air

The threshold is **50 kg “Nickel and compounds (as Ni)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 47: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Nickel and compounds (as Ni)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	11	42.3	2 182	52.9
Metal industry	12	46.2	1 778	43.1
Waste and waste water management	3	11.5	167	4.06
Total	26	100	4 128	100

Figure 47: Annual number of facilities (left) and their releases (right) of the pollutant “Nickel and compounds (as Ni)” to Air, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

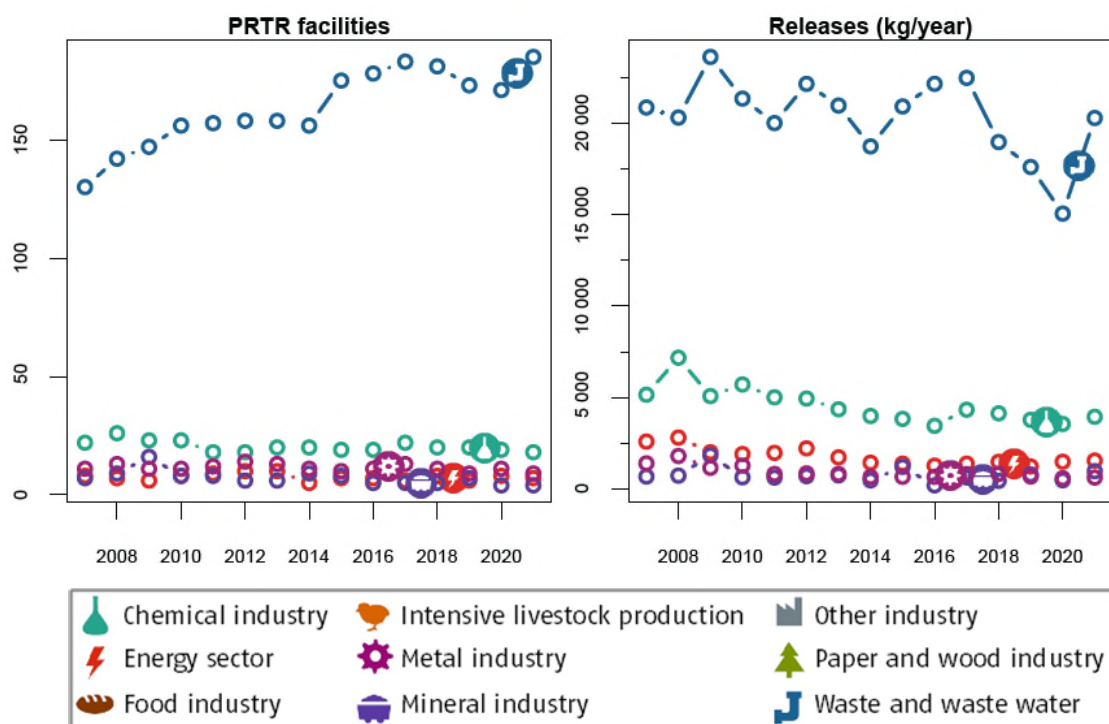
2.34.2 Releases to Water

The threshold is **20 kg “Nickel and compounds (as Ni)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 48: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Nickel and compounds (as Ni)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	185	81.9	20 278	73.5
Chemical industry	18	7.96	3 949	14.3
Energy sector	7	3.10	1 555	5.64
Mineral industry	4	1.77	973	3.53
Metal industry	9	3.98	626	2.27
Paper- and wood industry	3	1.33	194	0.703
Total	226	100	27 584	100

Figure 48: Annual number of facilities (left) and their releases (right) of the pollutant “Nickel and compounds (as Ni)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

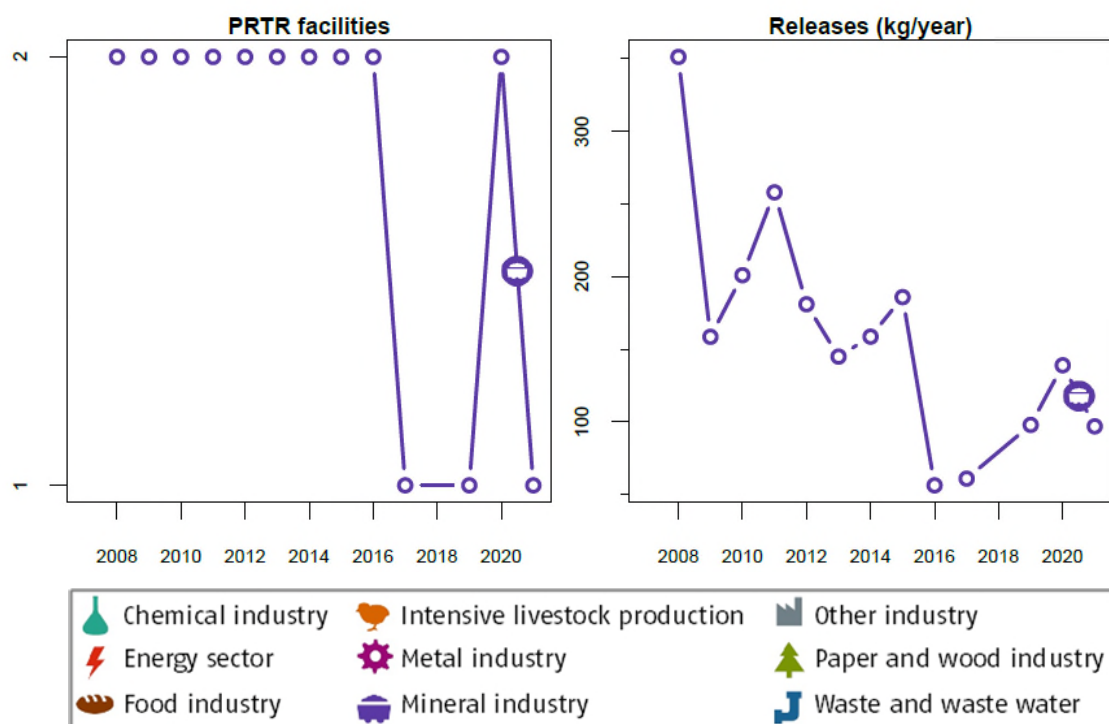
2.34.3 Releases to Land

The threshold is **20 kg “Nickel and compounds (as Ni)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 49: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Nickel and compounds (as Ni)” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	1	100	97	100
Total	1	100	97	100

Figure 49: Annual number of facilities (left) and their releases (right) of the pollutant “Nickel and compounds (as Ni)” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.35 Nitrogen oxides (NO_x/NO₂)

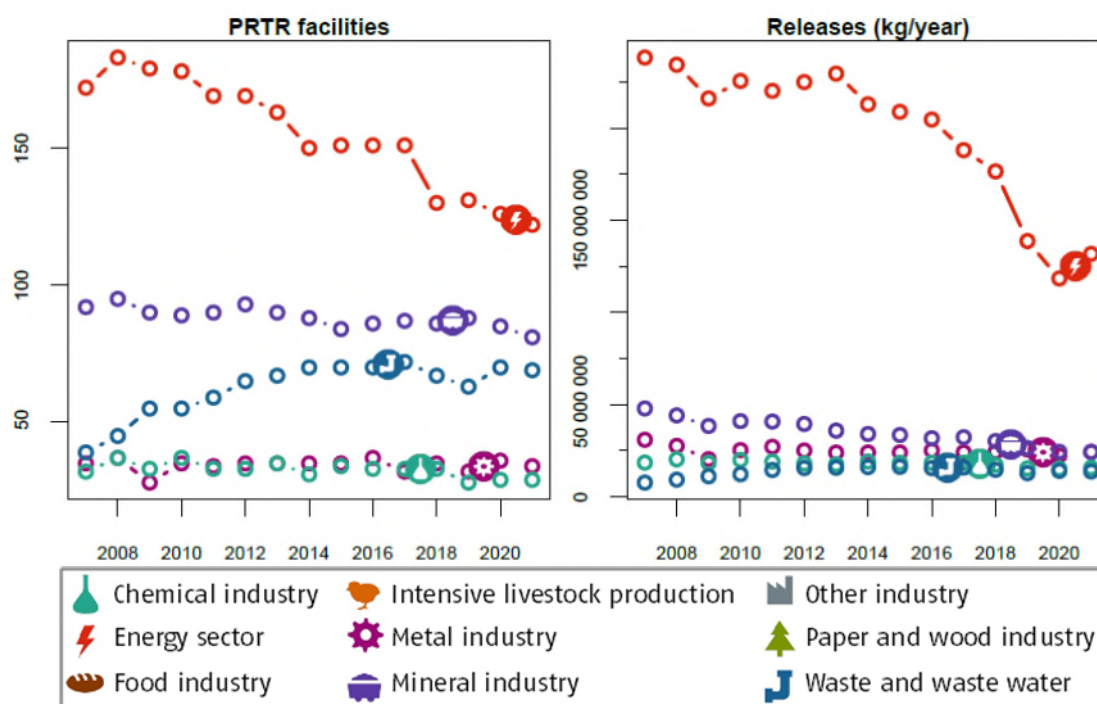
2.35.1 Releases to Air

The threshold is **100 000 kg “Nitrogen oxides (NO_x/NO₂)” per year**. Releases to Air above this value have to be reported according to the E-PRTR Regulation.

Table 50: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Nitrogen oxides (NO_x/NO₂)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	122	32.4	131 800 000	59.9
Metal industry	34	9.02	24 323 000	11.1
Mineral industry	81	21.5	24 306 000	11.0
Chemical industry	29	7.69	15 709 000	7.14
Waste and waste water management	69	18.3	13 677 000	6.22
Paper- and wood industry	33	8.75	8 652 000	3.93
Food industry	5	1.33	934 000	0.425
Other industry	4	1.06	572 000	0.260
Total	377	100	219 973 000	100

Figure 50: Annual number of facilities (left) and their releases (right) of the pollutant “Nitrogen oxides (NO_x/NO₂)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.36 Nitrous oxide (N₂O)

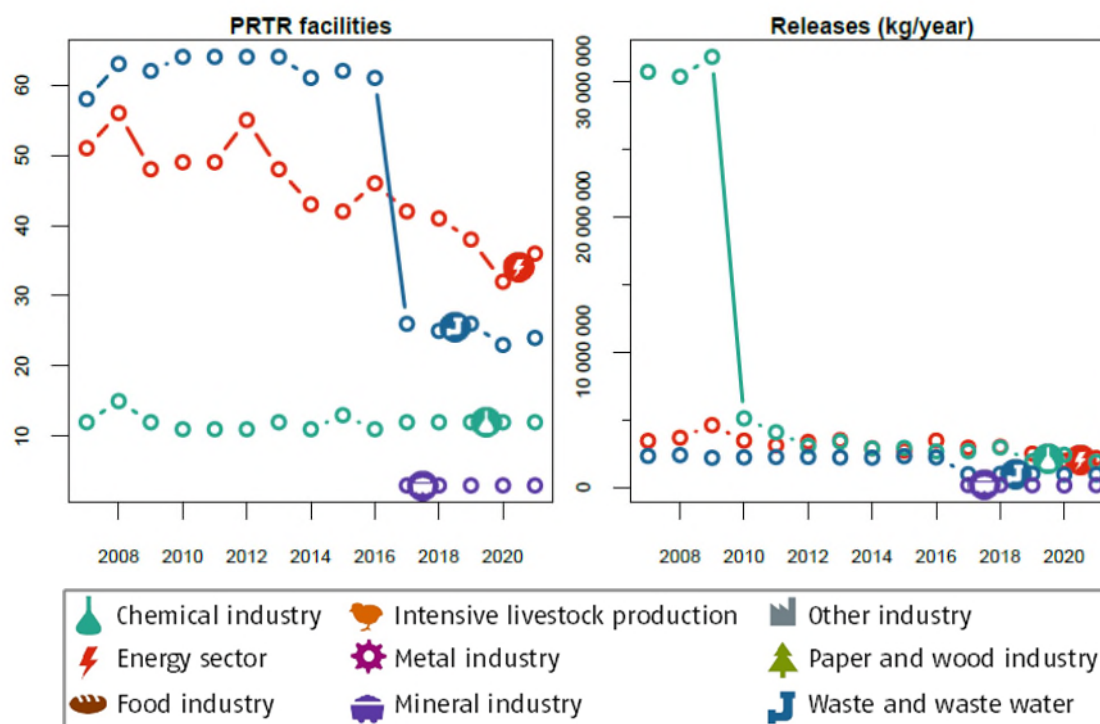
2.36.1 Releases to Air

The threshold is **10 000 kg “Nitrous oxide (N₂O)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 51: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Nitrous oxide (N₂O)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	36	48	2 165 200	42.1
Chemical industry	12	16	1 879 100	36.5
Waste and waste water management	24	32	944 200	18.3
Mineral industry	3	4	159 600	3.10
Total	75	100	5 148 100	100

Figure 51: Annual number of facilities (left) and their releases (right) of the pollutant “Nitrous oxide (N₂O)” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.37 Non-methane volatile organic compounds (NMVOC)

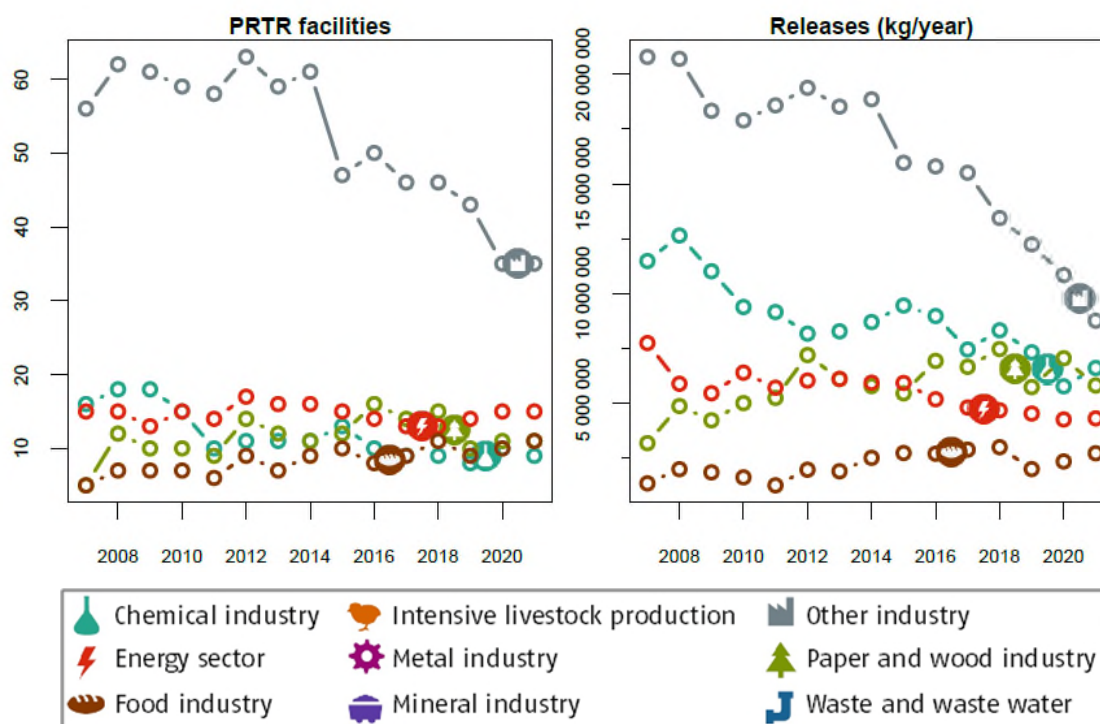
2.37.1 Releases to Air

The threshold is **100 000 kg “Non-methane volatile organic compounds (NMVOC)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 52: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Non-methane volatile organic compounds (NMVOC)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Other industry	35	38.0	8 756 000	28.4
Chemical industry	9	9.78	6 598 000	21.4
Paper- and wood industry	11	12.0	5 801 000	18.8
Energy sector	15	16.3	4 299 000	13.9
Food industry	11	12.0	2 707 000	8.78
Metal industry	10	10.9	2 533 000	8.22
Mineral industry	1	1.09	134 000	0.435
Total	92	100	32 080 000	100

Figure 52: Annual number of facilities (left) and their releases (right) of the pollutant “Non-methane volatile organic compounds (NMVOC)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.38 Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)

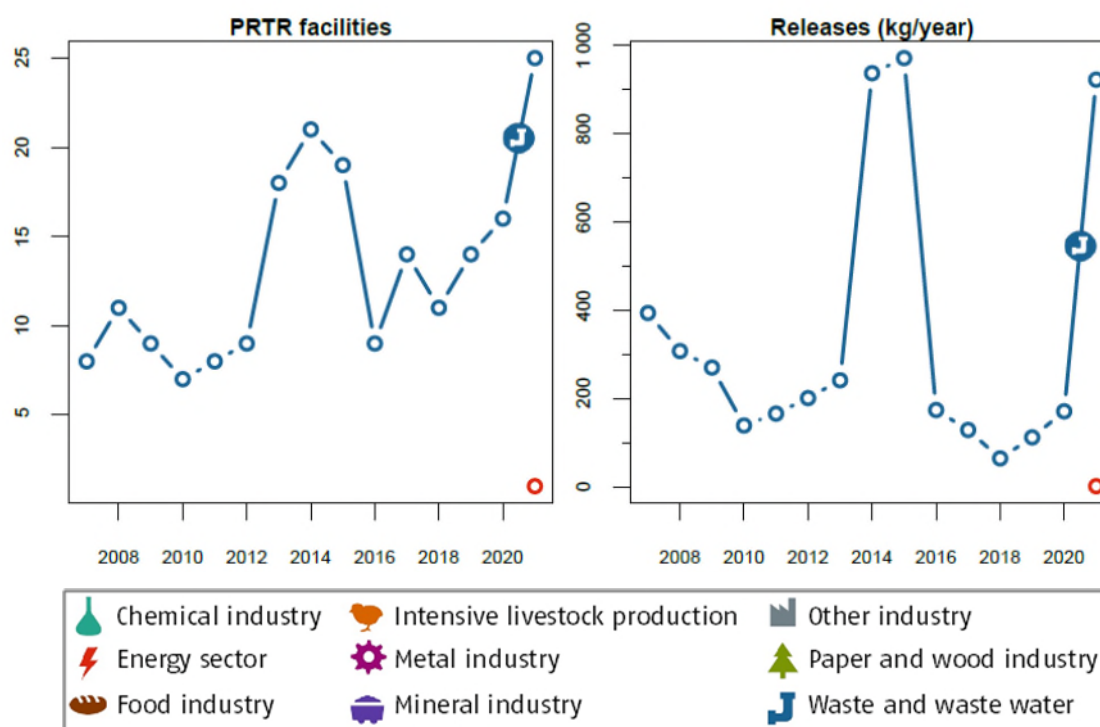
2.38.1 Releases to Water

The threshold is **1 kg “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 53: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	25	96.2	923	99.8
Energy sector	1	3.85	2	0.216
Total	26	100	925	100

Figure 53: Annual number of facilities (left) and their releases (right) of the pollutant “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” to Water, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.38.2 Releases to Soil

The threshold is **1 kg “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” to **Land** in **2021**.

2.39 Octylphenols and Octylphenol ethoxylates

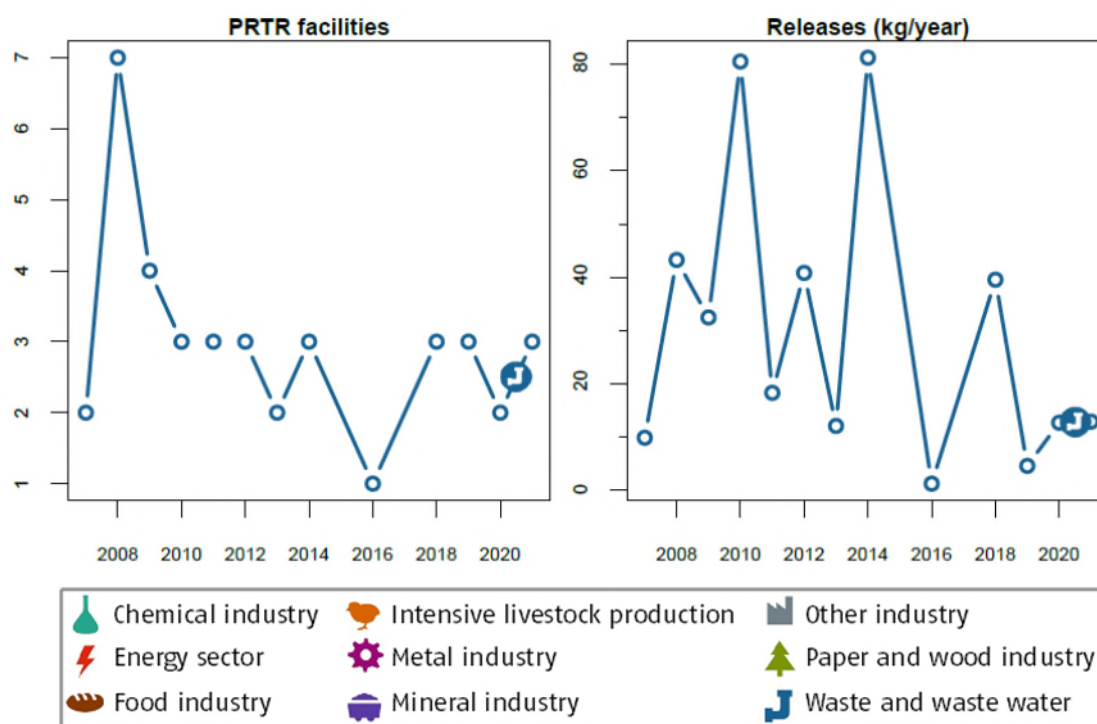
2.39.1 Releases to Water

The threshold is **1 kg “Octylphenols and Octylphenol ethoxylates” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 54: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Octylphenols and Octylphenol ethoxylates” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	3	100	12.8	100
Total	3	100	12.8	100

Figure 54: Annual number of facilities (left) and their releases (right) of the pollutant “Octylphenols and Octylphenol ethoxylates” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.40 Organotin compounds (as total Sn)

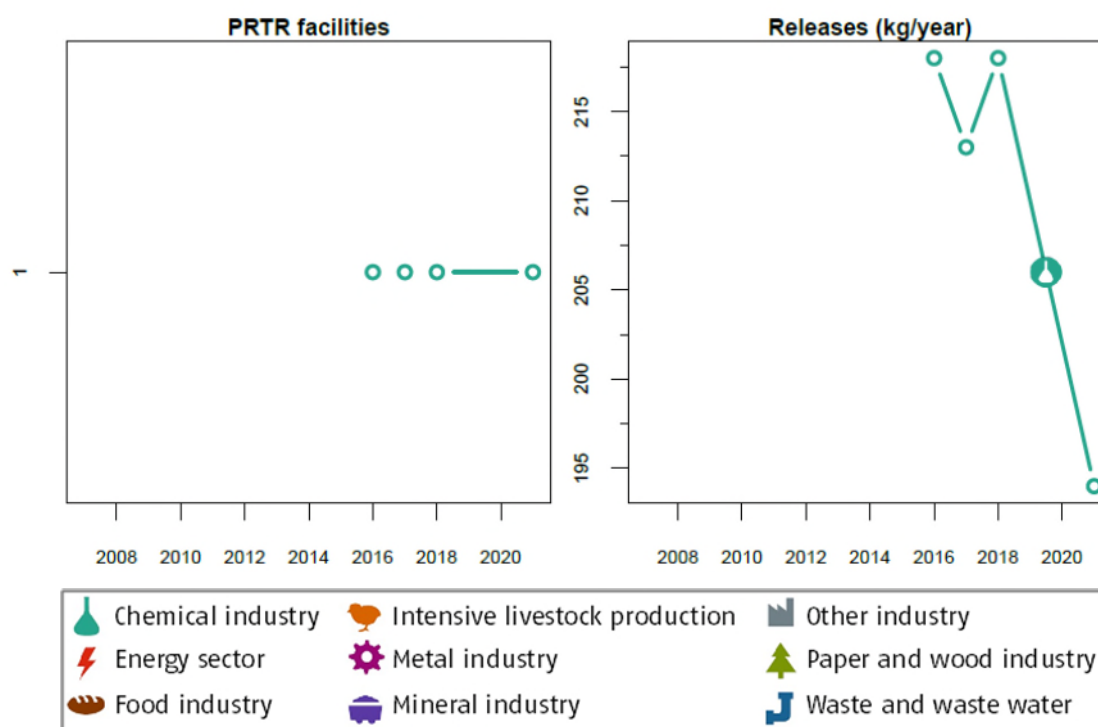
2.40.1 Releases to Water

The threshold is **50 kg “Organotin compounds (as total Sn)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 55: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Organotin compounds (as total Sn)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	194	100
Total	1	100	194	100

Figure 55: Annual number of facilities (left) and their releases (right) of the pollutant “Organotin compounds (as total Sn)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.40.2 Umweltmedium Boden

The threshold is **50 kg “Organotin compounds (as total Sn)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Organotin compounds (as total Sn)” to **Land** in **2021**.

2.41 Particulate matter (PM10)

2.41.1 Releases to Air

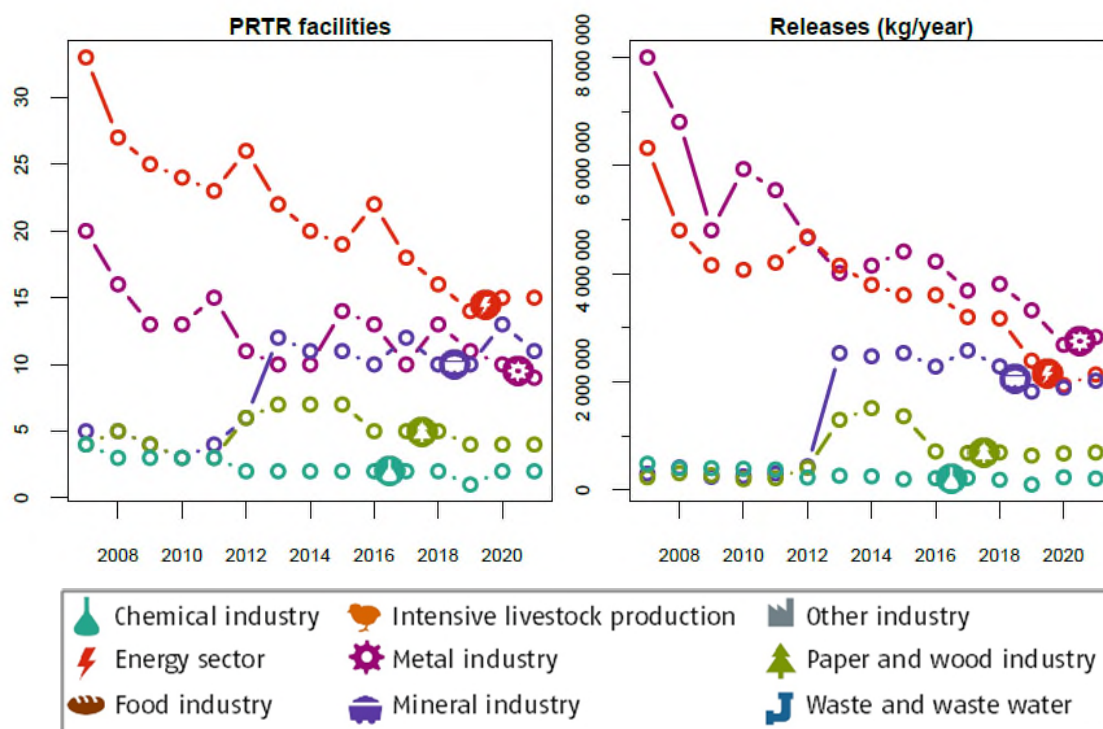
The threshold is **50 000 kg “Particulate matter (PM10)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 56: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Particulate matter (PM10)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	9	20.5	2 832 600	35.1
Energy sector	15	34.1	2 138 000	26.5
Mineral industry	11	25.0	2 022 600	25.0
Paper- and wood industry	4	9.09	693 300	8.62
Chemical industry	2	4.55	214 400	2.65

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Intensive livestock production and aquaculture	3	6.82	176 700	2.19
Total	44	100	8 080 600	100

Figure 56: Annual number of facilities (left) and their releases (right) of the pollutant “Particulate matter (PM10)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.42 PCDD + PCDF (dioxins + furans) (as Teq)

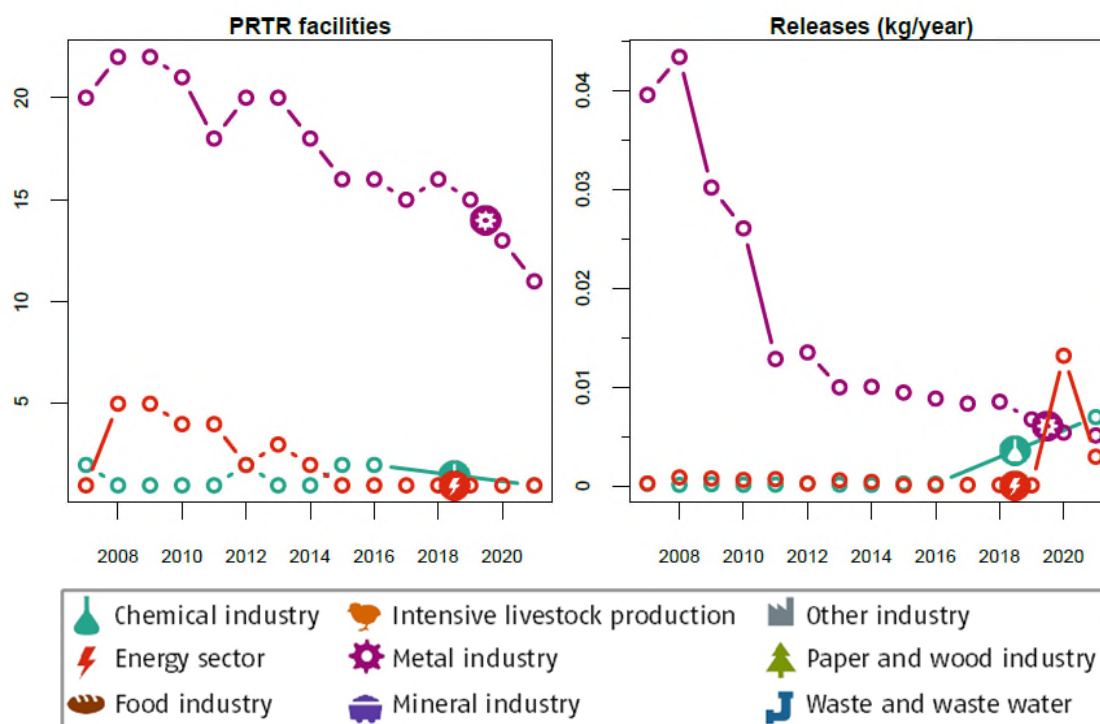
2.42.1 Releases to Air

The threshold is **0,0001 kg “PCDD + PCDF (dioxins + furans) (as Teq)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 57: For the reporting year 2021 - Number of facilities and their releases of the pollutant “PCDD + PCDF (dioxins + furans) (as Teq)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	7.69	0.007	46.2
Metal industry	11	84.6	0.00515	34.0
Energy sector	1	7.69	0.003	19.8
Total	13	100	0.0151	100

Figure 57: Annual number of facilities (left) and their releases (right) of the pollutant “PCDD + PCDF (dioxins + furans) (as Teq)” to Air, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.42.2 Umweltmedium Wasser

The threshold is **0,0001 kg “PCDD + PCDF (dioxins + furans) (as Teq)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “PCDD + PCDF (dioxins + furans) (as Teq)” to **Water** in **2021**.

2.42.3 Umweltmedium Boden

The threshold is **0,0001 kg “PCDD + PCDF (dioxins + furans) (as Teq)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “PCDD + PCDF (dioxins + furans) (as Teq)” to **Land** in **2021**.

2.43 Pentachlorophenol (PCP)

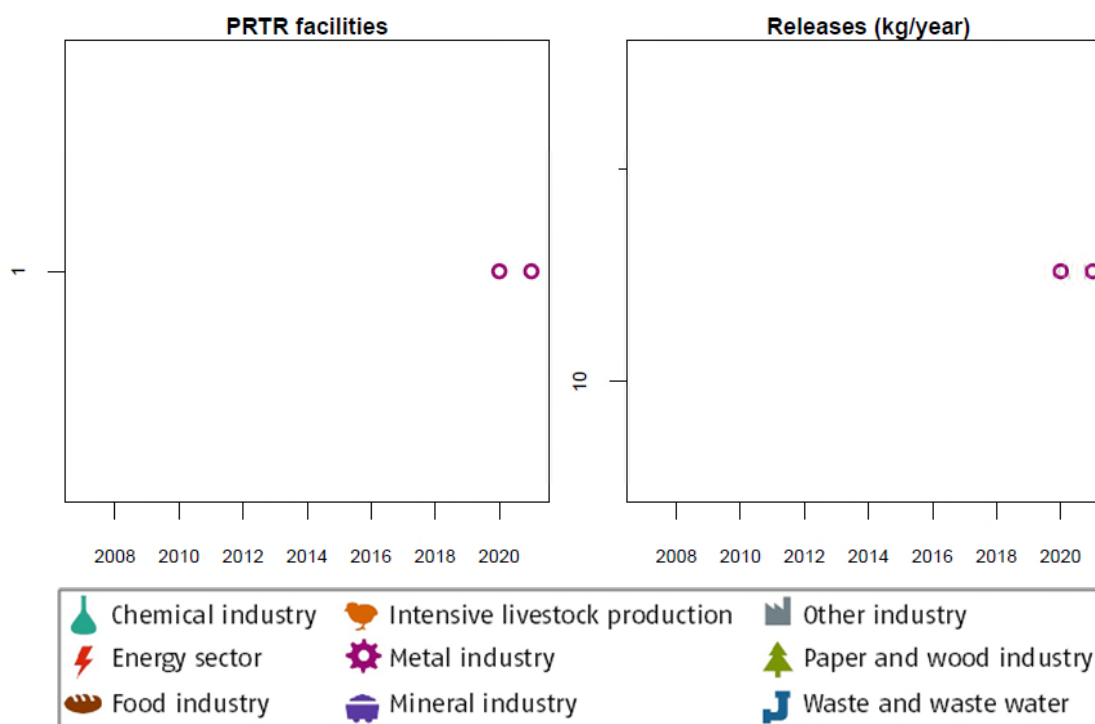
2.43.1 Releases to Air

The threshold is **10 kg “Pentachlorophenol (PCP)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 58: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Pentachlorophenol (PCP)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	1	100	12.6	100
Total	1	100	12.6	100

Figure 58: Annual number of facilities (left) and their releases (right) of the pollutant “Pentachlorophenol (PCP)” to Air, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

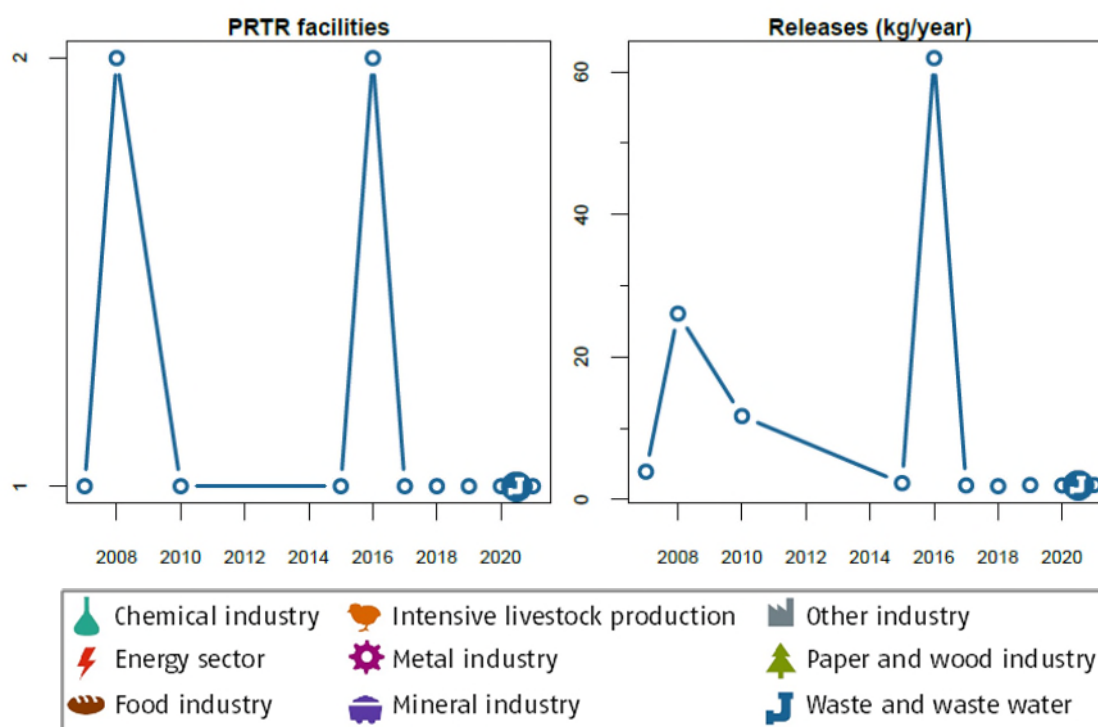
2.43.2 Releases to Water

The threshold is **1 kg “Pentachlorophenol (PCP)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 59: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Pentachlorophenol (PCP)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	2.03	100
Total	1	100	2.03	100

Figure 59: Annual number of facilities (left) and their releases (right) of the pollutant “Pentachlorophenol (PCP)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.43.3 Releases to Land

The threshold is **1 kg “Pentachlorophenol (PCP)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “**Pentachlorophenol (PCP)**” to **Land** in **2021**.

2.44 Perfluorocarbons (PFCs)

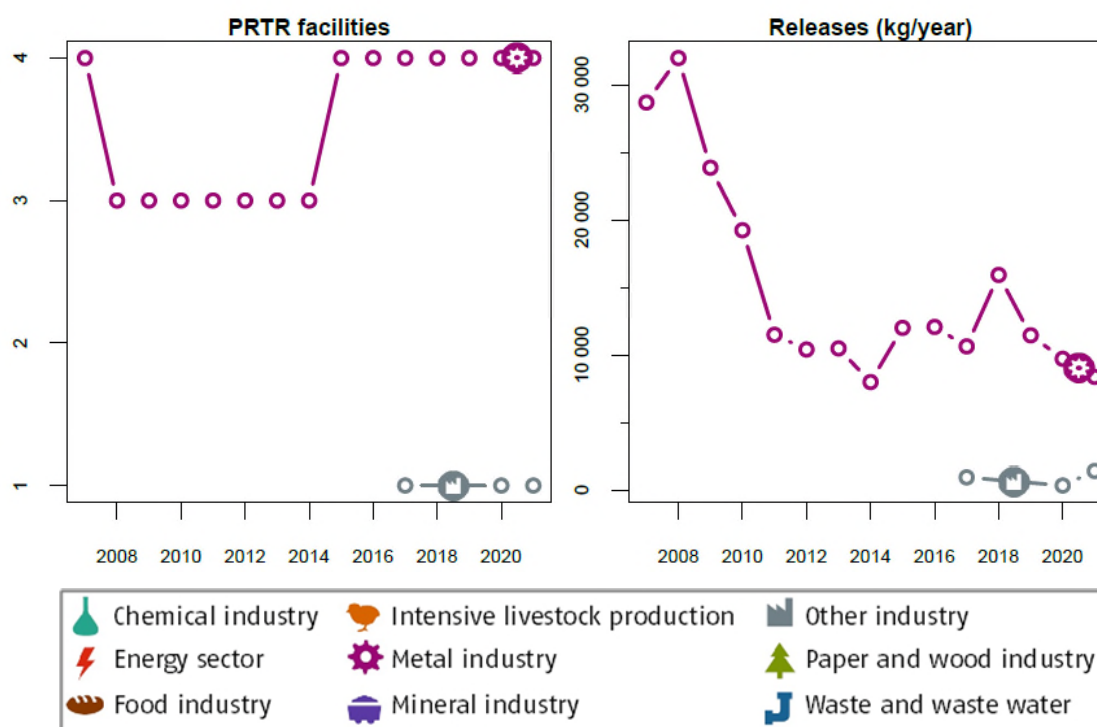
2.44.1 Releases to Air

The threshold is **100 kg “Perfluorocarbons (PFCs)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 60: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Perfluorocarbons (PFCs)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	4	80	8 380	85.6
Other industry	1	20	1 410	14.4
Total	5	100	9 790	100

Figure 60: Annual number of facilities (left) and their releases (right) of the pollutant “Perfluorocarbons (PFCs)” to Air, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.45 Phenols (as total C)

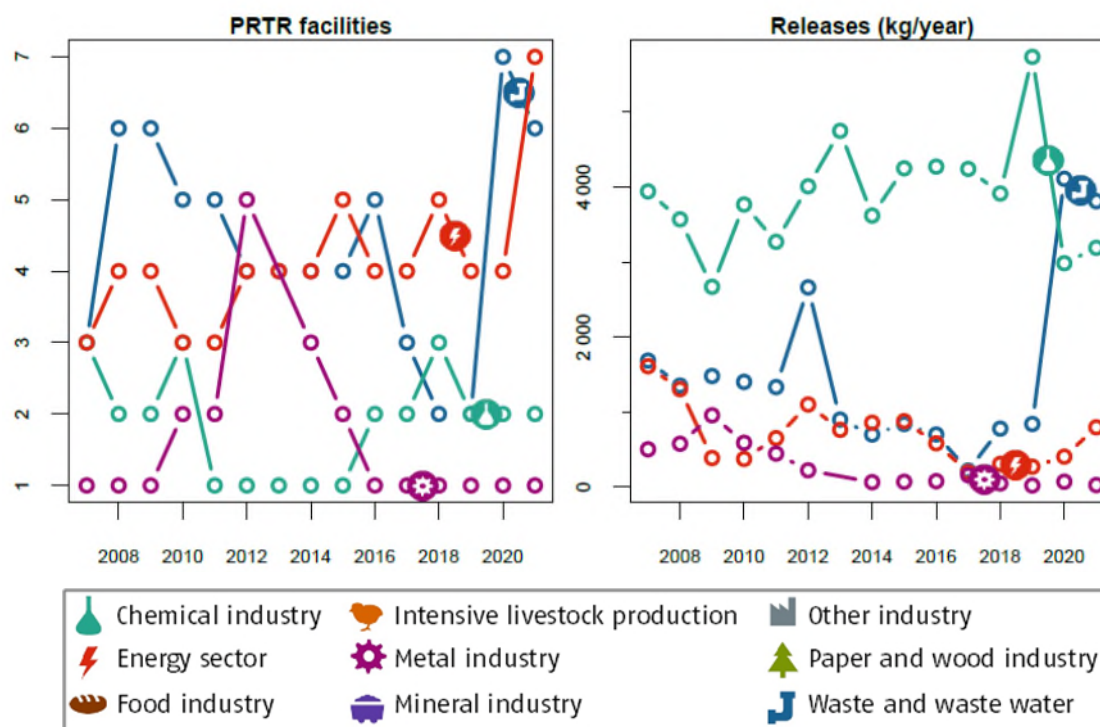
2.45.1 Releases to Water

The threshold is **20 kg “Phenols (as total C)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 61: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Phenols (as total C)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	6	37.5	3 811	48.7
Chemical industry	2	12.5	3 190	40.8
Energy sector	7	43.8	796	10.2
Metal industry	1	6.25	26,3	0.336
Total	16	100	7 824	100

Figure 61: Annual number of facilities (left) and their releases (right) of the pollutant “Phenols (as total C)” to Water, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.45.2 Releases to Land

The threshold is **20 kg “Phenols (as total C)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Phenols” to **Land** in **2021**.

2.46 Polycyclic aromatic hydrocarbons (PAHs)

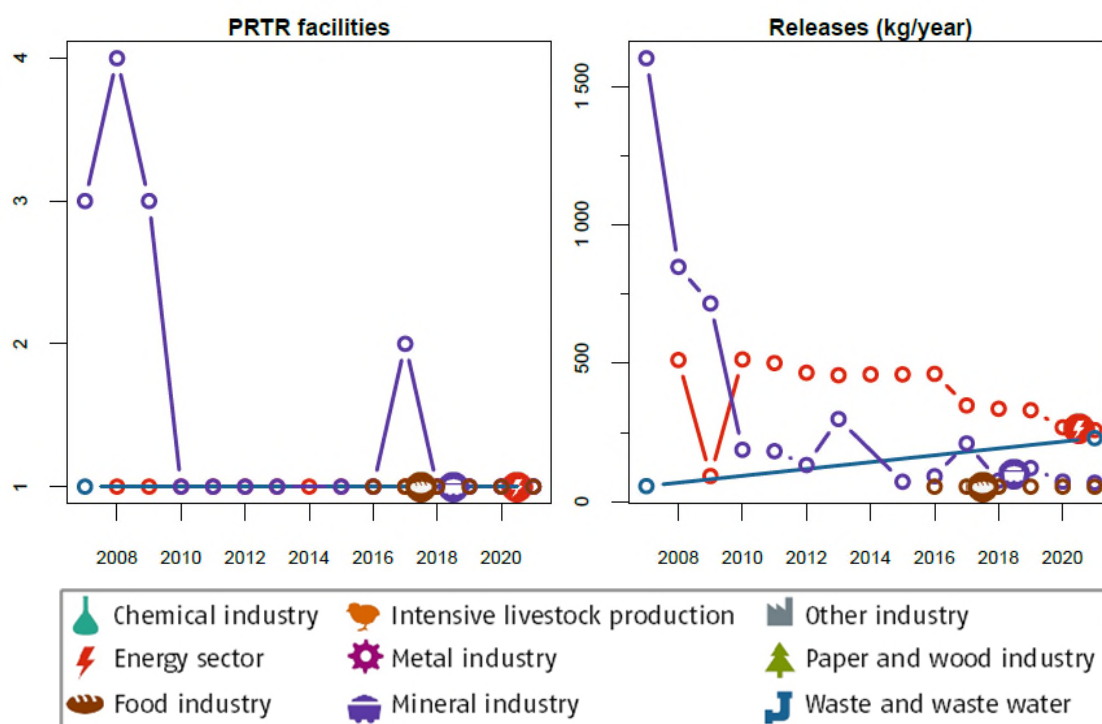
2.46.1 Releases to Air

The threshold is **50 kg “Polycyclic aromatic hydrocarbons (PAHs)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 62: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Polycyclic aromatic hydrocarbons (PAHs)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	1	25	259	42.2
Waste and waste water management	1	25	230	37.5
Mineral industry	1	25	69.1	11.3
Food industry	1	25	55.0	8.97
Total	4	100	613	100

Figure 62: Annual number of facilities (left) and their releases (right) of the pollutant “Polycyclic aromatic hydrocarbons (PAHs)” to Air, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

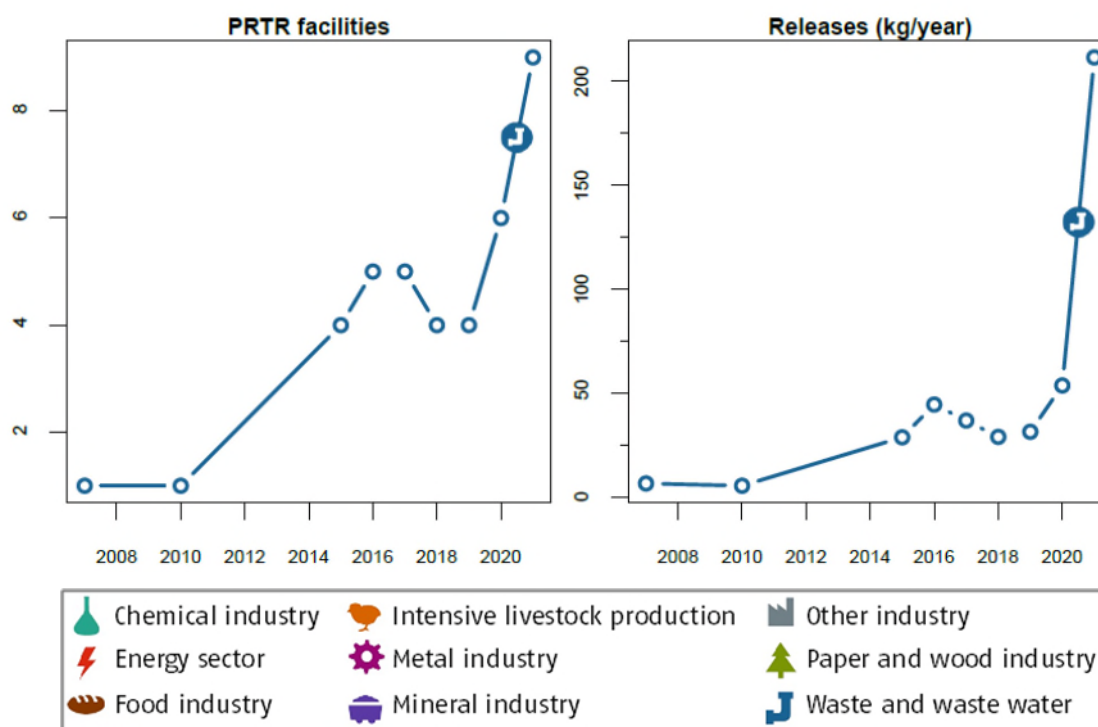
2.46.2 Releases to Water

The threshold is **5 kg “Polycyclic aromatic hydrocarbons (PAHs)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 63: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Polycyclic aromatic hydrocarbons (PAHs)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	9	100	211	100
Total	9	100	211	100

Figure 63: Annual number of facilities (left) and their releases (right) of the pollutant “Polycyclic aromatic hydrocarbons (PAHs)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.46.3 Releases to Land

The threshold is **5 kg “Polycyclic aromatic hydrocarbons (PAHs)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Polycyclic aromatic hydrocarbons (PAHs)” to **Land** in **2021**.

2.47 Simazine

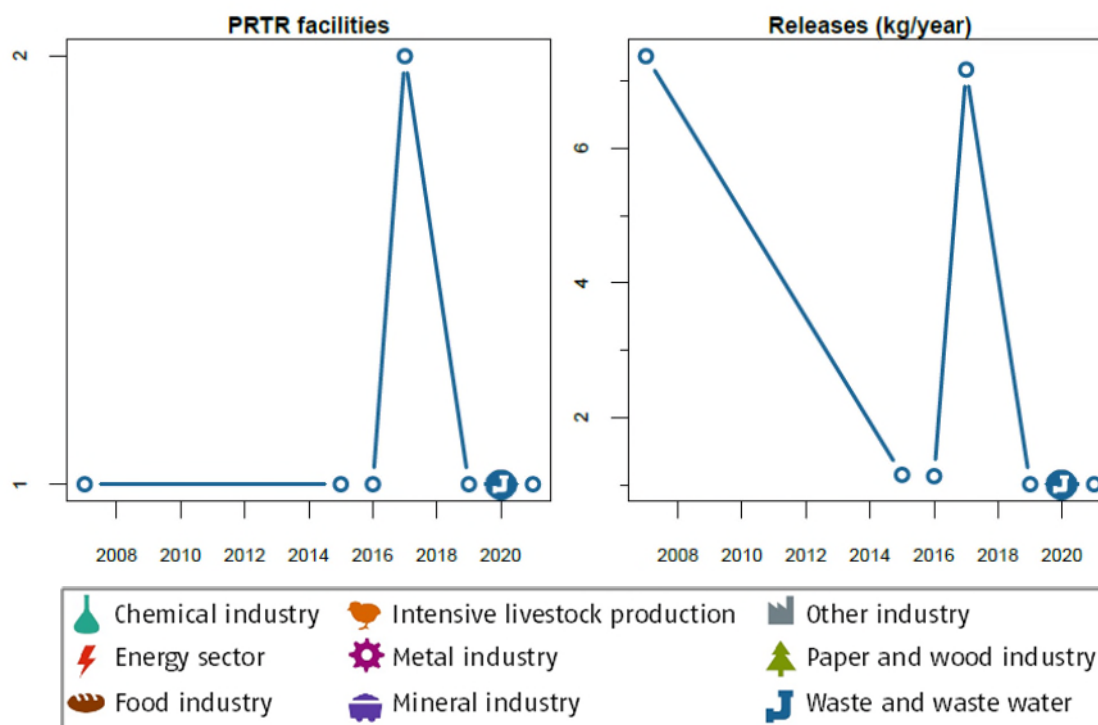
2.47.1 Releases to Water

The threshold is **1 kg “Simazine” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 64: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Simazine” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	1	100	1.01	100
Total	1	100	1.01	100

Figure 64: Annual number of facilities (left) and their releases (right) of the pollutant “Simazine” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.47.2 Releases to Land

The threshold is **1 kg “Simazine” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “**Simazine**” to **Land** in **2021**.

2.48 Sulphur hexafluoride (SF6)

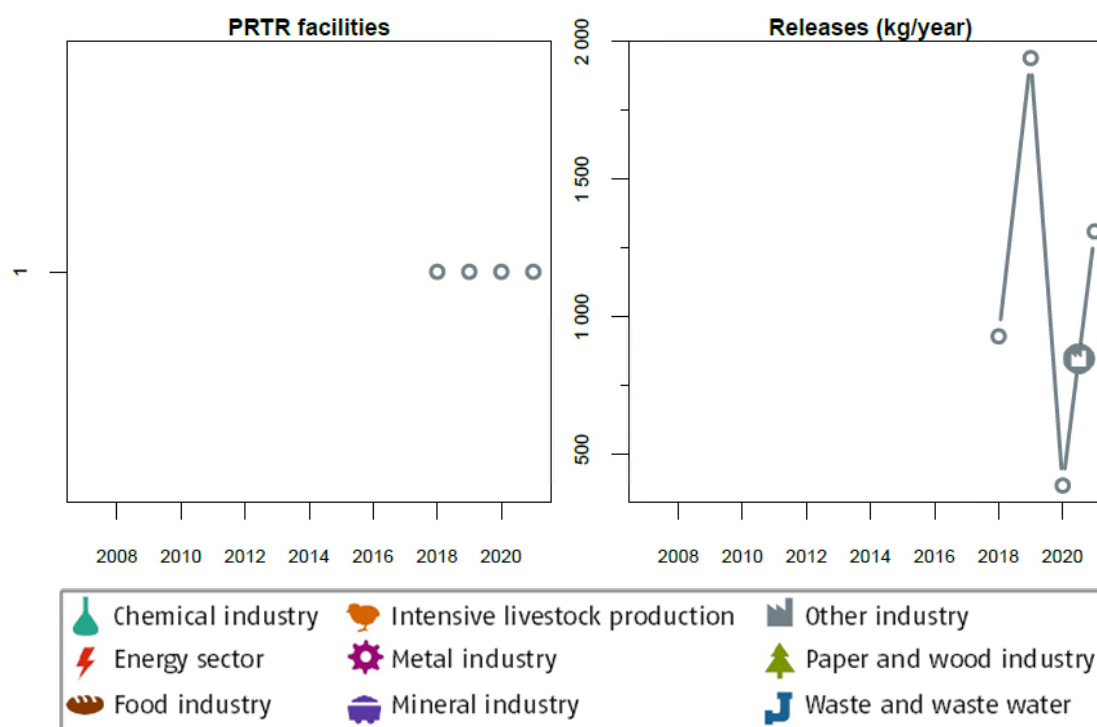
2.48.1 Releases to Air

The threshold is **50 kg “Sulphur hexafluoride (SF6)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 65: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Sulphur hexafluoride (SF6)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Other industry	1	100	1 310	100
Total	1	100	1 310	100

Figure 65: Annual number of facilities (left) and their releases (right) of the pollutant “Sulphur hexafluoride (SF6)” to Air, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.49 Sulphur oxides (SOx/SO2)

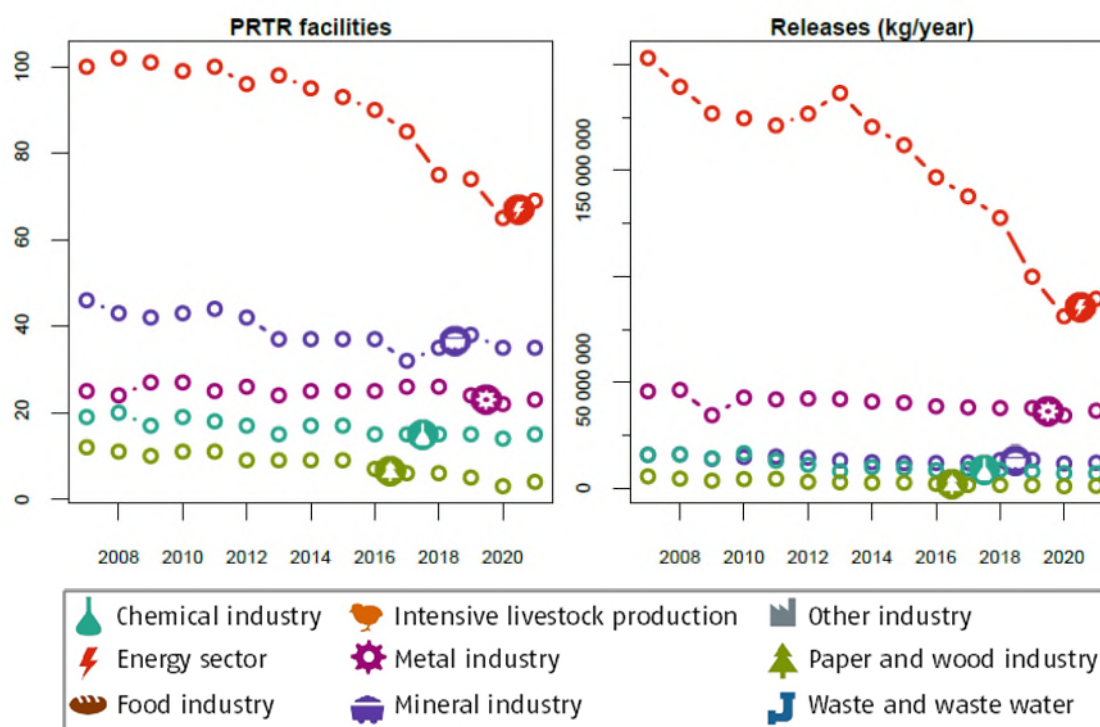
2.49.1 Releases to Air

The threshold is **150 000 kg “Sulphur oxides (SOx/SO2)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 66: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Sulphur oxides (SOx/SO2)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	69	46.9	89 421 000	61.1
Metal industry	23	15.6	36 565 000	25.0
Mineral industry	35	23.8	12 005 000	8.21
Chemical industry	15	10.2	7 030 000	4.80
Paper- and wood industry	4	2.72	1 131 000	0.773
Food industry	1	0.68	161 000	0.110
Total	147	100	146 313 000	100

Figure 66: Annual number of facilities (left) and their releases (right) of the pollutant “Sulphur oxides (SOx/SO₂)” to Air, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.50 Tetrachloroethylen (PER)

2.50.1 Releases to Air

The threshold is **2 000 kg “Tetrachloroethylen (PER)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Tetrachloroethylen (PER)” to **Air** in **2021**.

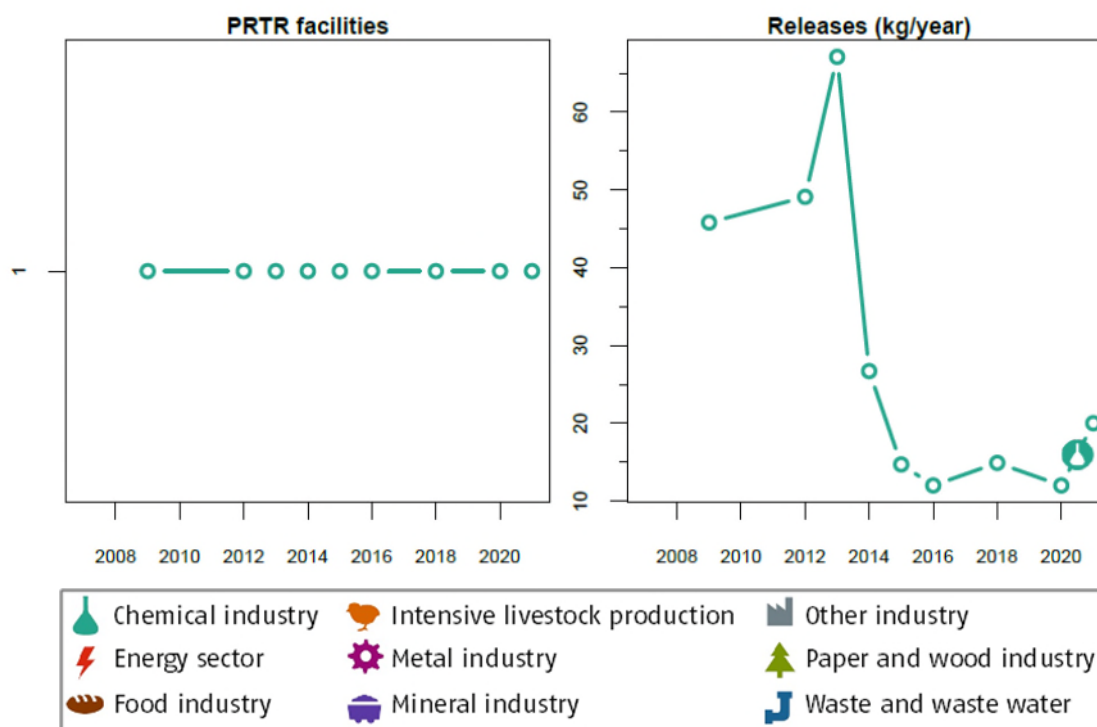
2.50.2 Releases to Water

The threshold is **10 kg “Tetrachloroethylen (PER)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 67: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Tetrachloroethylen (PER)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	20	100
Total	1	100	20	100

Figure 67: Annual number of facilities (left) and their releases (right) of the pollutant “Tetrachloroethylen (PER)” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.51 Tetrachloromethane (TCM)

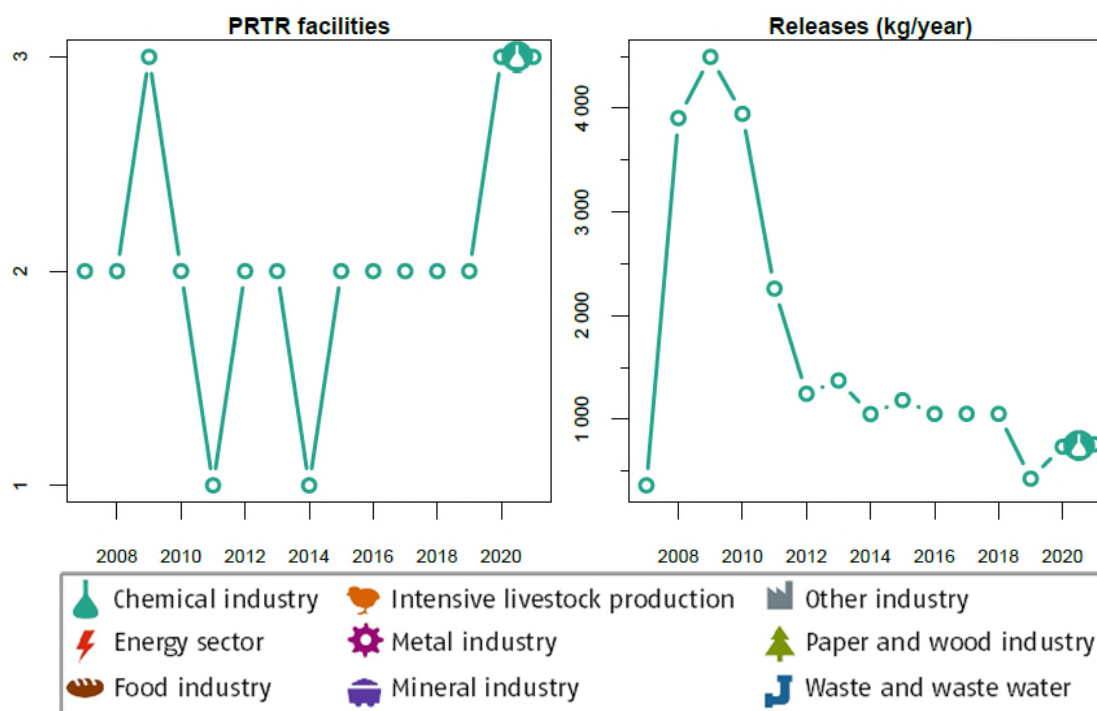
2.51.1 Releases to Air

The threshold is **100 kg “Tetrachloromethane (TCM)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 68: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Tetrachloromethane (TCM)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	3	100	759	100
Total	3	100	759	100

Figure 68: Annual number of facilities (left) and their releases (right) of the pollutant “Tetrachloromethane (TCM)” to Air, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.51.2 Releases to Water

The threshold is **1 kg “Tetrachloromethane (TCM)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Tetrachloromethane (TCM)” to **Water** in **2021**.

2.52 Total nitrogen

2.52.1 Releases to Water

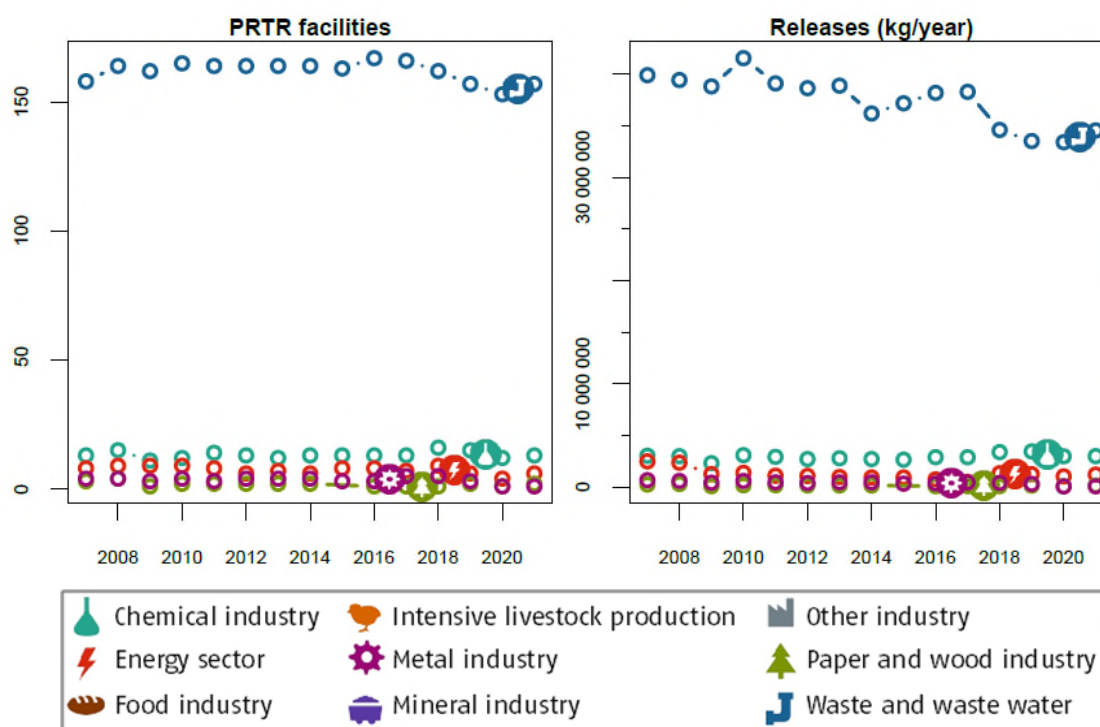
The threshold is **50 000 kg “Total nitrogen” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 69: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Total nitrogen” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	157	87.2	34 547 600	88.6
Chemical industry	13	7.22	2 983 300	7.66
Energy sector	6	3.33	1 191 700	3.06
Paper- and wood industry	2	1.11	132 300	0.340
Metal industry	1	0.556	59 400	0.152

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	1	0.556	56 300	0.144
Total	180	100	38 970 800	100

Figure 69: Annual number of facilities (left) and their releases (right) of the pollutant “Total nitrogen” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

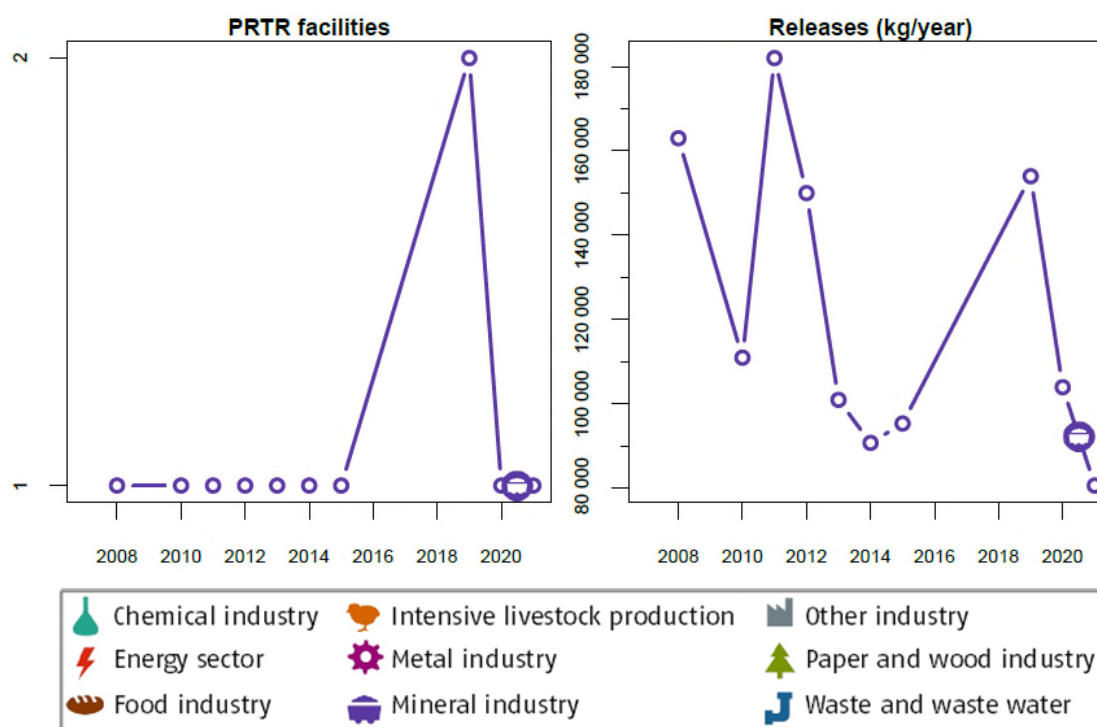
2.52.2 Releases to Land

The threshold is **50 000 kg “Total nitrogen” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 70: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Total nitrogen” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	1	100	80 700	100
Total	1	100	80 700	100

Figure 70: Annual number of facilities (left) and their releases (right) of the pollutant “Total nitrogen” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.53 Total organic carbon (TOC) (as total C or COD/3)

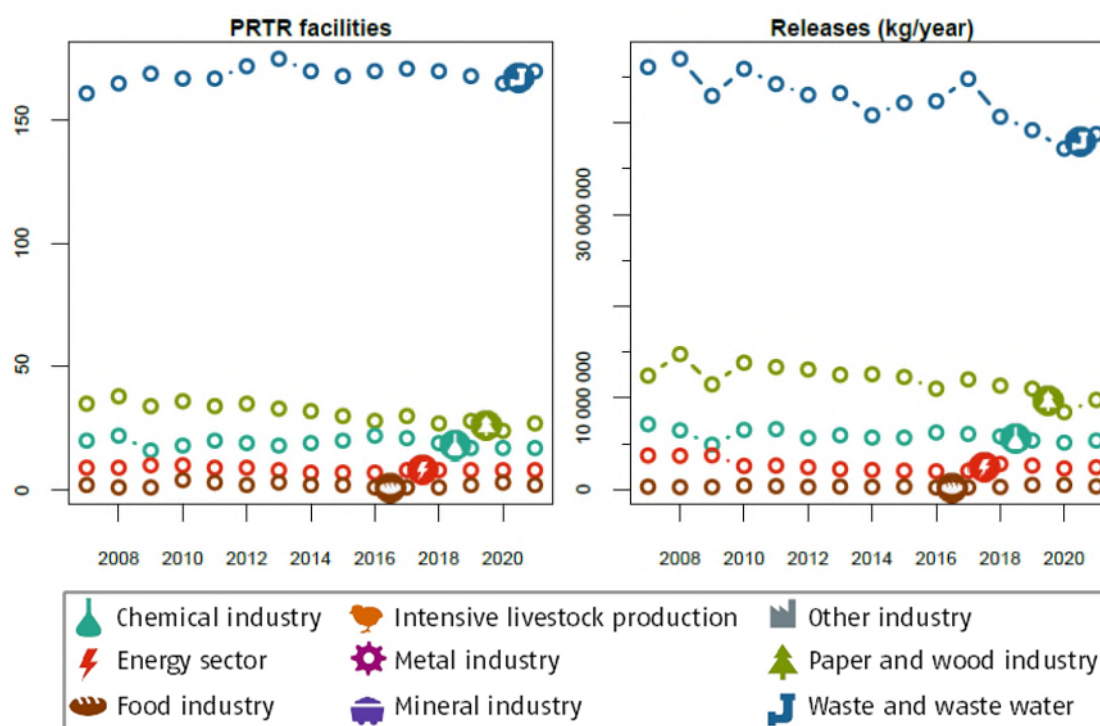
2.53.1 Releases to Water

The threshold is **50 000 kg “Total organic carbon (TOC) (as total C or COD/3)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 71: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Total organic carbon (TOC) (as total C or COD/3)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	170	74.6	38 803 000	67.9
Paper- and wood industry	27	11.8	9 788 400	17.1
Chemical industry	17	7.46	5 346 700	9.36
Energy sector	8	3.51	2 431 300	4.26
Food industry	2	0.877	342 000	0.599
Mineral industry	2	0.877	229 600	0.402
Metal industry	2	0.877	194 000	0.340
Total	22	100	57 135 100	100

Figure 71: Annual number of facilities (left) and their releases (right) of the pollutant “Total organic carbon (TOC) (as total C or COD/3)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.54 Total phosphorus

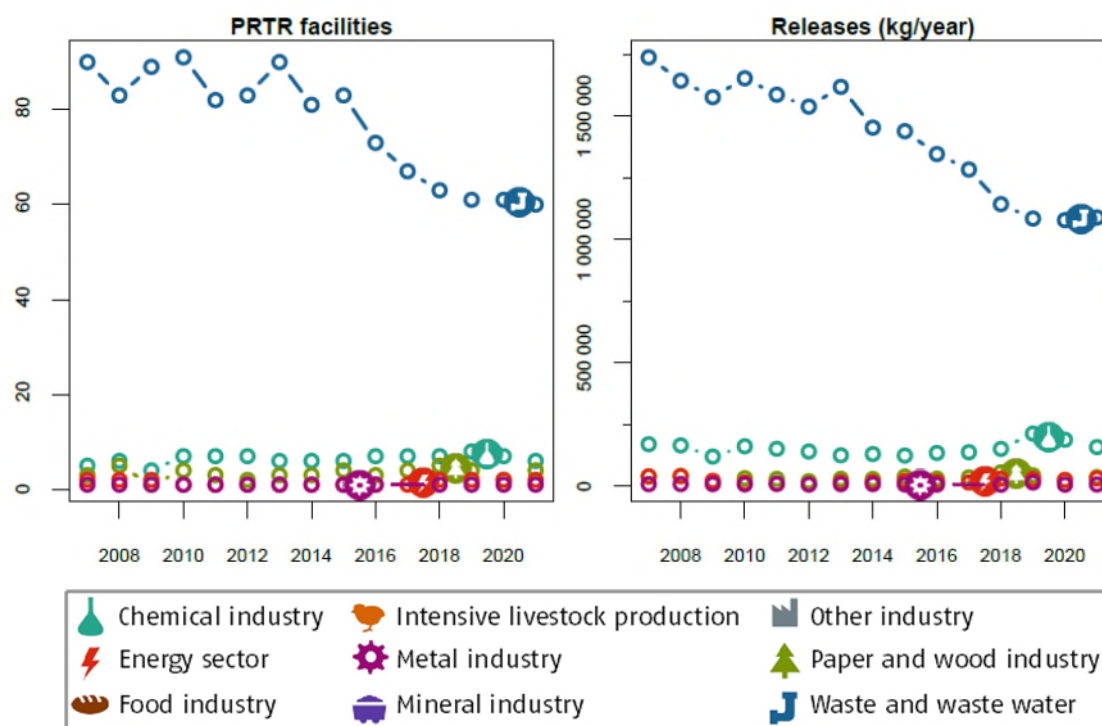
2.54.1 Releases to Water

The threshold is **5 000 kg “Total phosphorus” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 72: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Total phosphorus” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	60	82.2	1 088 870	82.6
Chemical industry	6	8.22	157 580	12.0
Paper- and wood industry	4	5.48	35 410	2.69
Energy sector	2	2.74	30 200	2.29
Metal industry	1	1.37	5 980	0.454
Total	73	100	1 318 040	100

Figure 72: Annual number of facilities (left) and their releases (right) of the pollutant “Total phosphorus” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.54.2 Releases to Land

The threshold is **5 000 kg “Total phosphorus” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Total phosphorus” to **Land** in **2021**.

2.55 Trichlormethane

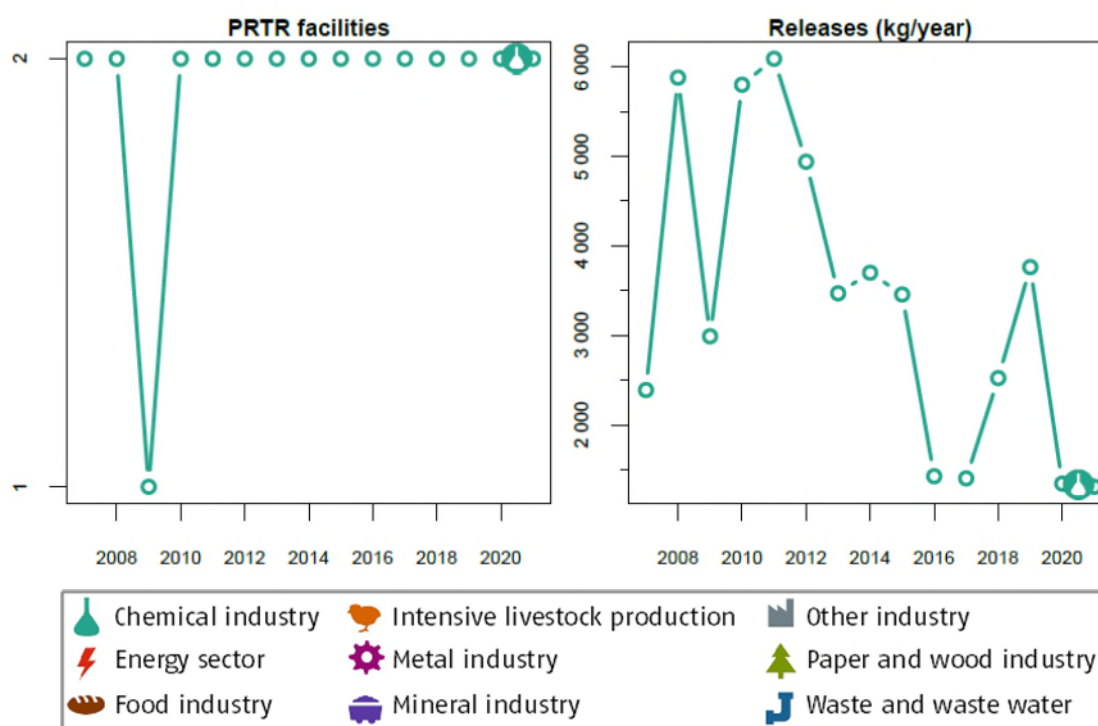
2.55.1 Releases to Air

The threshold is **500 kg “Trichlormethane” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 73: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Trichlormethane” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	100	1 309	100
Total	2	100	1 309	100

Figure 73: Annual number of facilities (left) and their releases (right) of the pollutant “Trichlormethane” to Air, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

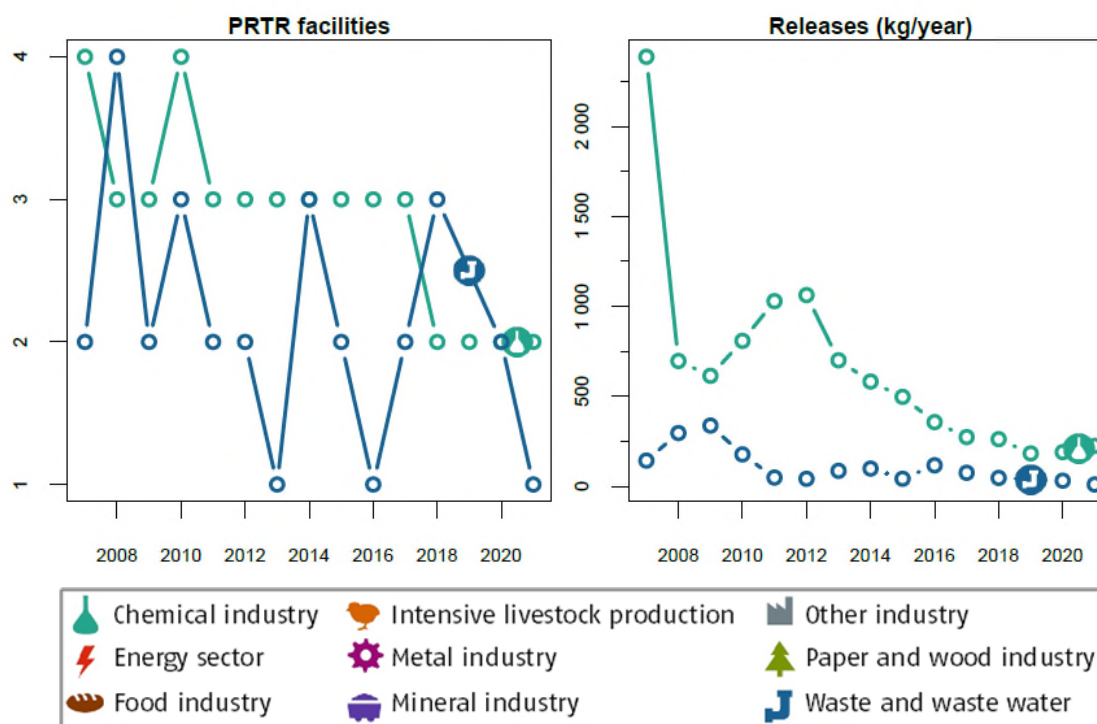
2.55.2 Releases to Water

The threshold is **10 kg “Trichlormethane” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 74: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Trichlormethane” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	66.7	226	95.2
Waste and waste water management	1	33.3	11.5	4.84
Total	3	100	238	100

Figure 74: Annual number of facilities (left) and their releases (right) of the pollutant “Trichlormethane” to Water, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.56 Vinyl chloride

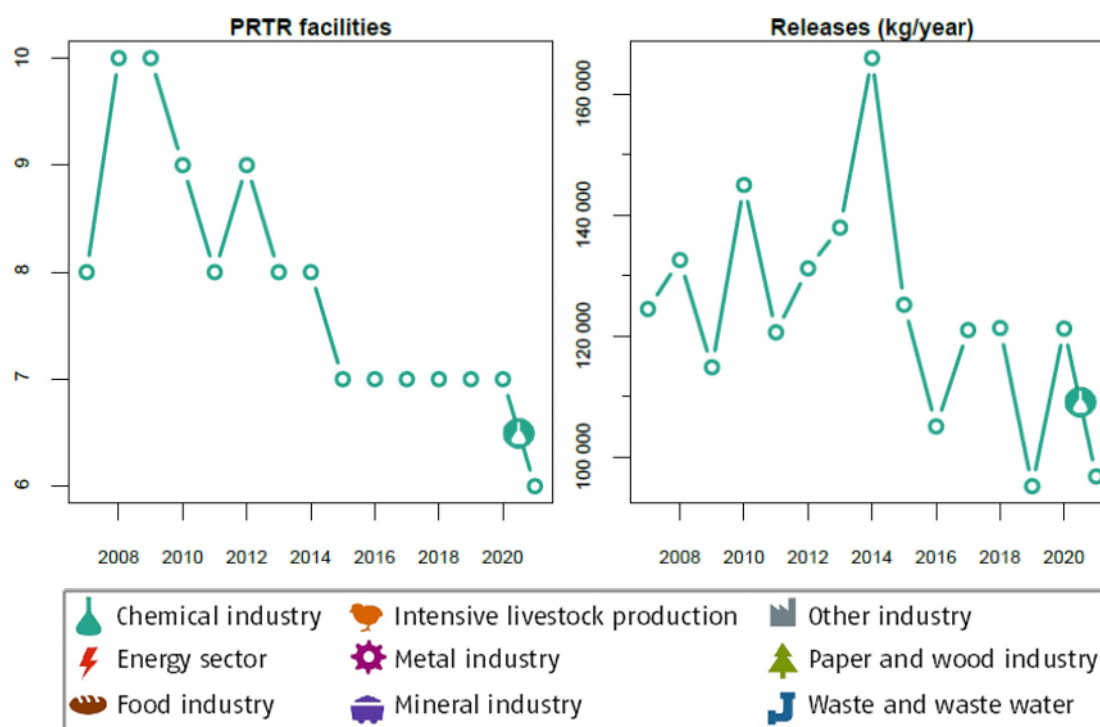
2.56.1 Releases to Air

The threshold is **1 000 kg “Vinyl chloride” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 75: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Vinyl chloride” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	6	100	96 830	100
Total	6	100	96 830	100

Figure 75: Annual number of facilities (left) and their releases (right) of the pollutant “Vinyl chloride” to Air, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

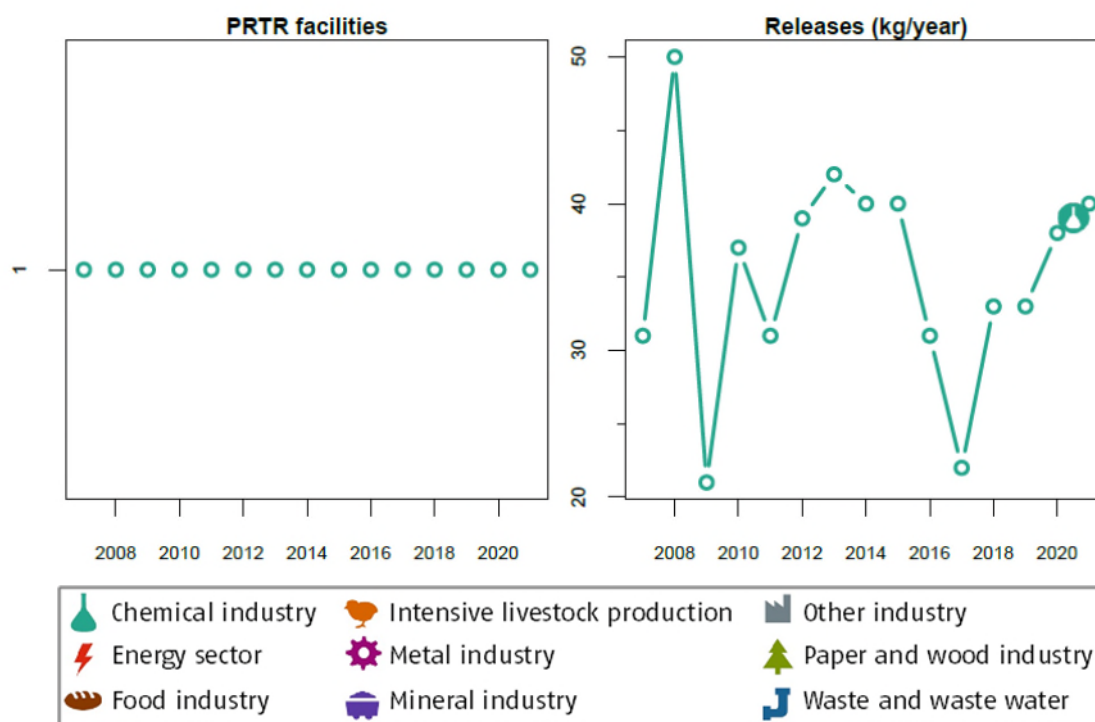
2.56.2 Releases to Water

The threshold is **10 kg “Vinyl chloride” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 76: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Vinyl chloride” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	40	100
Total	1	100	40	100

Figure 76: Annual number of facilities (left) and their releases (right) of the pollutant “Vinyl chloride” to Water, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

2.56.3 Releases to Land

The threshold is **10 kg “Vinyl chloride” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

No facility reported the release of “Vinyl chloride” to **Land** in **2021**.

2.57 Zinc and compounds (as Zn)

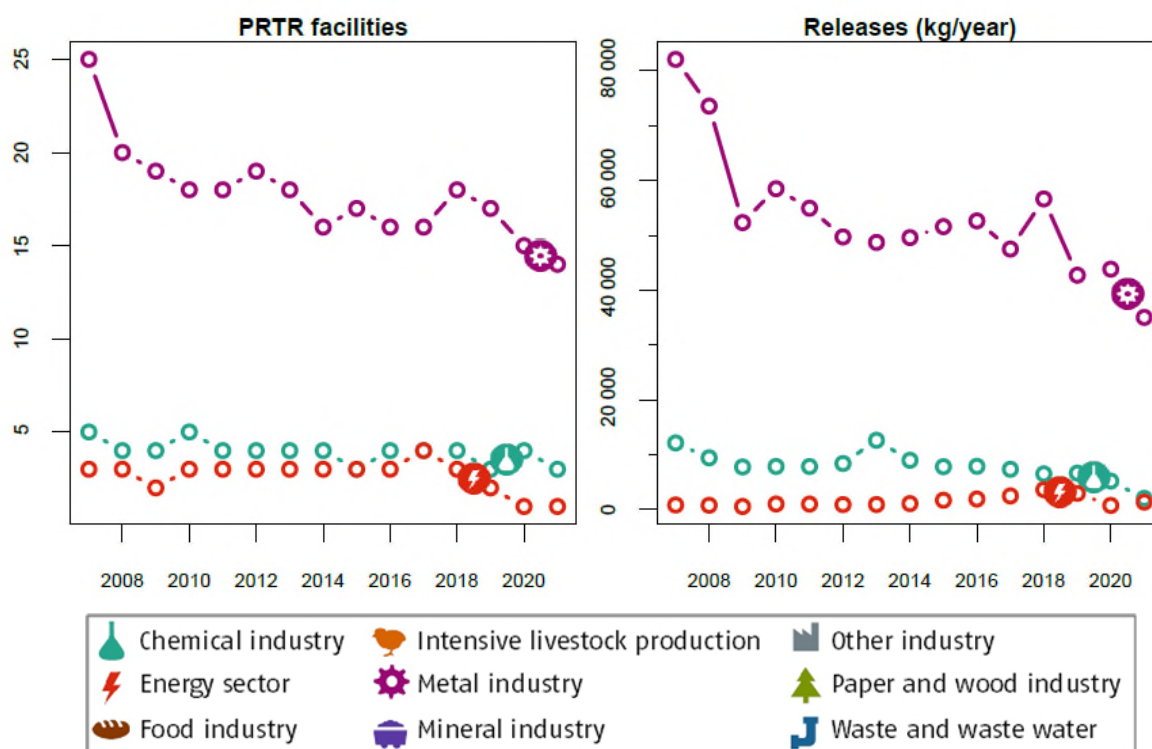
2.57.1 Releases to Air

The threshold is **200 kg “Zinc and compounds (as Zn)” per year**. Releases to **Air** above this value have to be reported according to the E-PRTR Regulation.

Table 77: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Zinc and compounds (as Zn)” to Air of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	14	77.8	35 027	91.3
Chemical industry	3	16.7	2 015	5.25
Energy sector	1	5.56	1 340	3.49
Total	18	100	38 382	100

Figure 77: Annual number of facilities (left) and their releases (right) of the pollutant “Zinc and compounds (as Zn)” to Air, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

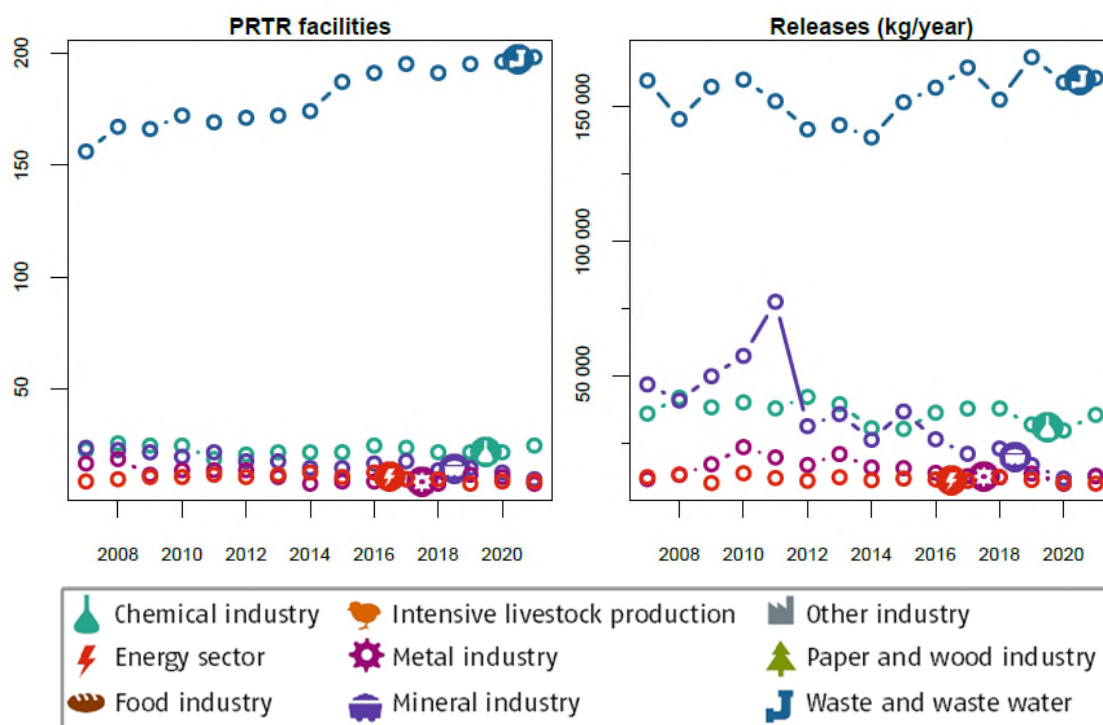
2.57.2 Releases to Water

The threshold is **100 kg “Zinc and compounds (as Zn)” per year**. Releases to **Water** above this value have to be reported according to the E-PRTR Regulation.

Table 78: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Zinc and compounds (as Zn)” to Water of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Waste and waste water management	198	79.2	160 623	69.2
Chemical industry	25	10.0	35 634	15.3
Mineral industry	10	4.00	13 012	5.60
Metal industry	8	3.20	12 864	5.54
Energy sector	9	3.60	10 130	4.36
Total	250	100	232 263	100

Figure 78: Annual number of facilities (left) and their releases (right) of the pollutant “Zinc and compounds (as Zn)” to Water, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

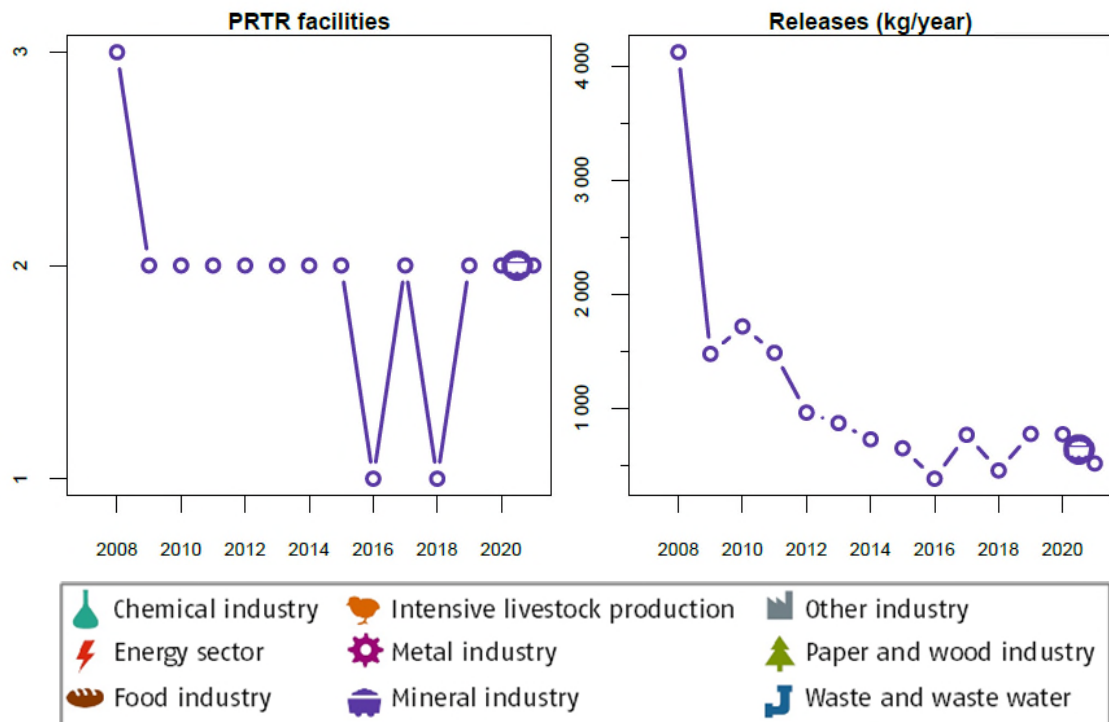
2.57.3 Releases to Land

The threshold is **100 kg “Zinc and compounds (as Zn)” per year**. Releases to **Land** above this value have to be reported according to the E-PRTR Regulation.

Table 79: For the reporting year 2021 - Number of facilities and their releases of the pollutant “Zinc and compounds (as Zn)” to Land of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Mineral industry	2	100	516	100
Total	2	100	516	100

Figure 79: Annual number of facilities (left) and their releases (right) of the pollutant “Zinc and compounds (as Zn)” to Land, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

3 Off-site transfer in waste water

The following chapters cover only off-site transfer of pollutants in waste water.

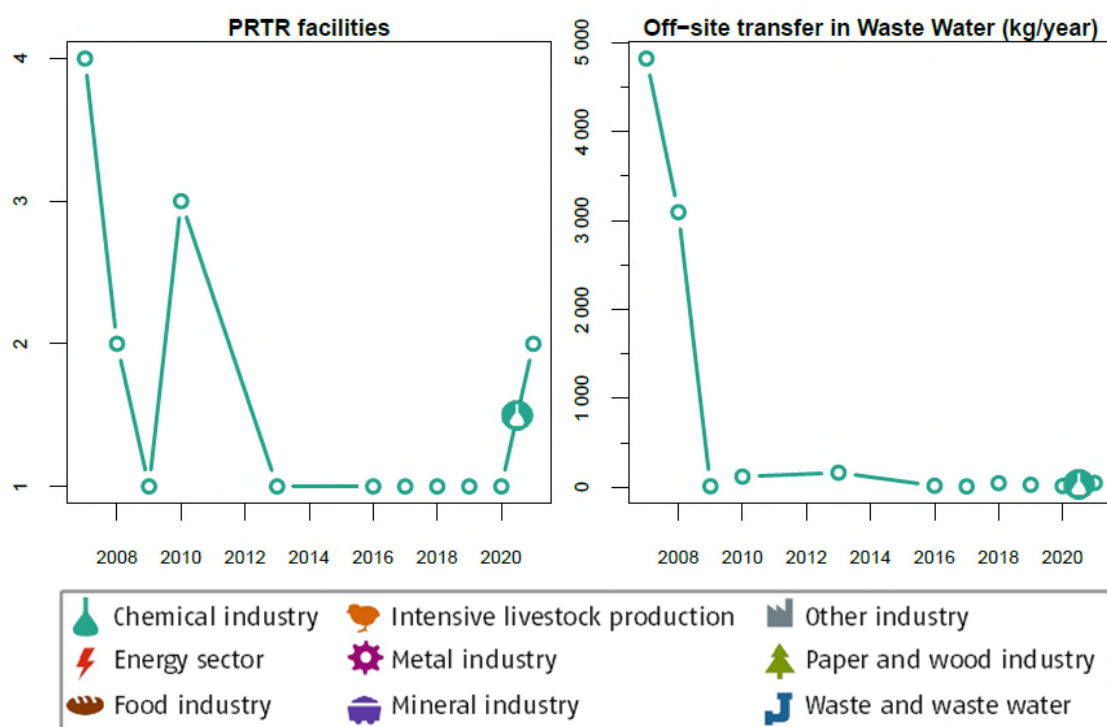
3.1 1,2-Dichlorethan (EDC)

The threshold is **10 kg “1,2-dichloroethane (EDC)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 80: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “1,2-dichloroethane (EDC)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Off-site transfer (kg/year)	(%)
Chemical industry	2	100	50.4	100
Total	2	100	50.4	100

Figure 80: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “1,2-dichloroethane (EDC)”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

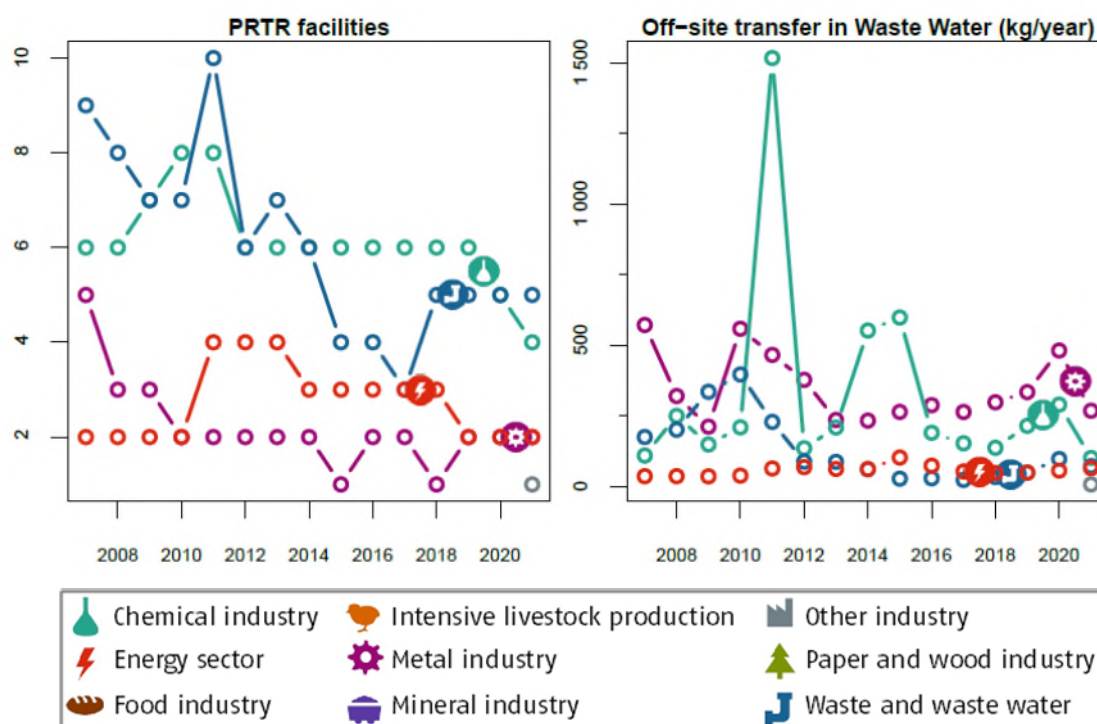
3.2 Arsenic and compounds (as As)

The threshold is **5 kg “Arsenic and compounds (as As)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 81: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Arsenic and compounds (as As)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	2	14.3	269	51.9
Chemical industry	4	28.6	102	19.7
Waste and waste water management	5	35.7	72,9	14.1
Energy sector	2	14.3	65.7	12.7
Other industry	1	7.14	8.32	1.61
Total	14	100	518	100

Figure 81: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Arsenic and compounds (as As)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

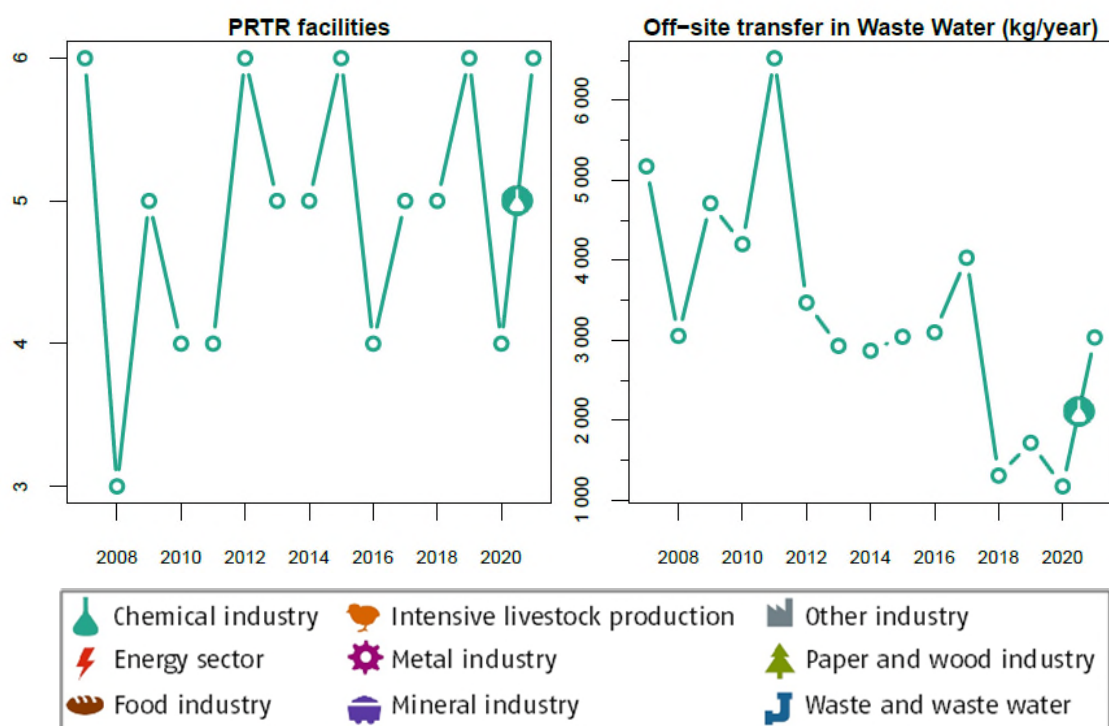
3.3 Benzene

The threshold is **200 kg “Benzene” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 82: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Benzene” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	6	100	3 034	100
Total	6	100	3 034	100

Figure 82: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Benzene”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

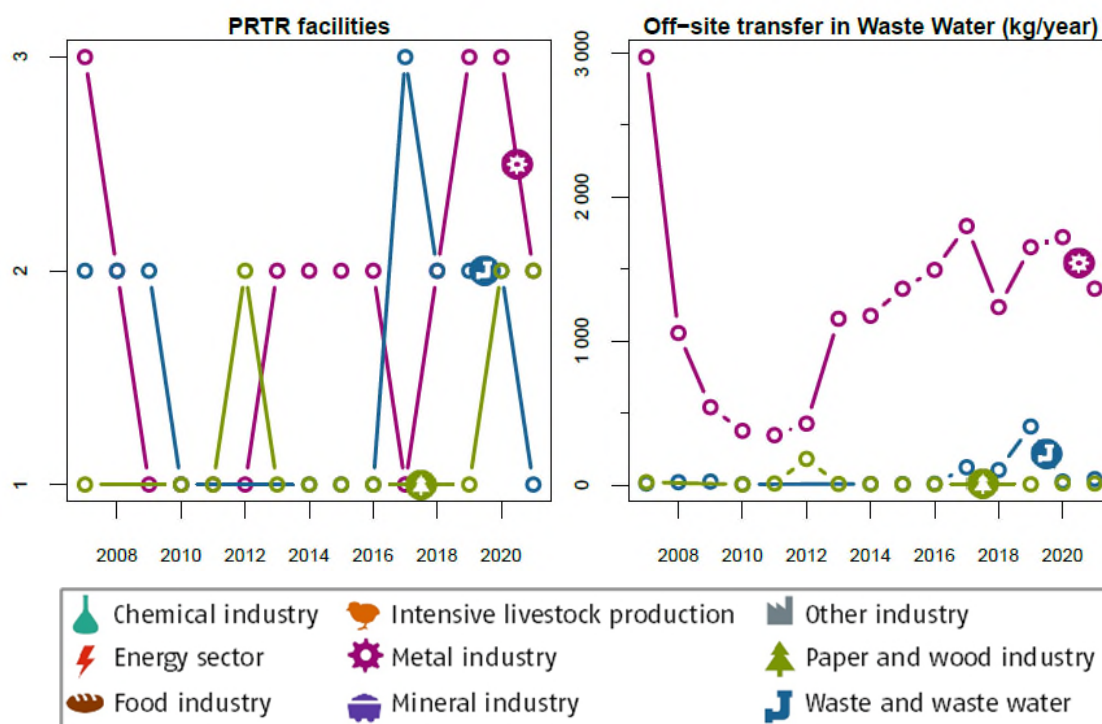
3.4 Cadmium and compounds (as Cd)

The threshold is **5 kg “Cadmium and compounds (as Cd)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 83: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Cadmium and compounds (as Cd)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	2	40	1 365	96.1
Waste and waste water management	1	20	42.8	3.01
Paper- and wood industry	2	40	12.7	0.894
Total	5	100	1 420	100

Figure 83: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Cadmium and compounds (as Cd)”, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

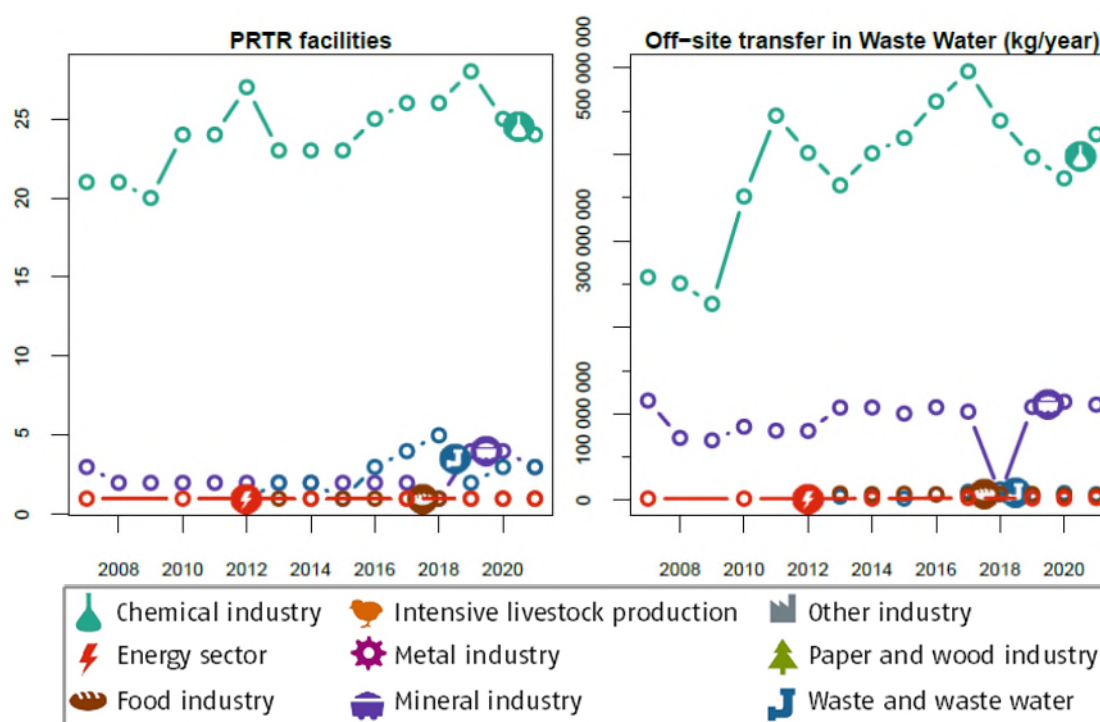
3.5 Chlorides (as total Cl)

The threshold is **2 000 000 kg “Chlorides (as total Cl)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 84: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Chlorides (as total Cl)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	24	72.7	423 140 000	76.7
Mineral industry	3	9.09	110 710 000	20.1
Waste and waste water management	3	9.09	7 100 000	1.29
Food industry	1	3.03	5 700 000	1.03
Energy sector	1	3.03	2 820 000	0.511
Paper- and wood industry	1	3.03	2 420 000	0.438
Total	33	100	551 890 000	100

Figure 84: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Chlorides (as total Cl)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

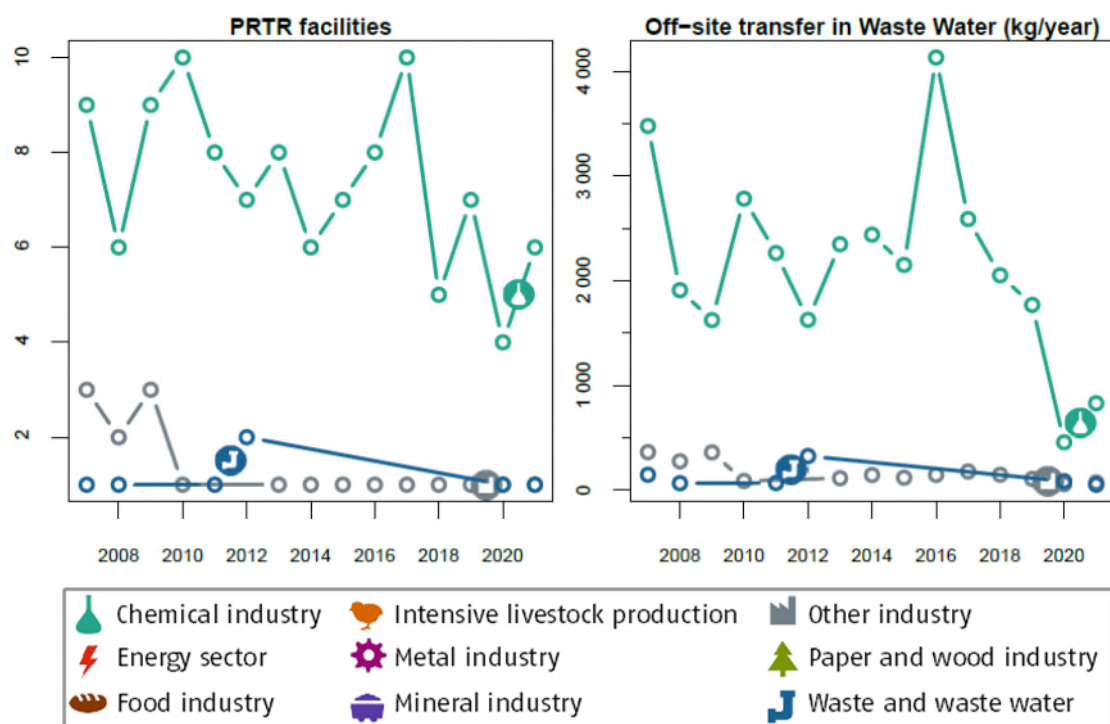
3.6 Chromium and compounds (as Cr)

The threshold is **50 kg “Chromium and compounds (as Cr)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 85: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Chromium and compounds (as Cr)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	6	75.0	830	86.7
Other industry	1	12.5	74,5	7.78
Waste and waste water management	1	12.5	53,1	5.55
Total	8	100	958	100

Figure 85: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Chromium and compounds (as Cr)”, each by the 3 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

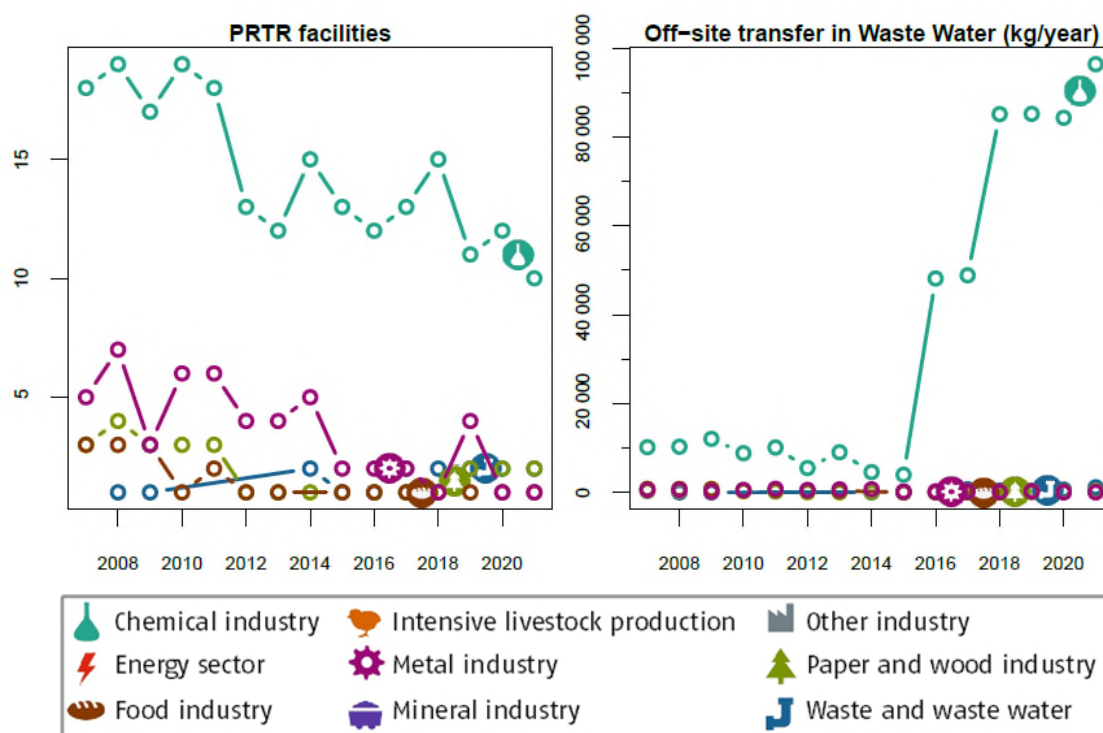
3.7 Copper and compounds (as Cu)

The threshold is **50 kg “Copper and compounds (as Cu)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 86: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Copper and compounds (as Cu)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	10	62.5	96 365	98.2
Waste and waste water management	2	12.5	1 175	1.20
Paper- and wood industry	2	12.5	355	0.362
Food industry	1	6.25	145	0.148
Metal industry	1	6.25	89.7	0.0914
Total	16	100	98 130	100

Figure 86: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Copper and compounds (as Cu)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

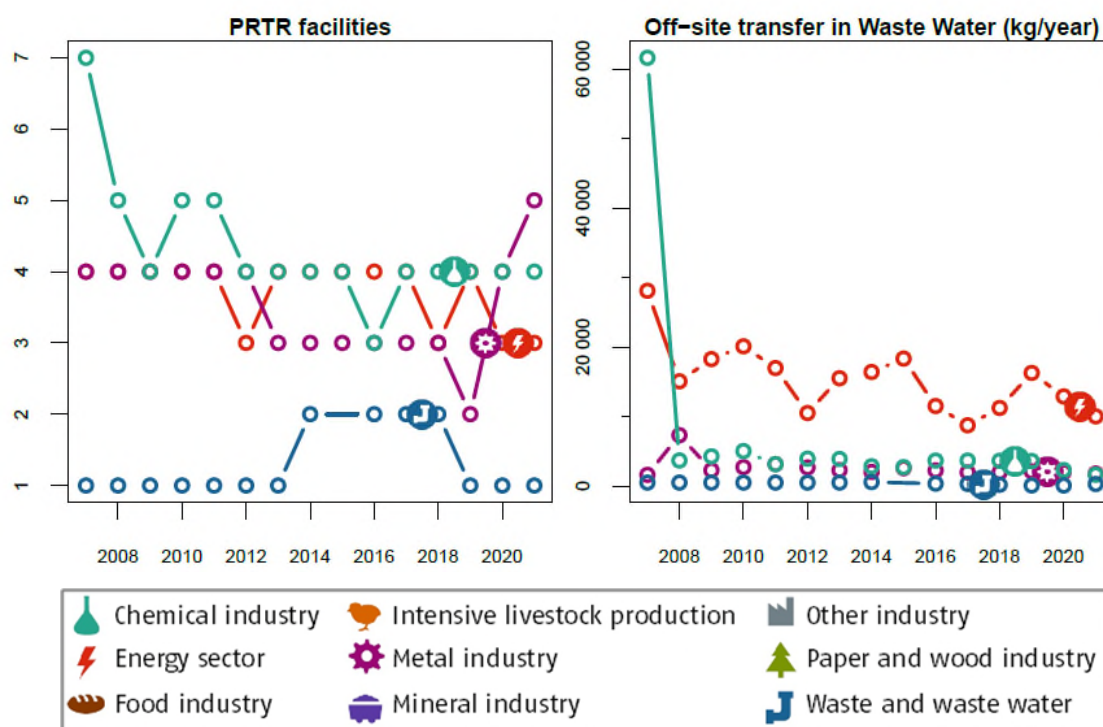
3.8 Cyanides (as total CN)

The threshold is **50 kg “Cyanides (as total CN)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 87: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Cyanides (as total CN)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	3	23.1	10 056	72.6
Metal industry	5	38.5	1 834	13.2
Chemical industry	4	30.8	1 648	11.9
Waste and waste water management	1	7.69	320	2.31
Total	13	100	13 858	100

Figure 87: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Cyanides (as total CN)”, each by the 4 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

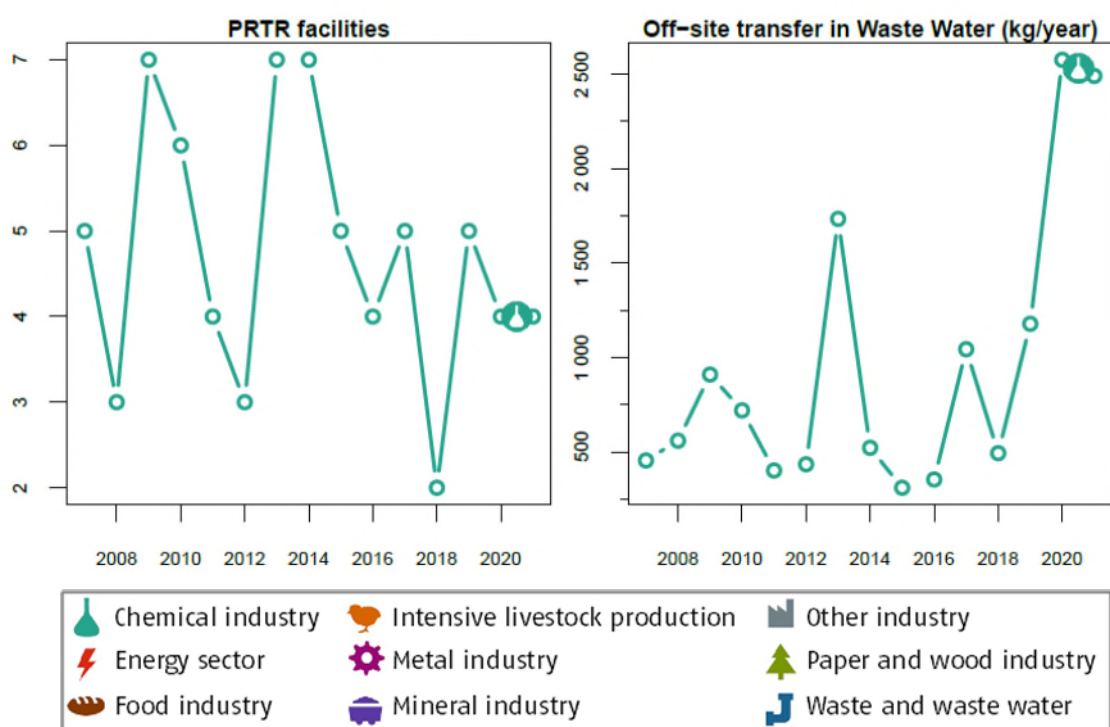
3.9 Dichloromethane (DCM)

The threshold is **10 kg “Dichloromethane (DCM)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 88: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Dichloromethane (DCM)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	4	100	2 490	100
Total	4	100	2 490	100

Figure 88: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Dichloromethane (DCM)”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

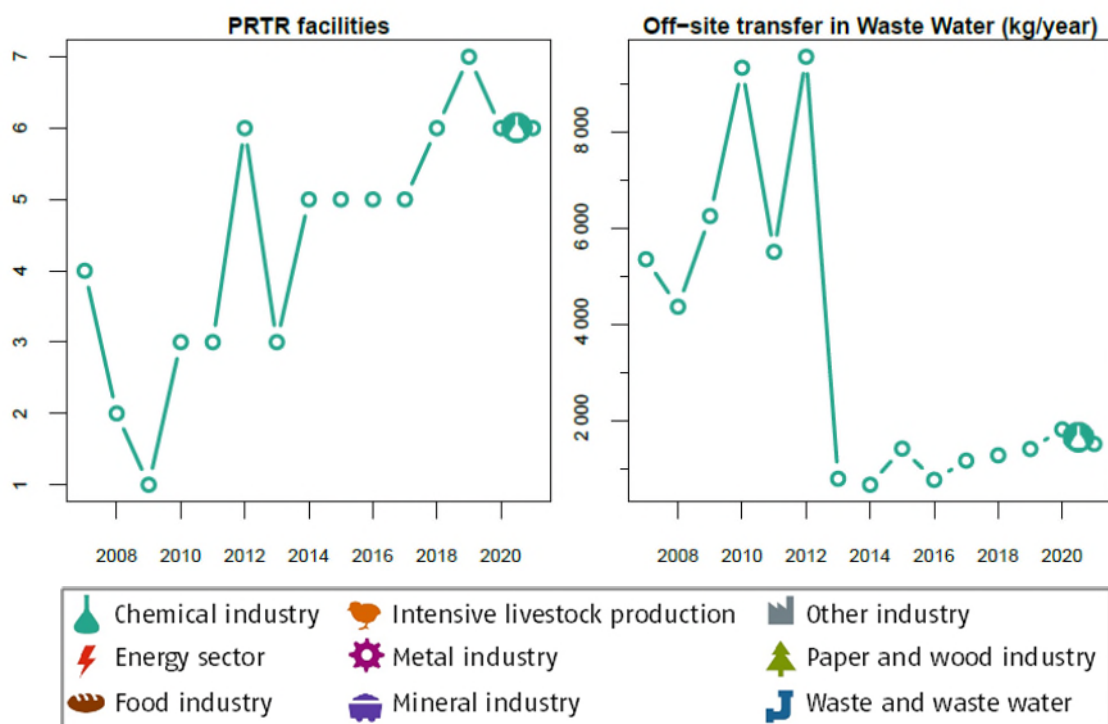
3.10 Ethyl benzene

The threshold is **200 kg “Ethylbenzene” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 89: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Ethyl benzene” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	6	100	1 508	100
Total	6	100	1 508	100

Figure 89: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Ethyl benzene”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

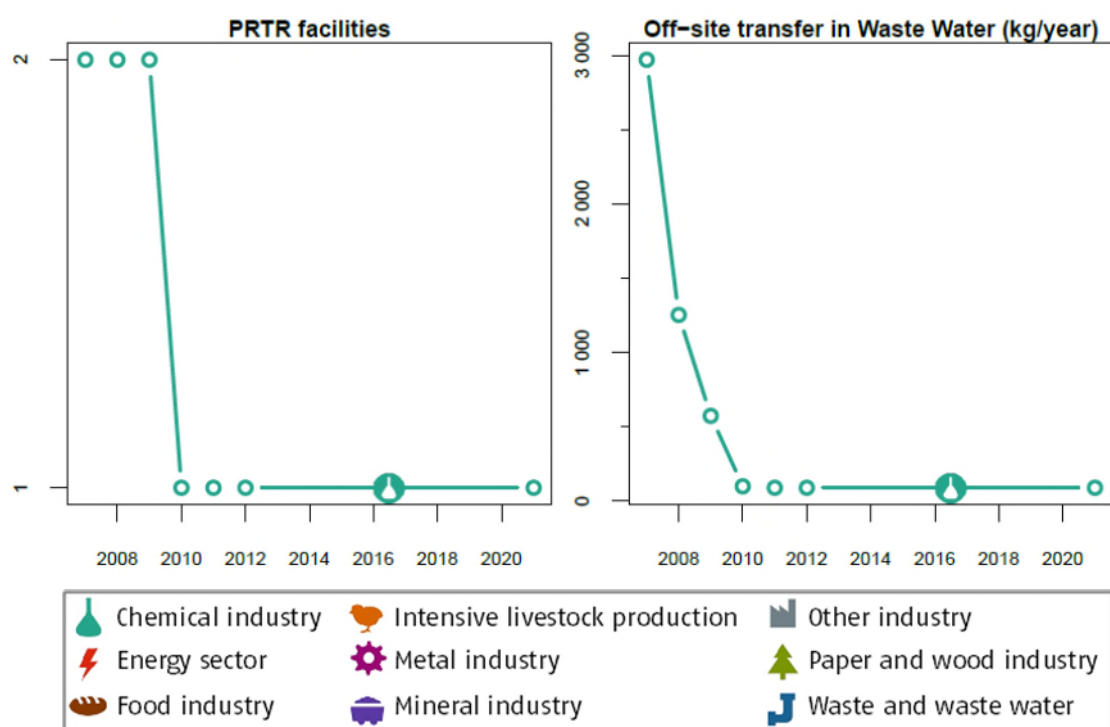
3.11 Ethylene oxide

The threshold is **10 kg “Ethylene oxide” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 90: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Ethylene oxide” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	90	100
Total	1	100	90	100

Figure 90: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Ethylene oxide”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

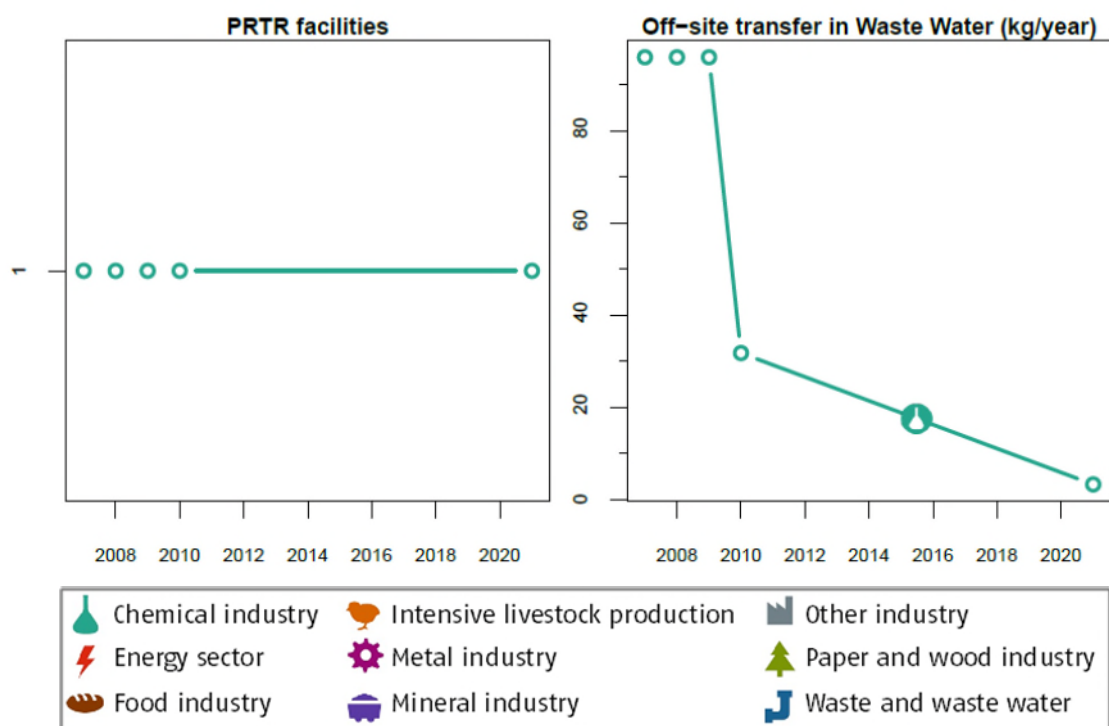
3.12 Fluoranthene

The threshold is **1 kg “Fluoranthene” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 91: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Fluoranthene” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	3.29	100
Total	1	100	3.29	100

Figure 91: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Fluoranthene”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

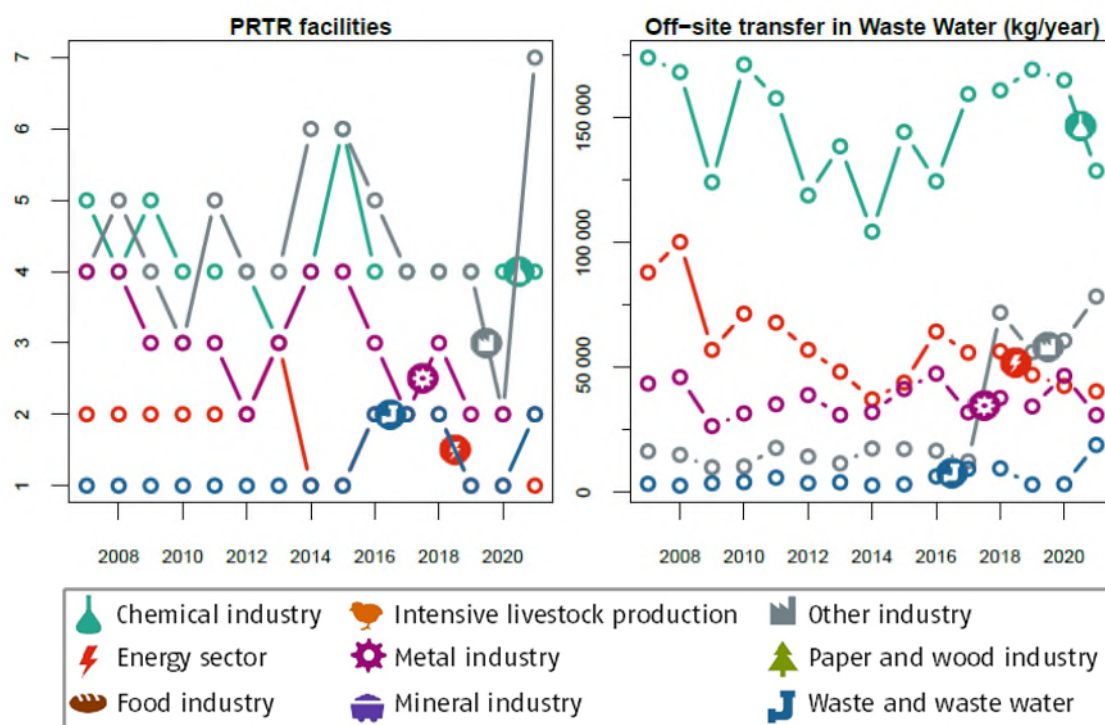
3.13 Fluorides (as total F)

The threshold is **2 000 kg “Fluorides (as total F)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 92: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Fluorides (as total F)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	4	25.0	128 760	43.2
Other industry	7	43.8	78 480	26.4
Energy sector	1	6.25	40 500	13.6
Metal industry	2	12.5	31 000	10.4
Waste and waste water management	2	12.5	19 040	6.39
Total	16	100	297 780	100

Figure 92: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Fluorides (as total F)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

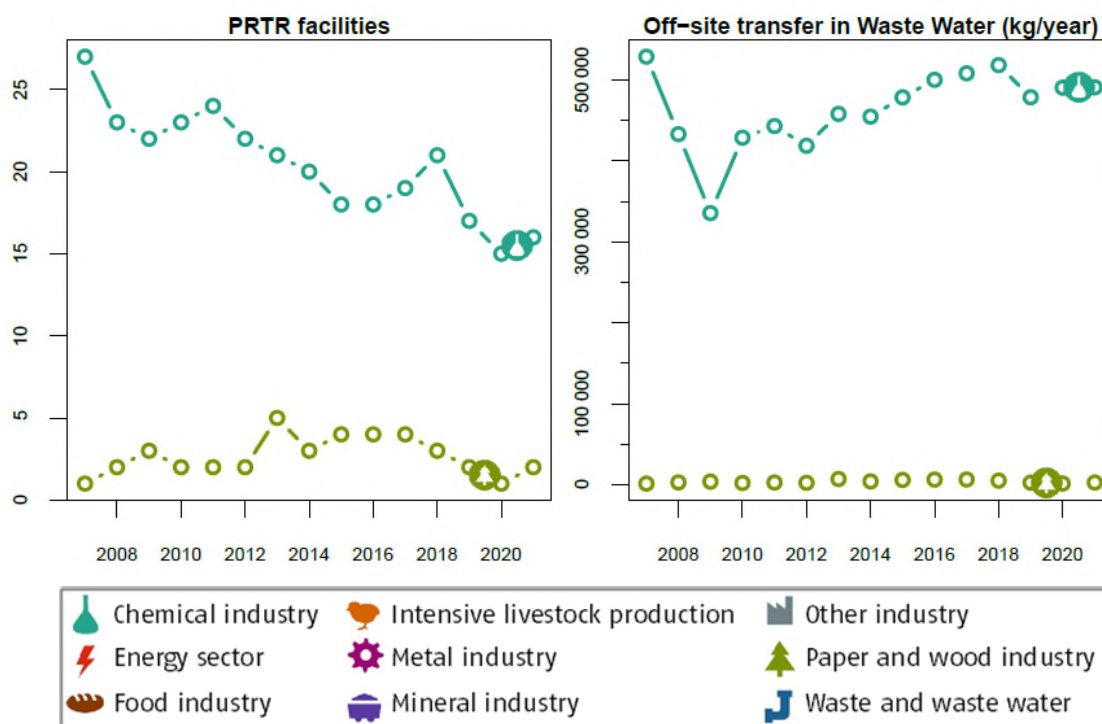
3.14 Halogenated organic compounds (as AOX)

The threshold is **1 000 kg “Halogenated organic compounds (as AOX)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 93: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Halogenated organic compounds (as AOX)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	16	88.9	490 970	99.5
Paper- and wood industry	2	11.1	2 680	0.543
Total	18	100	493 650	100

Figure 93: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Halogenated organic compounds (as AOX)”, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

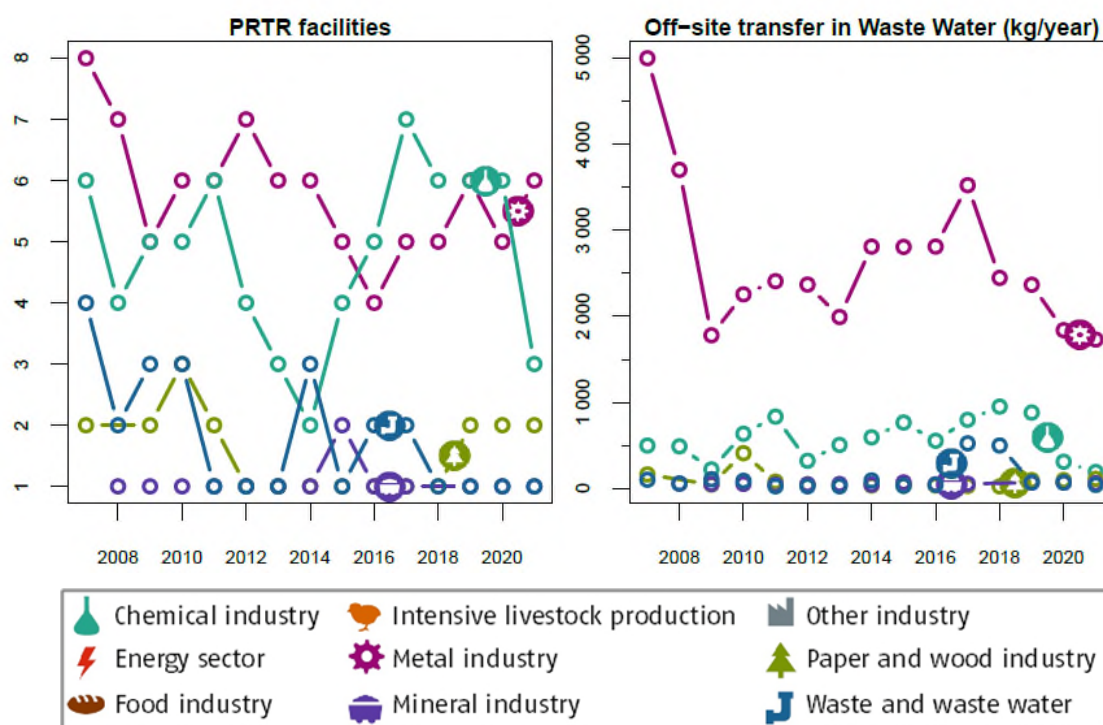
3.15 Lead and compounds (as Pb)

The threshold is **20 kg “Lead and compounds (as Pb)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 94: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Lead and compounds (as Pb)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	6	46.2	1 731	80.9
Chemical industry	3	23.1	192	8.99
Paper- and wood industry	2	15.4	113	5.26
Mineral industry	1	7.69	60,8	2.84
Waste and waste water management	1	7.69	42.5	1.99
Total	13	100	2 139	100

Figure 94: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Lead and compounds (as Pb)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

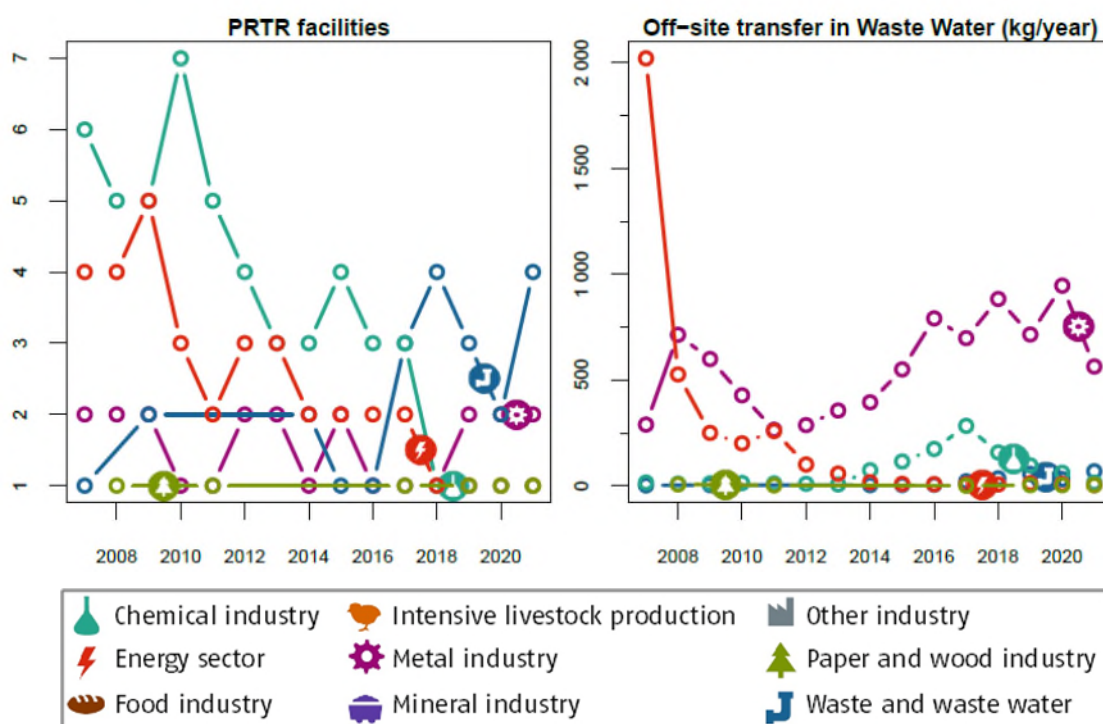
3.16 Mercury and compounds (as Hg)

The threshold is **1 kg “Mercury and compounds (as Hg)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 95: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Mercury and compounds (as Hg)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	2	20	564	85.7
Waste and waste water management	4	40	69	10.5
Chemical industry	1	10	16	2.43
Energy sector	1	10	4.16	0.632
Paper- and wood industry	1	10	3.50	0.532
Mineral industry	1	10	1.20	0.182
Total	10	100	658	100

Figure 95: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Mercury and compounds (as Hg)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

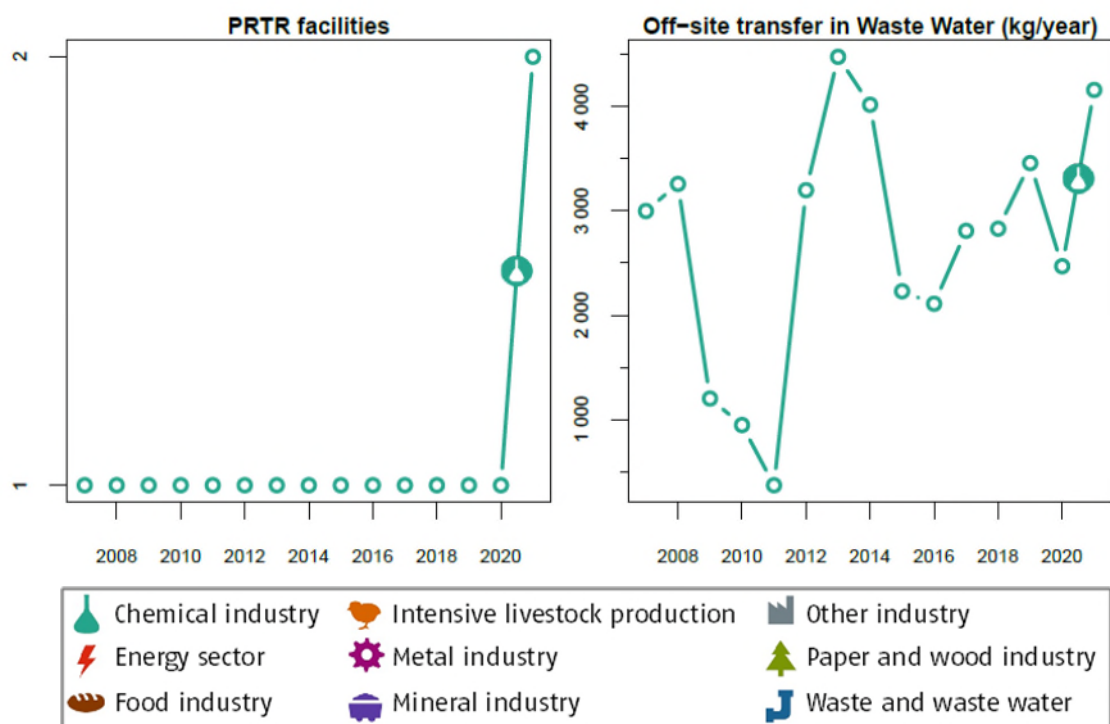
3.17 Naphthalene

The threshold is **10 kg “Naphthalene” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 96: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Naphthalene” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	100	4 162	100
Total	2	100	4 162	100

Figure 96: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Naphthalene”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

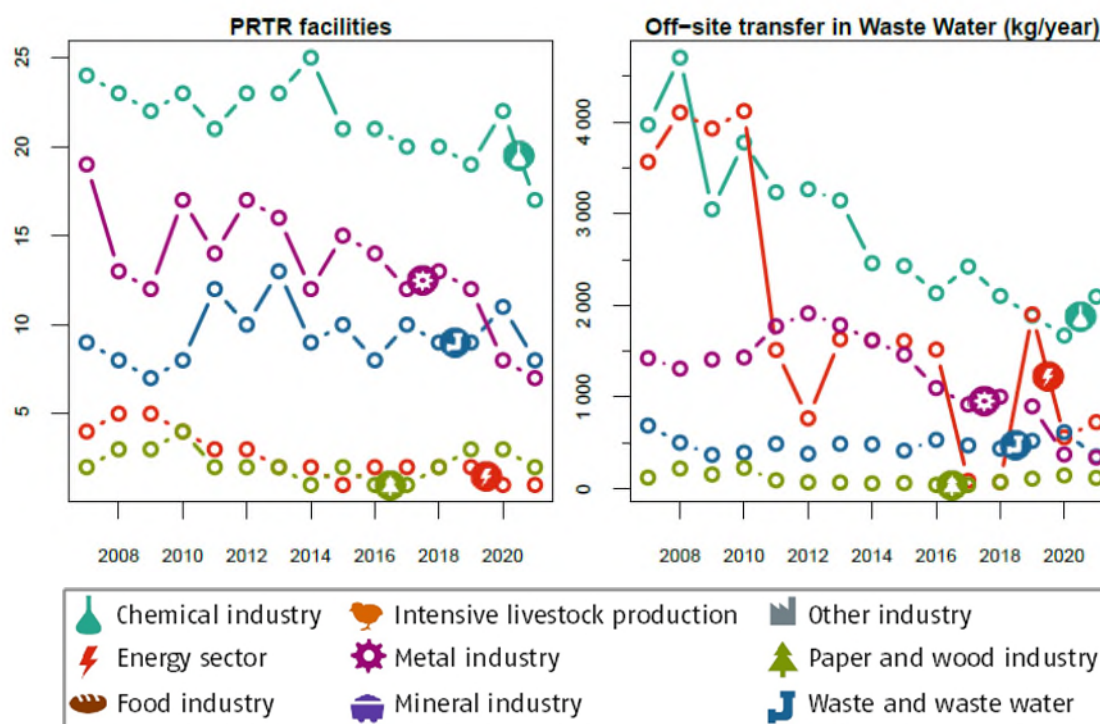
3.18 Nickel and compounds (as Ni)

The threshold is **20 kg “Nickel and compounds (as Ni)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 97: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Nickel and compounds (as Ni)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	17	42,5	2 095	54.2
Energy sector	1	2.5	726	18.8
Waste and waste water management	8	20.0	351	9.09
Metal industry	7	17.5	340	8.80
Paper- and wood industry	2	5.0	118	3.06
Other industry	3	7.5	108	2.79
Mineral industry	1	2.5	82,9	2.14
Food industry	1	2.5	44.6	1.15
Total	40	100	3 866	100

Figure 97: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Nickel and compounds (as Ni)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

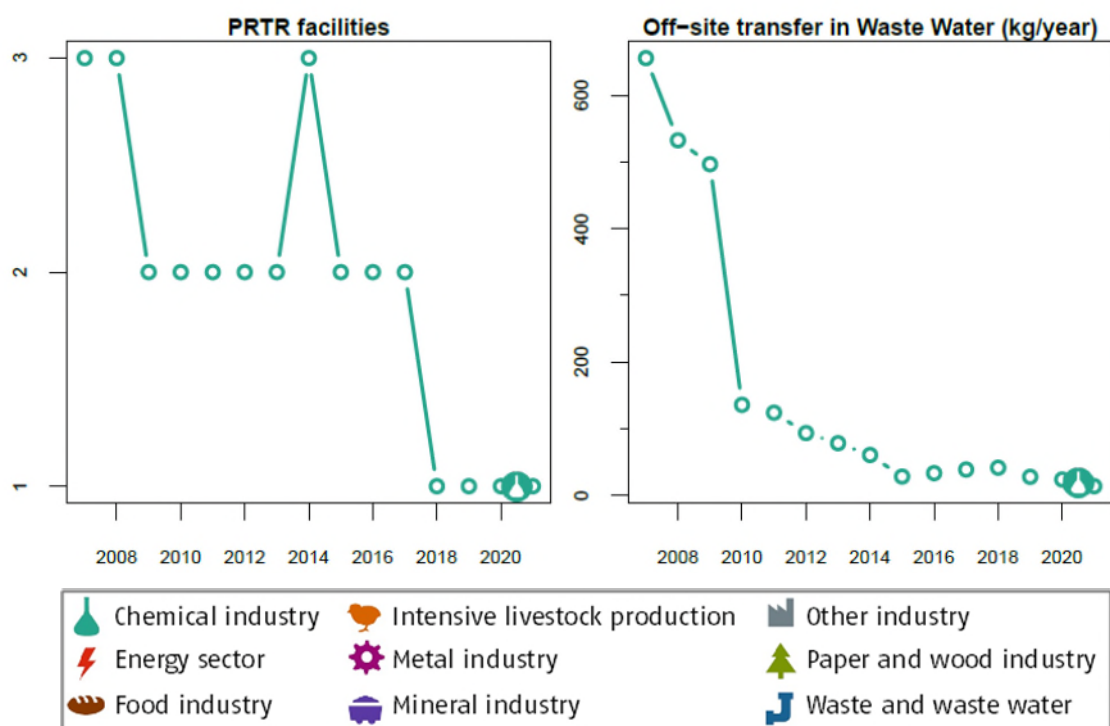
3.19 Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)

The threshold is **1 kg “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 98: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	13.6	100
Total	1	100	13.6	100

Figure 98: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

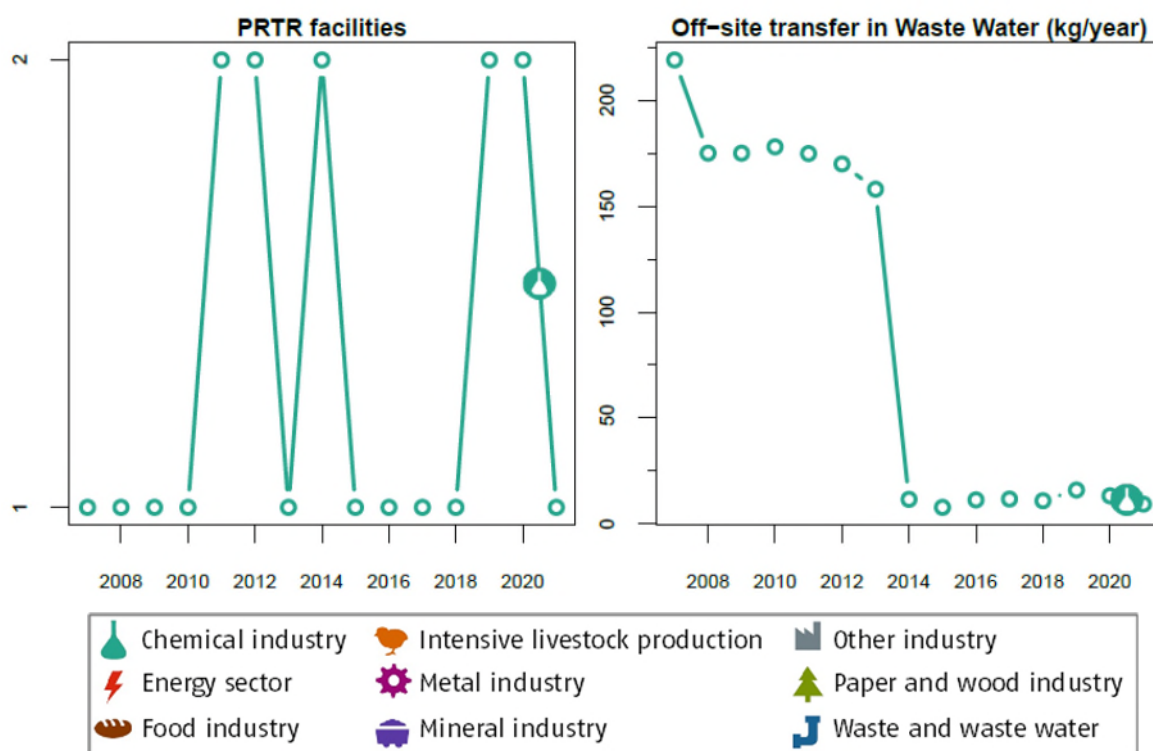
3.20 Octylphenols and Octylphenol ethoxylates

The threshold is **1 kg “Octylphenols and Octylphenol ethoxylates” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 99: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Octylphenols and Octylphenol ethoxylates” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	9.4	100
Total	1	100	9.4	100

Figure 99: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Octylphenols and Octylphenol ethoxylates”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

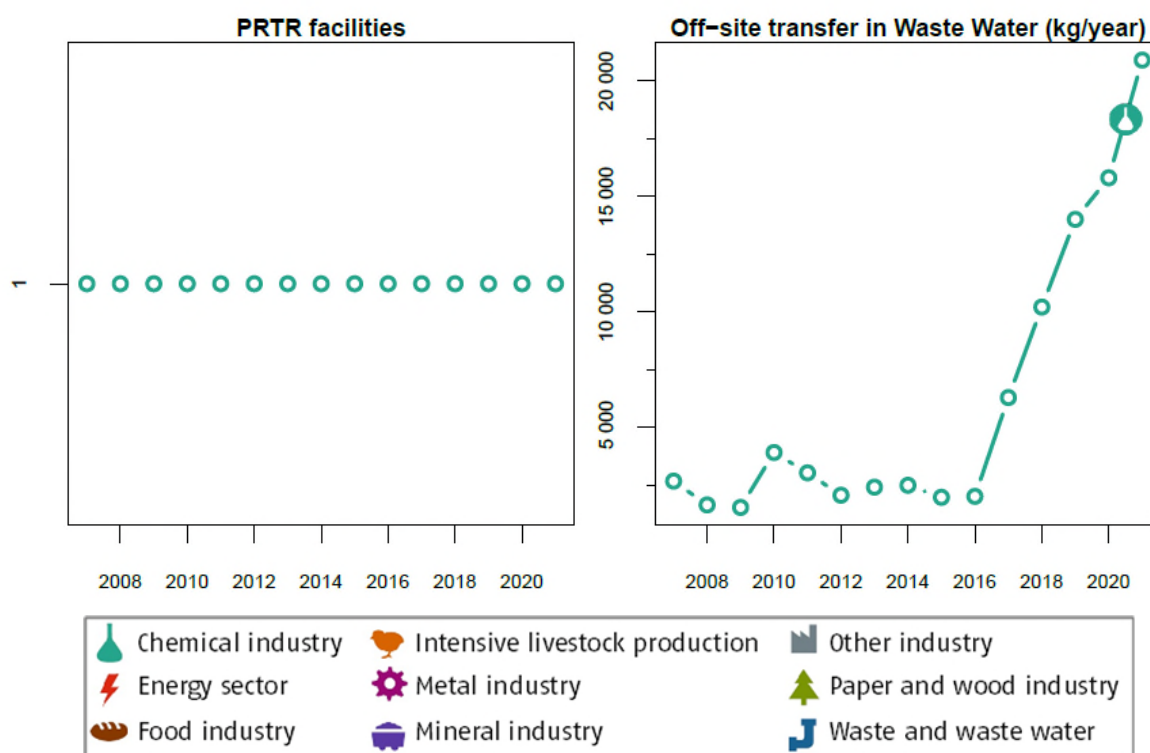
3.21 Organotin compounds (as total Sn)

The threshold is **50 kg “Organotin compounds (as total Sn)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 100: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Organotin compounds (as total Sn)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	20 900	100
Total	1	100	20 900	100

Figure 100: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Organotin compounds (as total Sn)”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

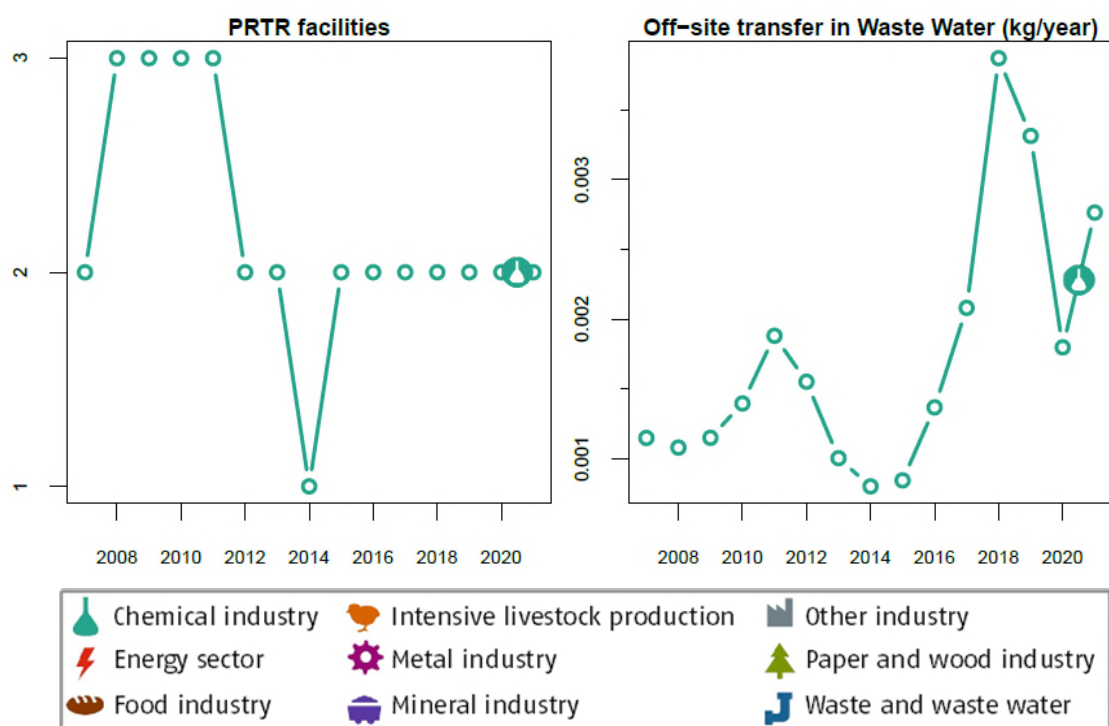
3.22 PCDD + PCDF (dioxins + furans) (as Teq)

The threshold is **0.0001 kg “PCDD + PCDF (dioxins + furans) (as Teq)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 101: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “PCDD + PCDF (dioxins + furans) (as Teq)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	2	100	0.00277	100
Total	2	100	0.00277	100

Figure 101: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “PCDD + PCDF (dioxins + furans) (as Teq)”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

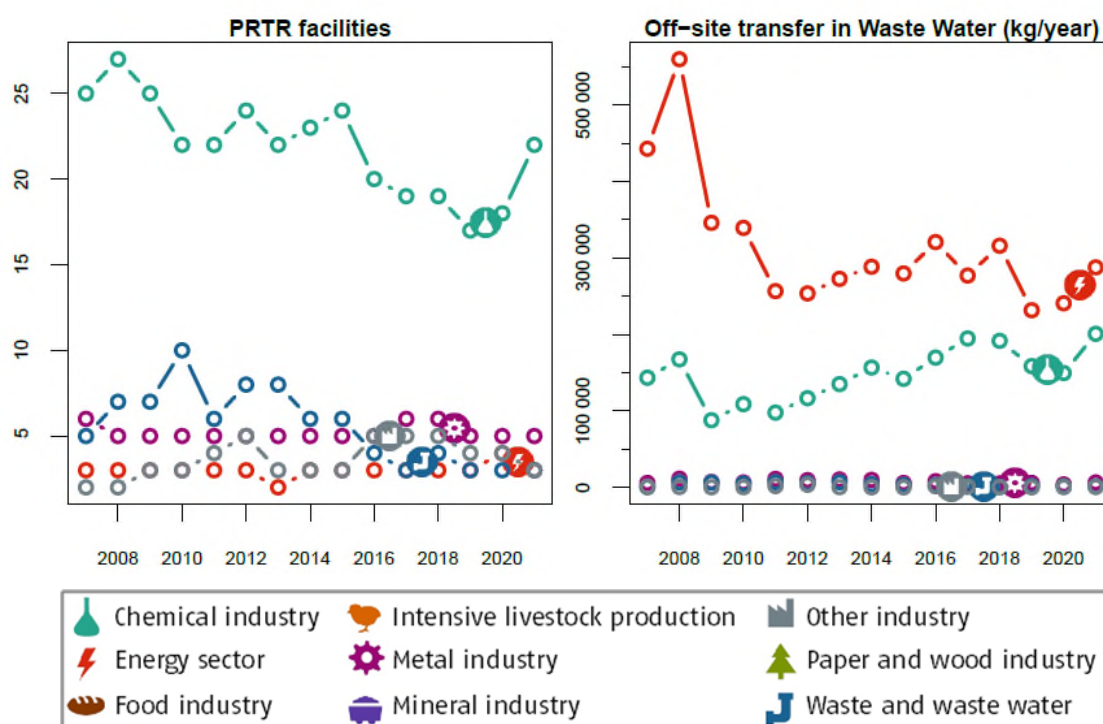
3.23 Phenols (as total C)

The threshold is **20 kg “Phenols (as total C)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 102: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Phenols (as total C)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Energy sector	3	8.11	287 676	57.8
Chemical industry	22	59.5	200 787	40.3
Metal industry	5	13.5	6 603	1.33
Waste and waste water management	3	8.11	1 453	0.292
Other industry	3	8.11	726	0.146
Food industry	1	2.7	645	0.13
Total	37	100	497 890	100

Figure 102: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Phenols (as total C)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

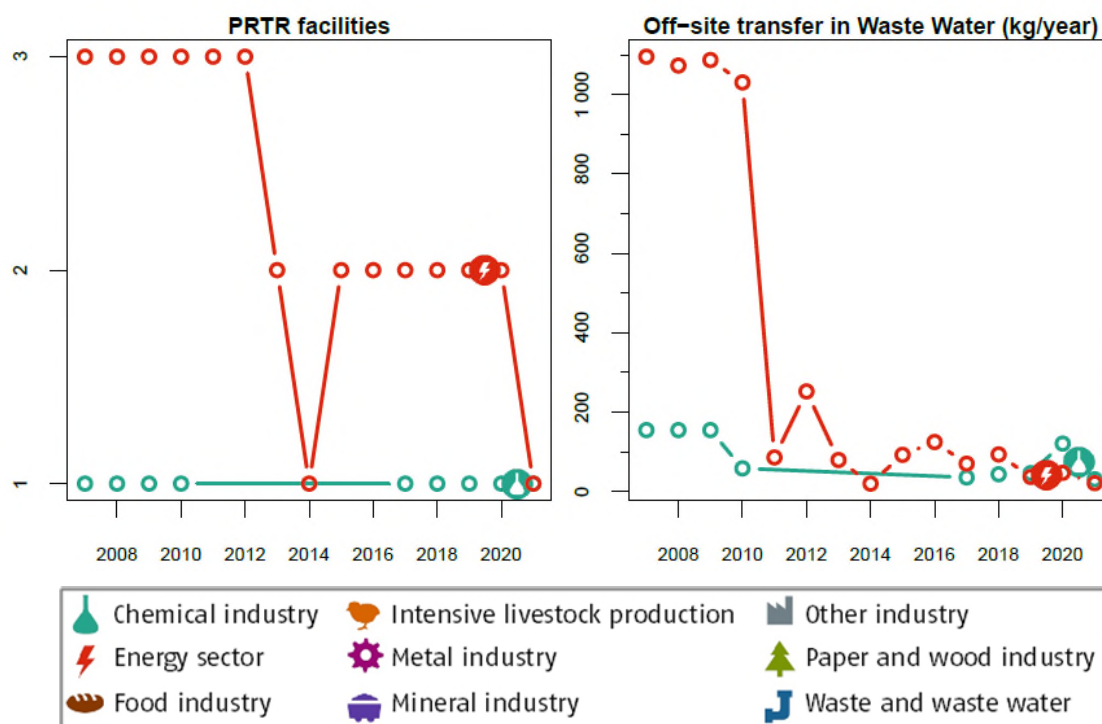
3.24 Polycyclic aromatic hydrocarbons (PAHs)

The threshold is **5 kg “Polycyclic aromatic hydrocarbons (PAHs)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 103: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Polycyclic aromatic hydrocarbons (PAHs)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	50	31.1	59.2
Energy sector	1	50	21.4	40.8
Total	2	100	52.5	100

Figure 103: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Polycyclic aromatic hydrocarbons (PAHs)”, each by the 2 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

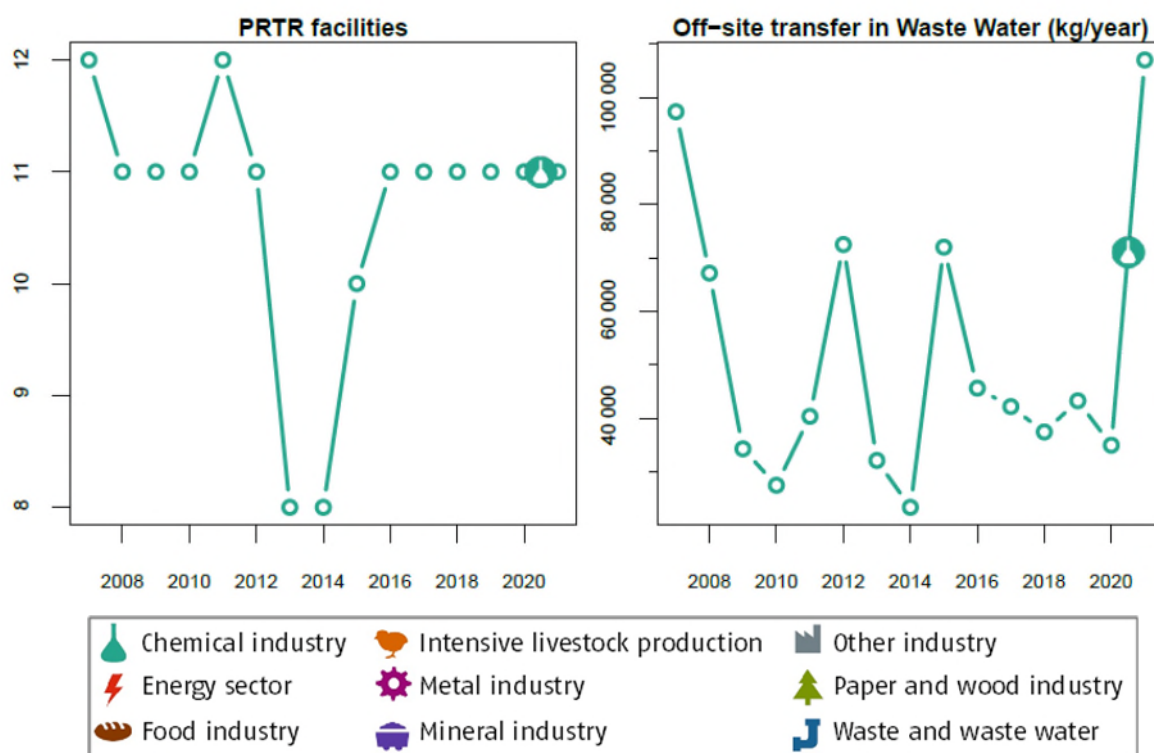
3.25 Toluene

The threshold is **200 kg “Toluene” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 104: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Toluene” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	11	100	107 069	100
Total	11	100	107 069	100

Figure 104: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Toluene”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

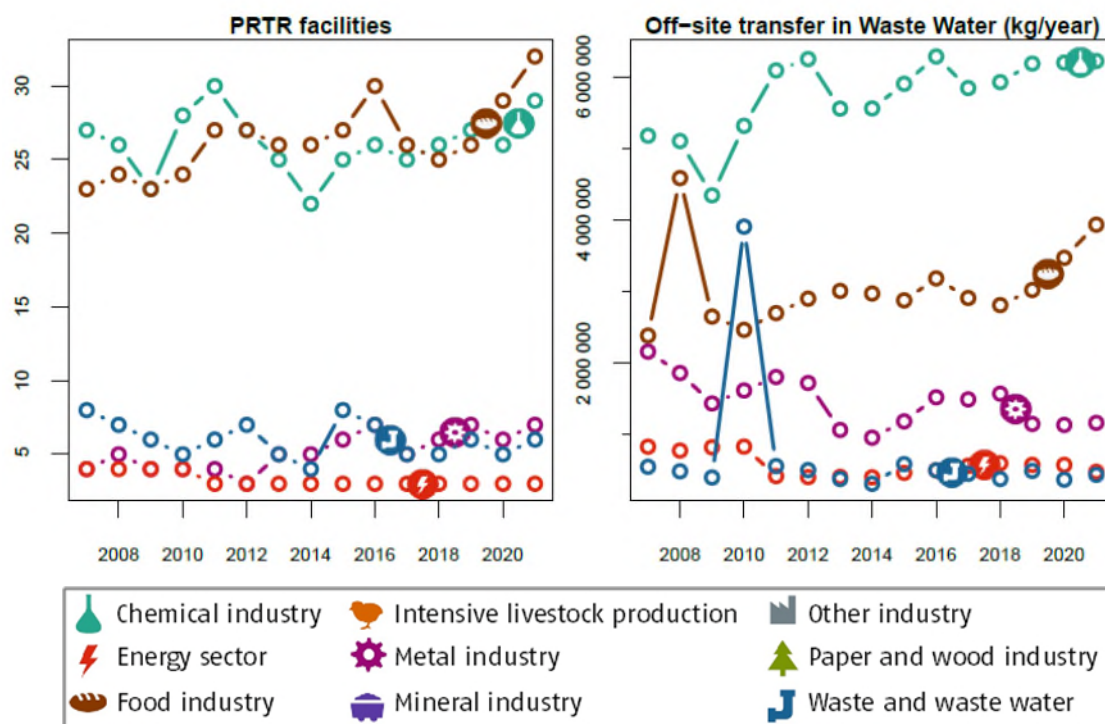
3.26 Total nitrogen

The threshold is **50 000 kg “Total nitrogen” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 105: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Total nitrogen” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	29	35.4	6 218 000	49.0
Food industry	32	39.0	3 931 300	31.0
Metal industry	7	8.54	1 162 900	9.16
Energy sector	3	3.66	479 300	3.77
Waste and waste water management	6	7.32	437 400	3.44
Paper- and wood industry	4	4.88	306 400	2.41
Other industry	1	1.22	164 000	1.29
Total	82	100	12 699 300	100

Figure 105: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Total nitrogen”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

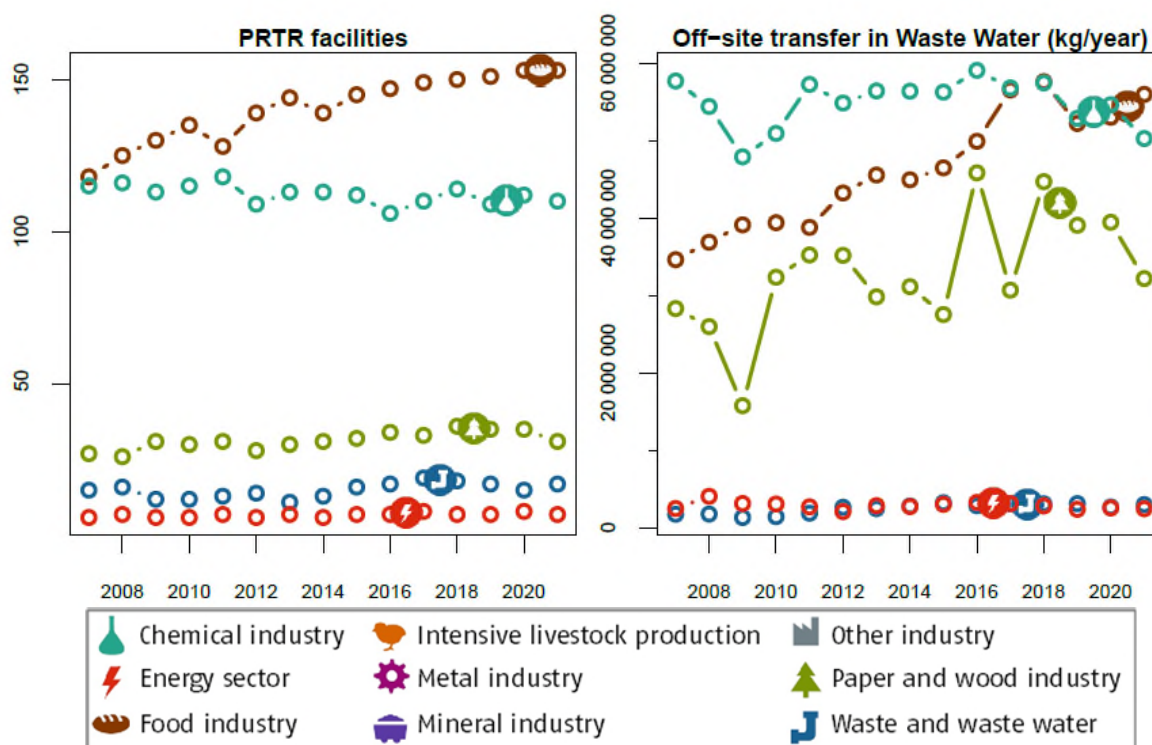
3.27 Total organic carbon (TOC) (as total C or COD/3)

The threshold is **50 000 kg “Total organic carbon (TOC) (as total C or COD/3)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 106: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Total organic carbon (TOC) (as total C or COD/3)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Food industry	153	45.5	55 975 800	38.2
Chemical industry	110	32.7	50 273 200	34.3
Paper- and wood industry	31	9.23	32 184 200	22.0
Waste and waste water management	17	5.06	2 988 600	2.04
Energy sector	7	2.08	2 457 700	1.68
Other industry	11	3.27	1 699 600	1.16
Metal industry	7	2.08	901 500	0.615
Total	336	100	146 480 600	100

Figure 106: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Total organic carbon (TOC) (as total C or COD/3)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

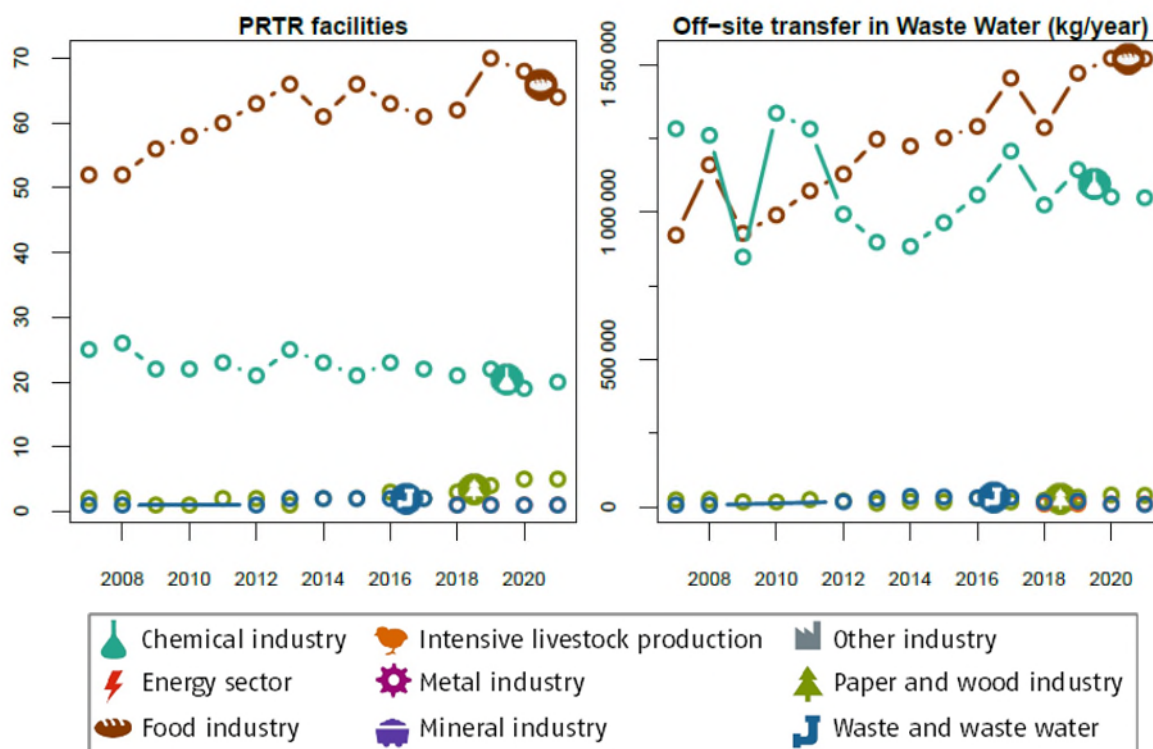
3.28 Total phosphorus

The threshold is **5 000 kg “Total phosphorus” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 107: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Total phosphorus” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Food industry	64	68,8	1 520 480	57.5
Chemical industry	20	21.5	1 049 300	39.7
Paper- and wood industry	5	5.38	39 820	1.51
Intensive livestock production and aquaculture	1	1.08	10 900	0.412
Waste and waste water management	1	1.08	9 260	0.350
Other industry	1	1.08	7 950	0.301
Energy sector	1	1.08	5 770	0.218
Total	93	100	2 643 480	100

Figure 107: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Total phosphorus”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

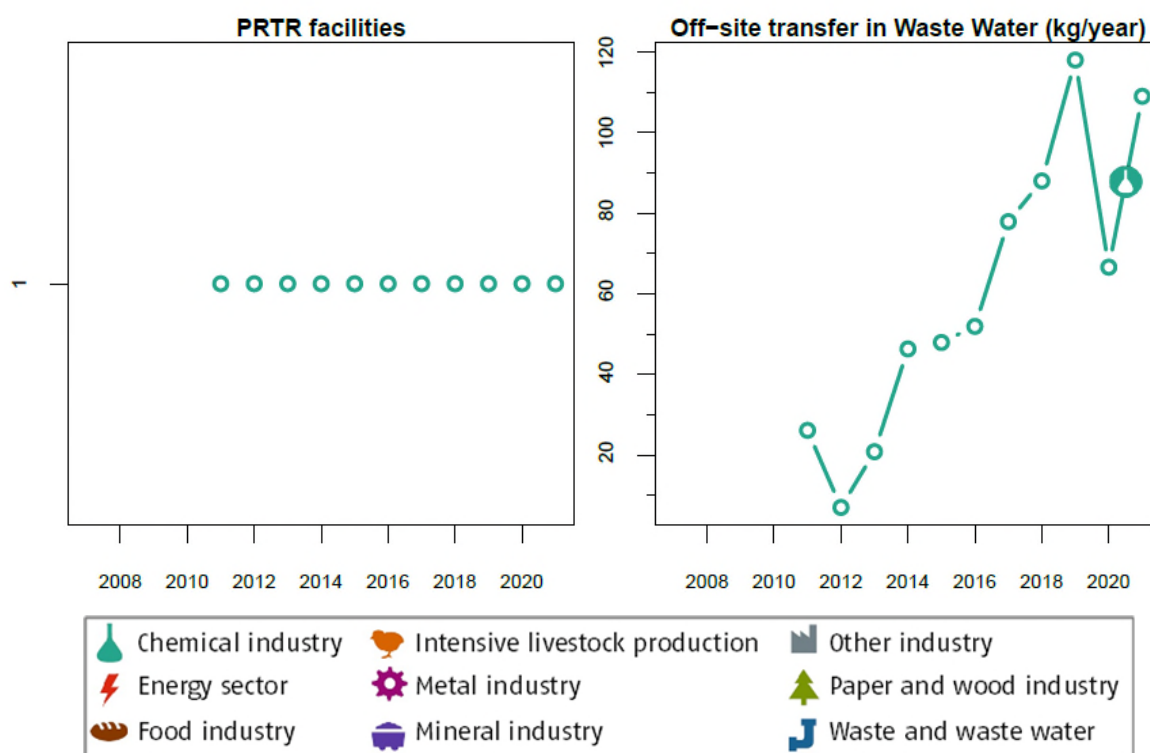
3.29 Trichlorobenzenes (TCBs) (all isomers)

The threshold is **1 kg “Trichlorobenzenes (TCBs) (all isomers)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 108: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Trichlorobenzenes (TCBs) (all isomers)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	1	100	109	100
Total	1	100	109	100

Figure 108: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Trichlorobenzenes (TCBs) (all isomers)”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

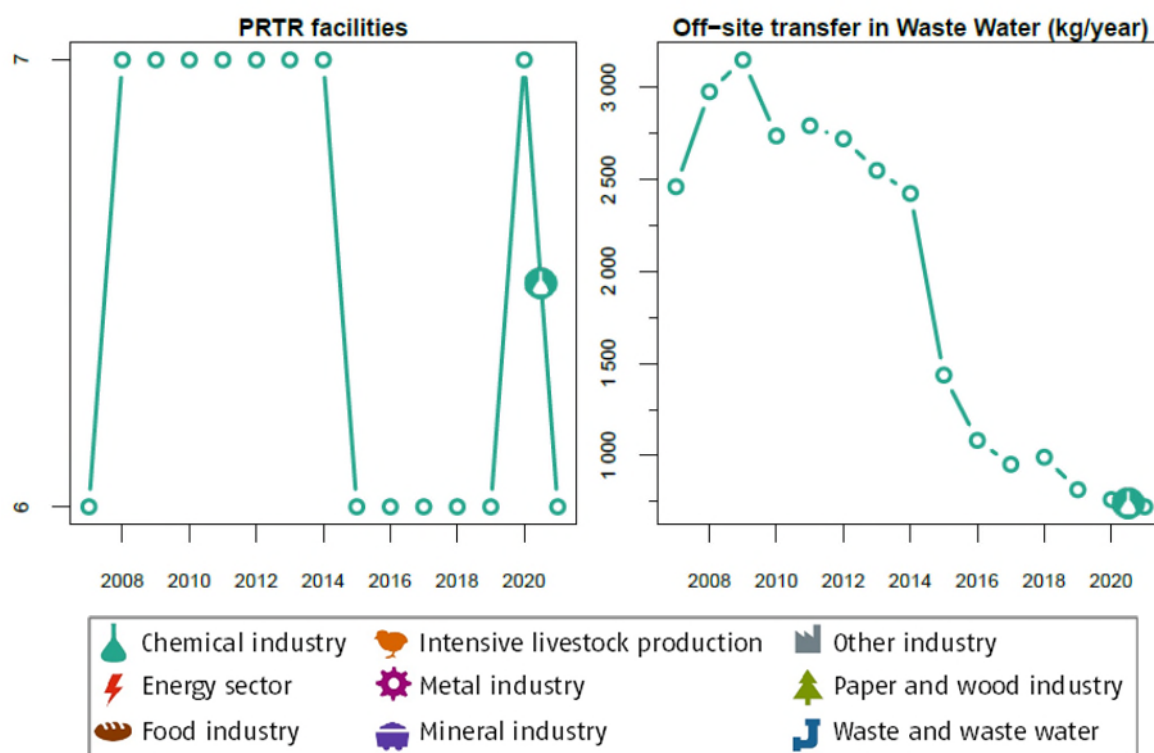
3.30 Vinyl chloride

The threshold is **10 kg “Vinyl chloride” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 109: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Vinyl chloride” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	6	100	722	100
Total	6	100	722	100

Figure 109: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Vinyl chloride”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

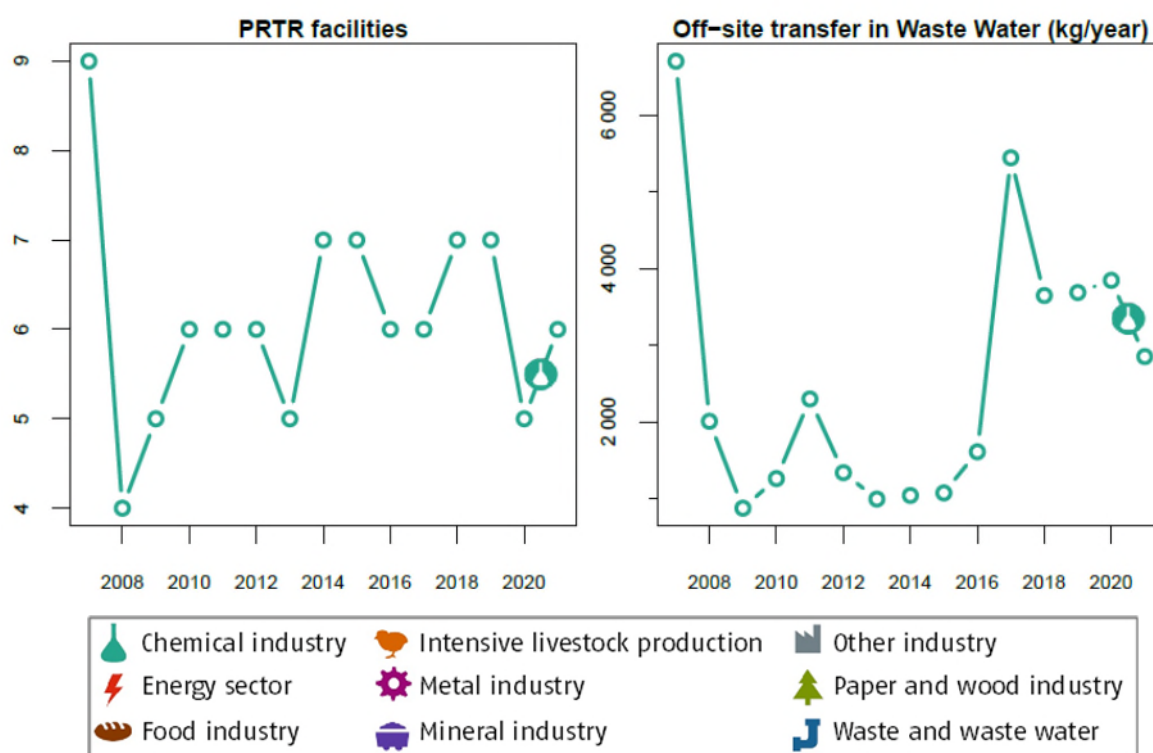
3.31 Xylenes

The threshold is **200 kg “Xylenes” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 110: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Xylenes” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Chemical industry	6	100	2 851	100
Total	6	100	2 851	100

Figure 110: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Xylenes”, each by the 1 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

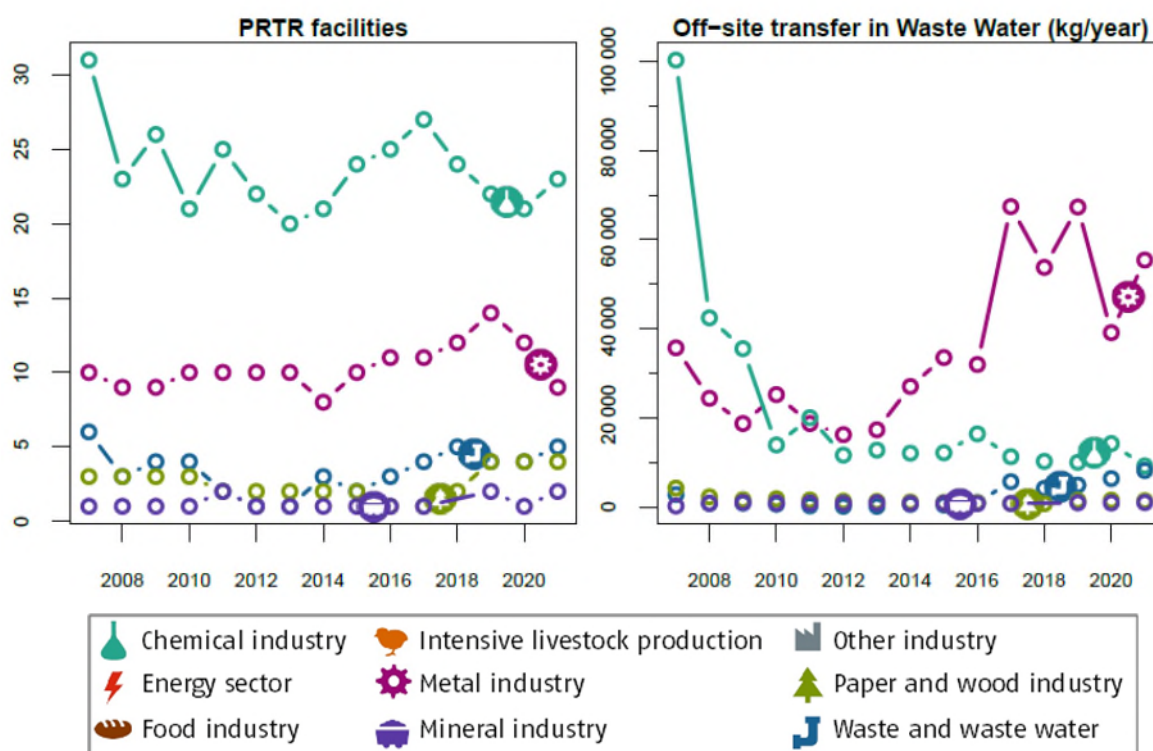
3.32 Zinc and compounds (as Zn)

The threshold is **100 kg “Zinc and compounds (as Zn)” per year**. Off-site transfer in waste water above this value have to be reported according to the E-PRTR Regulation.

Table 111: For the reporting year 2021 - Number of facilities and their off-site transfer in waste water of the pollutant “Zinc and compounds (as Zn)” of the different industrial sectors including the corresponding shares.

Industrial sector	Facilities	(%)	Releases (kg/year)	(%)
Metal industry	9	18	55 417	72.5
Chemical industry	23	46	9 198	12.0
Waste and waste water management	5	10	8 169	10.7
Paper- and wood industry	4	8	1 377	1.80
Mineral industry	2	4	965	1.26
Energy sector	3	6	701	0.917
Other industry	3	6	442	0.578
Food industry	1	2	146	0.191
Total	50	100	76 415	100

Figure 111: Annual number of facilities (left) and their off-site transfer in waste water (right) of the pollutant “Zinc and compounds (as Zn)”, each by the 5 industrial sector(s) with the highest emissions in the year 2021.



Source: own illustration, Umweltbundesamt

A Pollutants and thresholds

The following summary shows the pollutant and their thresholds applicable for each environmental media as defined by the E-PRTR Regulation.

Source: Annex II of the Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC.

Table 112: Summary of the pollutants covered by the E-PRTR Regulation with their thresholds for releases into each environmental media.

No.	CAS-Number	Pollutant (1)	Release to air (kg/year)	Release to water (kg/year)	Release to land (kg/year)
1	74-82-8	Methane (CH ₄)	100 000	(2)	-
2	630-08-0	Carbon monoxide (CO)	500 000	-	-
3	124-38-9	Carbon dioxide (CO ₂)	100 000 000	-	-
4		Hydro-fluorocarbons (HFCs) (3)	100	-	-
5	10024-97-2	Nitrous oxide (N ₂ O)	10 000	-	-
6	7664-41-7	Ammonia (NH ₃)	10 000	-	-
7		Non-methane volatile organic compounds (NMVOC)	100 000	-	-
8		Nitrogen oxides (NO _x /NO ₂)	100 000	-	-
9		Perfluorocarbons (PFCs) (4)	100	-	-
10	2551-62-4	Sulphur hexafluoride (SF ₆)	50	-	-
11		Sulphur oxides (SO _x /SO ₂)	150 000	-	-
12		Total nitrogen	-	50 000	50 000
13		Total phosphorus	-	5 000	5 000
14		Hydrochlorofluorocarbons (HCFCs) (5)	1	-	-
15		Chlorofluorocarbons (CFCs) (6)	1	-	-
16		Halons (7)	1	-	-
17		Arsenic and compounds (as As) (8)	20	5	5
18		Cadmium and compounds (as Cd) (8)	10	5	5
19		Chromium and compounds (as Cr) (8)	100	50	50
20		Copper and compounds (as Cu) (8)	100	50	50
21		Mercury and compounds (as Hg) (8)	10	1	1
22		Nickel and compounds (as Ni) (8)	50	20	20
23		Lead and compounds (as Pb) (8)	200	20	20

No.	CAS-Number	Pollutant (1)	Release to air (kg/year)	Release to water (kg/year)	Release to land (kg/year)
24		Zinc and compounds (as Zn) (8)	200	100	100
25	15972-60-8	Alachlor	-	1	1
26	309-00-2	Aldrin	1	1	1
27	1912-24-9	Atrazine	-	1	1
28	57-74-9	Chlordane	1	1	1
29	143-50-0	Chlordecone	1	1	1
30	470-90-6	Chlorfenvinphos	-	1	1
31	85535-84-8	Chloro-alkanes, C10-C13	-	1	1
32	2921-88-2	Chlorpyrifos	-	1	1
33	50-29-3	DDT	1	1	1
34	107-06-2	1,2-dichloroethane (EDC)	1 000	10	10
35	75-09-2	Dichloromethane (DCM)	1 000	10	10
36	60-57-1	Dieldrin	1	1	1
37	330-54-1	Diuron	-	1	1
38	115-29-7	Endosulphan	-	1	1
39	72-20-8	Endrin	1	1	1
40		Halogenated organic compounds (as AOX) (9)	-	1 000	1 000
41	76-44-8	Heptachlor	1	1	1
42	118-74-1	Hexachlorobenzene (HCB)	10	1	1
43	87-68-3	Hexachlorobutadiene (HCBD)	-	1	1
44	608-73-1	1,2,3,4,5, 6-hexachlorocyclohexane (HCH)	10	1	1
45	58-89-9	Lindane	1	1	1
46	2385-85-5	Mirex	1	1	1
47		PCDD + PCDF (dioxins + furans) (as Teq) (10)	0.0001	0.0001	0.0001
48	608-93-5	Pentachlorobenzene	1	1	1
49	87-86-5	Pentachlorophenol (PCP)	10	1	1
50	1336-36-3	Polychlorinated biphenyls (PCBs)	0.1	0.1	0.1
51	122-34-9	Simazine	-	1	1
52	127-18-4	Tetrachloroethylene (PER)	2 000	10	-

No.	CAS-Number	Pollutant (1)	Release to air (kg/year)	Release to water (kg/year)	Release to land (kg/year)
53	56-23-5	Tetrachloromethane (TCM)	100	1	-
54	12002-48-1	Trichlorobenzenes (TCBs) (all isomers)	10	1	-
55	71-55-6	1,1,1-trichloroethane	100	-	-
56	79-34-5	1,1,2,2-tetrachloroethane	50	-	-
57	79-01-6	Trichloroethylen	2 000	10	-
58	67-66-3	Trichloromethane	500	10	-
59	8001-35-2	Toxaphene	1	1	1
60	75-01-4	Vinyl chloride	1 000	10	10
61	120-12-7	Anthracene	50	1	1
62	71-43-2	Benzene	1 000	200 (as BTEX) (11)	200 (as BTEX) (11)
63		Brominated diphenylethers (PBDE) (12)	-	1	1
64		Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)	-	1	1
65	100-41-1	Ethyl benzene	-	200 (as BTEX) (11)	200 (as BTEX) (11)
66	75-21-8	Ethylene oxide	1 000	10	10
67	34123-59-6	Isopoturon	-	1	1
68	91-20-3	Naphthalene	100	10	10
69		Organotin compounds (as total Sn)	-	50	50
70	117-81-7	Di-(2-ethyl hexyl) phthalate (DEHP)	10	1	1
71	108-95-2	Phenols (as total C) (13)	-	20	20
72		Polycyclic aromatic hydrocarbons (PAHs) (14)	50	5	5
73	108-88-3	Toluene	-	200 (as BTEX) (11)	200 (as BTEX) (11)
74		Tributyltin and compounds (15)	-	1	1
75		Triphenyltin and compounds (16)	-	1	1
76		Total organic carbon (TOC) (as total C or COD/3)	-	50 000	-
77	1582-09-8	Trifluralin	-	1	1
78	1330-20-7	Xylenes (17)	-	200 (as BTEX) (11)	200 (as BTEX) (11)

No.	CAS-Number	Pollutant (1)	Release to air (kg/year)	Release to water (kg/year)	Release to land (kg/year)
79		Chlorides (as total Cl)	-	2 000 000	2 000 000
80		Chlorine and inorganic compounds (as HCl)	10 000	-	-
81	1332-21-4	Asbestos	1	1	1
82		Cyanides (as total CN)	-	50	50
83		Fluorides (as total F)	-	2 000	2 000
84		Fluorine and inorganic compounds (as HF)	5 000	-	-
85	74-90-8	Hydrogen cyanide (HCN)	200	-	-
86		Particulate matter (PM10)	50 000	-	-
87	1806-26-4	Octylphenols and Octylphenol ethoxylates	-	1	-
88	206-44-0	Fluoranthene	-	1	-
89	465-73-6	Isodrin	-	1	-
90	36355-1-8	Hexabromobiphenyl	0.1	0.1	0.1
91	191-24-2	Benzo(g,h,i)perylene	-	1	-

- (1) Unless otherwise specified any pollutant specified in Annex II shall be reported as the total mass of that pollutant or, where the pollutant is a group of substances, as the total mass of the group.
- (2) A hyphen (—) indicates that the parameter and medium in question do not trigger a reporting requirement.
- (3) Total mass of hydrogen fluorocarbons: sum of HFC23, HFC32, HFC41, HFC4310mee, HFC125, HFC134, HFC134a, HFC152a, HFC143, HFC143a, HFC227ea, HFC236fa, HFC245ca, HFC365mfc.
- (4) Total mass of perfluorocarbons: sum of CF₄, C₂F₆, C₃F₈, C₄F₁₀, c-C₄F₈, C₅F₁₂, C₆F₁₄.
- (5) Total mass of substances including their isomers listed in Group VIII of Annex I to Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer (OJ L 244, 29.9.2000, p. 1). Regulation as amended by Regulation (EC) No 1804/2003 (OJ L 265, 16.10.2003, p. 1).
- (6) Total mass of substances including their isomers listed in Group I and II of Annex I to Regulation (EC) No 2037/2000.
- (7) Total mass of substances including their isomers listed in Group III and VI of Annex I to Regulation (EC) No 2037/2000.
- (8) All metals shall be reported as the total mass of the element in all chemical forms present in the release.
- (9) Halogenated organic compounds which can be adsorbed to activated carbon expressed as chloride.
- (10) Expressed as I-TEQ.
- (11) Single pollutants are to be reported if the threshold for BTEX (the sum parameter of benzene, toluene, ethyl benzene, xylenes) is exceeded.
- (12) Total mass of the following brominated diphenylethers: penta-BDE, octa-BDE and deca-BDE.
- (13) Total mass of phenol and simple substituted phenols expressed as total carbon.
- (14) Polycyclic aromatic hydrocarbons (PAHs) are to be measured for reporting of releases to air as benzo(a)pyrene (50-32-8), benzo(b)fluoranthene (205-99-2), benzo(k)fluoranthene (207-08-9), indeno(1,2,3-cd)pyrene (193-39-5) (derived from Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants (OJ L 229, 29.6.2004, p. 5)).
- (15) Total mass of tributyltin compounds, expressed as mass of tributyltin.
- (16) Total mass of triphenyltin compounds, expressed as mass of triphenyltin.
- (17) Total mass of xylene (ortho-xylene, meta-xylene, para-xylene).