

National EPER Overview Report 2003 of Germany – National Totals -

Submission under Article 1 sub 4 of the EPER Decision

Executive Summary

According to Article 1 sub 4 of the EPER Decision Germany is required to provide an overview report including the aggregated national totals of all reported emissions for each of the source categories with the main Annex I activity and the corresponding NOSE-P code as specified in Annex A3. This is the first National EPER Overview Report of Germany.

This report includes the reported emissions of facilities that were received at the Federal Environmental Agency until 20th of Mai 2004.

Remarks:

Emission data are sorted according to Annex A3 Source Categories and NOSE-P Codes.

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
1.1 Combustion installations > 50 MW	101.01	As and compounds	2876,5		
		Cd and compounds	275.8	11.35	
		CH4	2247000.0		
		Chlorides		15600000.0	
		Chlorine and inorganic compounds	4550300.0		
		CO	61647000.0		
		CO2	294313000000.0		
		Cr and compounds	556.0	271.5	
		Cu and compounds	1295.0	2305.0	
		Fluorides		17030.0	
		Fluorine and inorganic compounds	1172990.0		
		Hg and compounds	3611.3	5.25	
		N2O	1382200.0		
		NH3	320600.0		
		Ni and compounds	1728.9	125.9	
		NMVOOC	1713000.0		
		NOx	198289000.0		
		Pb and compounds	3562.0	103.5	
		PM10	7628700.0		
		Polycyclic aromatic hydrocarbons	60.8		
SOx	184589000.0				
Total - nitrogen			446800.0	183000.0	
Total organic carbon (TOC)			75700.0	940000.0	
Zn and compounds		16817.0			

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
1.1 Combustion installations > 50 MW	101.02	As and compounds	105,5		
		Cd and compounds	11,9		
		CH4	163000,0		
		Chlorine and inorganic compounds	1086200,0		
		CO2	17888000000,0		
		Dichloroethane-1,2 (DCE)		12,0	
		Fluorine and inorganic compounds	38830,0		
		Hg and compounds	276,5		
		N2O	186300,0		
		Ni and compounds	799,8		
		NMVOc	163000,0		
		NOx	20122000,0		
		Pb and compounds		126,0	
		PM10	88200,0		
		SOx	16734000,0		
Total organic carbon (TOC)			115000,0		
	101.04	CO2	1949000000,0		
		NOx	1720000,0		
		SOx	382000,0		
	101.05	As and compounds	36,8		
		Chlorine and inorganic compounds	29400,0		
		Fluorine and inorganic compounds	7050,0		
		Hg and compounds	78,6		
		NOx	1070000,0		
		PM10	62800,0		
		SOx	808000,0		
		Zn and compounds	441,0		

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a	
1.2 Mineral oil and gas refineries	105.08	As and compounds	88.1	7.0		
		Benzene	134970.0			
		Benzene, toluene, ethylbenzene, xylenes				880.0
		Cd and compounds	88.1			
		Chlorides			3070000.0	
		Chlorine and inorganic compounds	96000.0			
		CO	634000.0			
		CO2	21074000000.0			
		Cr and compounds	314.0			
		Cu and compounds	314.0		60.6	
		Cyanides			59.0	1310.0
		Dichloroethane-1,2 (DCE)	6150.0			
		Dichloromethane (DCM)	23600.0			166.0
		Fluorides			4980.0	
		HCN	1220.0			
		Hg and compounds	10.8			
		N2O	51400.0			
		NH3	207600.0			
		Ni and compounds	20357.3		145.0	21.9
		NMVOC	7327000.0			
		NOx	24617000.0			
		Pb and compounds	275.0			
		Phenols			444.0	88510.0
		PM10	514500.0			
SOx	69745000.0					
Total - nitrogen			150100.0	1744000.0		
Total - phosphorus				30680.0		
Total organic carbon (TOC)			392400.0	1850000.0		
Zn and compounds			199.0			

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
1.3 Coke ovens	104.08	As and compounds			8.2
		Benzene	2710.0		
		Chlorides			2100000.0
		CO	4130000.0		
		CO2	395000000.0		
		Cyanides		55.4	35600.0
		Fluorides			48100.0
		Hg and compounds			1.6
		NH3	17500.0		
		NOx	2170000.0		
		Phenols		53.5	108000.0
		Polycyclic aromatic hydrocarbons			24.4
		SOx	950000.0		
		Total - nitrogen			
Total organic carbon (TOC)			77000.0	428000.0	

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
2.1/2.2/2.3/2.4/2.5/2.6 <i>Metal industry and metal ore roasting or sintering installations; installations for the production of ferrous and non-ferrous metals</i>	104.12	As and compounds	238.0	440.0	45.9
		Benzene	81100.0		
		Cd and compounds	687.4	56.0	12.0
		CH4	117000.0		
		Chlorides		3550000.0	
		Chlorine and inorganic compounds	279500.0		
		CO	346146000.0		
		CO2	13654000000.0		
		Cr and compounds	10484.0	313.0	
		Cu and compounds	2668.0	596.4	385.0
		Cyanides		925.0	8320.0
		Fluorides		75020.0	
		Fluorine and inorganic compounds	199600.0		
		HCN	5403.0		
		Hg and compounds	182.5	1.4	3.0
		NH3	12100.0		
		Ni and compounds	1440.2	466.0	110.0
		NMVOC	743000.0		
		NOx	15305000.0		
		Pb and compounds	32252.0	519.0	1860.0
		PCDD+PCDF (dioxins+furans)	0.0129		
		PFCs	34910.0		
		Phenols		313.0	146000.0
PM10	3401300.0				
Polycyclic aromatic hydrocarbons	229.0		8.0		
SOx	23118000.0				
Total - nitrogen			140000.0	181000.0	
Total organic carbon (TOC)			183700.0	336000.0	
Zn and compounds		83965.0	9251.0	5715.0	

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
2.1/2.2/2.3/2.4/2.5/2.6 <i>Metal industry and metal ore roasting or sintering installations; installations for the production of ferrous and non-ferrous metals</i>	105.01	As and compounds			599.53
		Cd and compounds	59.3	22.0	
		Chlorides		2780000.0	
		Chlorine and inorganic compounds	171400.0		
		CO	48600000.0		
		CO2	862000000.0		
		Cr and compounds	642.0	563.0	1081.0
		Cu and compounds	1046.0	103.0	
		Cyanides			85.0
		Fluorides		28840.0	6100.0
		HCN	254.0		
		Hg and compounds	47.5		1.19
		Ni and compounds	227.9	520.3	874.3
		NMVOC	1070000.0		
		NOx	1858000.0		
		Pb and compounds	4840.0	313.0	
		PCDD+PCDF (dioxins+furans)	0.0122		
		Phenols			49.0
		PM10	314000.0		
		SOx	1720000.0		
Total - nitrogen			113000.0	525000.0	
Total - phosphorus			10800.0	13270.0	
Total organic carbon (TOC)			195000.0	53100.0	
Zn and compounds		225.0	12450.0	5397.0	

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
2.1/2.2/2.3/2.4/2.5/2.6 <i>Metal industry and metal ore roasting or sintering installations; installations for the production of ferrous and non-ferrous metals</i>	105.12	As and compounds	928.3	23.1	8.8
		Benzene	74690.0		
		Cd and compounds	760.5	27.0	7.31
		CH4	136000.0		
		Chlorides		7360000.0	12500.0
		Chlorine and inorganic compounds	263700.0		
		CO	390881000.0		
		CO2	12017000000.0		
		Cr and compounds	12490.0	90.0	2126.0
		Cu and compounds	18794.0	808.0	6299.3
		Cyanides		1370.0	148.6
		Fluorides		78720.0	
		Fluorine and inorganic compounds	141950.0		
		HCN	785.0		
		Hg and compounds	97.4		4.67
		N2O	13600.0		
		NH3	11400.0		
		Ni and compounds	5699.5	567.3	4574.4
		NMVOC	1161000.0		
		NOx	17648000.0		
		Pb and compounds	66361.0	748.1	54.0
		PCDD+PCDF (dioxins+furans)	0.051		
		Phenols		1020.0	4209.8
		PM10	5770500.0		
		Polycyclic aromatic hydrocarbons			6.25
		SOx	23530000.0		
Total - nitrogen			363000.0	2064800.0	
Total - phosphorus				41700.0	
Total organic carbon (TOC)			16400.0	804000.0	
Zn and compounds		60582.0	8662.0	1821.56	

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
3.1/3.3/3.4/3.5 <i>Installations for the production of cement klinker (>500t/d). lime (>50 t/d). glass (>20 t/d). mineral substances (>20 t/d). and ceramic products (> 75 t/d)</i>	104.11	As and compounds	68.6	8.5	9.0
		Benzene	21680.0		
		Cd and compounds	41.0		
		Chlorine and inorganic compounds	297200.0		
		CO	71906000.0		
		CO2	27712000000.0		
		Cr and compounds	614.0	102.0	
		Cu and compounds	172.0		
		Fluorine and inorganic compounds	6760.0		
		Hg and compounds	781.2		
		N2O	59000.0		
		NH3	941900.0		
		Ni and compounds	159.5	35.6	
		NMVOC	951000.0		
		NOx	68803000.0		
		Pb and compounds	859.0	40.1	45.0
		PCDD+PCDF (dioxins+furans)	0.00839		
		PM10	2042300.0		
Polycyclic aromatic hydrocarbons	908.0				
SOx	16384000.0				
Zn and compounds		116.0	116.0		

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
4.1 Basic organic chemicals	105.09	As and compounds	90.7	722.2	
		Benzene	10610.0		
		Benzene.toluene.ethylbenzene.xylenes		230.0	2430.0
		Cd and compounds	127.7	11.0	
		Chlorides		1904490000.0	12500000.0
		Chlorine and inorganic compounds	222100.0		
		Chloro-alkanes (C10-13)		101.0	
		CO	10686000.0		
		CO2	14943000000.0		
		Cr and compounds	134.0	5111.0	239.0
		Cu and compounds	162.0	6836.0	479.0
		Cyanides		2531.0	182.0
		Dichloromethane (DCM)	15100.0	344.0	18.4
		Dichloroethane-1.2 (DCE)	35360.0	969.0	
		Fluorides		449590.0	
		Halogenated organic compounds		120081.3	6770.0
		HCN	4154.0		
		Hexachlorobenzene (HCB)		6.0	
		HFC	6341.0		
		Hg and compounds	994.0	41.7	1.2
		N2O	351600.0		
		NH3	192900.0		
		Ni and compounds	1645.1	4147.7	482.2
		NMVOG	11271000.0		
		NOx	14903000.0		
		Organotin - compounds		322.0	
		Pb and compounds	977.0	1029.0	94.0
		PFCs	170.0		
		Phenols		7380.0	3950.0
		PM10	238700.0		
		Polycyclic aromatic hydrocarbons		46.0	
		SOx	12707000.0		
		Tetrachloromethane (TCM)	148.0		
Total - nitrogen		3884200.0	655500.0		
Total - phosphorus		126580.0	140800.0		
Total organic carbon (TOC)		9155510.0	11181200.0		
Trichlorobenzenes (TCB)		40.0			

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
4.1 Basic organic chemicals	105.09	Trichloromethane Zn and compounds	3223.0 792.0	36650.0	25526.0

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a	
4.1 Basic organic chemicals	107.03	Benzene.toluene.ethylbenzene.xylenes			1707.0	
		Chlorides		3390000.0		
		CO	2220000.0			
		CO2	156000000.0			
		Cu and compounds			152.0	
		Fluorides			19600.0	
		Halogenated organic compounds			2200.0	
		Ni and compounds			252.0	
		NMVOC	143000.0			
		NOx	101000.0			
		Pb and compounds			77.0	
		Phenols			599.0	1532.0
		Tetrachloromethane (TCM)	1020.0			
		Total - phosphorus				15450.0
Total organic carbon (TOC)			305000.0	2045400.0		
Zn and compounds			632.0			

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
4.2./4.3 Basic inorganic chemicals or fertilizers	105.09	As and compounds	52.0	1140.6	17.8
		Benzene	2890.0		
		Benzene.toluene.ethylbenzene.xylenes		880.0	
		Cd and compounds	17.0	174.33	5.5
		Chlorides		1751400000.0	
		Chlorine and inorganic compounds	40900.0		
		Chloro-alkanes (C10-13)		10.0	
		CO	25162000.0		
		CO2	9140000000.0		
		Cr and compounds	352.0	11487.0	
		Cu and compounds	292.0	17236.0	
		Cyanides		12532.0	
		Dichloromethane (DCM)	6870.0	1170.0	
		Dichloroethane-1.2 (DCE)	6090.0		
		Fluorides		289300.0	
		Fluorine and inorganic compounds	5230.0		
		Halogenated organic compounds		51100.0	
		HCN	508.0		
		Hexachlorocyclohexane (HCH)		13.6	
		HFCs	5500.0		
		Hg and compounds	1060.5	57.72	
		N2O	6640000.0		
		NH3	2055800.0		
		Ni and compounds	855.4	8364.3	112.0
		NMVOG	1277000.0		
		NOx	10100000.0		
		Pb and compounds	512.0	9928.1	
		Phenols		3170.0	15400.0
		PM10	532800.0		
		Polycyclic aromatic hydrocarbons		140.0	
		SF6	5880.0		
		SOx	7874000.0		
		Tetrachloromethane (TCM)	322.0		
Total - nitrogen			5309600.0	313000.0	
Total - phosphorus			184900.0	43400.0	
Total organic carbon (TOC)			5474500.0	272800.0	
Trichlorobenzenes (TCB)		32.0			

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
4.2./4.3 Basic inorganic chemicals or fertilizers	105.09	Trichloromethane Zn and compounds	5630.0 5720.0	40359.0	159.0

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
4.4./4.6 Biocides and explosives	105.09	Cu and compounds Phenols		90.6	107.0
4.5 Pharmaceutical products	107.03	Chlorides CO2 Cu and compounds Dichloromethane (DCM) Dichloroethane-1.2 (DCE) Halogenated organic compounds Hg and compounds NH3 Ni and compounds NOx Organotin - compounds Pb and compounds Total - nitrogen Total - phosphorus Total organic carbon (TOC) Trichloromethane Zn and compounds	101000000.0 17900.0 12200.0 273000.0 3640.0	3210000.0 47.7 78000.0 69000.0	7210000.0 92.0 105.0 67.0 18100.0 28.0 61.0 232.0 30.0 19900.0 1253000.0 350.0
5.1./5.2 Installations for the disposal or recovery of hazardous waste (> 10t/d) or installations for the incineration of municipal waste (> 3 t/d)	105.14	CO2 Fluorides HFCs Hg and compounds Ni and compounds NOx Pb and compounds	166000000.0 3380.0 13.8 145000.0	5330.0 26.3	56.0

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a	
5.1./5.2 Installations for the disposal or recovery of hazardous waste (> 10t/d) or installations for the incineration of municipal waste (> 3 t/d)	109.03	As and compounds	510.0		83.1	
		Cd and compounds			13.13	
		Chlorides		2010000.0	7170000.0	
		Chlorine and inorganic compounds	64400.0			
		CO2	7261000000.0			
		Cr and compounds			210.0	
		Cu and compounds	1530.0			
		Hg and compounds	97,2			
		N2O	46000,0			
		NH3	26400,0			
		Ni and compounds			114,3	
		NOx	6693000,0			
		Pb and compounds			165.4	
		Phenols			75192.0	
		PM10	83200.0			
	Polycyclic aromatic hydrocarbons			7.6		
	Total - phosphorus			5340.0		
	Total organic carbon (TOC)			315000.0		
	Zn and compounds	360.0		471.0		
	109.07	Cd and compounds			17.0	
		Chlorides		2240000.0		
		Chlorine and inorganic compounds	22700.0			
		CO2	12400000000.0			
		Cu and compounds			62.0	
		Ni and compounds			83.0	
		NOx	782000.0			
		Pb and compounds			71.0	
Phenols				30.0	635.0	
SOx		205000.0				
Total - phosphorus					6000.0	
Total organic carbon (TOC)				175000.0	63400.0	

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
5.3./5.4 Installations for the disposal of non-hazardous waste (> 50 t/d) and Landfills of inert waste (> 10 t/d)	109.06	As and compounds			270.17
		CH4	492904000,0		
		Cr and compounds	912.0		111.0
		Fluorides		2700.0	
		Ni and compounds			1243.4
		Phenols			3926.8
		Total - nitrogen			715400.0
		Total organic carbon (TOC)			658900,0
	Zn and compounds			218.0	
	109.07	CH4	688000.0		4770.0
		Fluorides			7.28
		Hg and compounds	17.8		
		N2O	67700.0		
		PM10	364400.0		
Total - nitrogen				119000.0	
6.1 Industrial plants for production of pulp from timber or other fibrous materials and paper and board (> 20t/d)	105.07	Chlorine and inorganic compounds	195100.0		
		CO2	5427000000.0		
		Cu and compounds		157.0	200.0
		Fluorine and inorganic compounds	7000.0		
		Halogenated organic compounds		12890.0	3040.0
		Ni and compounds	669.2	145.5	
		NOx	7463000.0		
		PCDD+PCDF (dioxins+furans)	0.00285		
		PM10	82800.0		
		SOx	7094000.0		
		Total - nitrogen		132700.0	
		Total - phosphorus		40750.0	21750.0
		Total organic carbon (TOC)		18244900.0	8342100.0
		Zn and compounds			2960.0

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
6.2 Plants for the pre-treatment or dyeing of fibres or textiles (> 10t/d)	105.04	As and compounds			15.0
		Cd and compounds			12.9
		Cr and compounds			361.0
		Cu and compounds		3546.0	1517.5
		Ni and compounds		544.0	160.5
		NOx	123000.0		
		Pb and compounds		272.0	
		SOx	490000.0		
		Total - phosphorus			33040.0
		Total organic carbon (TOC)		148000.0	3204200.0
6.3 Plants for tanning of hides and skins (> 12t/d)	105.05	Chlorides			2300000.0
		Cr and compounds			527.0
		Total - nitrogen			211000.0
		Total - phosphorus			7750.0
		Total organic carbon (TOC)			2710000.0
6.4 Slaughterhouses (> 50t/d). Animal raws materials (non-milk) (> 75t/d), vegetable raw materials (> 300t/d), Treatment and processing of milk (>200t/d)	105.03	Chlorides		2460000.0	
		CO	726000.0		
		CO2	733000000.0		
		NH3	100700.0		
		Ni and compounds	623.0		
		NMVOC	3559000.0		
		NOx	2512000.0		
		Phenols			808.0
		PM10	309400.0		
		SOx	3147000.0		
		Total – nitrogen		1520000.0	347900.0
		Total – phosphorus		17246.0	513210.0
		Total organic carbon (TOC)		916630.0	15664700.0
		Zn and compounds			200.0
6.5 Installations for the disposal or recycling of animal carcasses and animal waste (> 10t/d)	105.14	Total - nitrogen			167200.0
		Total organic carbon (TOC)			692000.0

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
6.6 Installations for intensive rearing of poultry (> 40000 places). pigs (> 2000 places). sows (> 750 places)	110.04	CH4 N2O NH3	182000.0 263000.0 12378400.0		
	110.05	N2O NH3	252000.0 6187500.0		
6.7 Installations for surface treatment or products using organic solvents (> 200t/d)	107.01	Cd and compounds		7.50	
		CO2	198000000.0		
		Cr and compounds		54.0	126.0
		Dichloromethane (DCM)	4900.0		
		Fluorides			4600.0
		Ni and compounds	113.0	306.6	378.4
		NMVOc	11050000.0		
		NOx	462000.0		
		Pb and compounds			51.0
		Phenols			38.0
PM10	138400.0				
SOx	269000.0				
Total - nitrogen				299000.0	
Total organic carbon (TOC)				1285600.0	
Zn and compounds			289.0	329.0	
107.02	As and compounds Fluorides PCDD+PCDF (dioxins+furans)				7.70
		0.00106		26700.0	
107.03	Cu and compounds NMVOc Total organic carbon (TOC) Zn and compounds				53.0
		222000.0			
					970000.0
					110.0
107.04	Benzene.toluene.ethylbenzene.xylenes NMVOc	1710000.0			3120.0
6.8 Installations for the production of carbon or graphite	105.09	Benzene	11890.0		
		CO	1530000.0		
		NMVOc	157000.0		
		NOx	118000.0		

Source categories (Annex I Activities)	Main NOSE-P-Kode	Pollutant	Emissions to air kg/a	Emissions to water (direct) kg/a	Emissions to water (indirect) kg/a
6.8 Installations for the production of carbon or graphite	105.09	PM10	190000.0		
		Polycyclic aromatic hydrocarbons	6964.4		
		SOx	844000.0		