Chapter 4 - NFR 2 - Industrial Processes and Product Use

Industrial processes are an important emission source for most pollutants. Due to Germany's high-level, differentiated industry featuring numerous companies and a large number of plants for each sector, emission estimation for industrial processes is very complex. Please refer to the sub-sections below for details.

In the area of industrial processes, production data from association statistics and of manufacturers' information is used. In the interest of the inventory's completeness and reliability, checking of source-category definitions and data-collection methods will stay a priority where emissions reporting is based on such sources. The inventory is considered complete for the main industrial processes. [!– (Should be described at the source category level) Nevertheless, there are still certain categories awaiting further examination, though only negligible contributions to the national total emissions are expected. –]

NFR 2 consists of the following and sub-categories:

| |
|---|
| **2.A Mineral Industry** |
| 2.A.1 Cement Production |
| 2.A.2 Lime Production |
| 2.A.3 Glass Production |
| 2.A.5.a Quarrying and Mining of Minerals other than Coal |
| 2.A.5.b Construction and Demolition |
| 2.A.5.c Storage, Handling and Transport of Mineral Products |
| 2.A.6 Other Mineral Products |
| **2.B Chemical Industry** |
| 2.B.1 Ammonia Production |
| 2.B.2 Nitric Acid Production |
| 2.B.3 Adipic Acid Production |
| 2.B.5 Carbide Production |
| 2.B.6 Titanium Dioxide Production |
| 2.B.7 Soda Ash Production |
| 2.B.10.a Other |
| 2.B.10.b Storage, Handling and Transport of Chemical Products |
| **2.C Metal Industry** |
| 2.C.1 Iron and Steel Production |
| 2.C.2 Ferroalloys Production |
| 2.C.3 Aluminum Production |
| 2.C.4 Magnesium Production |
| 2.C.5 Lead Production |
| 2.C.6 Zinc Production |
| 2.C.7.a Copper Production |
| 2.C.7.b Nickel Production |
| 2.C.7.c Other Metal_Production |
| 2.C.7.d Storage, Handling and Transport of Metal Products |
| **2.D Other Solvent and Product Use** |
| 2.D.3.a Domestic Solvent Use including fungicides |
| 2.D.3.b Road Paving with Asphalt |
| 2.D.3.c Asphalt Roofing |
| 2.D.3.d Coating Applications |
| 2.D.3.e Degreasing |
| 2.D.3.f Dry Cleaning |
| 2.D.3.g Chemical Products |
| 2.D.3.h Printing |
| 2.D.3.i Other Solvent Use |
| **2.G Other Product Use** |
| 2.G.4 Use of Fireworks |

2.A Mineral Industry
2.G.4 Use of Tobacco
2.G.4 Charcoal
2.H Other (Pulp & Paper, Food)
2.H.1 Pulp and Paper Industry
2.H.2 Food and Beverages Industry
2.H.3 Other Industrial Processes
2.I Wood Processing
2.J Production of POPs
2.K Consumption of POPs and Heavy Metals
2.L Other Production, Consumption, Storage, Transportation or Handling of Bulk Products
2.L(a) Handling of Bulk Products
2.L(b) Diffuse Emissions From Industrial Establishments

Visual overview

Emission trends for main pollutants in *NFR 2 - Industrial Processes*:

Industrial processes/Industrieprozesse (NFR 2)

Emissions by pollutant / Emissionen nach Schadstoff

Legend: NOx, SO2, NMVOC, NH3, CO, TSP, PM10*, PM2.5*, Black Carbon**
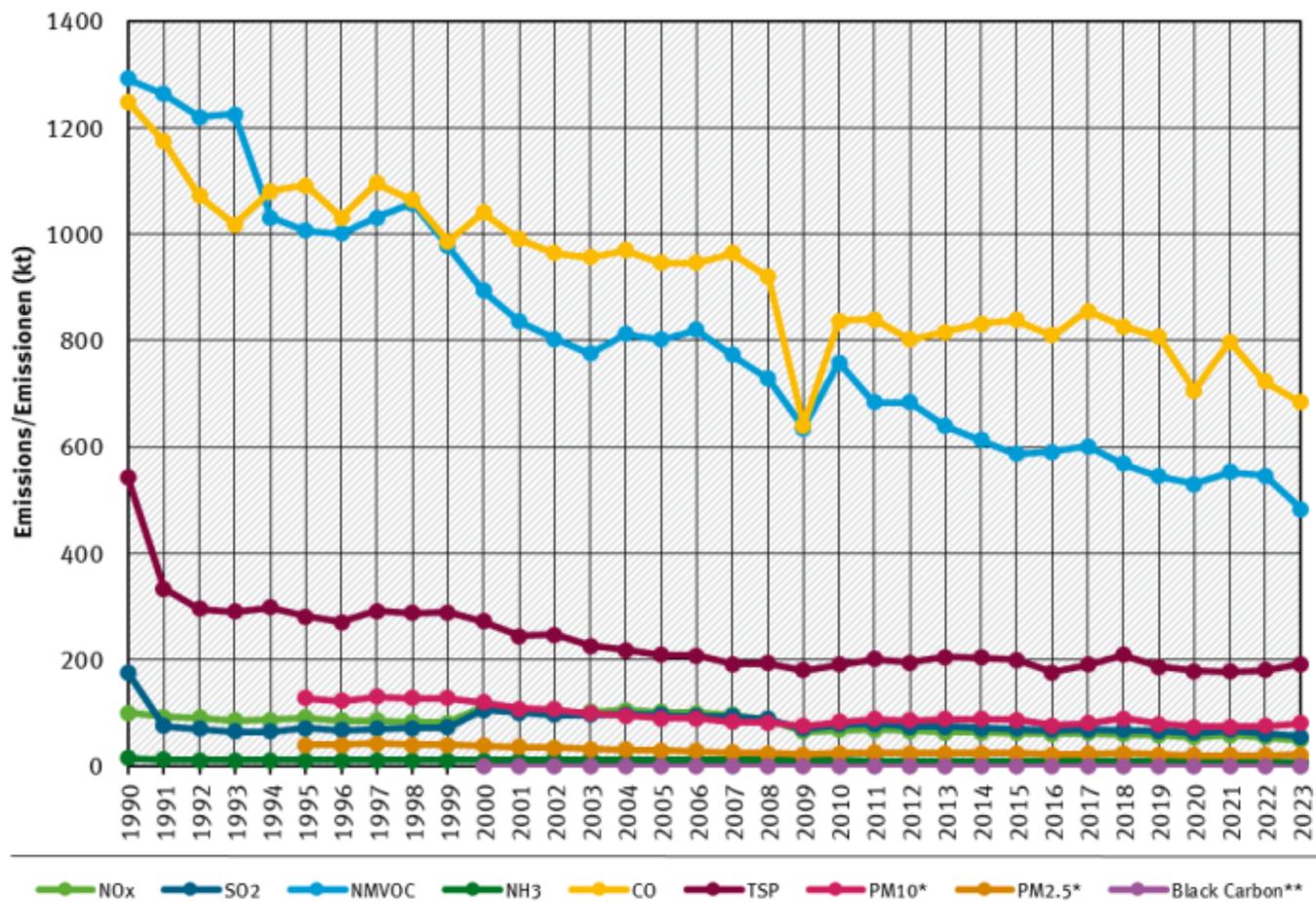
* Base Year for PM = 1995 / Basisjahr für Feinstäube (PM) ist 1995
** Black Carbon emissions from 2000 / Black Carbon Emissionen erst ab 2000

Quelle: German Emission Inventory (17.03.2025)

Industrial processes/Industrieprozesse (NFR 2)
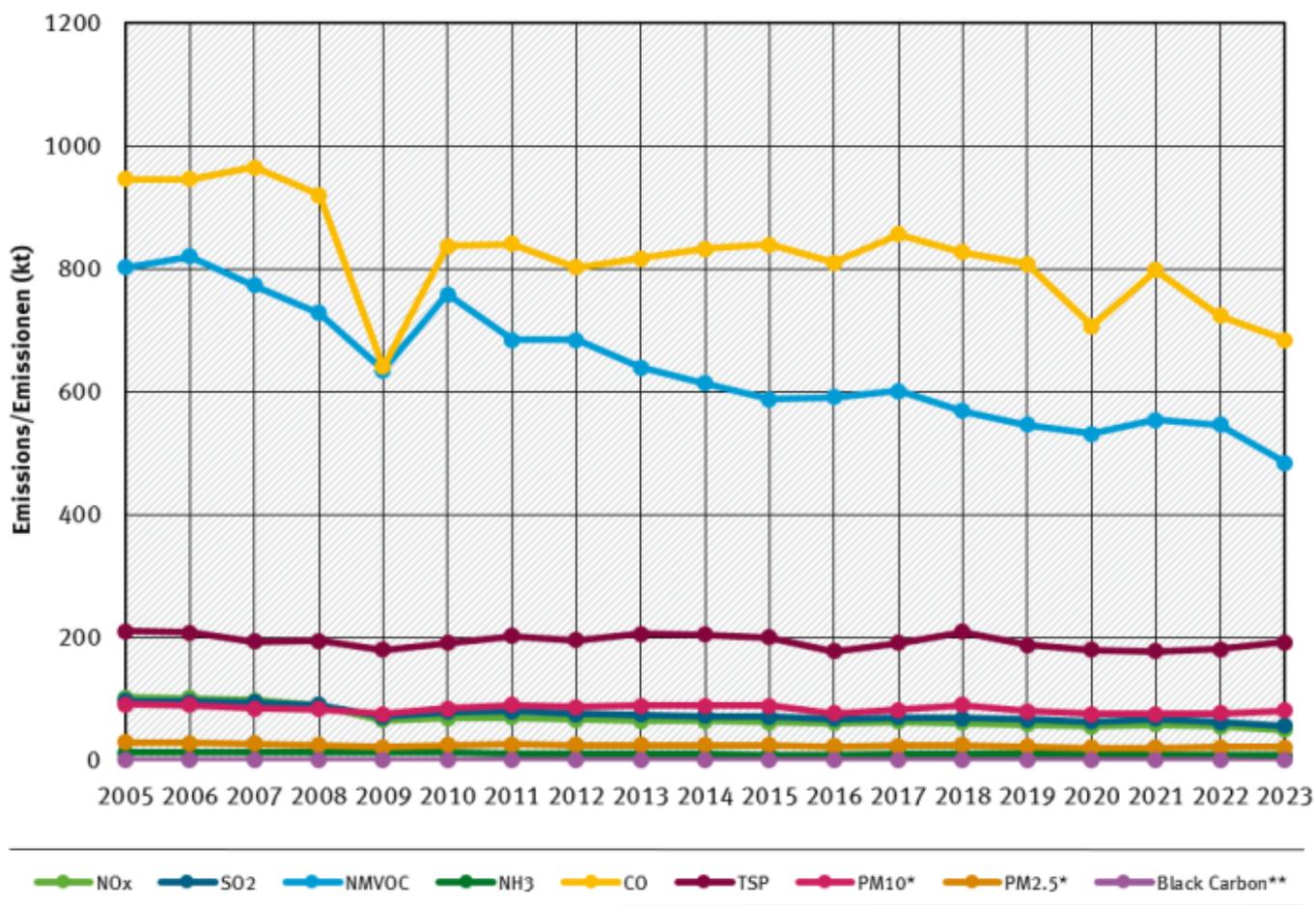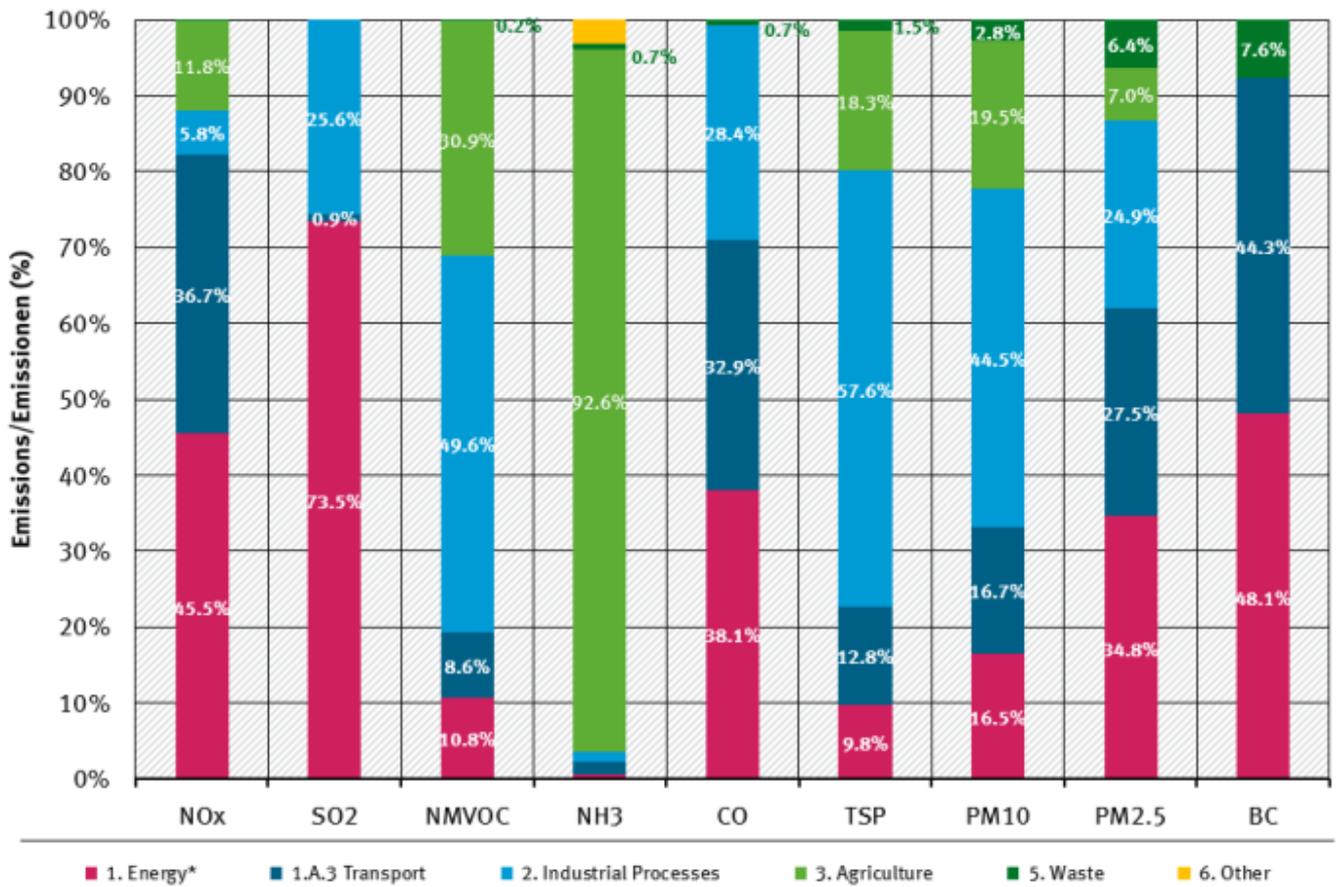
Emissions by pollutant / Emissionen nach Schadstoff

* Base Year for PM = 1995 / Basisjahr für Feinstäube (PM) ist 1995
** Black Carbon emissions from 2000 / Black Carbon Emissionen erst ab 2000

Quelle: German Emission Inventory (17.03.2025)

[Contribution of NFRs 1 to 6 to the National Totals, for 2021](#)

Contribution of NFR categories to the emissions

percentages per air pollutant, 2023

Emissions/Emissionen (%)

	NOx	SO2	NMVOC	NH3	CO	TSP	PM10	PM2.5	BC
1. Energy*	45.5%	73.5%	10.8%		38.1%	9.8%	16.5%	34.8%	48.1%
1.A.3 Transport	36.7%	0.9%	8.6%		32.9%	12.8%	16.7%	27.5%	44.3%
2. Industrial Processes	5.8%	25.6%	49.6%		28.4%	57.6%	44.5%	24.9%	
3. Agriculture	11.8%		30.9%	92.6%		18.3%	19.5%	7.0%	
5. Waste			0.2%	0.7%	0.7%	1.5%	2.8%	6.4%	7.6%
6. Other				0.7%					

Legend: ■ 1. Energy* ■ 1.A.3 Transport ■ 2. Industrial Processes ■ 3. Agriculture ■ 5. Waste ■ 6. Other

* w/o Transport / ohne Verkehr (1.A.3)

Quelle: German Emission Inventory (17.03.2025)