Explanation of Key Trends - Fine Particulate Matter (PM_{2.5})

Obligations

Germany has made a commitment to reduce particulate matter emissions. The revised Gothenburg Protocol and the revised NEC Directive both define emission reduction targets relative to a 2005 base year, mandating 26% (2020) and 43% (2030) reductions respectively.

While Germany's compliance with these obligations is not discussed here, further information on this subject can be found in Chapter 9 - Projections and Chapter 11 - Adjustments and Emission Ceiling Exceedance.

Main drivers

Between 1995 and 2022, Total PM_{2.5} emissions declined by 57.8%.

The Main Drivers for $PM_{2.5}$ emissions are **Fuel Combustion (NFR 1.A)** with 73% of total 1995 emissions and a 64% reduction between 1995 and 2022 and, as a sum, the **Industrial Processes (NFR 2)** with about 20% of total 1995 emissions and a 48% reduction between 1995 and 2022.

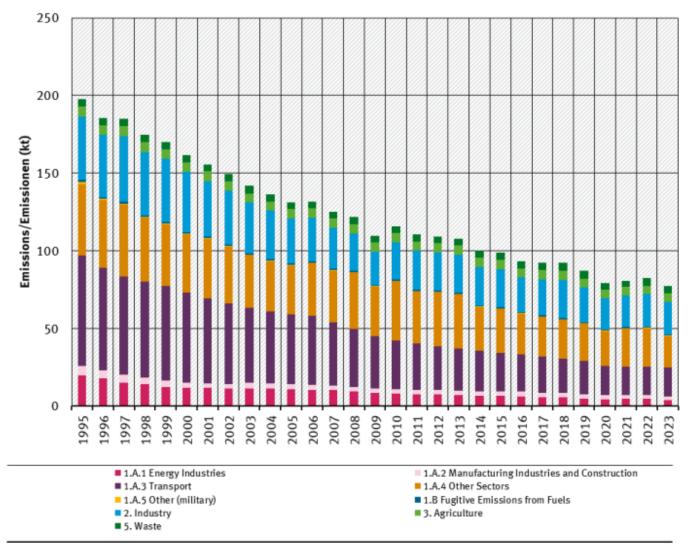
Within both National totals and NFR 1.A, **Transport (NFR 1.A.3)** is responsible for the biggest part of PM_{2.5} emissions. Here, about 77% of 2019 PM_{2.5} transport emissions are induced by **Road Transport (NFR 1.A.3.b)**, caused by two third directly by fuel consumption (**NFR 1.A.3.b.i - v**) and the other third by road abrasion and tyre and brake wear (**NFR 1.A.3.b.vi - vii**).

Table: PM_{2.5} emissions 1990-2021, in kilotonnes [kt]

| | | | | | | | | | | | | | | | | Trend: latest compared to | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------|--------|------------------|
| 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 1995 | previous year |
| 197 | 162 | 131 | 116 | 111 | 109 | 108 | 100 | 99 | 93 | 92 | 92 | 87 | 79 | 81 | 82 | 77 | -60.8% | -5.9% |

Fine Particulate Matter / Feinstaub (PM2.5)

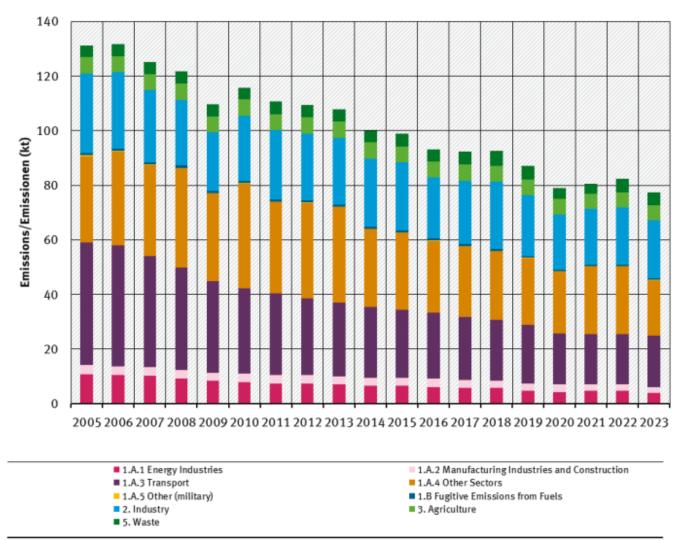
Emissions per Sector / Sektorale Emissionen



Quelle: German Emission Inventory (14.02.2025)

Fine Particulate Matter / Feinstaub (PM2.5)

Emissions per Sector / Sektorale Emissionen



3/3

Quelle: German Emission Inventory (14.02.2025)