

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

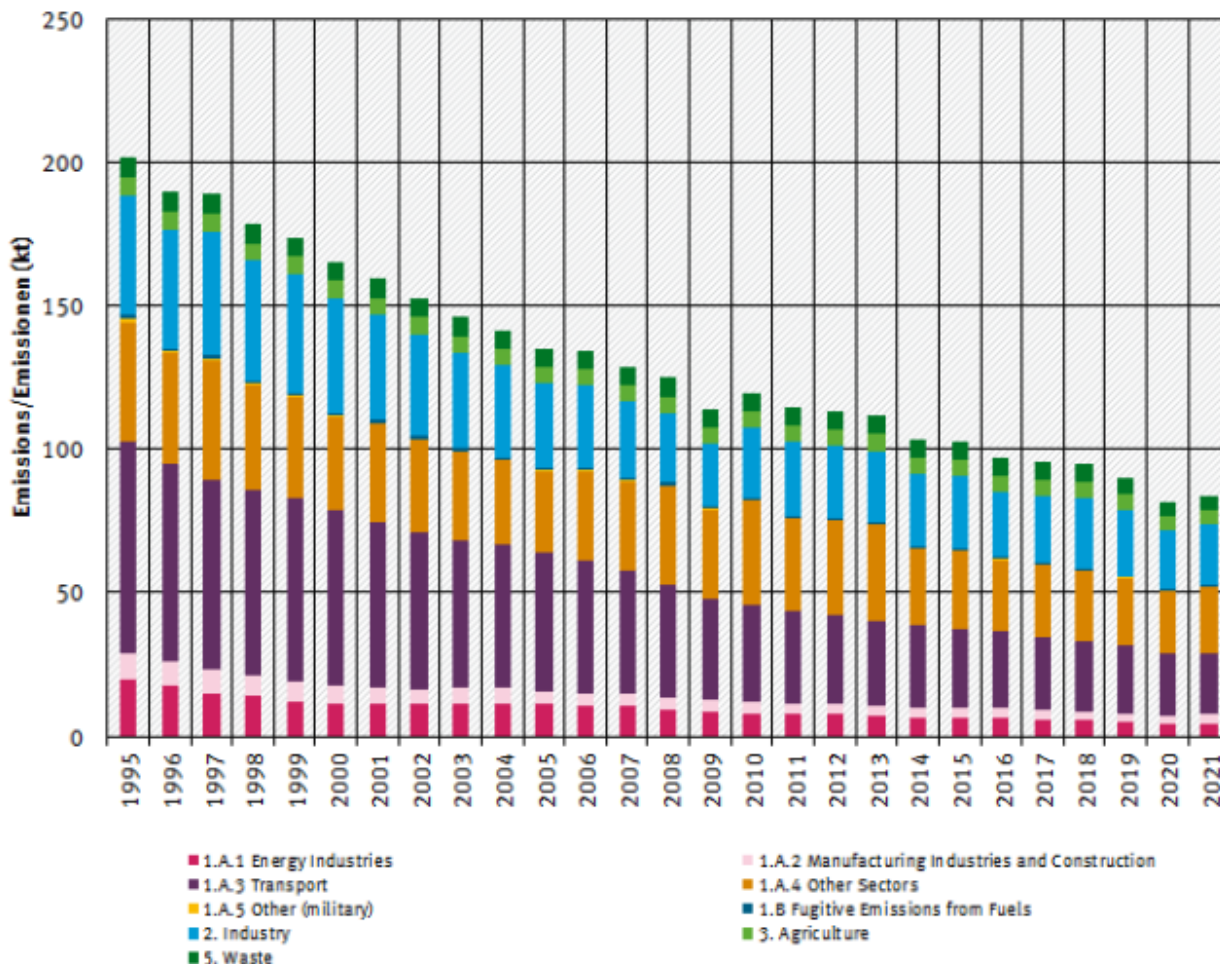
Total PM_{2.5} emissions declined by 58.6% between 1995 and 2021.

The Main Drivers for PM_{2.5} emissions are **Fuel Combustion (NFR 1.A)** with 72% of total 1995 emissions and a 64% reduction between 1995 and 2021 and, as a sum, the **Industrial Processes (NFR 2)** with about 21% of total 1995 emissions and a 51% reduction between 1995 and 2021.

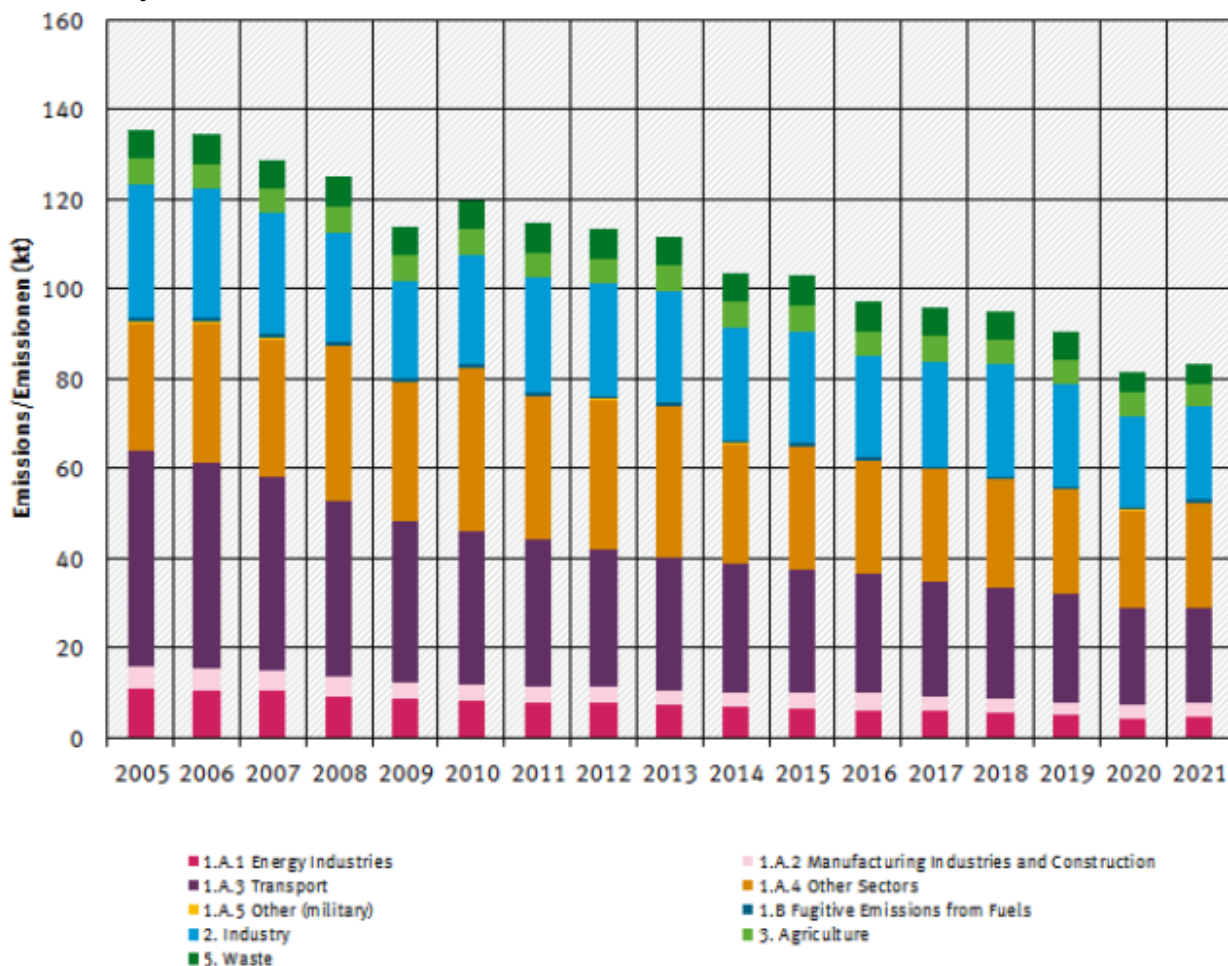
Within both National totals and NFR 1.A, **Transport (NFR 1.A.3)** is responsible for the biggest part of PM_{2.5} emissions. Here, about 77% of 2019 PM_{2.5} transport emissions are induced by **Road Transport (NFR 1.A.3.b)**, caused by two third directly by fuel consumption (**NFR 1.A.3.b.i - v**)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

| Total Emissions (kt) | | | | | | | | | | | | | | | Trend: latest compared to | |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------|------------|
| 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 1995 | last years |
| 202 | 165 | 135 | 119 | 115 | 113 | 111 | 104 | 103 | 97 | 96 | 95 | 90 | 81 | 83 | ▼ -58.6% | ▼ |



PM_{2.5} trend by sector



PM_{2.5} trend by sector, from 2005