

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

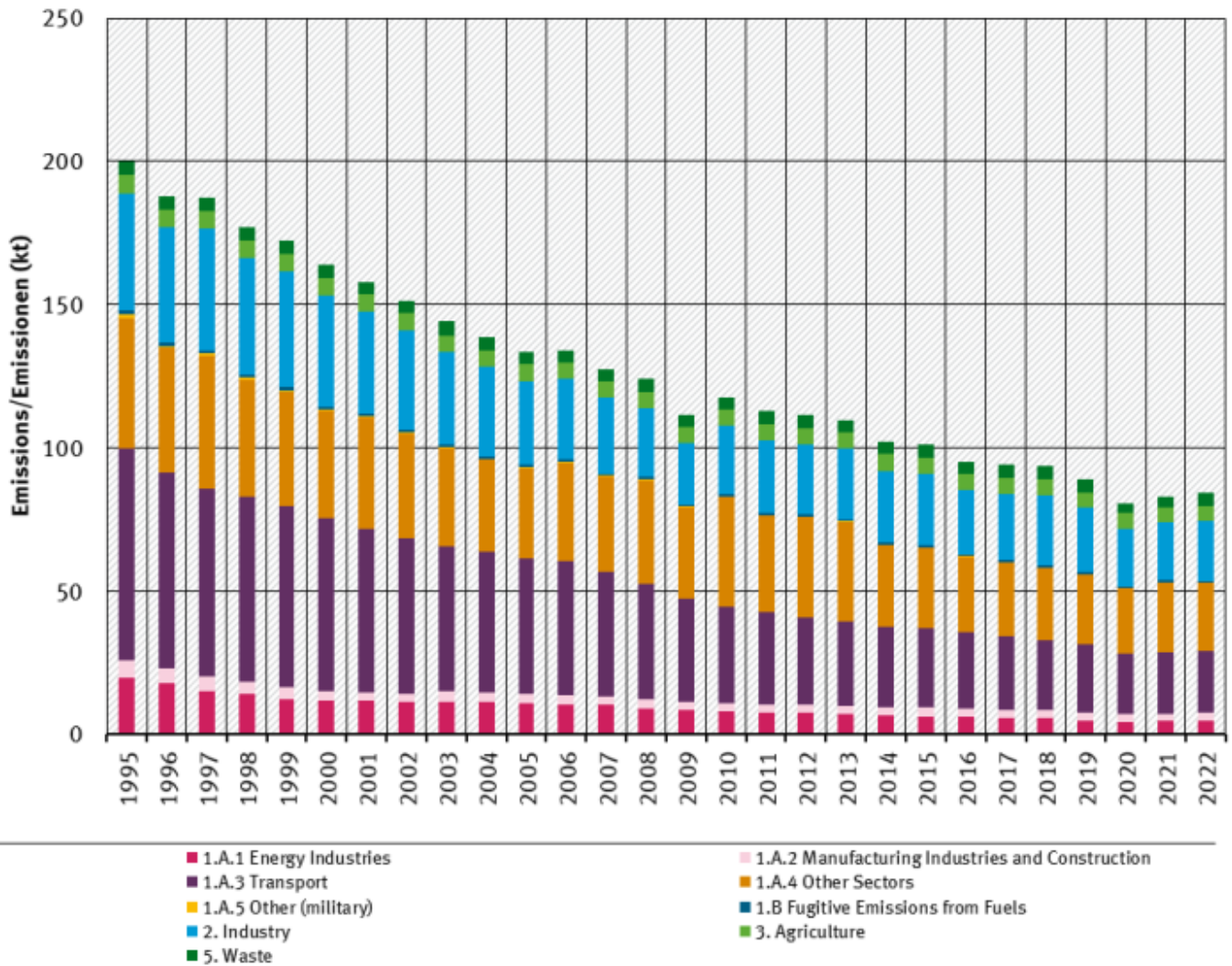
Total PM_{2.5} emissions declined by 58.6% between 1995 and 2021.

The Main Drivers for PM_{2.5} emissions are **Fuel Combustion (NFR 1.A)** with 72% of total 1995 emissions and a 65% 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.

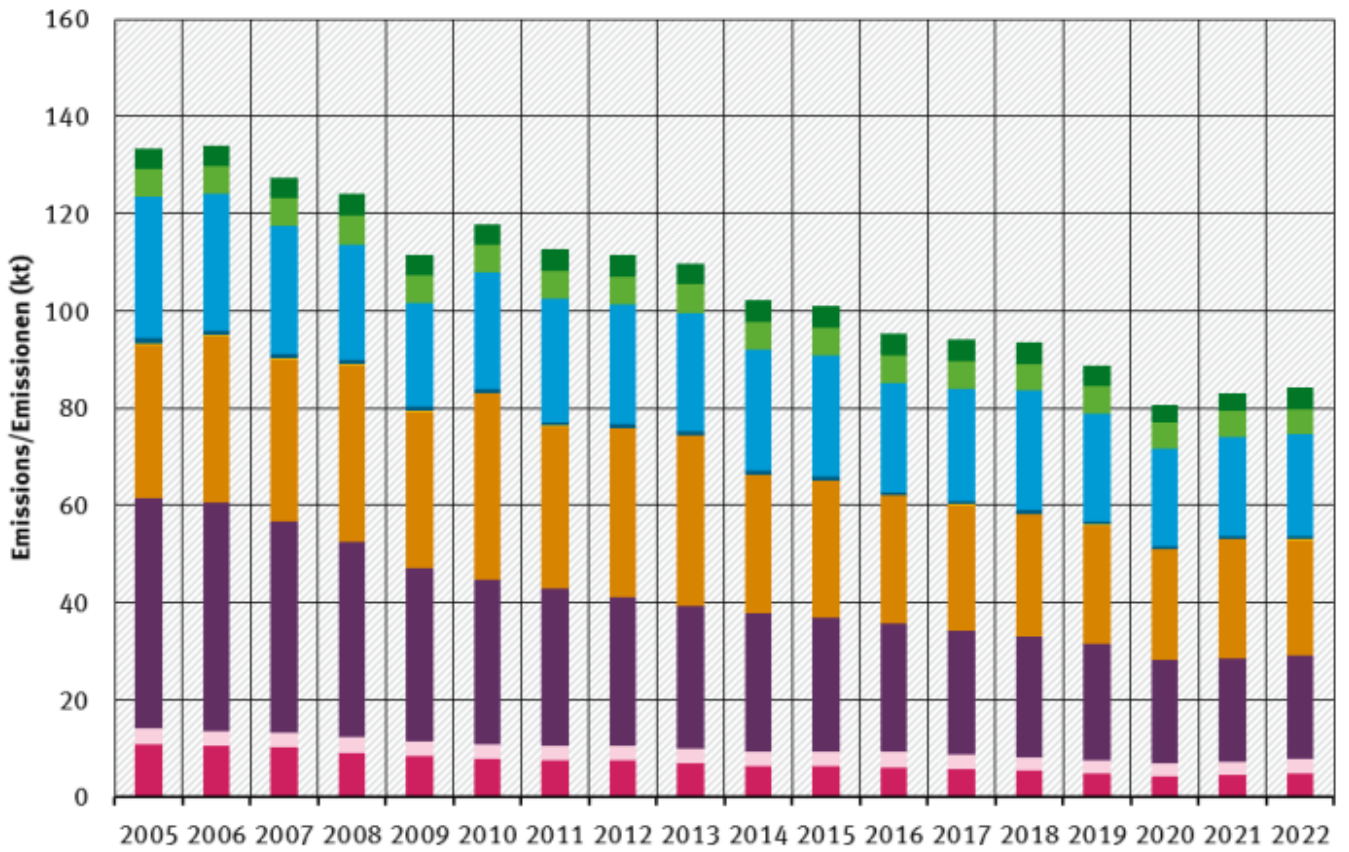
Within both National totals and NFR 1.A, **Transport (NFR 1.A.3)** is responsible for the biggest part of PM_{2.5} emissions. Here, about 77% of 2019 PM_{2.5} transport emissions are induced by **Road Transport (NFR 1.A.3.b)**, caused by two third directly by fuel consumption (**NFR 1.A.3.b.i - v**)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



- 1.A.1 Energy Industries
 - 1.A.3 Transport
 - 1.A.5 Other (military)
 - 2. Industry
 - 5. Waste
- 1.A.2 Manufacturing Industries and Construction
 - 1.A.4 Other Sectors
 - 1.B Fugitive Emissions from Fuels
 - 3. Agriculture

PM_{2.5} trend by sector, from 2005