Chapter 6 - NFR 5 - Waste (OVERVIEW)

Source category *NFR 5 - Waste* is not a key source. NMVOC and $PM_{2.5}$ emissions from Solid Waste Disposal on Land, NH_3 emissions from Composting and Anaerobic Digestion at biogas facilities, emissions from Cremation as well as NMVOC emissions from Domestic & Commercial and Industrial Wastewater Treatment are reported.

Germany has a large number of waste incineration plants, whose emissions are reported in *NFR 1*, because German legislation requires energy recovery. Therefore, waste is also part of the German Energy Statistic as well as the National Energy Balance.

In addition to the “classical” municipal waste incineration, there are also various types of combustion installations, like co-incineration of “replacement fuels” in conventional power plants or industrial plants. The increasing number of co-incineration plants is mainly due to the landfill ban of untreated waste in 2005 and the introduction of the emission trading scheme (ETS). Further information about the methodology of municipal waste incineration, co-incineration in public power plants and emissions from waste wood combustion is available in chapter: 1.A.1.a -Public electricity and heat production. Municipal waste incineration does also include clinical waste, which is not incinerated separately.

Emissions from hazardous waste incineration plants are reported in source category 1.A.2.g. viii - Stationary Combustion in Manufacturing Industries and Construction: Other Production as well as co-incineration in industrial plants, whereas emissions from sewage sludge incineration are reported in source category 1.A.1.c - Manufacture of solid fuels and other energy industries , following the structure of the National Statistics.

In Germany, “Other Waste Incineration” *(NFR 5.C.1.b vi)* is prohibited by law, therefore, “NO” is used as notation key.

Furthermore, it should be mentioned that all emissions originating from biogas recovery are reported in source category 1.A.1.a , following the structure of the National Energy Balance. That covers emissions from sewage gas as well as landfill gas and biogas from biological waste treatment.

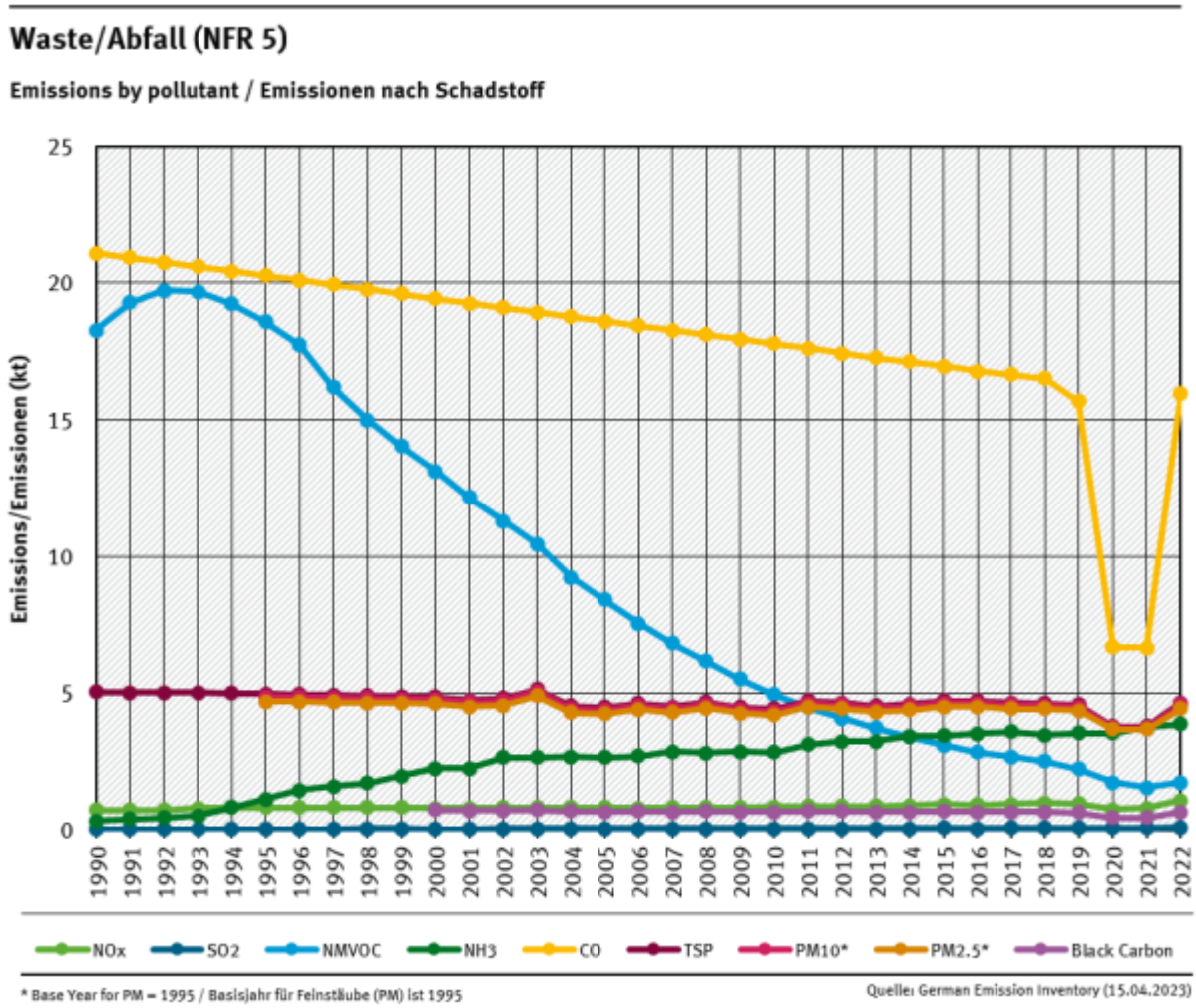
NFR 5 consists of the following sub-categories:

NFR Code	Name of Category	State of Reporting
5.A & 5.B - Biological Treatment of Waste		
5.A	Biological Treatment of Waste: Solid Waste Disposal on Land	
5.B.1	Biological Treatment of Waste: Composting	
5.B.2	Biological Treatment of Waste: Anaerobic digestion at biogas facilities	
5.C - Thermal Treatment of Waste		
5.C.1.a	Municipal Waste Incineration	considered in *1.A.1.a*
5.C.1.b i	Industrial Waste Incineration	considered in *1.A.1.a* & 1.A.2.g viii
5.C.1.b ii	Hazardous Waste Incineration	considered in *1.A.2.g viii*
5.C.1.b iii	Clinical Waste Incineration	considered in *1.A.1.a*
5.C.1.b iv	Sewage Sludge incineration	considered in *1.A.1.c*
5.C.1.b v	Cremation	
5.C.1.b vi	Other waste incineration (please specify in the IIR)	NO
5.C.2	Open Burning of Waste	
5.D - Wastewater handling		
5.D.1	Domestic & Commercial Wastewater Handling	
5.D.2	Industrial Wastewater Handling	
5.D.3	Other Wastewater Handling	NO
5.E - Other Waste (please specify in IIR)		
5.E.1		GHG emissions only
5.E.2	Other Waste: Building and Car Fires	

NOTE: Within category *5.C - Waste incineration*, Germany only reports emissions from *NFR 5.C.1.b v - Cremation* and *NFR 5.C.2 bonfires etc.*. For all other sub-categories of NFR 5.C, as all waste incineration in Germany is carried out with energy recovery and in order to avoid double counting, resulting emissions are reported as *not occuring (NO)* under NFR 5.C but are included in energy sector NFR 1.

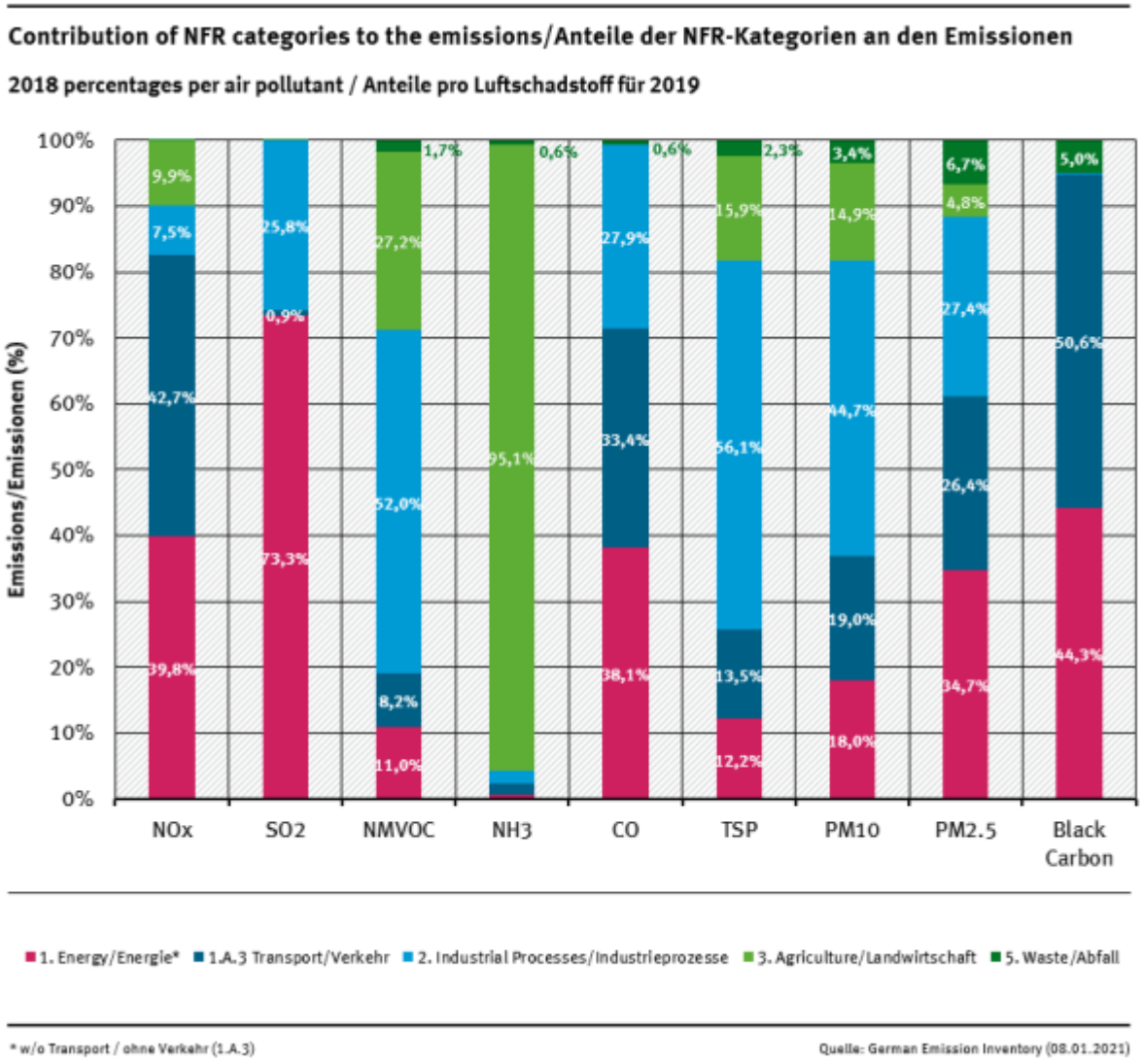
Visual overview

Chart showing emission trends for main pollutants in *NFR 5 - Waste*:



NFR 5 emission trends per category

Contribution of NFR categories to the emissions/Anteile der NFR-Kategorien an den Emissionen



Contribution of NFR categories to the emissions