

5.E.2 - Other Waste: Building and Car Fires

Short description



For key source information please see the [Overview-chapter 5.E](#).

Within NFR 5.E.2 - Other Waste: Building and Car Fires, emissions from building and car fires are reported.

Method

With a method for estimation the AD developed within a research project ¹⁾, and after publication of Tier2-EF within the EEA-Guidebook 2019 ²⁾, a country-specific method is implemented and further developed. So now it is possible to estimate a full-scale-approach for all Buildings and the cars, additionally an estimation for waste container fires. In all cases only accidental fires are mentioned (including acts of vandalism).

Activity data

Official population statistics for Germany are applied as primary activity data.

From these statistical input data, the number of fires is estimated via the following steps:

- specific values for number of fires per 1,000 inhabitants,
- differentiated according to building,
- vehicle and container fires,
- Determination of the number of relevant fires per year in Germany in total,
- Differentiation of the fires according to building and vehicle fires,
- Differentiation of fires according to fire scale,
- Differentiation of building fires by building category,
- Conversion of different fires per year to full-scale fires per year,
- Transfer of the results on the number of fires in the form of number of full-scale fires per year differentiated by fire categories.

In order to apply the emission factors available from the EMEP/EEA Guidebook, the annual number of building fires is differentiated for detached and undetached, apartment and industrial buildings.

Table 1: Estimated shares per building category, for 2018

detached houses	undetached houses	appartement buildings	industrial buildings
53%	13%	13%	20%

Table 2: Estimated number of full-scale fires, per category, per 1,000 inhabitants, for 2018

detached houses	undetached houses	appartement buildings	industrial buildings	cars/ vehicles	containers
0.02	0.05	0.05	0.08	0.18	0.15

Emission Factors

For most of pollutants Tier2 default values from the EMEP/EEA air pollutant emission inventory guidebook 2019 (as 2016), Chapter 5.E - Other waste, tables 3-2 to 3-6 are applied ³⁾. Due to gap for emissions factors of black carbon we assume the following analogy: 10% of PM_{2.5} from Table 3-40, Tier 2 emission factor for conventional stoves, wood and similar wood waste. Regarding containers we use figure of Table 6.22 of Danish IIR ⁴⁾.

In contrast to building fires, in accordance to the emission factor values provided in the EMEP/EEA Guidebook, no additional differentiation e.g. of vehicle categories is implemented.

Verification

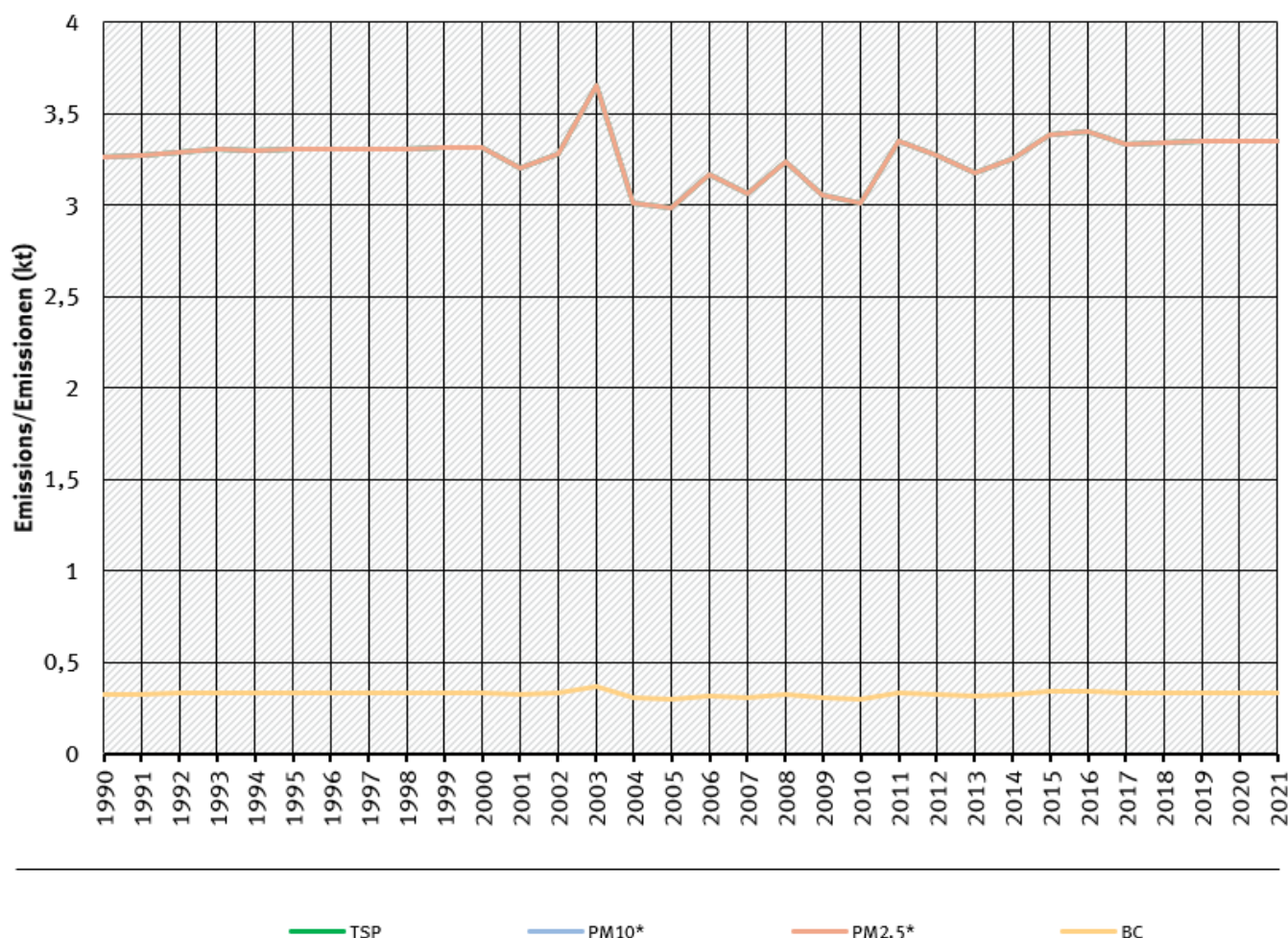
For verification purposes, a consultant has checked the Informative Inventory Reports (IIRs) of other countries. In the IIRs of Denmark and Iceland it is additionally stated that the emission factors refer to so-called “full-scale fires” and therefore the activity data (i.e. the number of fires) must be converted to so-called full-scale equivalent fires.

Trends in emissions

All trends in emissions correspond to trends of AD. No rising trends are to identify, but a jump in 2003 due to many forest fires. Forest fires are part of the total fire AD and affect so the calculation in general.

trends of emissions of Building and Car Fires

Emissions by pollutant / Emissionen nach Schadstoff



* Base Year for PM = 1995 / Basisjahr für Feinstäube (PM) ist 1995

Source: German Emission Inventory (20.01.2023)

Emission trends in NFR 5.E.2

Recalculations

With **activity data** and **emission factors** remaining unrevised, no recalculations have been carried out compared to last year's submission.



For **pollutant-specific information on recalculated emission estimates for Base Year and 2020**, please see the recalculation tables following [chapter 8.1 - Recalculations](#).

¹⁾ Project leader Site: https://oekopol.de/en/archiv-en/?doc=EN_720, Publication in prep. as Umweltbundesamt 2021: Research-ID 3717411050, "Wissenschaftlich-methodische Grundlagen der Inventarverbesserung zur Umsetzung der Hinweise aus den Inventarüberprüfungen 2016 und 2017"

^{2), 3)} <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019/part-b-sectoral-guidance-chapters/5-waste/5-e-other-waste/view>

⁴⁾ https://cdr.eionet.europa.eu/dk/un/clrtap/iir/envxgkjdw/Denmarks_Informative_Inventory_Report_2019.pdf