

## 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 <sup>1)</sup>, and after publication of Tier2-EF within the EEA-Guidebook 2019 <sup>2)</sup>, 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.

Estimated shares per building category, for 2018:

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

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 <sup>3)</sup>. Due to gap for emissions factors of black carbon we assume the following analogy: 10% of PM<sub>2.5</sub> 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 <sup>4)</sup>.

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

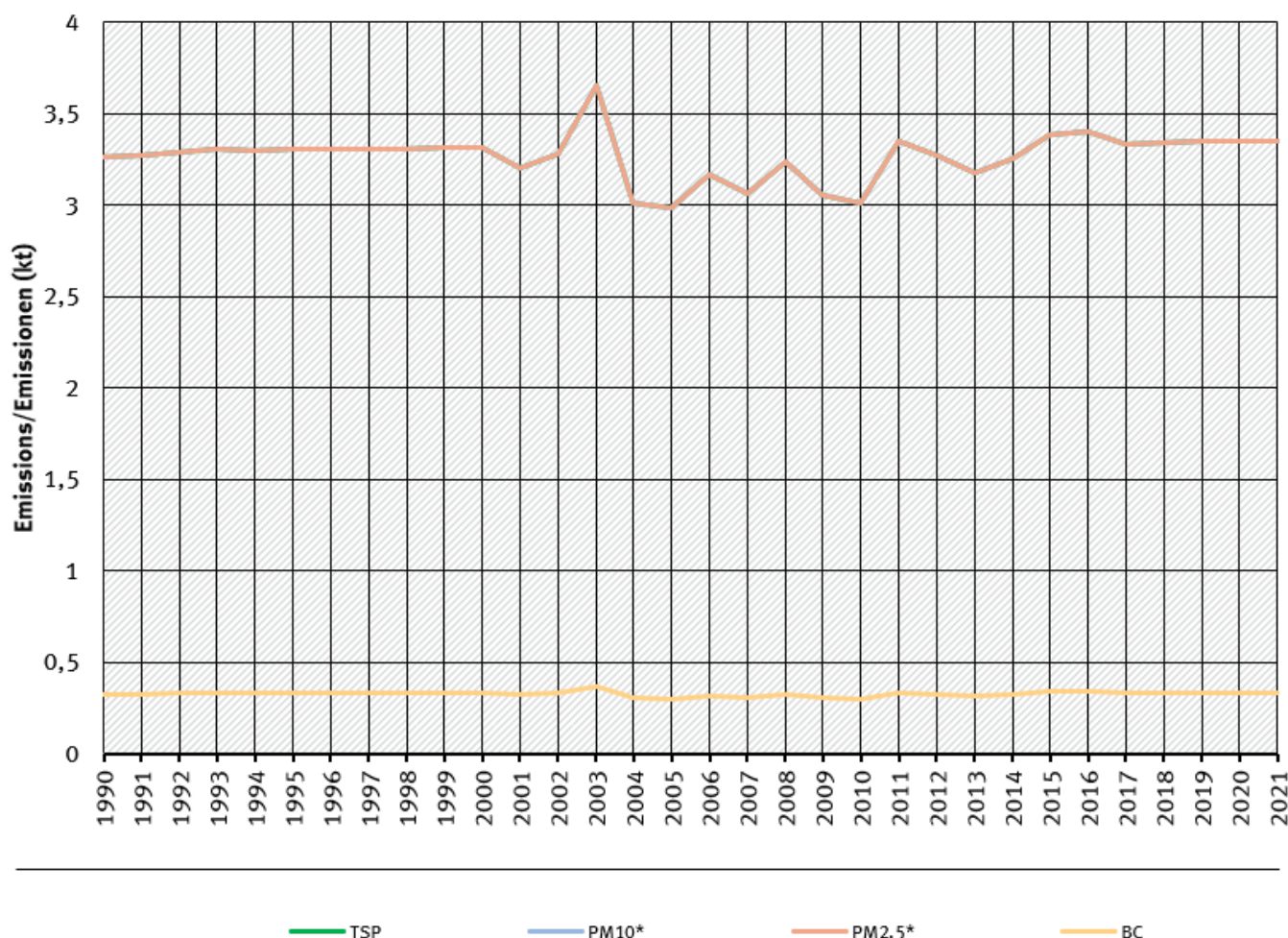
For verification purposes, a consultant has checked the Informative Inventory Reports (IIRs) of other countries. In the IIRs of Denmark and Iceland it is additionally stated that the emission factors refer to so-called “full-scale fires” and therefore the activity data (i.e. the number of fires) must 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 2018, please see the pollutant specific recalculation tables following [chapter 8.1 - Recalculations](#).

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<sup>1)</sup> Project leader Site: [https://oekopol.de/en/archiv-en/?doc=EN\\_720](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"

<sup>2)</sup>

<https://www.eea.europa.eu/publications/emep-eea-guidebook-2019/part-b-sectoral-guidance-chapters/5-waste/5-e-other-waste/view>

<sup>3)</sup>

<https://www.eea.europa.eu/publications/emep-eea-guidebook-2019/part-b-sectoral-guidance-chapters/5-waste/5-e-other-waste/view>

<sup>4)</sup> [http://cdr.eionet.europa.eu/dk/un/clrtap/iir/envxgkjdw/Denmarks\\_Informative\\_Inventory\\_Report\\_2019.pdf](http://cdr.eionet.europa.eu/dk/un/clrtap/iir/envxgkjdw/Denmarks_Informative_Inventory_Report_2019.pdf)