# 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, appartment and industrial buildings.

Table: Estimated shares per building category, for 2018

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

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

C	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 PM2.5 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 <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

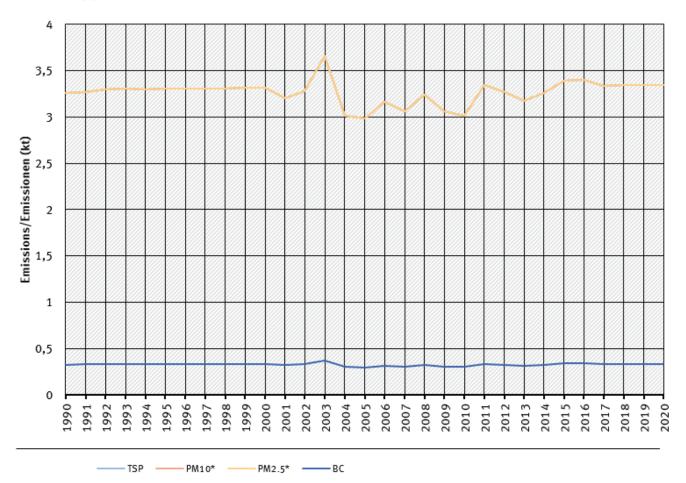
For verification purposes, a consultant has checked the Informative Inventory Reports (IIRs) of other countries. In the IIRs of Denmark and Iceland it is additionally stated that the emission factors refer to so-called "full-scale fires" and therefore the activity data (i.e. the number of fires) must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

Emissions by pollutant / Emissionen nach Schadstoff



<sup>\*</sup> Base Year for PM = 1995 / Basisjahr für Feinstäube (PM) ist 1995

Source: German Emission Inventory (03.12.2021)

**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 2019, please see the recalculation tables following chapter 8.1 - Recalculations.

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

<sup>&</sup>lt;sup>1)</sup> 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"
<sup>2)</sup>, <sup>3)</sup>

 $<sup>^{4)}\</sup> http://cdr.eionet.europa.eu/dk/un/clrtap/iir/envxgkjdw/Denmarks\_Informative\_Inventory\_Report\_2019.pdf$