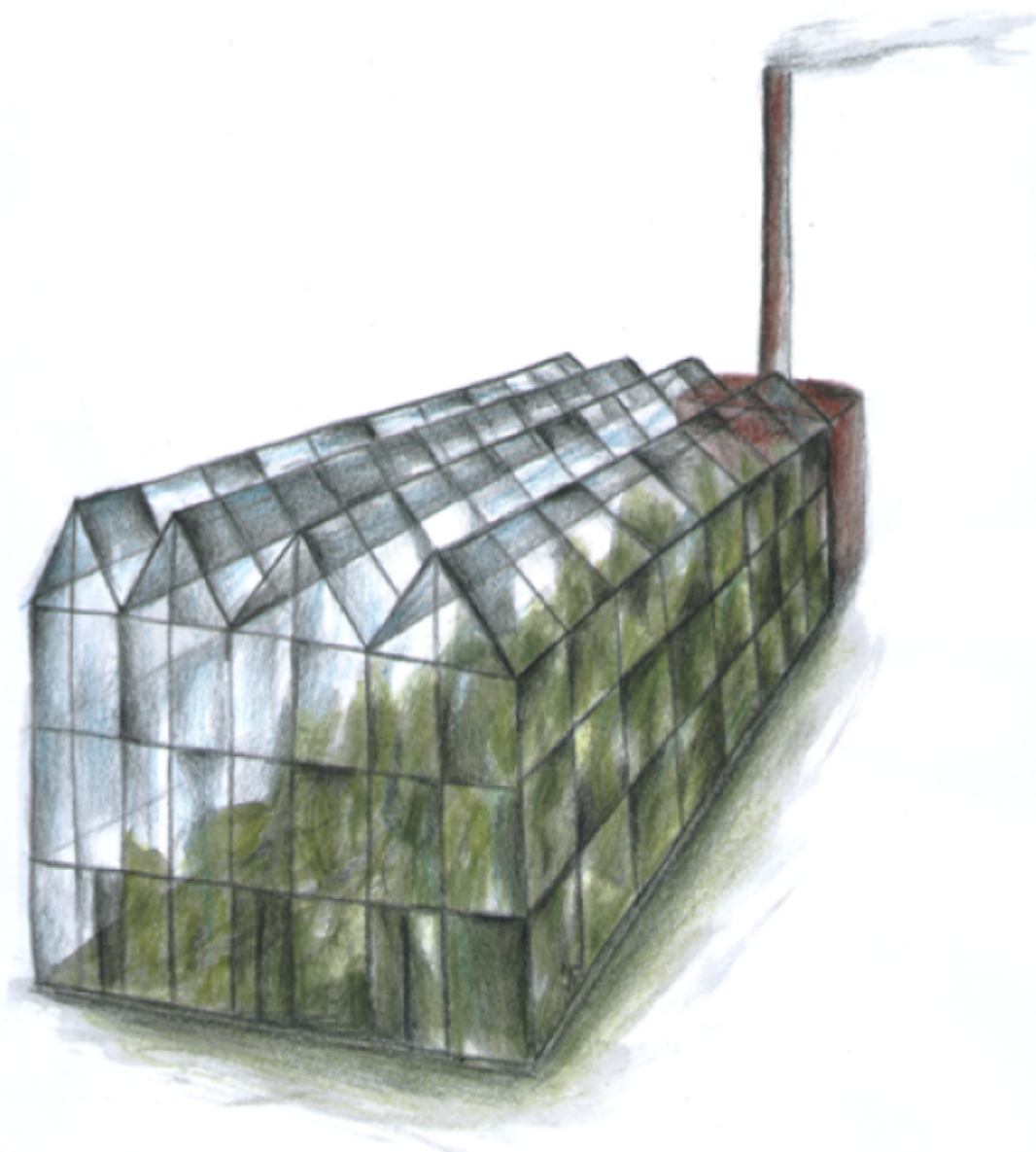


## 1.A.4.c.i - Agriculture/Forestry/Fishing: Stationary



### Short description

In source category *1.A.4.c.i - Agriculture/Forestry/Fishing: Stationary* emissions from smaller combustion plants in agricultural facilities and greenhouses are reported.

Category Code	Method					AD					EF				
1.A.4.c.i	T2, T3					NS					CS, D				
Key Category	SO <sub>2</sub>	NO <sub>x</sub>	NH <sub>3</sub>	NM VOC	CO	BC	Pb	Hg	Cd	Diox	PAH	HCB	TSP	PM <sub>10</sub>	PM <sub>2.5</sub>
1.A.4.c.i	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-

**T** = key source by Trend **L** = key source by Level

#### Methods

<b>D</b>	Default
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<b>RA</b>	Reference Approach
<b>T1</b>	Tier 1 / Simple Methodology *
<b>T2</b>	Tier 2*
<b>T3</b>	Tier 3 / Detailed Methodology *
<b>C</b>	CORINAIR
<b>CS</b>	Country Specific
<b>M</b>	Model

\* as described in the EMEP/CORINAIR Emission Inventory Guidebook - 2007, in the group specific chapters.

<b>AD - Data Source for Activity Data</b>	
<b>NS</b>	National Statistics
<b>RS</b>	Regional Statistics
<b>IS</b>	International Statistics
<b>PS</b>	Plant Specific data
<b>AS</b>	Associations, business organisations
<b>Q</b>	specific questionnaires, surveys
<b>EF - Emission Factors</b>	
<b>D</b>	Default (EMEP Guidebook)
<b>C</b>	Confidential
<b>CS</b>	Country Specific
<b>PS</b>	Plant Specific data

## Methodology

### Activity data

For further information on activity data please refer to the [superordinate chapter](#) on small stationary combustion.

### Emission factors

For further information on the emission factors applied please refer to the [superordinate chapter](#) on small stationary combustion.

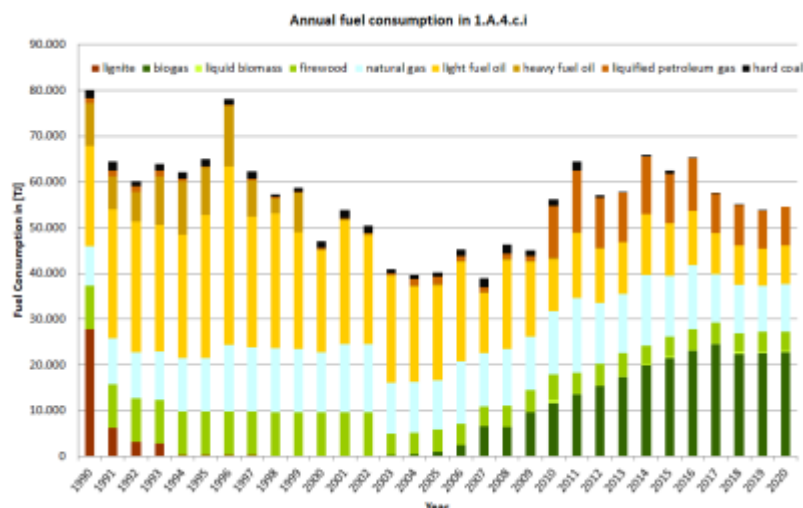
Table 1: Emission factors for commercial and institutional combustion installations

Pollutant	NO <sub>x</sub>	SO <sub>x</sub>	CO	NM <sub>VOC</sub>	TSP	PM <sub>10</sub>	PM <sub>2.5</sub>	PAH	PCDD/F
Fuel	[kg/T]							Fuel	[kg/T]
<b>Hard Coal</b>	76.2	331.7	2,709	48.4	18.5	17.6	15.7	60,000	16.3
<b>Residual Wood</b>	79.2	6.5	2,285	122.1	84.2	81.6	76.9	430,000	355.3
<b>Light Fuel Oil</b>	43.7	3.3	11.9	2.6	1.0	1.0	1.0	160.7	2.7
<b>Natural Gas</b>	27.2	0.1	11.1	0.36	0.03	0.03	0.03	40	1.6

TSP and PM emission factors are to a large extent based on measurements without condensed compounds, according to CEN-TS 15883, annex I. PAH measurement data contain the following individual substances: Benzo(a)pyrene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(b)fluoranthene, Benzo(j)fluoranthene, Benzo(ghi)perylene, Anthracene, Benzo(a)anthracene, Chrysene(+Trihenylene) and Dibenzo(a,h)anthracene, as a specific part of US EPA.

## Trend Discussion for Key Sources

The following charts give an overview and assistance for explaining dominant emission trends of selected pollutants.



Annual fluctuations of all fuel types in source category 1.A.4 depend on heat demand subject to winter temperatures. Between 1990 and 2014 the fuel use changed considerably from coal & lignite to natural gas. The consumption of light heating oil decreased as well. As the activity data for light heating oil is based on the sold amount, it fluctuates due to fuel prices and changing storage amounts.

## Recalculations

Recalculations were necessary for the latest reference year (2018) due to the availability of the National Energy Balance. Germany has a federal structure which causes a time lack of the National Energy Balance. Therefore recalculations are always necessary. Further recalculations are the result of the revision of PAH emission factors.



For specific **information on recalculated emission estimates for Base Year and 2018**, please see the pollutant specific recalculation tables following chapter [8.1 - Recalculations](#).

## Planned improvements

There is a running Project on new emission factors for small combustion plants using updated data from the chimney sweepers and new measurement data.