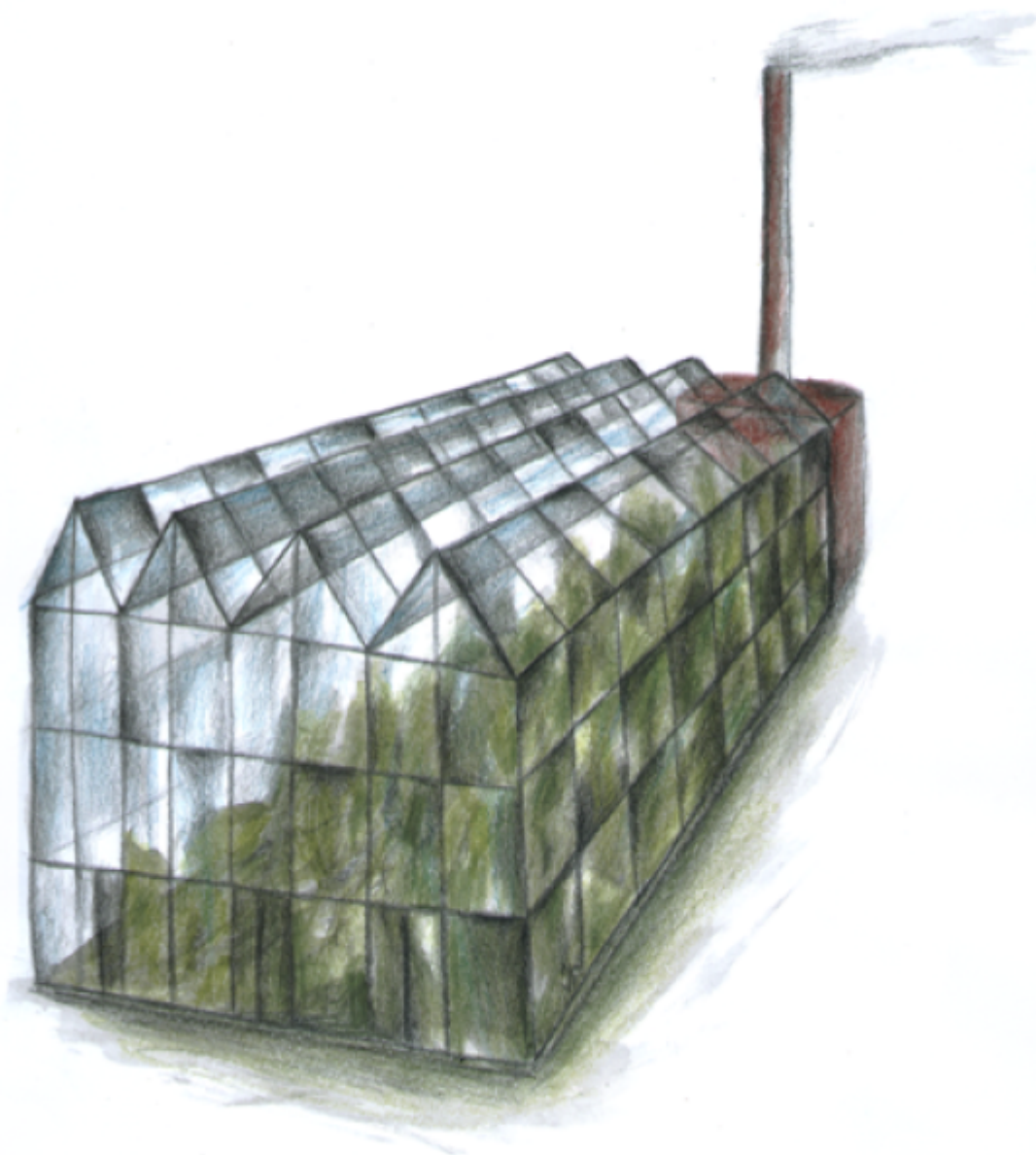# 1.A.4.c.i - Agriculture/Forestry/Fishing: Stationary

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$_2$	NO$_x$	NH$_3$	NMVOC	CO	BC	Pb	Hg	Cd	Diox	PAH	HCB	TSP	PM$_{10}$	PM$_{2.5}$
1.A.4.c.i	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-

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

Methods	
D	Default

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

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

AD - Data Source for Activity Data	
NS	National Statistics
RS	Regional Statistics
IS	International Statistics
PS	Plant Specific data
AS	Associations, business organisations
Q	specific questionnaires, surveys

EF - Emission Factors	
D	Default (EMEP Guidebook)
C	Confidential
CS	Country Specific
PS	Plant Specific data

Methodology

Activity data

For further information on activity data please refer to the superordinte chapter on small stationary combustion.

Emission factors

For further information on the emission factors applied please refer to the superordinte chapter on small stationary combustion.
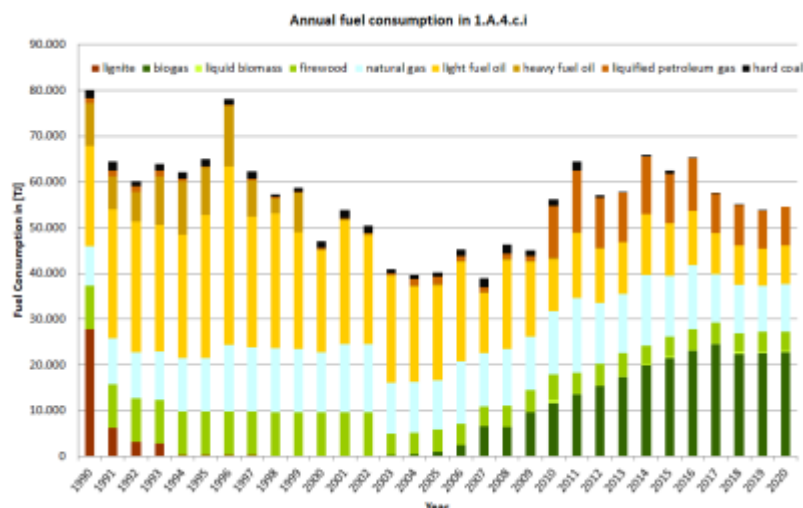
Table 1: Emission factors for commercial and institutional combustion installations

Pollutant	NOx	SOx	CO	NMVOC	TSP	PM$_{10}$	PM$_{2.5}$	PAH	PCDD/F
Fuel				**[kg/TJ]**				**Fuel**	**[kg/TJ]**
Hard Coal	76.2	331.7	2,709	48.4	18.5	17.6	15.7	60,000	16.3
Residual Wood	79.2	6.5	2,285	122.1	84.2	81.6	76.9	430,000	355.3
Light Fuel Oil	43.7	3.3	11.9	2.6	1.0	1.0	1.0	160.7	2.7
Natural Gas	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 extend 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 Dibenz(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 fuel consumption in 1.A.4.c.i

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.