

NFR Code				Method				AD				EF			
1.A.2.f				T1				NS				CS			
Method(s) applied															
D				Default											
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/EEA Emission Inventory Guidebook - 2019, in category chapters.															
(source for) Activity Data															
NS				National Statistics											
RS				Regional Statistics											
IS				International Statistics											
PS				Plant Specific											
As				Associations, business organisations											
Q				specific Questionnaires (or surveys)											
M				Model / Modelled											
C				Confidential											
(source for) Emission Factors															
D				Default (EMEP Guidebook)											
CS				Country Specific											
PS				Plant Specific											
M				Model / Modelled											
C				Confidential											
NO <sub>x</sub>	NM VOC	SO <sub>2</sub>	NH <sub>3</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>	TSP	BC	CO	PB	Cd	Hg	PCDD/F	PAHs	HCB	
-/-	-/-	-/-	-/-	-	-	-/-	-	-/-	-	-	-	-	-	-	

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In order of significance relating energy use and emissions, the covered industries are:

- burning of cement clinker,
- burning of quicklime,
- melting of glass,
- burning of ceramics.

## Method

Regarding the burning processes emissions can be allocated to the use of fuels or to the production process. Current allocation is regarding the main importance of the production process.

## Activity data

The key source of all conventional fuel data is the national energy balance. Moreover the use of additional statistical data is necessary in order to disaggregate data. Data source for fuel inputs for energy-related process combustion in cement industry are manufacturing-sector statistics (Statistik des produzierenden Gewerbes); reporting number (Melde-Nr.) 23.51, Cement production. Furthermore the cement industry uses significant amounts of substitute fuels that do not appear in national statistics and in the Energy Balance. Relevant production figures and fuel-use amounts have been taken from statistics of the VDZ cement-industry association. The fuel-input data for ceramics production has also been taken from manufacturing industry statistics (Statistik des produzierenden Gewerbes); reporting no. (Melde-Nr.) 23.32, brickworks (Ziegelei), production of other construction ceramics. The same statistic is also used as source for fuel input of glass (reporting number: 23.1, Production of glass and glassware) and lime production (reporting number: 23.52, Lime).

## Emissions

Due to allocating emissions to process part we have removed most of time series inconsistencies. The current situation is the following:

Table 1: relevance of emission sources regarding the fuel use due to burning processes in 1.A.2.f

	SO <sub>x</sub>	NO <sub>x</sub>	CO	NMVOC	NH <sub>3</sub>	TSP	BC
<b>cement</b>	IE <sup>1</sup>	IE <sup>1</sup>	medium	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>2</sup>	NE
<b>lime</b>	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>1</sup>	low	IE <sup>2</sup>	NE
<b>glass</b>	IE <sup>2</sup>	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>2</sup>	NE
<b>ceramics</b>	IE <sup>3</sup>	IE <sup>3</sup>	low	IE <sup>1</sup>	IE <sup>1</sup>	IE <sup>1</sup>	NE

<sup>1</sup> Included in process related emissions, in all cases it is the link to complementary source category.

<sup>2</sup> Some artifacts occur for 1990 emissions that cannot be shifted.

<sup>3</sup> Inclusion in process related emissions occurs from different time points onwards.

The entire appraisal of the emissions situation succeeds only in connection with the process related emissions. Especially further relevant pollutants as heavy metals or persistent organics are shown as process related generally.

## Recalculations

For the purpose of improving the data quality National Energy Balances for the years 2003 to 2021 have gone under revisions through fine-tuning of the computational models, consideration of new statistics or re-allocation of activity data, along with other revision mechanisms. These updates led to re-calculations in fuel uses in different sub-categories and in their corresponding emissions.



For **pollutant-specific information on recalculated emission estimates for Base Year and 2022**, please see the recalculation tables following [chapter 8.1 - Recalculations](#).

## Planned improvements

At the moment, no category-specific improvements are planned.