

## 2.A.2 - Lime Production

### Short description

Category Code	Method					AD					EF				
2.A.2	T1					AS					CS				
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>
2.A.2	-/-	-/-	-	-/-	-/-	-	-	-/-	-	-	-	-	-/-	-/-	-/-

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

Methods	
<b>D</b>	Default
<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/EEA Emission Inventory Guidebook - 2019, in the group specific chapters.

AD - Data Source for Activity Data	
<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 (or surveys)
<b>M</b>	Model / Modelled
<b>C</b>	Confidential
EF - Emission Factors	
<b>D</b>	Default (EMEP Guidebook)
<b>C</b>	Confidential
<b>CS</b>	Country Specific
<b>PS</b>	Plant Specific data
<b>M</b>	Model / Modelled

The statements made below regarding source category 2.A.2 refer solely to the amounts of burnt lime and dolomite lime produced in German lime works. Other lime-producing processes are included in NFR 2.C.1 and 2.H.2.

Because of the wide range of applications covered by the sector's products, lime production is normally more isolated from economic fluctuations than is production of other mineral products such as cement. Production has fluctuated relatively little since the end of the 1990s. Dolomite-lime production, of which significantly smaller amounts are produced, basically exhibits similar fluctuations.

### Methodology

The pertinent emissions level is obtained by multiplying the amount of product in question (quick lime or dolomite lime) and the relevant emission factor.

### Activity data

The German Lime Association (BVK) collects the production data for the entire time series on a plant-specific basis, and makes it available for reporting purposes. Production amounts are determined via several different concurrent procedures; their quality is thus adequately assured (Tier 2). Most companies are also required to report lime-production data within the

framework of CO<sub>2</sub>-emissions trading. The EU monitoring guidelines for emissions trading specify a maximum accuracy of 2.5%. It is additionally assumed that 2% of the burnt lime is separated as dust in all years of the reporting period from 1990 onwards via appropriate exhaust gas purification systems and is not returned to the production process. This is taken into account by a potential 2% increase in activity rates.

## Emission factors

Due to recommendation during NEC-Review 2021 the calculation of CO emissions from lime production is allocated to process emissions based on default-EF. The other EF are country-specific values from different research projects.

Table 1: Emission factors for quick-lime production

<b>pollutant</b>	<b>Name of Category</b>	<b>EF</b>	<b>unit</b>	<b>Trend</b>
<b>NO<sub>x</sub></b>	quicklime	0.59	kg/t	falling
<b>SO<sub>2</sub></b>	quicklime	0.12	kg/t	falling
<b>NM VOC</b>	quicklime	0.041	kg/t	constant
<b>CO</b>	quicklime	1.940	kg/t	default <sup>1)</sup>
<b>TSP</b>	quicklime	0.050	kg/t	falling
<b>PM<sub>10</sub></b>	quicklime	0.038	kg/t	falling
<b>PM<sub>2.5</sub></b>	quicklime	0.023	kg/t	falling
<b>Hg</b>	quicklime	2.62	mg/t	falling

Table 2: Emission factors for dolomite production

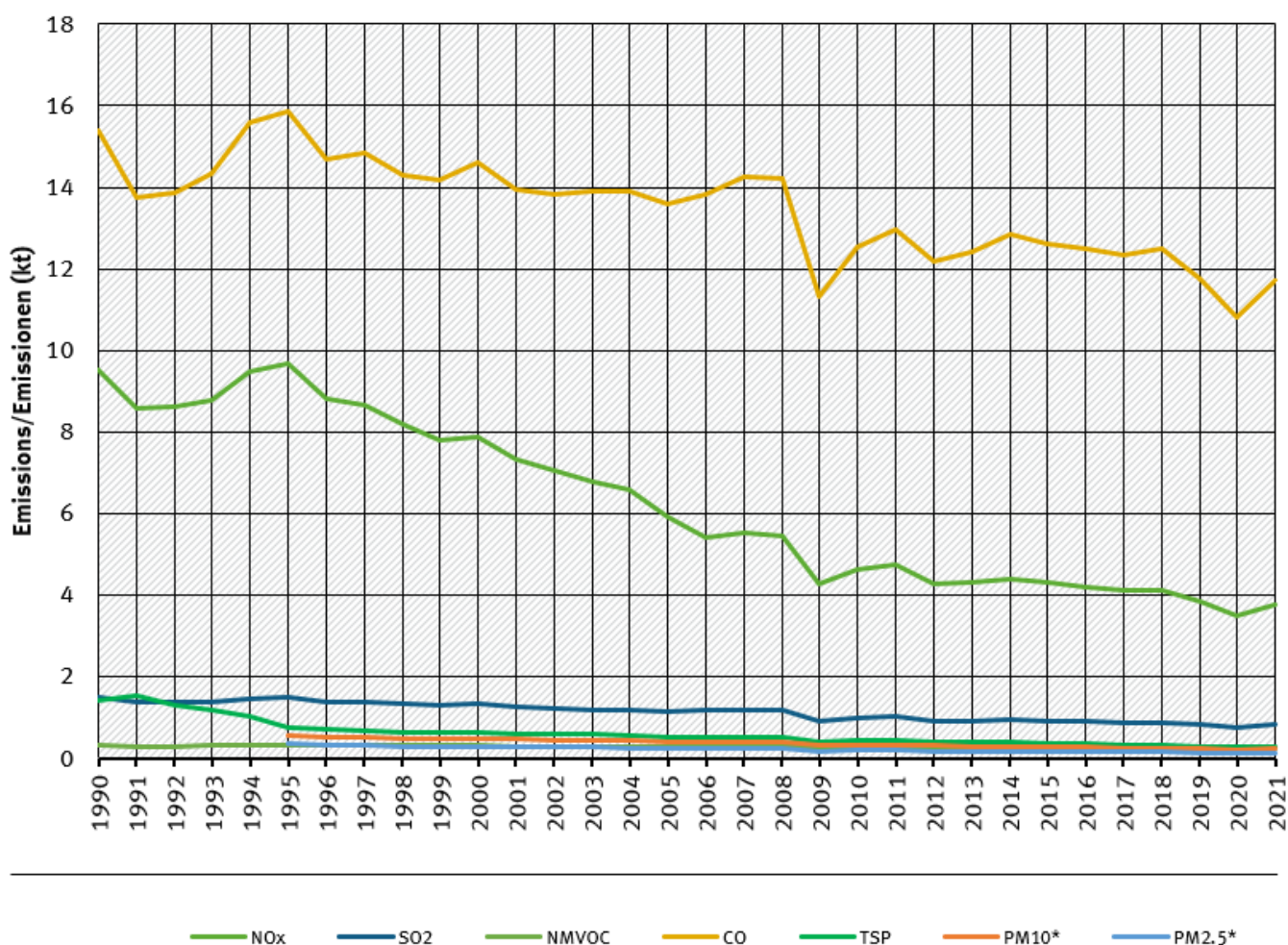
<b>pollutant</b>	<b>Name of Category</b>	<b>EF</b>	<b>unit</b>	<b>Trend</b>
<b>NO<sub>x</sub></b>	dolomite	1.73	kg/t	falling
<b>SO<sub>2</sub></b>	dolomite	0.58	kg/t	falling
<b>NM VOC</b>	dolomite	0.041	kg/t	constant
<b>CO</b>	dolomite	1.940	kg/t	default <sup>2)</sup>
<b>TSP</b>	dolomite	0.034	kg/t	falling
<b>PM<sub>10</sub></b>	dolomite	0.026	kg/t	falling
<b>PM<sub>2.5</sub></b>	dolomite	0.015	kg/t	falling
<b>Hg</b>	quicklime	2.63	mg/t	falling

## Trends in emissions

All trends in emissions correspond to trends of emission factors in table above. No rising trends are identified.

## trends of emissions of lime industry

### Emissions by pollutant / Emissionen nach Schadstoff



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

Source: German Emission Inventory (15.01.2023)

### Emission trends in NFR 2.A.2

## Recalculations

With **activity data** and all already used **emission factors** remaining unrevised, no recalculations have been carried out compared to last year's submission for this pollutants. But due to recommendation during NEC-Review 2021 the calculation of CO emissions from lime production is allocated to process emissions and first time estimated and reported here. So emission trend shows the recalculation in total.



For pollutant-specific information on recalculated emission estimates for Base Year and 2019, please see the pollutant specific recalculation tables following [chapter 8.1 - Recalculations](#).

## Planned improvements

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

1) , 2)

EMEP GB 2019: Table 3-23 Tier 2 emission factors for source category 1.A.2.f.i, Lime production