

2.A.2 - Lime Production

Short description

Category Code	Method						AD						EF			
2.A.2	T1						AS						CS			
	NO _x	NM VOC	SO ₂	NH ₃	PM _{2.5}	PM ₁₀	TSP	BC	CO	Pb	Cd	Hg	Diox	PAH	HCb	
Key Category:	-/-	-/-	-/-	-	-/-	-/-	-/-	-	-/-	-	-	-/-	-	-	-	-

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

Methods	
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 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 (or surveys)
M	Model / Modelled
C	Confidential
EF - Emission Factors	
D	Default (EMEP Guidebook)
C	Confidential
CS	Country Specific
PS	Plant Specific data
M	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 CO₂-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

pollutant	Name of Category	EF	unit	Trend
NO_x	quicklime	0.59	kg/t	falling
SO₂	quicklime	0.12	kg/t	falling
NMVOC	quicklime	0.041	kg/t	constant
CO	quicklime	1.940	kg/t	default ¹⁾
TSP	quicklime	0.050	kg/t	falling
PM₁₀	quicklime	0.038	kg/t	falling
PM_{2.5}	quicklime	0.023	kg/t	falling
Hg	quicklime	2.62	mg/t	falling

Table 2: Emission factors for dolomite production

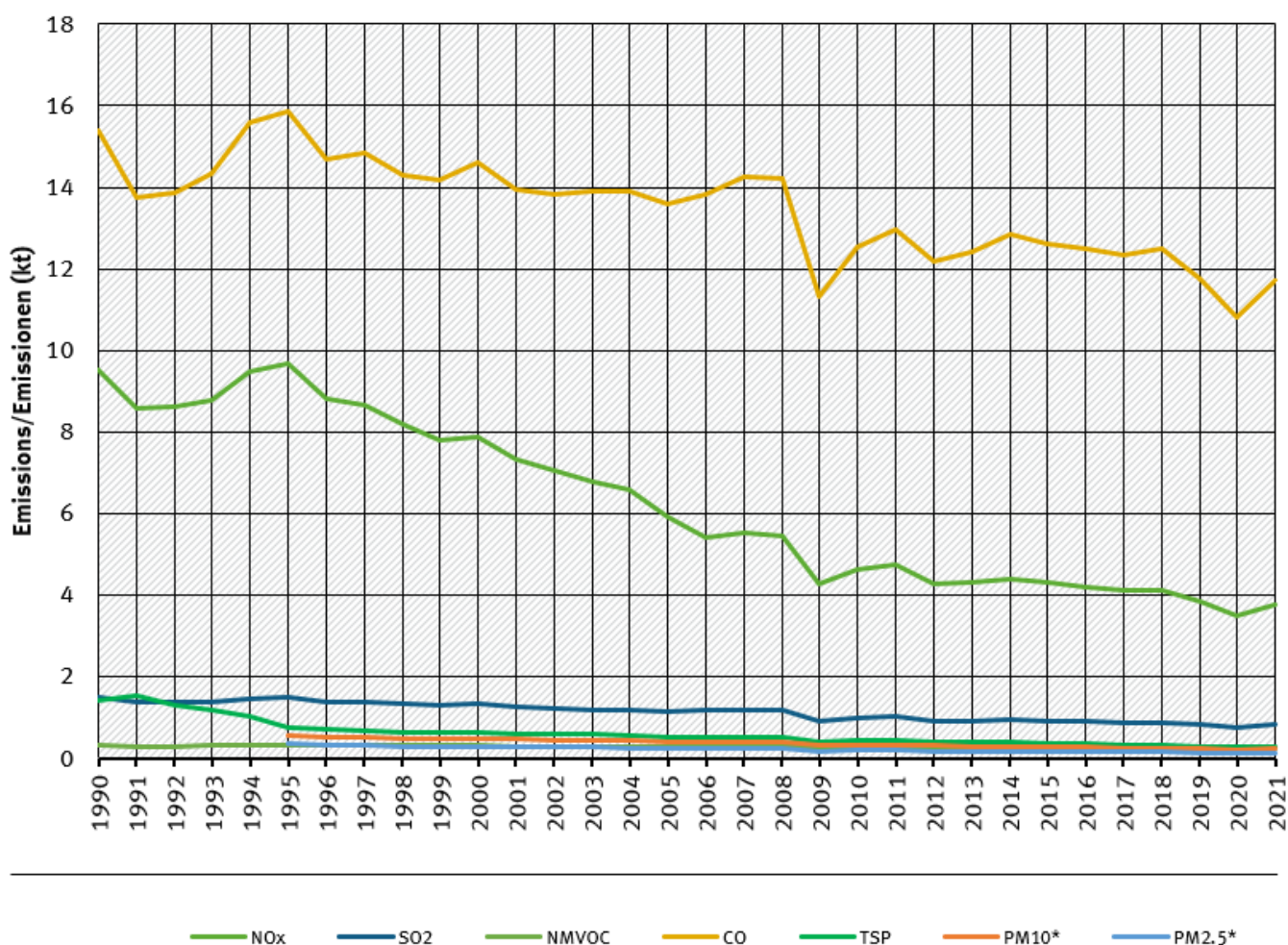
pollutant	Name of Category	EF	unit	Trend
NO_x	dolomite	1.73	kg/t	falling
SO₂	dolomite	0.58	kg/t	falling
NMVOC	dolomite	0.041	kg/t	constant
CO	dolomite	1.940	kg/t	default ²⁾
TSP	dolomite	0.034	kg/t	falling
PM₁₀	dolomite	0.026	kg/t	falling
PM_{2.5}	dolomite	0.015	kg/t	falling
Hg	quicklime	2.63	mg/t	falling

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.

However, due to recommendation during NEC-Review 2021, the calculation of CO emissions from lime production is allocated to process emissions and estimated and reported here for the first time. So emission trend show 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