# 1.A.2.b - Stationary Combustion in Manufacturing Industries and Construction: Non-Ferrous Metals

## Short description

Sub-category *1.A.2.b - Stationary Combustion in Manufacturing Industries and Construction: Non-Ferrous Metals* includes aluminium production (sub-divided into primary and resmelted aluminium) as well as lead production, thermal galvanisation, copper and zinc production.

In Germany, aluminium is produced at four foundries, in electrolytic furnaces with pre-burnt anodes. The principal emission sources are resulting from fuel provided in the energy related processes.

| NFR Code | Method | AD | EF |
|---|---|---|---|
| 1.A.2.b | T2 | 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 |

| $NO_x$ | NMVOC | $SO_2$ | $NH_3$ | $PM_{2.5}$ | $PM_{10}$ | TSP | BC | CO | Heavy Metals | PCDD/F | PAHs | HCB | PCBs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -/- | -/- | -/- | -/- | IE | IE | IE | IE | -/- | IE | IE | IE | IE | IE |

| | |
|---|---|
| **L/-** | key source by **L**evel only |
| **-/T** | key source by **T**rend only |
| **L/T** | key source by both **L**evel and **T**rend |
| -/- | no key source for this pollutant |
| IE | emission of specific pollutant **I**ncluded **E**lsewhere (i.e. in another category) |
| NE | emission of specific pollutant **N**ot **E**stimated (yet) |
| NA | specific pollutant not emitted from this source or activity = **N**ot **A**pplicable |
| * | no analysis done |

# Method

## Activity data

The source of the fuel inputs consists of the statistics for the manufacturing sector (Statistik 060 - Energieverwendung des produzierenden Gewerbes / energy use in the manufacturing sector), DESTATIS, reporting number 27.43 and 27.44, production and initial processing of lead, zinc and tin, production and initial processing of copper - and, for differentiations relative to heat and electricity production, Statistik 067 (DESTATIS).

Data for fuel consumption for production and initial processing of precious metals are also provided by these statistics.

## Emission factors

Reported pollutants are NOx, NMVOC, $SO_2$, $NH_3$ and CO. Instead, all particulate matter emissions are reported as process emissions in the associated categories in 2.C.

The underlying data for the emission factors used is provided by the report on the research project “Ermittlung und Evaluierung von Emissionsfaktoren für Feuerungsanlagen in Deutschland für die Jahre 1995, 2000 und 2010” (Determination and evaluation of emission factors for combustion systems in Germany for the years 1995, 2000 and 2010“; RENTZ et al, 2002)[1)]. The values for the intermediate years 1996 - 1999 and 2001 - 2010 are obtained via linear interpolation; adjusted values for the following years.

# Recalculations

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.

[1)] RENTZ et al., 2002: Rentz, O. ; Karl, U. ; Peter, H.: Ermittlung und Evaluierung von Emissionsfaktoren für Feuerungsanlagen in Deutschland für die Jahre 1995, 2000 und 2010: Forschungsbericht 299 43 142; Forschungsvorhaben im Auftrag des Umweltbundesamt; Endbericht; Karlsruhe: Deutsch-Französisches Inst. f. Umweltforschung, Univ. (TH); 2002