

5.D.1 - Domestic & Commercial Wastewater Handling

Short description

| Category Code | Method | | | | | AD | | | | | EF | | | | |
|---------------|-----------------|-----------------|-----------------|--------|----|----|----|----|----|------|-----|-----|-----|------------------|-------------------|
| 5.D.1 | T1 | | | | | NS | | | | | D | | | | |
| Key Category | SO ₂ | NO _x | NH ₃ | NM VOC | CO | BC | Pb | Hg | Cd | Diox | PAH | HCB | TSP | PM ₁₀ | PM _{2.5} |
| 5.D.1 | - | - | - | -/- | - | - | - | - | - | - | - | - | - | - | - |

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 |

In category **5.D.1**, NM VOC emissions from domestic and commercial wastewater handling are reported. The domestic section is covered by wastewaters of municipal origin (large centralised plants; ranging from 1000 up to >100.000 resident values). The commercial section is covered by industrial and commercial wastewaters, co-treated in municipal wwt-plants.

Method

Emissions reported under this category are calculated using the Tier 1 approach of the EMEP/EEA Guidebook 2019, where the emission factor (EF) is 15 mg/m³ wastewater (Part B, 5.D, chap. 3.2.2, Table 3-1, p. 7). This EF is multiplied with the total amount of wastewater (AD) treated in domestic and commercial wwt-plants, following the equation:

$$\text{Emissions}_{\text{(NM VOC)}} = \text{AD} \times \text{EF} \text{ (ibid., chap. 3.2.1)}$$

Activity data

Total volumes of treated municipal wastewater are derived by the German statistical agency (Statistisches Bundesamt, Fachserie 19, Reihe 2.1.2 ¹⁾). The data source is published on a three-year basis with new data only for the respective year of the update. The availability of the data starts in 1991 with an exception for the following update, which was for 1995.

Missing data are inter- or extrapolated

Emission factors

See method

Uncertainties

The AD from Statistisches Bundesamt have an uncertainty of $\pm 3\%$ (normal distribution) whereas the uncertainty for the EF, due to its range (5/50 mg/m³), is -70 / +210 % and the distribution lognormal.

Recalculations

Recalculations were not necessary

Planned improvements

Currently no improvements are planned.

¹⁾

Statistisches Bundesamt, Fachserie 19, Reihe 2.1.2