

## Appendix 2.1 - Reporting of PM emissions

Table A2.1: Documentation entries of the Central System Emissions database for the condensable fraction of PM<sub>2.5</sub>



NFR categories with no reported activity or PM emissions (notation keys 'NO' or 'NA' in the NFR tables) are excluded here.)

The condensable fraction of particulate matter (PM<sub>2.5</sub>) is documented for all source groups in the emissions database ("Central Emissions System") of the German Environmental Agency. A documentation entry has been created for each source group, indicating the following options for condensable particulate matter (PM<sub>2.5</sub>):

- The documentation for the condensable fraction for PM<sub>2.5</sub> is not available (documentation N/A)
- Yes (measured/determined) – The condensable fraction for PM<sub>2.5</sub> was measured or determined
- NA (no condensable PM<sub>2.5</sub> is generated in the process) – Therefore not applicable (NA)
- No (but potentially possible)
- Unknown – The condensable fraction for PM<sub>2.5</sub> is unknown

Below is an excerpt from the current Central System Emissions, showing the aforementioned documentation entries for each source group.

| NFR Source Category |                                                                                                            | Documentation not available | Yes (measured/determined) | Not Applicable (no condensable PM <sub>2.5</sub> are generated in the process) | No (potentially possible) | Unknown | Number of document entries |
|---------------------|------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|--------------------------------------------------------------------------------|---------------------------|---------|----------------------------|
| <b>NFR 1 Energy</b> |                                                                                                            |                             |                           |                                                                                |                           |         |                            |
| 1.A.1.a             | Public electricity and heat production                                                                     | -                           | -                         | -                                                                              | 147                       | -       | 147                        |
| 1.A.1.b             | Petroleum refining                                                                                         | -                           | -                         | -                                                                              | 31                        | -       | 31                         |
| 1.A.1.c             | Manufacture of solid fuels and other energy industries                                                     | -                           | -                         | -                                                                              | 49                        | -       | 49                         |
| 1.A.2.a             | Stationary combustion in manufacturing industries and construction: Iron and steel                         | -                           | -                         | -                                                                              | 22                        | -       | 22                         |
| 1.A.2.b             | Stationary combustion in manufacturing industries and construction: Non-ferrous metals                     | -                           | -                         | -                                                                              | -                         | -       | -                          |
| 1.A.2.c             | Stationary combustion in manufacturing industries and construction: Chemicals                              | -                           | -                         | -                                                                              | -                         | -       | -                          |
| 1.A.2.d             | Stationary combustion in manufacturing industries and construction: Pulp, Paper and Print                  | -                           | -                         | -                                                                              | -                         | -       | -                          |
| 1.A.2.e             | Stationary combustion in manufacturing industries and construction: Food processing, beverages and tobacco | -                           | -                         | -                                                                              | -                         | -       | -                          |
| 1.A.2.f             | Stationary combustion in manufacturing industries and construction: Non-metallic minerals                  | -                           | -                         | -                                                                              | -                         | -       | -                          |

|                     |                                                                                                       |   |     |    |     |    |     |
|---------------------|-------------------------------------------------------------------------------------------------------|---|-----|----|-----|----|-----|
| 1.A.2.g<br>vii      | Mobile combustion in manufacturing industries and construction (please specify in the IIR)            | - | 4   | -  | -   | -  | 4   |
| 1.A.2.g<br>viii     | Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR) | - | -   | -  | 102 | -  | 102 |
| 1.A.3.a             | Domestic Aviation                                                                                     | - | -   | -  | -   | 4  | 4   |
| 1.A.3.b             | Road Transport                                                                                        | - | 469 | 18 | -   | -  | 487 |
| 1.A.3.c             | Railways                                                                                              | - | 11  | -  | 1   | -  | 12  |
| 1.A.3.d             | Domestic Navigation                                                                                   | - | 5   | -  | 1   | -  | 6   |
| 1.A.3.e             | Other Transportation                                                                                  | - | -   | -  | 3   | -  | 3   |
| 1.A.4.a<br>i        | Commercial/Institutional: Stationary                                                                  | - | -   | -  | 28  | -  | 28  |
| 1.A.4.a<br>ii       | Commercial/Institutional: Mobile                                                                      | - | 3   | -  | -   | -  | 3   |
| 1.A.4.b<br>i        | Residential: Stationary                                                                               | - | -   | -  | 14  | -  | 14  |
| 1.A.4.b<br>ii       | Residential: Household and gardening (mobile)                                                         | - | -   | -  | 4   | 4  | 8   |
| 1.A.4.c<br>i        | Agriculture/Forestry/Fishing: Stationary                                                              | - | -   | -  | 15  | -  | 15  |
| 1.A.4.c<br>ii       | Agriculture/Forestry/Fishing: Off-road vehicles and other machinery                                   | - | 6   | -  | -   | -  | 6   |
| 1.A.4.c<br>iii      | Agriculture/Forestry/Fishing: National fishing                                                        | - | -   | -  | -   | 3  | 3   |
| 1.A.5.a             | Other stationary (including military)                                                                 | - | -   | -  | 10  | -  | 10  |
| 1.A.5.b             | Other, Mobile (including military, land based and recreational boats)                                 | - | -   | -  | 9   | -  | 9   |
| 1.B.1.a             | Fugitive emission from solid fuels: Coal mining and handling                                          | - | -   | 1  | -   | -  | 1   |
| 1.B.1.b             | Fugitive emission from solid fuels: Solid fuel transformation                                         | - | -   | 6  | 2   | -  | 8   |
| 1.B.2.c             | Venting and flaring (oil, gas, combined oil and gas)                                                  | - | -   | -  | 1   | -  | 1   |
| 1.D.1.a             | Civil Aviation (international)                                                                        | - | -   | -  | -   | 4  | 4   |
| 1.D.1.b             | Maritime Navigation (international)                                                                   | - | -   | -  | -   | 2  | 2   |
| 11.B                | Forest Fires                                                                                          | - | -   | -  | -   | 1  | 1   |
| <b>NFR 2 - IPPU</b> |                                                                                                       |   |     |    |     |    |     |
| 2.A.1               | Cement production                                                                                     | - | -   | -  | 1   | -  | 1   |
| 2.A.2               | Lime production                                                                                       | - | -   | -  | -   | 2  | 2   |
| 2.A.3               | Glass production                                                                                      | - | 6   | -  | -   | -  | 6   |
| 2.A.4.A             | Ceramics                                                                                              | - | -   | -  | -   | 15 | 15  |
| 2.A.5.a             | Quarrying and mining of minerals other than coal                                                      | - | -   | 4  | -   | -  | 4   |
| 2.A.5.b             | Construction and demolition                                                                           | - | -   | 5  | -   | -  | 5   |
| 2.B.5               | Carbide production                                                                                    | - | -   | -  | -   | 1  | 1   |
| 2.B.8               | Petrochemical and Carbon Black Production                                                             | - | -   | -  | -   | 1  | 1   |
| 2.B.10              | Other                                                                                                 | - | -   | -  | -   | 1  | 1   |
| 2.C.1               | Iron and steel production                                                                             | - | -   | -  | -   | 7  | 7   |
| 2.C.2               | Ferroalloys production                                                                                | - | -   | -  | -   | 1  | 1   |
| 2.C.3.a             | By-Product Emissions                                                                                  | - | -   | -  | -   | 2  | 2   |

|                            |                                                                                                                 |   |            |           |            |            |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|---|------------|-----------|------------|------------|--------------|
| 2.C.4                      | Magnesium production                                                                                            | - | -          | -         | -          | -          | -            |
| 2.C.5                      | Lead production                                                                                                 | - | -          | -         | -          | 2          | 2            |
| 2.C.6                      | Zinc production                                                                                                 | - | -          | -         | -          | 2          | 2            |
| 2.C.7                      | Other                                                                                                           | - | -          | -         | -          | 3          | 3            |
| 2.D.3.b                    | Road paving with asphalt                                                                                        | - | -          | -         | -          | 1          | 1            |
| 2.G.1                      | Electric Equipment                                                                                              | - | -          | -         | -          | -          | -            |
| 2.G.2                      | SF <sub>6</sub> and PFCs from Other Product Use                                                                 | - | -          | -         | -          | -          | -            |
| 2.G.3                      | N <sub>2</sub> O from Product Uses                                                                              | - | -          | -         | -          | -          | -            |
| 2.G.4                      | Other                                                                                                           | - | 3          | -         | -          | 1          | 4            |
| 2.H.1                      | Pulp and paper industry                                                                                         | - | -          | -         | 2          | -          | 2            |
| 2.H.2                      | Food and beverages industry                                                                                     | - | -          | -         | -          | 2          | 2            |
| 2.I                        | Wood processing                                                                                                 | - | -          | 1         | -          | -          | 1            |
| 2.L                        | Other production, consumption, storage, transportation or handling of bulk products (please specify in the IIR) | - | -          | 1         | -          | 89         | 90           |
| <b>NFR 3 - Agriculture</b> |                                                                                                                 |   |            |           |            |            |              |
| 3.B                        | Manure Management                                                                                               | - | -          | 20        | -          | -          | 20           |
| 3.D                        | Agricultural Soils                                                                                              | - | -          | 1         | -          | -          | 1            |
| <b>NFR 5 - Waste</b>       |                                                                                                                 |   |            |           |            |            |              |
| 5.A                        | Biological treatment of waste - Solid waste disposal on land                                                    | - | -          | 1         | -          | -          | 1            |
| 5.C                        | Waste Incineration                                                                                              | - | -          | -         | 1          | 1          | 2            |
| 5.E                        | Other waste (please specify in the IIR)                                                                         | - | -          | -         | -          | 6          | 6            |
| <b>SUM</b>                 |                                                                                                                 | - | <b>507</b> | <b>58</b> | <b>443</b> | <b>155</b> | <b>1,163</b> |