

## Appendix 2.1 - Reporting of PM emissions

Table A2.1: Inclusion/exclusion of the condensable component from PM<sub>10</sub> and PM<sub>2.5</sub> emission factors



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 2.5) 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 2.5):

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

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

| Source group |                                                                                                            | Documentation not available | Yes (measured/determined) | Not Applicable (no condensable PM 2.5 are generated in the process) | No (potentially possible) | Unknown | Number of document entries |
|--------------|------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|---------------------------------------------------------------------|---------------------------|---------|----------------------------|
| NFR 1 Energy |                                                                                                            |                             |                           |                                                                     |                           |         |                            |
| 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 vii  | Mobile combustion in manufacturing industries and construction (please specify in the IIR)            | - | 4   | -  | -   | -  | 4   |
| 1 A 2 g viii | Stationary combustion in manufacturing industries and construction: Other (please specify in the IIR) | - | -   | -  | 102 | -  | 102 |
| 1 A 3 a      |                                                                                                       | - | -   | -  | -   | 4  | 4   |
| 1 A 3 b      |                                                                                                       | - | 469 | 18 | -   | -  | 487 |
| 1 A 3 c      | Railways                                                                                              | - | 11  | -  | 1   | -  | 12  |
| 1 A 3 d      |                                                                                                       | - | 5   | -  | 1   | -  | 6   |
| 1 A 3 e      |                                                                                                       | - | -   | -  | 3   | -  | 3   |
| 1 A 4 a i    | Commercial/Institutional: Stationary                                                                  | - | -   | -  | 28  | -  | 28  |
| 1 A 4 a ii   | Commercial/Institutional: Mobile                                                                      | - | 3   | -  | -   | -  | 3   |
| 1 A 4 b i    | Residential: Stationary                                                                               | - | -   | -  | 14  | -  | 14  |
| 1 A 4 b ii   | Residential: Household and gardening (mobile)                                                         | - | -   | -  | 4   | 4  | 8   |
| 1 A 4 c i    | Agriculture/Forestry/Fishing: Stationary                                                              | - | -   | -  | 15  | -  | 15  |
| 1 A 4 c ii   | Agriculture/Forestry/Fishing: Off-road vehicles and other machinery                                   | - | 6   | -  | -   | -  | 6   |
| 1 A 4 c 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      |                                                                                                       | - | -   | -  | -   | 4  | 4   |
| 1 D 1 b      |                                                                                                       | - | -   | -  | -   | 2  | 2   |
| 11 B         |                                                                                                       | - | -   | -  | -   | 1  | 1   |
| NFR 2 - IPPU |                                                                                                       |   |     |    |     |    |     |
| 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      |                                                                                                       | - | -   | -  | -   | 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        |                                                                                                       | - | -   | -  | -   | 1  | 1   |
| 2 B 10       |                                                                                                       | - | -   | -  | -   | 1  | 1   |
| 2 C 1        | Iron and steel production                                                                             | - | -   | -  | -   | 7  | 7   |
| 2 C 2        | Ferroalloys production                                                                                | - | -   | -  | -   | 1  | 1   |
| 2 C 3 a      |                                                                                                       | - | -   | -  | -   | 2  | 2   |
| 2 C 4        | Magnesium production                                                                                  | - | -   | -  | -   | -  | -   |
| 2 C 5        | Lead production                                                                                       | - | -   | -  | -   | 2  | 2   |
| 2 C 6        | Zinc production                                                                                       | - | -   | -  | -   | 2  | 2   |

|                     |                                                                                                                 |   |     |    |     |     |       |
|---------------------|-----------------------------------------------------------------------------------------------------------------|---|-----|----|-----|-----|-------|
| 2 C 7               |                                                                                                                 | - | -   | -  | -   | 3   | 3     |
| 2 D 3 b             | Road paving with asphalt                                                                                        | - | -   | -  | -   | 1   | 1     |
| 2 G 1               |                                                                                                                 | - | -   | -  | -   | -   | -     |
| 2 G 2               |                                                                                                                 | - | -   | -  | -   | -   | -     |
| 2 G 3               |                                                                                                                 | - | -   | -  | -   | -   | -     |
| 2 G 4               |                                                                                                                 | - | 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    |
| NFR 3 - Agriculture |                                                                                                                 |   |     |    |     |     |       |
| 3 B                 |                                                                                                                 | - | -   | 20 | -   | -   | 20    |
| 3 D                 |                                                                                                                 | - | -   | 1  | -   | -   | 1     |
| NFR 5 - Waste       |                                                                                                                 |   |     |    |     |     |       |
| 5 A                 | Biological treatment of waste - Solid waste disposal on land                                                    | - | -   | 1  | -   | -   | 1     |
| 5 C                 |                                                                                                                 | - | -   | -  | 1   | 1   | 2     |
| 5 E                 | Other waste (please specify in the IIR)                                                                         | - | -   | -  | -   | 6   | 6     |
| Sum                 |                                                                                                                 | - | 507 | 58 | 443 | 155 | 1.163 |