

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

| NFR code       | Source / sector name                                                                                   |  |  | condensable component    |          | EF reference and/or comments                       |
|----------------|--------------------------------------------------------------------------------------------------------|--|--|--------------------------|----------|----------------------------------------------------|
|                |                                                                                                        |  |  | included                 | excluded |                                                    |
| NFR 1 - Energy |                                                                                                        |  |  |                          |          |                                                    |
| 1.A.1.a        | Public electricity and heat production                                                                 |  |  |                          | x        |                                                    |
| 1.A.1.b        | Petroleum refining                                                                                     |  |  |                          | x        |                                                    |
| 1.A.1.c        | Manufacture of solid fuels and other energy industries                                                 |  |  |                          | x        |                                                    |
| 1.A.2.a        | Stationary combustion in manufacturing industries and construction: Iron and steel                     |  |  |                          | x        |                                                    |
| 1.A.2.b        | Stationary combustion in manufacturing industries & construction: Non-ferrous metals                   |  |  | ?                        |          | no indication                                      |
| 1.A.2.c        | Stationary combustion in manufacturing industries & construction: Chemicals                            |  |  |                          |          |                                                    |
| 1.A.2.d        | Stationary combustion in manufacturing industries & construction: Pulp, Paper & Print                  |  |  |                          |          |                                                    |
| 1.A.2.e        | Stationary combustion in manufacturing industries & construction: Food processing, beverages & tobacco |  |  |                          | x        |                                                    |
| 1.A.2.f        | Stationary combustion in manufacturing industries & construction: Non-metallic minerals                |  |  |                          |          |                                                    |
| 1.A.2.g vii    | Mobile combustion in manufacturing industries & construction                                           |  |  | x <sup>1</sup>           |          | country-specific EF likely to include condensables |
| 1.A.2.g viii   | Stationary combustion in manufacturing industries & construction                                       |  |  |                          | x        |                                                    |
| 1.A.3.a i(i)   | International aviation LTO (civil)                                                                     |  |  | ?                        |          | country-specific EF without clear indication       |
| 1.A.3.a ii(i)  | Domestic aviation LTO (civil)                                                                          |  |  | ?                        |          | country-specific EF without clear indication       |
| 1.A.3.b i      | Road transport: Passenger cars                                                                         |  |  | x <sup>1</sup>           |          | country-specific EF likely to include condensables |
| 1.A.3.b ii     | Road transport: Light duty vehicles                                                                    |  |  | x <sup>1</sup>           |          | country-specific EF likely to include condensables |
| 1.A.3.b iii    | Road transport: Heavy duty vehicles and buses                                                          |  |  | x <sup>1</sup>           |          | country-specific EF likely to include condensables |
| 1.A.3.b iv     | Road transport: Mopeds & motorcycles                                                                   |  |  | x <sup>1</sup>           |          | country-specific EF likely to include condensables |
| 1.A.3.b v      | Road transport: Gasoline evaporation                                                                   |  |  | NA                       |          | no PM emissions from this source category          |
| 1.A.3.b vi     | Road transport: Automobile tyre and brake wear                                                         |  |  |                          | x        |                                                    |
| 1.A.3.b vii    | Road transport: Automobile road abrasion                                                               |  |  |                          | x        |                                                    |
| 1.A.3.c        | Railways                                                                                               |  |  | x<sup>1</sup><sup></sup> |          | country-specific EF likely to include condensables |
| 1.A.3.d i(ii)  | International inland waterways                                                                         |  |  | IE                       |          | included in NFR 1.A.3.d ii                         |
| 1.A.3.d ii     | National navigation (shipping)                                                                         |  |  | x<sup>1</sup><sup></sup> |          | country-specific EF likely to include condensables |
| 1.A.3.e i      | Pipeline transport                                                                                     |  |  |                          | x        |                                                    |
| 1.A.4.a i      | Commercial/Institutional: Stationary                                                                   |  |  |                          | x        |                                                    |
| 1.A.4.a ii     | Commercial/Institutional: Mobile                                                                       |  |  | x<sup>1</sup><sup></sup> |          | country-specific EF likely to include condensables |
| 1.A.4.b i      | Residential: Stationary                                                                                |  |  |                          | x        |                                                    |
| 1.A.4.b ii     | Residential: Household and gardening (mobile)                                                          |  |  | ?                        |          | country-specific EF without clear indication       |
| 1.A.4.c i      | Agriculture/Forestry/Fishing: Stationary                                                               |  |  |                          | x        |                                                    |

|                     |                                                                                  |    |                    |                                                                                                   |                                                                   |
|---------------------|----------------------------------------------------------------------------------|----|--------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1.A.4.c ii          | Agriculture/Forestry/Fishing: Off-road vehicles and other machinery              |    | x<sup>1<sup></sup> |                                                                                                   | country-specific EF likely to include condensables                |
| 1.A.4.c iii         | Agriculture/Forestry/Fishing: National fishing                                   |    |                    | ?                                                                                                 | country-specific EF without clear indication                      |
| 1.A.5.a             | Other stationary (including military)                                            |    |                    | x                                                                                                 |                                                                   |
| 1.A.5.b             | Other, Mobile (including military, land based and recreational boats)            |    | x<sup>1<sup></sup> |                                                                                                   | country-specific EF likely to include condensables                |
| 1.B.1.a             | Fugitive emission from solid fuels: Coal mining and handling                     |    |                    | x                                                                                                 |                                                                   |
| 1.B.1.b             | Fugitive emission from solid fuels: Solid fuel transformation                    |    |                    | x                                                                                                 |                                                                   |
| 1.B.2.c             | Venting and flaring (oil, gas, combined oil and gas)                             |    |                    | ?                                                                                                 | EMEP GB 2016 EF without any indication                            |
| <b>NFR 2 - IPPU</b> |                                                                                  |    |                    |                                                                                                   |                                                                   |
| 2.A.1               | Cement production                                                                |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.A.2               | Lime production                                                                  |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.A.3               | Glass production                                                                 |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.A.5.a             | Quarrying and mining of minerals other than coal                                 |    |                    | ?                                                                                                 | EMEP GB 2016 EF without any indication                            |
| 2.A.5.b             | Construction and demolition                                                      |    |                    | ?                                                                                                 | EMEP GB 2016 EF without any indication                            |
| 2.A.5.c             | Storage, handling and transport of mineral products                              | IE |                    | included in NFR 2.L                                                                               |                                                                   |
| 2.A.6               | Other mineral products (please specify in the IIR)                               |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.B.3               | Adipic acid production                                                           | NE |                    | no EF in EMEP GB 2019                                                                             |                                                                   |
| 2.B.5               | Carbide production                                                               |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.B.7               | Soda ash production                                                              |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.B.10.a            | Chemical industry: Other (please specify in the IIR)                             |    |                    | ?                                                                                                 | carbon black: country-specific EF without any indication          |
| 2.B.10.a            | Chemical industry: Other (please specify in the IIR)                             |    |                    | ?                                                                                                 | fertilizer production: country-specific EF without any indication |
| 2.B.10.b            | Storage, handling and transport of chemical products (please specify in the IIR) | IE |                    | included in NFR 2.L                                                                               |                                                                   |
| 2.C.1               | Iron and steel production                                                        |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.C.2               | Ferroalloys production                                                           |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.C.3               | Aluminium production                                                             |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.C.4               | Magnesium production                                                             | NE |                    | no primary magnesium production; emission for secondary magnesium production allocated in 1.A.2.b |                                                                   |
| 2.C.5               | Lead production                                                                  |    |                    | ?                                                                                                 | country-specific EF without any indication                        |
| 2.C.6               | Zinc production                                                                  |    |                    | ?                                                                                                 | country-specific EF without any indication                        |

|                            |                                                                                                                 |    |                                            |                                                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|----|--------------------------------------------|------------------------------------------------------|
| 2.C.7.a                    | Copper production                                                                                               |    | ?                                          | country-specific EF without any indication           |
| 2.C.7.c                    | Other metal production (please specify in the IIR)                                                              |    | ?                                          | no indication                                        |
| 2.C.7.d                    | Storage, handling and transport of metal products (please specify in the IIR)                                   | IE | included in NFR 2.L                        |                                                      |
| 2.D.3.b                    | Road paving with asphalt                                                                                        |    | ?                                          | country-specific EF without any indication           |
| 2.G                        | Other product use: Tobacco                                                                                      |    | ?                                          | country-specific EF without any indication           |
| 2.G                        | Other product use: Fireworks                                                                                    |    | ?                                          | EMEP GB 2019 EF without any indication               |
| 2.G                        | Other product use: Charcoal                                                                                     |    | ?                                          | EF from 1.A.4 EMEP GB 2019 EF without any indication |
| 2.H.1                      | Pulp and paper industry                                                                                         |    | ?                                          | country-specific EF without any indication           |
| 2.H.2                      | Food and beverages industry                                                                                     |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 2.I                        | Wood processing                                                                                                 |    | ?                                          | country-specific EF without any indication           |
| 2.J                        | Production of POPs                                                                                              | NE |                                            |                                                      |
| 2.L                        | Other production, consumption, storage, transportation or handling of bulk products (please specify in the IIR) | ?  | country-specific EF without any indication |                                                      |
| <b>NFR 3 - Agriculture</b> |                                                                                                                 |    |                                            |                                                      |
| 3.B.1.a                    | Manure management - Dairy cattle                                                                                |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.1.b                    | Manure management - Non-dairy cattle                                                                            |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.2                      | Manure management - Sheep                                                                                       |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.3                      | Manure management - Swine                                                                                       |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.a                    | Manure management - Buffalo                                                                                     | IE | EMEP GB 2016 EF without any indication     |                                                      |
| 3.B.4.d                    | Manure management - Goats                                                                                       |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.e                    | Manure management - Horses                                                                                      |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.f                    | Manure management - Mules and asses                                                                             | IE | EMEP GB 2016 EF without any indication     |                                                      |
| 3.B.4.g i                  | Manure management - Laying hens                                                                                 |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.g ii                 | Manure management - Broilers                                                                                    |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.g iii                | Manure management - Turkeys                                                                                     |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.g iv                 | Manure management - Other poultry                                                                               |    | ?                                          | EMEP GB 2016 EF without any indication               |
| 3.B.4.h                    | Manure management - Other animals (please specify in the IIR)                                                   | NE | EMEP GB 2016 EF without any indication     |                                                      |
| 3.D.c                      | Farm-level agricultural operations including storage, handling and transport of agricultural products           |    | ?                                          | EMEP GB 2016 EF without any indication               |
| <b>NFR 5 - Waste</b>       |                                                                                                                 |    |                                            |                                                      |
| 5.A                        | Biological Treatment of Waste - Solid Waste Disposal on Land                                                    |    | ?                                          | EMEP-GB 2019: EF without any indication              |

|                                                                           |                                       |    |   |                                              |
|---------------------------------------------------------------------------|---------------------------------------|----|---|----------------------------------------------|
| 5.C.1.b v                                                                 | Cremation                             |    | ? | country-specific EF without any indication   |
| 5.E.2                                                                     | Other Waste: Building and Car Fires   |    | ? | EMEP GB 2016 EF without any indication       |
| <b>MEMO ITEMS<br/>- NOT TO BE<br/>INCLUDED IN<br/>NATIONAL<br/>TOTALS</b> |                                       |    |   |                                              |
| 1.A.3.a i(ii)                                                             | International aviation cruise (civil) |    | ? | country-specific EF without clear indication |
| 1.A.3.a ii(ii)                                                            | Domestic aviation cruise (civil)      |    | ? | country-specific EF without clear indication |
| 1.A.3.d i(i)                                                              | International maritime navigation     |    | ? | country-specific EF without clear indication |
| 1.A.5.c                                                                   | Multilateral operations               | NE |   |                                              |
| 11.B                                                                      | Forest fires                          |    | ? | EMEP GB 2016 EF without any indication       |