

## 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.)

NFR code	Source / sector name	condensable component		EF reference and/or comments
		included	excluded	
<b>NFR 1 - Energy</b>				
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>		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>		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>		country-specific EF likely to include condensables
1.A.4.b i	Residential: Stationary		x	

<b>NFR code</b>	<b>Source / sector name</b>		<b>condensable component</b>		<b>EF reference and/or comments</b>
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>		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>		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

<b>NFR 2 - IPPU</b>				
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 - NOT TO BE INCLUDED IN NATIONAL 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

<sup>1</sup> Due to the conditions during test-bench measurements applied for type/mitigation/Euro norm approval, the Country-specific emission factors for passenger cars, light and heavy-duty vehicles (both on- and offroad), mopeds and motorcycles also include a condensable fraction. The same is assumed to be the case for engines approved for and installed in railways and boats/vessels/ships.