

1.A.3.b vi - Road Transport: Automobile Tyre and Brake Wear

Short description

In sub-categories *1.A.3.b vi - Road transport: Automobile tyre and brake wear* emissions from automobile tyre and brake wear in RT are reported. Therefore, these sub-category is an important source for a) particle emissions and b) emissions of heavy metals, POPs etc. included in these particles.

Category Code	Method					AD					EF				
1.A.3.b vi	T1, T3					NS, M					CS				
	NO _x	NM VOC	SO ₂	NH ₃	PM _{2.5}	PM ₁₀	TSP	BC	CO	Pb	Cd	Hg	Diox	PAH	HCB
Key Category:	-	-	-	-	L/-	L/-	L/-	L/-	-	L/-	-/-	-	-	-/-	-

Methodology

Activity data

Abrasive emissions from tyre and brake wear are estimated based on vehicle-type specific mileage data.

For detailed mileage data, please see [superordinate chapter](#) on abrasive emissions from road vehicles.

Emission factors

Table 1: Emission factors applied

		Tyre Wear						Brake Wear					
		PCs	LDVs	HDVs	Buses	Mopeds	Motorcycles	PCs	LDVs	HDVs	Buses	Mopeds	Motorcycles
BC	[mg/km]	1,07	1,69	4,50	4,50	0,55	0,55	0,75	1,17	3,27	3,27	0,44	0,44
PM_{2.5}		4,49	7,10	18,9	18,9	1,93	1,93	2,93	4,56	12,7	12,7	1,44	1,44
PM₁₀		6,40	10,1	27,0	24,3	2,80	2,80	7,35	11,5	32,0	28,8	3,63	3,63
TSP		10,7	16,9	45,0	45,0	4,60	4,60	7,50	11,7	32,7	32,7	3,70	3,7
Pb	[µg/km]	1,88	2,97	4,26	3,10	0,81	0,81	45,5	71,0	199	199	22,5	22,5
Hg		0	0	0	0	0	0	0	0	0	0	0	0
Cd		0,05	0,08	0,11	0,08	0,02	0,02	0,17	0,26	0,73	0,73	0,08	0,08
As		0,04	0,06	0,09	0,07	0,02	0,02	0,51	0,79	2,21	2,21	0,25	0,25
Cr		0,26	0,40	0,58	0,42	0,11	0,11	17,3	27,0	75,7	75,7	8,55	8,55
Cu		1,86	2,94	4,21	3,06	0,80	0,80	383	598	1674	1674	189	189
Ni		0,32	0,51	0,72	0,53	0,14	0,14	2,45	3,83	10,71	10,71	1,21	1,21
Se		0,21	0,34	0,48	0,35	0,09	0,09	0,15	0,23	0,66	0,66	0,07	0,07
Zn		79,5	126	180	131	34,2	34,2	65,1	102	284	284	32,1	32,1
B[a]P		0,032	0,049	0,134	0,120	0,013	0,013	NA	NA	NA	NA	NA	NA
B[b]F		0,038	0,063	0,161	0,144	0,019	0,019	NA	NA	NA	NA	NA	NA
B[k]F		0	0	0	0	0	0	NA	NA	NA	NA	NA	NA
I[.].P		0,019	0,028	0,082	0,072	0,006	0,006	NA	NA	NA	NA	NA	NA
Σ PAHs 1-4		0,090	0,140	0,379	0,336	0,038	0,038	NA	NA	NA	NA	NA	NA

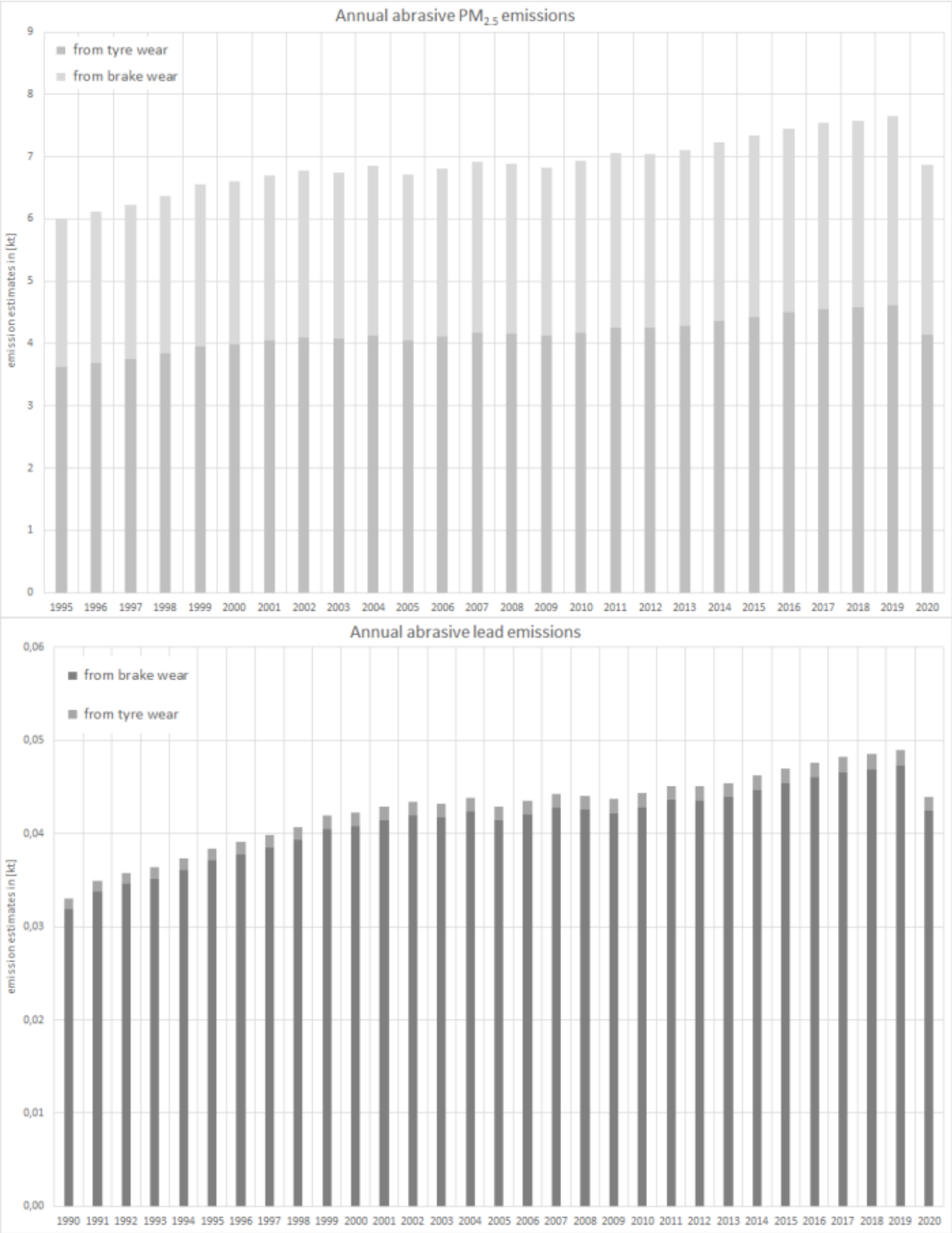
Discussion of emission trends

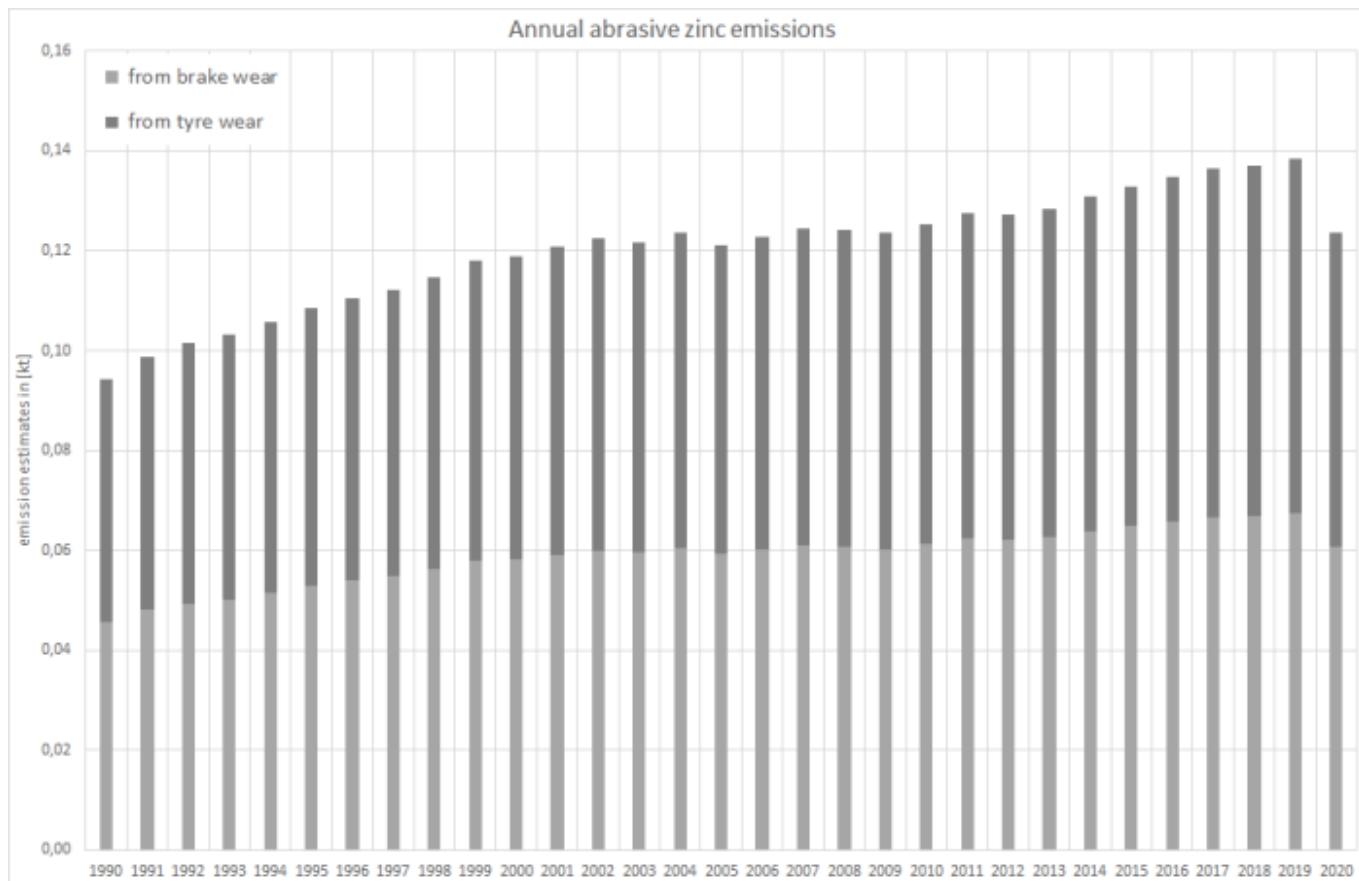
(emissions from wear/abrasion only; no fuel combustion included)

Table 2: Outcome of Key Category Analysis

for:	BC	Pb	TSP	PM₁₀	PM_{2.5}
by:	Level	L/-	L/-	Level & Trend	L/-

All reported emissons from tyre and brake wear are connected directly to the mileage driven by the road vehicles covered.





Recalculations

With both **activity data** and **emission factors** unrevised, emission estimates remain unaltered compared to last year's submission.



For **pollutant-specific information on recalculated emission estimates for Base Year and 2020**, please see the recalculation tables following [chapter 8.1 - Recalculations](#).

Planned improvements

Besides a routine revision of the underlying model, no specific improvements are planned.