

1.A.3.b vii - Road Transport: Automobile Road Abrasion

Short description

In sub-category *1.A.3.b vii - Road Transport: Automobile Road Abrasion* emissions from road abrasion in Road Transport are reported. Therefore, this 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.vii	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/-	-	-	-/-	-/-	-	-	-	-

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

		PCs	LDVs	HDVs	Buses	Mopeds	Motorcycles
BC	[mg/km]	NA	NA	NA	NA	NA	NA
PM _{2.5}		4,05	4,05	20,5	20,5	1,62	1,62
PM ₁₀		7,50	7,50	38,0	34,2	3,00	3,00
TSP		15,0	15,0	76,0	76,0	6,00	6,00
Pb	[µg/km]	0,00006	0,00006	0,00031	0,00006	0,00002	0,00002
Hg		NA	NA	NA	NA	NA	NA
Cd		0,000003	0,000003	0,000016	0,000003	0,000001	0,000001
As		0,00004	0,00004	0,00020	0,00004	0,00002	0,00002
Cr		0,00108	0,00108	0,00547	0,00108	0,00043	0,00043
Cu		0,00004	0,00004	0,00019	0,00004	0,00001	0,00001
Ni		0,00057	0,00057	0,00289	0,00057	0,00023	0,00023
Se		NA	NA	NA	NA	NA	NA
Zn		0,00129	0,00129	0,00654	0,00129	0,00052	0,00052

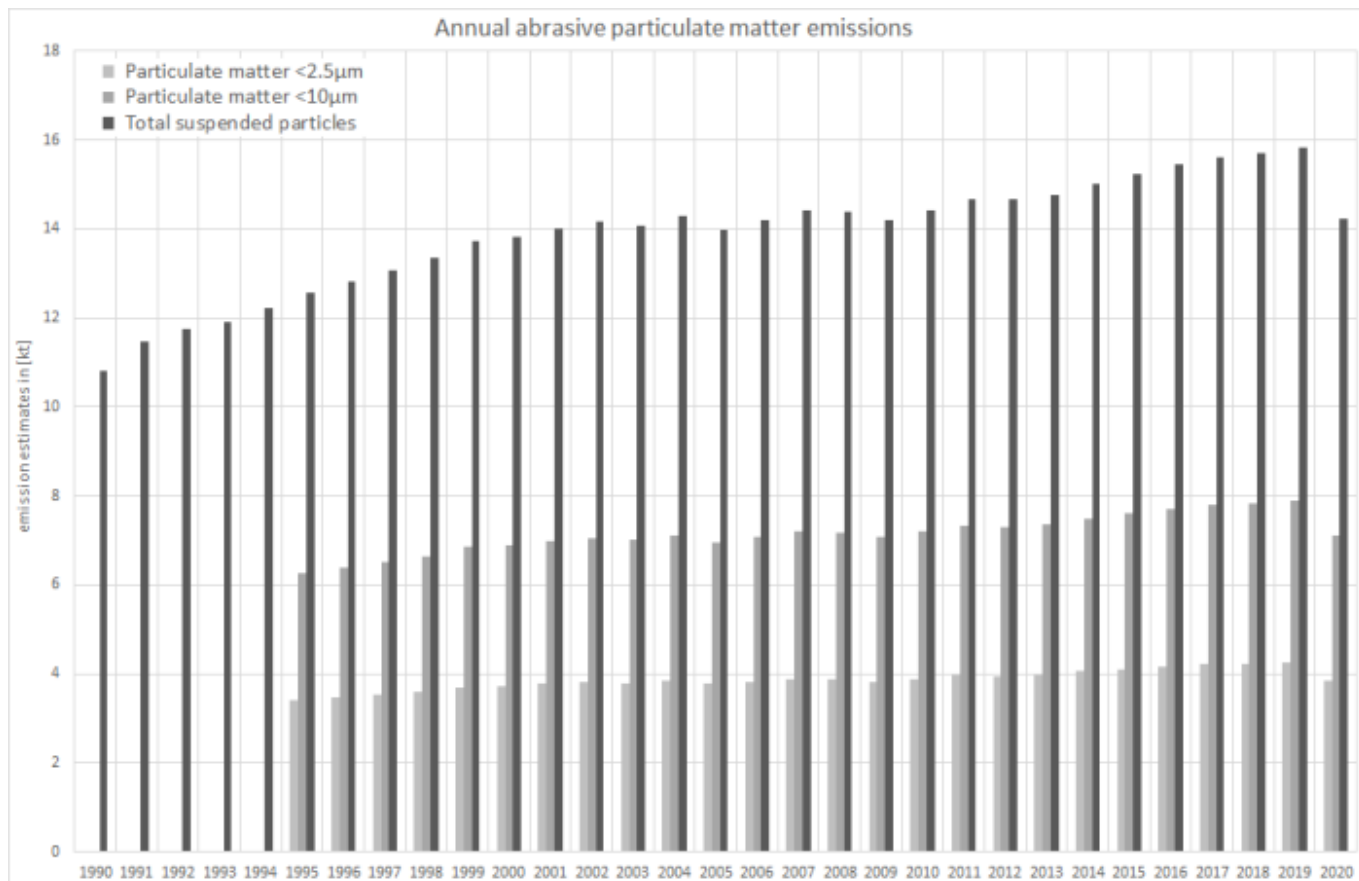
Discussion of emission trends

Table 2: Outcome of Key Category Analysis

for:	TSP	PM ₁₀	PM _{2.5}
by:	Level	Level	Level

Emissions from road abrasion are directly linked to driven mileage. Thus, the overall trend of emissions from road abrasion is similar to the trend for total driven mileage.

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



Recalculations

Compared to last year's submission, emission estimates have been revised due to updated mileage data (see super-ordinate chapter). Differences in the relative changes provided for the specific pollutants result from the different emission factors applied for the different vehicle types.

Table : Revised emission estimates for particulate matter, copper and zinc, in [kt]

	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PM_{2.5}															
current submission		3.39	3.72	3.77	3.87	3.94	3.94	4.01	4.06	4.13	4.20	4.25	4.29	4.29	3.83
previous submission		3.40	3.73	3.77	3.89	3.96	3.96	3.99	4.05	4.11	4.17	4.21	4.24	4.27	3.84
absolute change		-0.01	0.00	0.00	-0.02	-0.02	-0.01	0.02	0.01	0.01	0.04	0.04	0.05	0.02	-0.01
relative change		-0.15%	-0.10%	-0.03%	-0.55%	-0.50%	-0.37%	0.45%	0.18%	0.29%	0.84%	0.91%	1.23%	0.50%	-0.35%
PM₁₀															
current submission		6.27	6.88	6.97	7.15	7.29	7.28	7.40	7.50	7.62	7.76	7.86	7.92	7.93	7.08
previous submission		6.28	6.89	6.97	7.19	7.32	7.31	7.37	7.49	7.60	7.70	7.79	7.83	7.89	7.10
absolute change		-0.01	-0.01	0.00	-0.04	-0.04	-0.03	0.03	0.01	0.02	0.06	0.07	0.10	0.04	-0.02
relative change		-0.15%	-0.10%	-0.03%	-0.55%	-0.50%	-0.37%	0.45%	0.16%	0.27%	0.81%	0.91%	1.24%	0.50%	-0.31%
Total Suspended Particles (TSP)															
current submission	10.8	12.6	13.8	14.0	14.3	14.6	14.6	14.8	15.0	15.3	15.6	15.7	15.9	15.9	14.2

	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
previous submission	10.8	12.6	13.8	14.0	14.4	14.7	14.7	14.8	15.0	15.2	15.4	15.6	15.7	15.8	14.2
absolute change	0.00	-0.02	-0.01	0.00	-0.08	-0.07	-0.05	0.07	0.03	0.04	0.13	0.14	0.19	0.08	-0.05
relative change	0.00%	-0.15%	-0.10%	-0.03%	-0.55%	-0.50%	-0.37%	0.45%	0.18%	0.29%	0.84%	0.91%	1.23%	0.50%	-0.35%



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.