

2.G(b) - Other Product use: Tobacco

Short description

In this sub-category of 2.G(b) - Other product use: Tobacco Germany reports NO_x, NH₃, NMVOC, TSP, PM₁₀, PM_{2.5}, Cd, Co, Cu, Ni, Zn, Benzo(a)pyrene (B[a]P), Benzo(b)fluoranthene (B[b]F), Benzo(k)fluoranthene (B[k]F), Indeno(1,2,3-cd)pyrene (I[1,2,3-c,d]P), PAH 1-4 and PCDD/F emissions from the smoking of cigarettes and cigars.

NFR-Code	Name of Category	Method	AD	EF
2.G(b)	Other Product use: Tobacco	T2	NS	CS/D

Method

Activity data: Statistical data from the tax registration of sold tobacco¹⁾, cigarettes and cigars are used as **activity data**.

Emission factors: For the **emission factors**, a study was made and published in October 2016 "Entwicklung von Methoden zur Berechnung von Emissionen von Luftschadstoffen aus der Verwendung von Holzkohle, Tabak, Feuerwerk und Kerzen sowie aus dem Entfachen von Brauchtumsfeuern" from Nicola Toenges-Schuller et al., AVISO GmbH, for the Umweltbundesamt Germany. Based on this study, most of the EFs are an average value from different studys.

	Value	Unit	Data source
NO_x	1.8	kg/t tobacco	EMEP/EEA 2019 ²⁾
NMVOC	9.56	kg/t tobacco	average value
NH₃	5.33	kg/t tobacco	average value
CO	112.51	kg/t tobacco	average value
TSP/PM10/PM2.5	18.85	kg/t tobacco	average value
BC	0.074	kg/t tobacco	average value
Cd	0.0054	kg/t tobacco	EMEP/EEA 2019
Cu	5.4	g/t tobacco	EMEP/EEA 2019
Ni	2.7	g/t tobacco	EMEP/EEA 2019
Zn	2.16	g/t tobacco	average value
PCDD/F	0.1	µg/t tobacco	EMEP/EEA 2019
B[a]P	0.21	g/t tobacco	average value
B[b]F	0.26	g/t tobacco	average value
B[k]F	0.26	g/t tobacco	average value
I[1,2,3-c,d]P	0.42	g/t tobacco	average value

Recalculations

So far for the calculation of the activity data the production, import and export of cigarettes, cigars and tobacco products was used. But because of double counting of tobacco amounts the activity data

were overestimated. As new data source for the activity data the sold amount of tobacco registered for the taxes is used.

	Subm2020	Subm2021	Difference
	Activity data	Activity data	
	t	t	t
1990	408.171	169.724	-238.447
1991	435.441	169.724	-265.717
1992	430.880	158.243	-272.637
1993	438.902	147.181	-291.721
1994	452.966	153.485	-299.481
1995	435.306	152.618	-282.688
1996	390.828	155.226	-235.602
1997	381.328	158.332	-222.996
1998	391.045	161.501	-229.544
1999	431.930	170.375	-261.555
2000	336.197	166.077	-170.120
2001	349.237	169.829	-179.408
2002	319.870	176.813	-143.057
2003	334.437	167.661	-166.776
2004	320.141	155.110	-165.031
2005	276.110	150.003	-126.107
2006	276.758	144.814	-131.944
2007	304.975	148.082	-156.893
2008	249.158	136.666	-112.492
2009	216.960	130.702	-86.258
2010	232.027	129.643	-102.384
2011	251.896	136.594	-115.302
2012	251.847	129.331	-122.516
2013	237.208	125.000	-112.208
2014	242.183	125.870	-116.313
2015	250.841	123.250	-127.591
2016	227.667	117.970	-109.697
2017	235.325	117.456	-117.869
2018	235.325	117.026	-118.299

The emissions have changed as follows:

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989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Pollutant		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PM 10	Difference [Mt]						-0.328 15	-4.440 67	-4.203 07	-4.326 48	-4.829 83	-3.206 46	-3.381 52	-2.696 37	-3.143 42	-3.110 54	-2.376 89	-2.486 90	-2.957 14	-2.120 26	-1.625 80	-1.929 75	-2.173 23	-2.309 20	-2.114 91	-2.192 29	-2.404 86	-2.067 58	-2.221 42	-2.229 72
PM 2.5	Subm 2018 [Mt]						0.204 75	7.366 20	7.287 36	7.375 48	8.145 09	6.156 71	6.563 48	6.028 07	6.303 53	6.934 00	5.224 10	5.224 30	5.148 23	4.696 27	4.009 30	4.373 20	4.362 16	4.146 86	4.470 36	4.564 71	4.727 85	4.201 23	4.433 45	4.434 45
PM 2.5	Subm 2021 [Mt]						2.876 57	2.925 73	2.984 27	3.044 00	3.211 24	3.130 25	3.200 97	3.332 66	3.166 10	2.923 54	2.827 20	2.729 48	2.793 08	2.575 93	2.463 49	2.443 53	2.574 35	2.437 63	2.396 02	2.372 42	2.323 04	2.223 52	2.213 83	2.205 73
PM 2.5	Difference [Mt]						5.328 35	4.486 62	4.203 07	4.378 48	4.929 83	3.296 46	3.381 52	2.696 37	3.143 42	3.110 54	2.376 89	2.486 90	2.957 14	2.120 26	1.625 80	1.929 75	2.173 23	2.309 20	2.114 91	2.192 29	2.404 86	2.067 58	2.221 42	2.229 72
SO ₂	Subm 2018 [Mt]	7.603 26	8.207 24	8.121 33	8.272 50	8.537 58	9.204 72	7.366 59	7.187 34	7.370 48	8.145 09	6.156 71	6.563 48	6.028 07	6.303 53	6.934 00	5.224 10	5.224 30	5.148 23	4.696 27	4.009 30	4.373 20	4.362 16	4.146 86	4.470 36	4.564 71	4.727 85	4.201 23	4.433 45	4.434 45
SO ₂	Subm 2021 [Mt]	3.186 90	3.186 90	2.982 59	2.774 69	2.892 91	2.876 57	2.925 73	2.984 27	3.044 00	3.211 24	3.130 25	3.200 97	3.332 66	3.166 10	2.923 54	2.827 20	2.729 48	2.793 08	2.575 93	2.463 49	2.443 53	2.574 35	2.437 63	2.396 02	2.372 42	2.323 04	2.223 52	2.213 83	2.205 73
SO ₂	Difference [Mt]	-4.416 36	-5.118 72	-5.488 41	-5.644 97	-5.728 15	-4.448 15	-4.203 07	-4.326 48	-4.326 48	-4.929 83	-3.206 46	-3.381 52	-2.696 37	-3.143 42	-3.110 54	-2.376 89	-2.486 90	-2.957 14	-2.120 26	-1.625 80	-1.929 75	-2.173 23	-2.309 20	-2.114 91	-2.192 29	-2.404 86	-2.067 58	-2.221 42	-2.229 72
Zn	Subm 2018 [Mt]	0.80	0.94	0.93	0.95	0.98	0.94	0.84	0.82	0.84	0.93	0.72	0.70	0.69	0.72	0.69	0.60	0.60	0.60	0.60	0.60	0.60	0.54	0.43	0.50	0.54	0.51	0.52	0.54	0.51
Zn	Subm 2021 [Mt]	0.37	0.37	0.34	0.32	0.33	0.33	0.33	0.34	0.33	0.37	0.36	0.37	0.38	0.36	0.33	0.32	0.31	0.32	0.30	0.28	0.28	0.26	0.26	0.26	0.26	0.26	0.27	0.27	0.25
Zn	Difference [Mt]	-0.33	-0.37	-0.34	-0.63	-0.65	-0.41	-0.51	-0.48	-0.49	-0.54	-0.37	-0.39	-0.31	-0.36	-0.36	-0.27	-0.28	-0.34	-0.24	-0.19	-0.22	-0.25	-0.24	-0.24	-0.24	-0.25	-0.27	-0.24	-0.25



For pollutant-specific information on recalculated emission estimates for Base Year and 2018, please see the pollutant specific recalculation tables following [chapter 8.1 - Recalculations](#).

Planned improvements

No planned improvements.

- ¹⁾ Destatis, Versteuerung von Tabakwaren 73411, SBA FS 14 R 9.1.1 Absatz von Tabakwaren
- ²⁾ EMEP/EEA air pollutant emission inventory guidebook 2019, Copenhagen, 2019