German Patent and Trade Mark Office

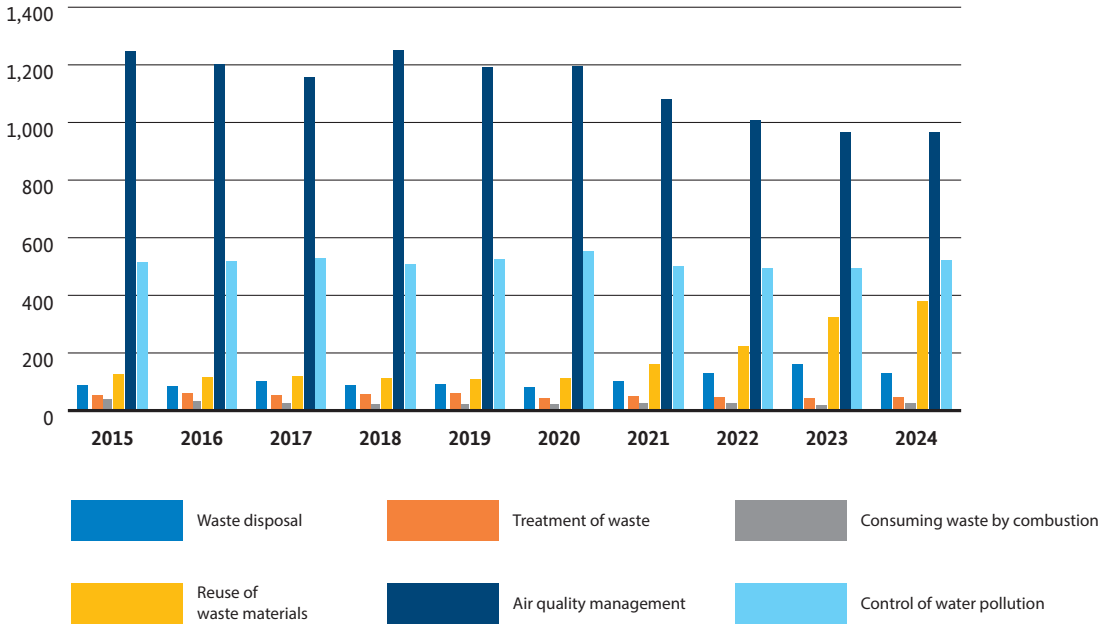
Waste management

(as of August 2025)

Development of patent applications effective in Germany [1)]

Subfield [2)]	Publication years									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Waste disposal [3)]	87	86	104	87	91	81	101	130	163	131
Treatment of waste [4)]	53	61	54	56	60	42	49	48	45	46
Consuming waste by combustion [5)]	40	33	26	24	21	24	27	26	19	25
Reuse of waste materials [6)]	125	118	120	113	108	114	164	223	323	379
Air quality management [7)]	1,249	1,204	1,158	1,250	1,193	1,197	1,081	1,007	966	965
Control of water pollution [8)]	515	519	528	507	525	552	501	496	495	521
Total [9)]	**2,068**	**2,021**	**1,990**	**2,037**	**1,999**	**2,009**	**1,923**	**1,929**	**2,011**	**2,069**

Patent applications waste management



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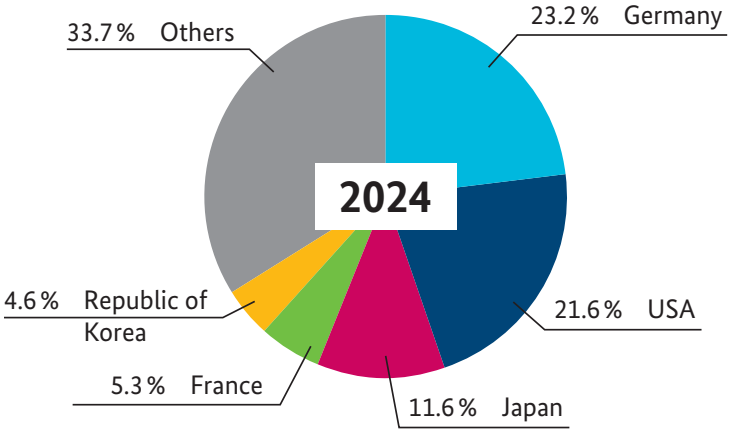
Waste management

(as of August 2025)

Development top 5 countries 2024 (residence or principal place of business of the first applicant)

Country	Publication years				
	2020	2021	2022	2023	2024
Germany	599	516	485	473	479
USA	381	352	389	444	447
Japan	242	240	208	206	240
France	100	129	122	118	110
Republic Korea	68	51	71	79	95
Others	620	635	654	690	697
Total [9]	**2,009**	**1,923**	**1,929**	**2,011**	**2,069**

Patent applications: Percentage by countries



Footnotes:

[1] Applications published by the DPMA and the EPO avoiding double counts.
[2] Based on a revised version of the topic "Waste Management" from the IPC Green Inventory of WIPO. IPC classes valid at the time of query counted proportionally. No claim to completeness. Results may also include other applications.
[3] B09B, B65F.
[4] A61L 11, A62D 101, A62D 3, B03B 9/06, B09C, D21B 1/08, D21B 1/32, G21F 9.
[5] F23G 5, F23G 7/00 bis 7/05, F23G 7/10 bis 7/14.
[6] A43B 1/12, A43B 21/14, B22F 8, C04B 7/24 bis 7/30, C04B 18/04 bis 18/10, C04B 18/16 bis 18/30, C05F 1, C05F 3, C05F 5, C05F 7, C05F 9, C05F 15, C05F 17, C09K 11/01, C11B 13/00 bis 13/04, C14C 3/32, C21B 3/04 bis 3/06; D01F 13/00 bis 13/04, B29B 17/00 bis 17/04, B62D 67, C08J 11/00 bis 11/28, C10G 1/10, C10L 5/46, C10L 5/48,C22B 7/00 bis 7/04, C22B 19/30, C22B 25/06, D01G 11/00 bis 11/04, D21C 5/02, H01J 9/50 bis 9/52, H01M 6/52, H01M 10/54.
[7] B01D 45, B01D 46, B01D 47, B01D 49, B01D 50, B01D 51, B01D 53/00 bis 53/90, B01D 53/92, B01D 53/94, B01D 53/96, B03C 3, C09K 3/22, C10B 21/18, C10L 10/02, C10L 10/06, C21B 7/22, C21C 5/38, F01N 3/00 bis 3/38, F01N 9, F02B 75/10, F23B 80/02, F23C 9/00 bis 9/08, F23G 7/06 bis 7/08, F23J 7, F23J 15/00 bis 15/08, F27B 1/18, F27B 15/12, G08B 21/12.
[8] B63B 35/32, B63J 4, C02F 1, C02F 3, C02F 7, C02F 9, C02F 11, C02F 101, C02F 103/00, C02F 103/06 bis 103/44, C09K 3/32, E02B 15/04, E03C 1/12, E03F.
[9] Due to rounding differences, totalized values may differ from the total.