

TABLE S8-28

USPTO patents and patent families granted in environmental technology, by region, country, or economy: 1998–2018

(Number)

Region, country, or economy	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families		
China	3	27	2	31	4	102	5	106	3	148	6	303	7	484	2	555	5	702	5	770	5	936	12	1,452	25	1,495	24	2,802	32	3,774	28	4,180	52	6,345	45	6,265	63	7,660	92	6,928	101	7,265
India	1	0	0	0	1	0	1	1	2	2	6	6	3	2	6	2	3	3	3	3	3	3	3	6	4	6	3	9	4	11	8	16	9	12	4	22	9	21	11			
Japan	281	1,500	259	1,808	261	1,693	252	1,625	265	1,849	282	1,928	285	1,956	250	2,076	253	2,403	242	2,608	252	2,344	252	2,430	361	2,629	343	2,808	380	2,660	428	2,354	444	2,163	452	1,704	416	1,899	441	1,817	424	1,581
Malaysia	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	2	5	0	0	2	0	0	1	6	8	0	9	0	6	1	4	2	6	1	6	1	9	1	14	1	5	
Singapore	0	1	1	0	0	2	1	0	0	0	3	2	2	1	3	0	0	0	0	1	2	0	2	1	3	2	0	2	0	4	2	3	0	3	2	3	1	5	1	5	1	
South Korea	20	270	19	746	20	402	21	398	31	460	28	758	26	982	18	1,629	21	1,725	23	1,952	23	1,422	36	1,106	45	1,316	38	1,539	51	1,852	78	2,186	88	1,960	94	1,438	87	1,618	116	1,857	144	1,877
Taiwan	21	37	29	45	25	46	29	60	34	86	27	80	31	68	26	107	20	109	26	91	28	79	28	63	23	74	24	82	43	103	39	145	27	141	24	146	26	184	40	180	26	110
All others	1	3	0	0	1	3	3	1	1	3	2	1	2	1	3	4	0	3	0	2	0	2	0	4	0	1	2	1	0	2	1	3	2	1	2	3	5	3	7	3	6	
Middle East	7	4	12	6	9	4	14	9	12	6	13	8	9	5	11	4	11	2	17	12	5	21	11	21	8	19	10	28	15	34	23	15	48	19	48	20	52	21	68	25		
Israel	5	4	4	5	7	2	13	6	10	7	12	3	9	2	10	11	3	14	4	3	11	10	3	19	9	18	15	4	24	5	22	7	26	6	25	6	27	4	31	8		
All others	2	0	1	0	2	2	1	4	2	5	1	4	1	2	0	1	1	1	3	8	2	2	2	1	3	5	5	6	13	10	21	17	13	8	22	13	23	14	25	17	37	17
Africa	2	4	3	9	5	10	8	10	3	13	4	13	3	9	3	5	8	4	3	5	2	13	1	3	1	19	2	7	2	12	5	16	2	11	3	2	1	6	3	4		
South Africa	2	2	3	4	4	6	8	6	3	2	4	2	2	5	3	6	3	3	2	1	9	2	1	2	1	11	2	0	2	1	3	2	2	1	1	1	0	2	1	2	0	
All others	0	2	1	5	1	4	0	5	0	11	0	10	1	3	0	2	2	1	1	4	1	4	0	1	0	8	0	7	1	10	1	13	0	10	1	1	1	5	0	5	1	4
Australia and Oceania	11	10	10	8	10	7	10	17	7	14	8	8	15	27	17	15	4	17	7	21	10	19	12	16	19	21	12	23	16	31	24	27	33	24	16	13	28	17	16	19	18	
Australia	10	10	10	8	8	6	9	17	7	14	7	14	7	17	17	15	3	17	6	21	8	19	11	16	19	21	12	23	15	30	22	21	24	32	22	16	12	27	16	16	18	
New Zealand	1	0	1	0	2	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	4	0	1	0	1	2	0	3	1	2	0	1	1	1	0	3	0	
All others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Unclassified	1	7	1	44	0	23	1	6	0	1	0	1	0	2	0	10	1	8	0	4	0	1	0	2	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	

EU = European Union; USPTO = U.S. Patent and Trademark Office.

Note(s)

USPTO patents are allocated according to patent inventorship information. USPTO patents are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. However, because PatentsView only provides the original IPC codes as they appeared on patents and not the IPC reformed codes, current Cooperative Patent Classification codes on patents were converted back to the most recent IPC classification to prepare these statistics. Fractional counts of patents were assigned to each technological field on patents to assign the proper weight of a patent to the corresponding technological fields under the classification. International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2012) is used to fill in missing information on priority patents using information in successive filings within the patent families (see technical documentation for details). Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in the year for which its output is accounted. The EU includes 28 member countries. China includes Hong Kong.

Source(s)

Science-Metrix; PATSTAT, accessed April 2019; PatentsView, USPTO, accessed June 2019.