

TABLE S8-31

USPTO patents and patent families granted in engines, pumps, turbines, 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	1	21	1	30	4	69	8	91	10	95	8	156	13	198	5	225	7	225	13	392	21	726	21	892	33	1,015	42	1,556	65	2,131	63	2,016	69	2,811	82	4,106	74	5,617	119	5,870	120	5,714
India	0	1	1	1	1	0	3	2	0	0	3	1	2	2	3	1	4	2	7	6	4	2	8	5	13	6	30	21	42	29	55	37	68	53	82	49	63	44	63	44	75	50
Japan	968	3,890	975	3,977	1,099	3,180	1,225	2,870	1,192	2,638	1,278	2,541	1,203	3,047	1,081	2,972	1,237	3,915	1,047	4,675	972	4,979	831	5,032	1,038	5,325	955	5,232	1,182	5,289	1,223	5,082	1,297	4,861	1,254	3,555	1,211	4,687	1,437	4,289	1,432	4,040
Malaysia	1	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	3	2	0	3	1	1	1	1	9	0	3	1	1	2	3	2	2	2	2	2	2	3	1	3	0
Singapore	2	0	2	1	1	0	0	1	1	1	2	0	1	2	1	0	2	1	1	2	1	2	1	0	3	1	5	0	11	0	11	4	12	1	14	3	11	2	7	1	7	2
South Korea	55	424	47	1,834	35	800	64	757	72	536	80	1,111	114	941	97	1,383	102	1,848	79	1,658	98	1,012	78	707	86	971	108	1,437	135	1,799	149	2,236	198	2,199	194	1,629	218	1,570	268	1,574	330	1,612
Taiwan	32	45	49	60	77	88	97	100	86	109	103	121	89	110	67	114	91	146	76	158	70	111	78	140	79	179	98	194	127	221	226	100	279	123	90	304	111	254	99	197		
All others	1	8	1	4	1	2	1	3	3	3	2	4	2	4	4	1	4	2	1	4	1	3	1	4	2	4	0	3	0	5	2	3	4	3	4	3	4	3	5	4	6	5
Middle East	14	12	12	7	12	31	18	31	10	16	20	18	8	6	10	17	7	7	10	18	16	16	11	6	19	13	15	26	25	28	20	33	16	27	30	36	20	41	15	34	15	
Israel	13	11	11	4	9	3	17	7	9	4	14	7	6	2	9	5	5	2	10	3	13	5	8	5	17	9	4	19	5	19	7	21	4	13	4	21	4	17	4	16	4	
All others	1	2	1	3	3	28	1	24	1	12	6	11	3	4	1	12	1	5	0	16	2	10	2	1	2	4	5	11	7	20	9	13	12	12	14	26	15	16	23	14	18	11
Africa	4	9	1	13	2	8	2	11	1	19	3	10	3	12	3	6	1	8	3	5	1	6	3	7	3	12	3	10	2	6	5	11	7	10	3	2	3	9	5	0	4	3
South Africa	4	7	1	9	1	4	2	1	7	1	3	2	3	4	2	4	1	5	3	2	4	2	3	7	3	6	3	0	2	2	1	5	0	3	1	3	2	1	4	0	2	0
All others	0	2	0	5	1	6	1	8	0	13	0	8	0	8	1	2	0	3	1	2	0	3	1	0	0	6	0	10	0	5	1	11	2	10	0	2	0	7	1	0	2	3
Australia and Oceania	30	8	22	14	27	10	22	16	33	20	27	13	25	24	34	12	26	25	23	26	14	13	14	15	21	21	14	27	32	37	34	31	36	22	33	25	35	29	31	19	20	6
Australia	27	7	21	14	26	10	19	16	30	20	21	9	22	23	30	11	21	23	15	25	13	13	10	15	16	21	13	27	36	29	29	29	21	29	25	31	27	27	19	27	18	6
New Zealand	3	1	1	0	1	0	3	0	3	0	5	3	2	1	4	0	4	2	8	1	1	0	4	1	5	0	1	0	3	1	5	3	7	2	4	0	4	2	5	0	1	0
All others	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	1	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	3	18	0	131	1	31	1	39	0	4	0	2	0	60	0	104	0	56	2	2	0	1	0	2	0	1	0	0	0	1	1	0	0	0	2	1	5	1	0	3	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.