



APPENDIX TABLE 6-59

USPTO patents granted in smart grid technology, by region, country, or economy: 1998–2016

(Number)

Region, country, or economy	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
World	454	471	404	456	456	481	473	408	551	545	564	603	823	906	1,141	1,298	1,480	1,550	1,695
North America	279	290	243	287	287	278	292	241	344	332	336	369	499	549	670	739	839	837	948
Canada	10	15	6	16	19	17	23	14	17	30	17	18	28	21	38	33	36	29	36
Mexico	0	0	0	0	0	0	0	1	1	0	0	0	4	0	2	2	1	2	1
Puerto Rico	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
United States	269	276	238	272	268	261	269	226	327	301	319	350	467	528	630	705	802	806	910
Central and South America	2	0	0	0	2	1	1	0	0	0	0	2	0	1	4	2	3	2	2
Argentina	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Brazil	2	0	0	0	2	1	1	0	0	0	0	1	0	1	3	2	2	1	2
All others	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
Europe	67	81	80	59	84	80	71	76	73	73	87	87	109	144	169	228	280	276	294
EU	54	76	69	50	78	71	64	67	63	67	80	80	103	124	154	204	260	252	262
Austria	0	2	1	1	2	2	2	0	1	2	3	3	1	0	4	4	1	3	5
Belgium	0	2	0	0	0	0	0	1	0	0	1	0	2	1	3	2	5	1	7
Denmark	0	0	0	4	1	1	2	4	2	1	7	2	11	10	5	13	19	17	24
Finland	1	1	2	0	2	1	2	5	5	7	7	7	3	9	3	3	16	7	9



Region, country, or economy	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
France	5	14	12	6	6	9	9	9	9	4	8	11	15	20	14	32	28	26	31
Germany	25	23	25	16	29	28	22	21	19	26	26	34	35	38	54	75	88	103	85
Hungary	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	4	1
Ireland	0	0	0	0	0	1	0	2	1	0	2	1	1	0	3	1	3	5	7
Italy	2	3	7	4	4	4	8	8	7	5	7	3	3	7	9	8	11	12	10
Netherlands	6	7	3	0	2	3	1	0	1	2	2	2	1	3	1	3	4	5	8
Spain	0	1	4	0	1	0	1	1	0	1	3	4	5	5	8	7	13	13	10
Sweden	8	17	8	12	19	12	6	6	7	7	4	3	11	14	31	30	36	24	21
United Kingdom	6	5	7	7	12	10	9	10	9	9	9	9	13	17	14	23	32	31	41
All others	0	1	1	0	1	1	2	1	1	2	0	1	0	1	4	3	5	2	4
Other Europe	14	5	11	9	5	9	8	9	10	6	7	8	6	20	15	25	20	24	32
Former Soviet Union	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Norway	0	0	1	0	0	0	1	2	1	1	0	0	1	0	2	1	1	4	6
Russia	0	0	1	1	0	0	0	0	0	0	0	2	0	1	0	1	2	0	1
Switzerland	13	2	8	8	5	8	7	7	8	5	7	6	5	19	13	22	17	20	23
All others	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Asia	100	96	74	110	78	114	98	81	126	135	136	133	202	196	272	296	331	405	428
China	1	2	3	2	3	4	3	3	8	5	7	16	16	29	46	46	69	87	80
India	1	1	0	3	2	1	1	1	1	3	3	2	5	5	13	13	15	32	26



Region, country, or economy	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Japan	83	83	60	82	63	84	64	51	78	64	57	63	96	74	125	144	128	145	153
Malaysia	0	0	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	1	2
Singapore	0	0	1	1	0	1	1	0	0	0	2	0	1	0	3	0	5	6	8
South Korea	11	7	5	12	4	11	12	14	19	44	51	39	54	67	64	67	75	78	104
Taiwan	4	3	6	10	4	13	16	11	18	19	16	13	29	21	20	26	39	54	54
All others	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2	0
Middle East	3	0	2	0	4	5	5	6	6	3	5	8	9	10	19	23	21	23	17
Israel	3	0	2	0	3	5	5	5	6	3	5	8	7	10	19	15	19	21	15
All others	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	8	2	2	2
Africa	0	1	0	0	1	0	0	0	0	1	0	1	1	0	0	2	1	0	1
South Africa	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	2	1	0	1
All others	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Australia and Oceania	3	2	4	0	1	2	5	4	2	1	1	2	2	5	6	7	5	8	5
Australia	0	1	2	0	1	1	3	4	2	1	1	2	1	4	3	4	4	7	2
New Zealand	3	1	2	0	0	1	2	0	0	0	0	0	1	0	3	3	1	1	3
Unclassified	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

Note(s)



Patents are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. The EU includes 28 member countries. China includes Hong Kong. Technologies are based on a classification developed by The Patent Board.

Source(s)

Science-Metrix; PatentsView and USPTO patent data.

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