CLEAN ENERGY PATENT GROWTH INDEX (CEPGI)

2nd Quarter 2011 Results

Presented by the Cleantech Group -
Heslin Rothenberg Farley & Mesiti P.C.

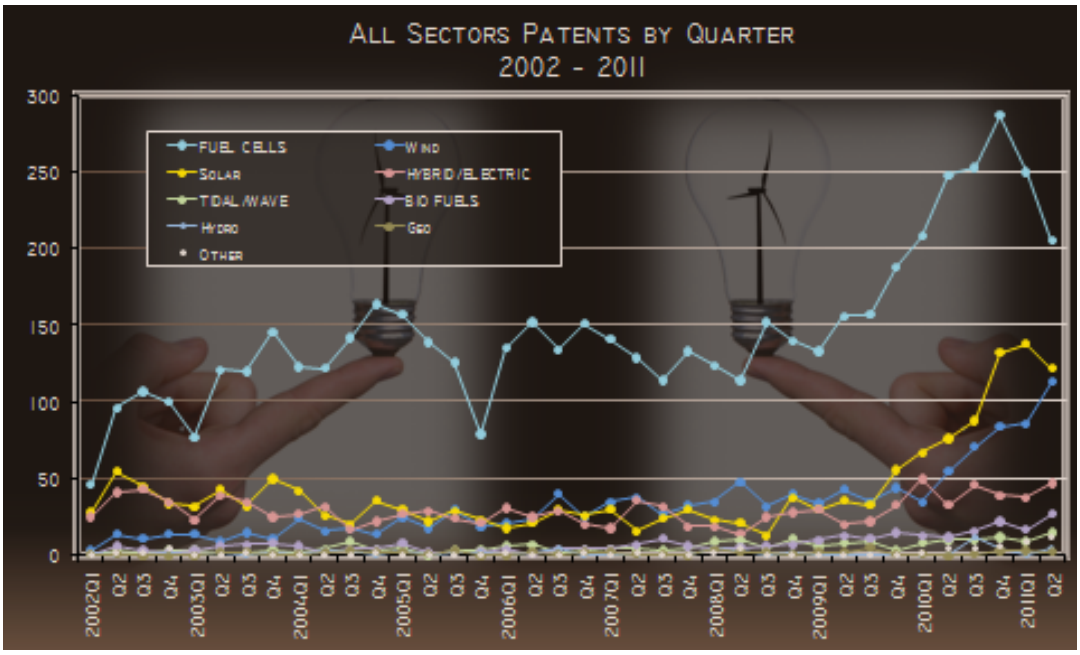
www.cleantechintellectualproperty.com

September 13, 2011

The CLEAN ENERGY PATENT GROWTH INDEX (CEPGI), published quarterly by the CLEANTECH GROUP at Heslin Rothenberg Farley & Mesiti P.C, provides an indication of the trend of innovative activity in the Clean Energy sector. Results from the second quarter of 2011 reveal the CEPGI to have a value of 537 granted U.S. patents which is the third highest quarter since tracking of the CEPGI began, lagging only the immediate two preceding quarters by 3 and 35 patents respectively, along with being up 100 over the second quarter of 2010.

The granting of patents by the United States Patent and Trademark Office (PTO) is often cited as a measure of the inventive activity and evidence of the effectiveness of research & development investments. Patents are considered to be such an indicator because to be awarded a patent it requires not only the efforts of inventors to develop new and non-obvious innovations but also successful handling by patent counsel to shepherd a patent application through the PTO. Thus, the granting of a patent is an indicator that efforts at innovation have been successful and that an innovation had enough perceived value to justify the time and expense in procuring the patent.

The CEPGI (shown below quarterly) tracks the granting of U.S. patents for the following sub-components: Solar, Wind, Hybrid/electric vehicles, Fuel Cells, Hydroelectric, Tidal/wave, Geothermal, Biomass/biofuels and other clean renewable energy.

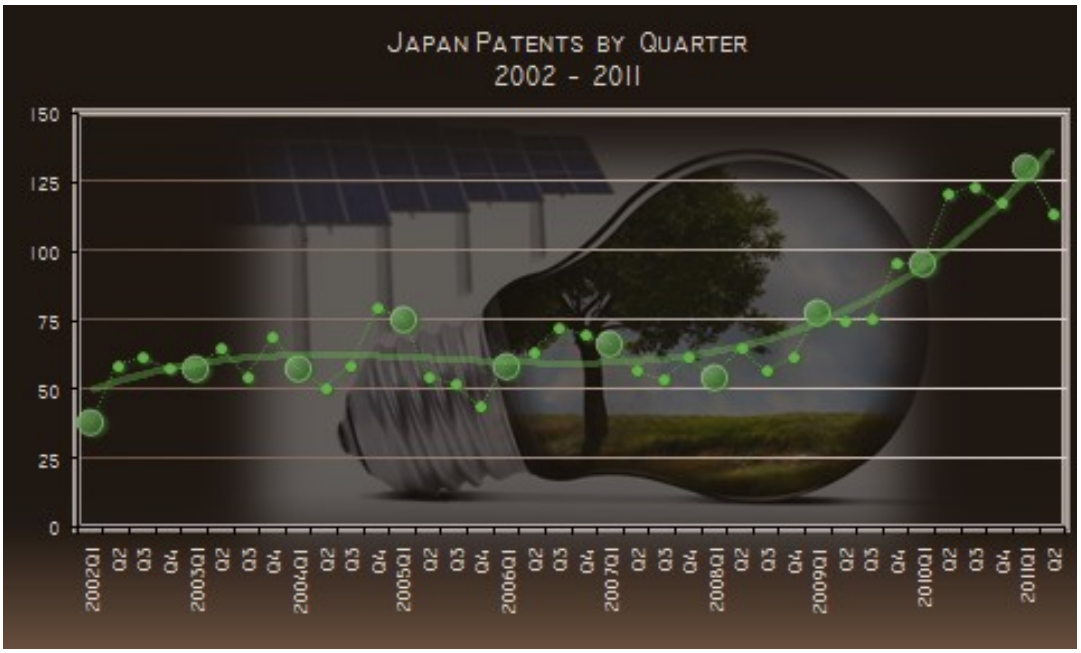


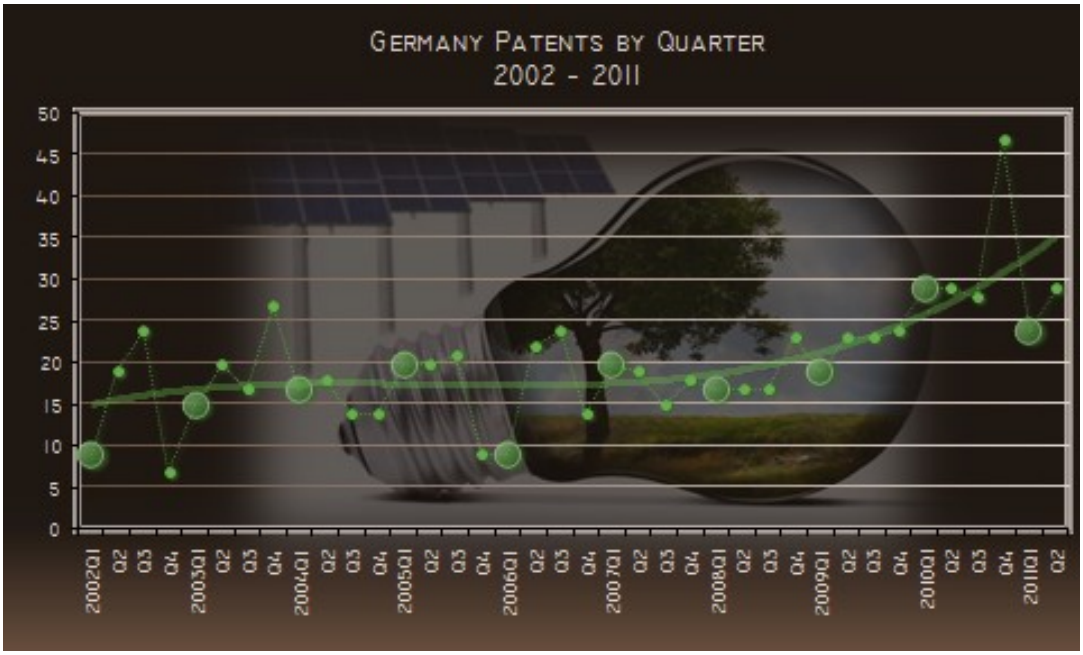
The components breakdown of the CEPGI shows fuel cells to be down 45 relative to the 1st quarter at 205 and down 43 relative to the year before. Granted solar patents (122) continued to top the remaining components of the CEPGI, and in particular its closest competitor, wind (113), by 9. Solar patents were down 16 compared to the 1st quarter while up 46 relative to a year prior. Wind was up 27 over the first quarter and up 58 over the second quarter of 2010. Hybrid/electric vehicle patents (47) were up 9 relative to the 1st quarter and up 14 compared to the second quarter of the year before. Biofuel patents (27) were up 10 from the 1st quarter and up 15 relative to the 2d quarter of 2010.

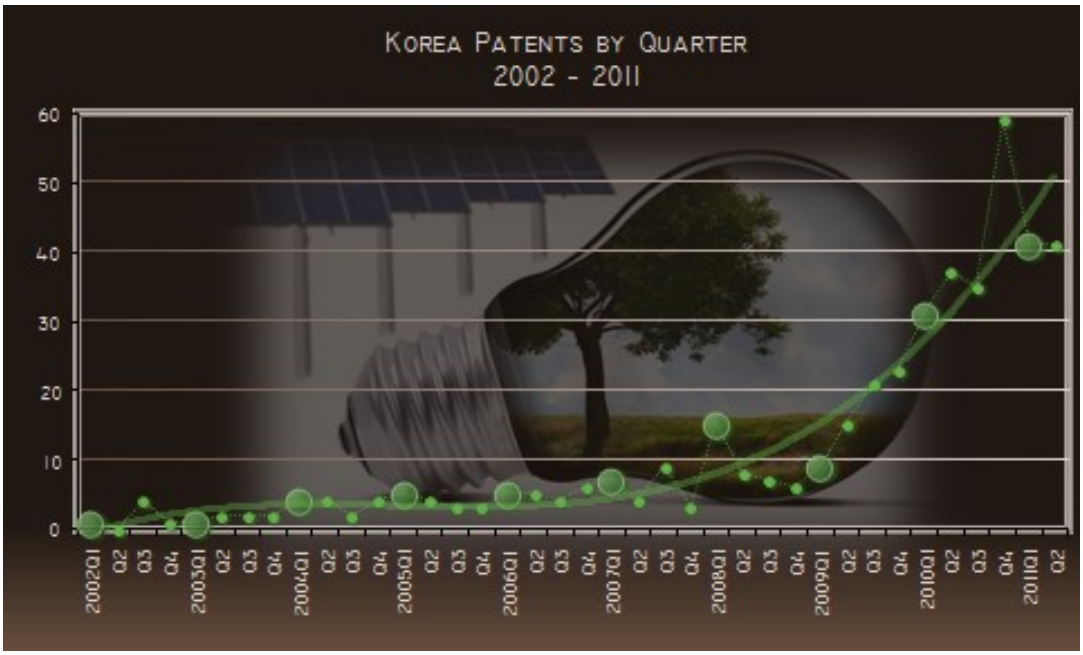
Hydroelectric patents were at four patents topping by three patents the first quarter and the same period of the year prior. Tidal patents were up 6 at 15 from the1st quarter and up 5 over the year before.

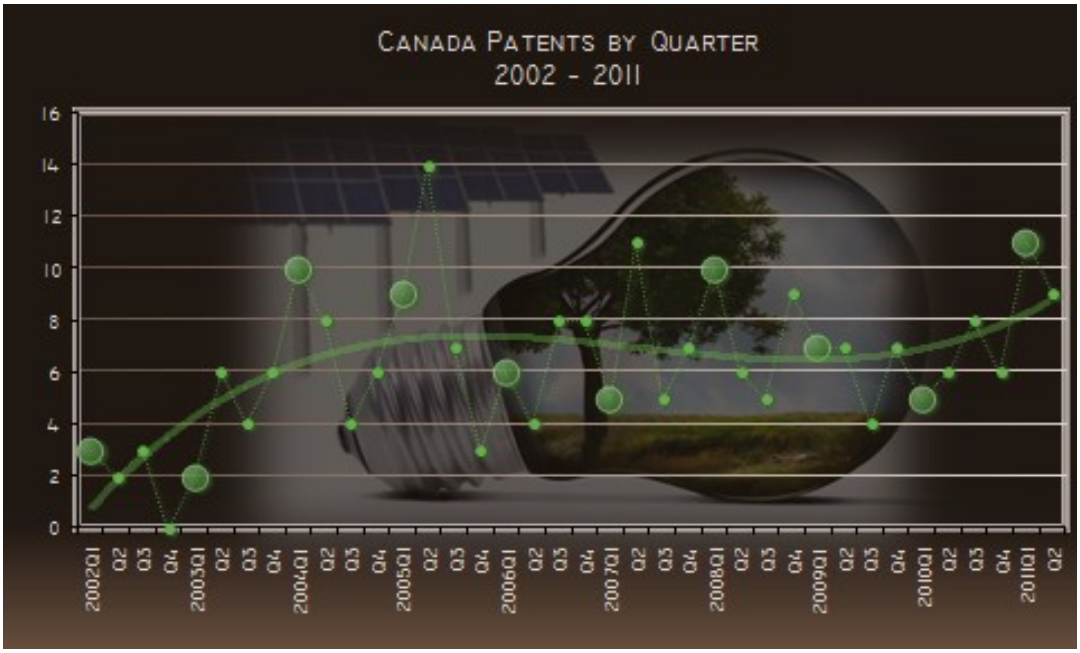
General Electric took the quarterly Clean Energy Patent crown with 44 granted clean energy patents in the second quarter of 2011, ending General Motors' streak of two quarterly wins and having won the annual contest in 2010. GE's win was based primarily on its wind patents (37) along with small numbers of patents in Fuel cells (1), Hybrid/Electric vehicles (2), solar and a pair of others. GM fell to fourth place while Toyota climbed back up into second place with 33 granted clean energy patents followed by Samsung with 28. Toyota's patents were in fuel cells (21) and Hybrid/Electric vehicles (12). Samsung coupled a large fuel cell (23) turnout with an assist from solar (5). GM's patents were primarily in Fuel Cells at 24 and GM led all others in this category in the second quarter. Also, Hybrid/Electric vehicles (3), as one would expect from a car company, added to GM's tally. Vestas had 22 wind patents and trailed GE by 15 in this category while taking fifth place. Honda followed with an uncharacteristically low 14 clean energy patents in fuel cells (12), hybrid/electric vehicles (2) and solar (1). Panasonic had 9 fuel cell patents in seventh place while five entities tied with 5 granted clean energy patents. Applied Materials was second in solar patents to Samsung, having 4 solar patents and one fuel cell patent. Car companies Nissan and Ford had patents in fuel cells (4 and 3, respectively) and hybrid/electric vehicles (2 each). Canon had patents exclusively in fuel cells (5) while Siemens scored wind (3) and fuel cell (2) patents.

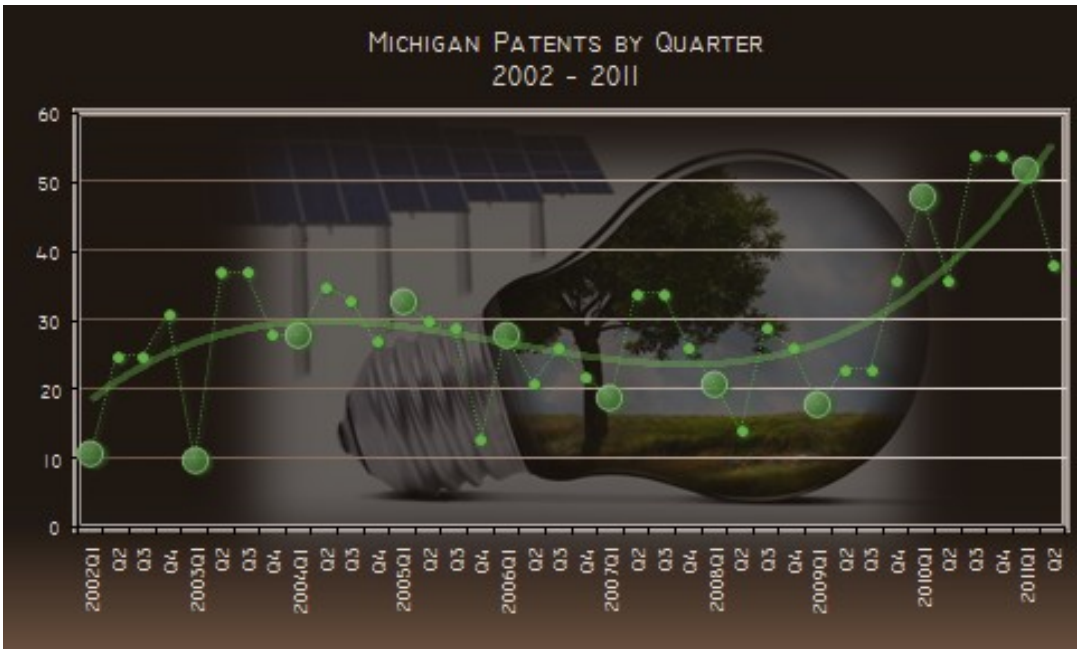
As depicted below in the geographic charts, Japan was the first quarter leader among non-U.S. holders of U.S. clean energy patents and the individual U.S. states with 114, down 17 from the 1st quarter and down 7 from the same period in 2010, to again claim the geographical clean energy patent crown. California was in second place for the third consecutive quarter at 65 clean energy patents, up 6 over the second quarter and up 16 compared to a year prior, leading new third place finisher New York which leapfrogged Michigan due to its largest quarterly finish ever at 52 granted clean energy patents, up 17 over the 1st quarter and up 30 over a year prior. Korea followed with 41 patents matching last quarter's total and up 4 over the same quarter in 2010. Longtime second place holder (and longtime US states leader) Michigan fell to 5th place, down 14 from the previous result and up two over last year's. Denmark (26) and Germany (29) trailed with Germany up 5 over last quarter and tieing the results of a year ago while Denmark was up 9 over last quarter and 17 over last year's second quarter. (Others having significant clean energy patent totals were Massachusetts (13) with a total identical to that of the first quarter, while Canada and Colorado had 9 and Connecticut had 7 (identical to the last quarter).

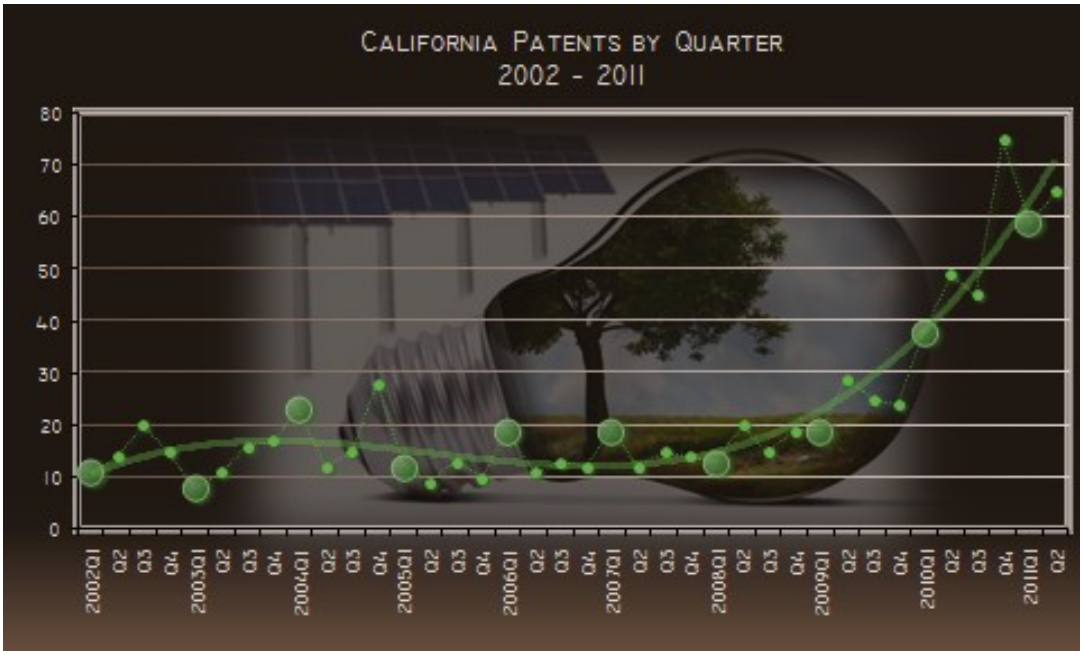

Japan Patents by Quarter
2002 - 2011
150
125
100
75
50
25
0
2002Q1
Q2
Q3
Q4
2003Q1
2004Q1
2005Q1
2006Q1
2007Q1
2008Q1
2009Q1
2010Q1
2011Q1

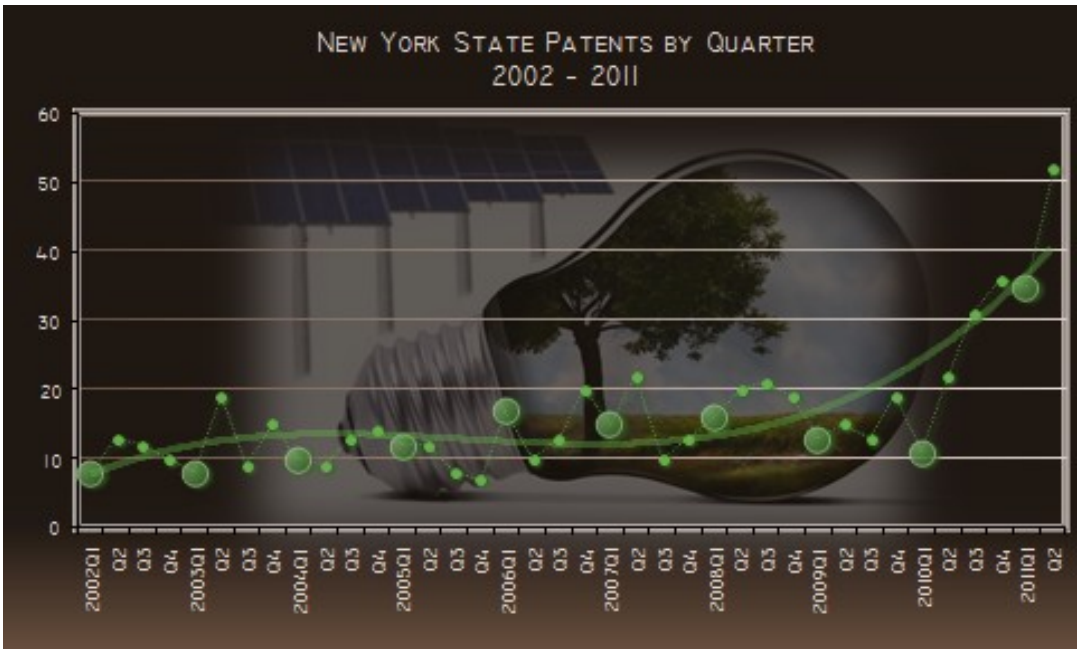

Germany Patents by Quarter
2002 - 2011
50
45
40
35
30
25
20
15
10
5
0
2002Q1
Q2
Q3
Q4
2003Q1
2004Q1
2005Q1
2006Q1
2007Q1
2008Q1
2009Q1
2010Q1
2011Q1

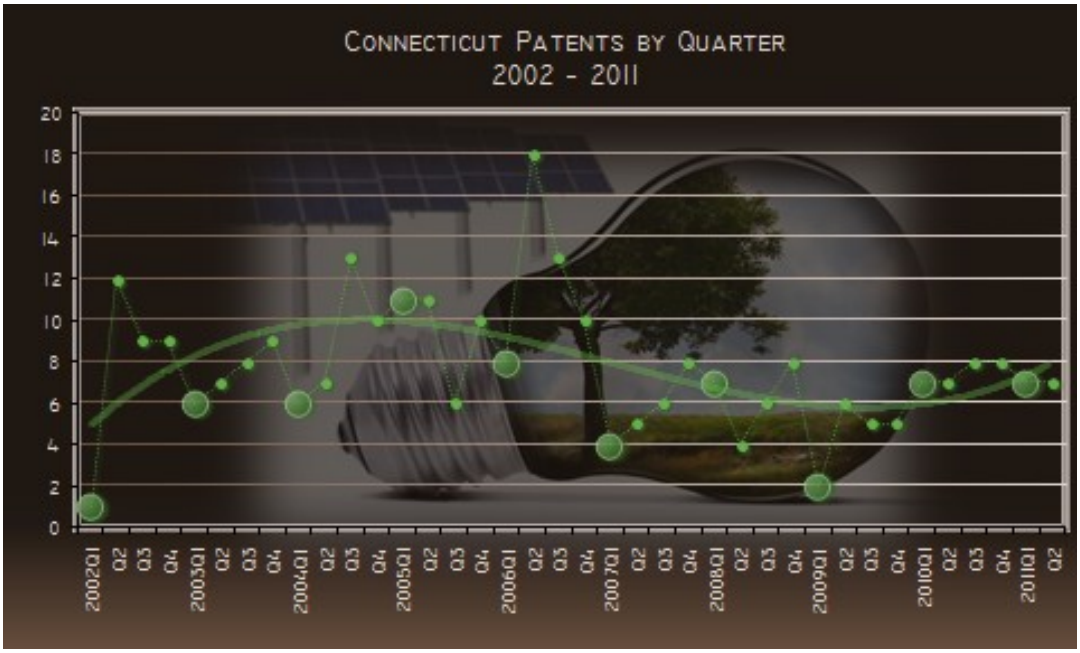

Korea Patents by Quarter
2002 - 2011
60
50
40
30
20
10
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2


Canada Patents by Quarter
2002 - 2011
16
14
12
10
8
6
4
2
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2

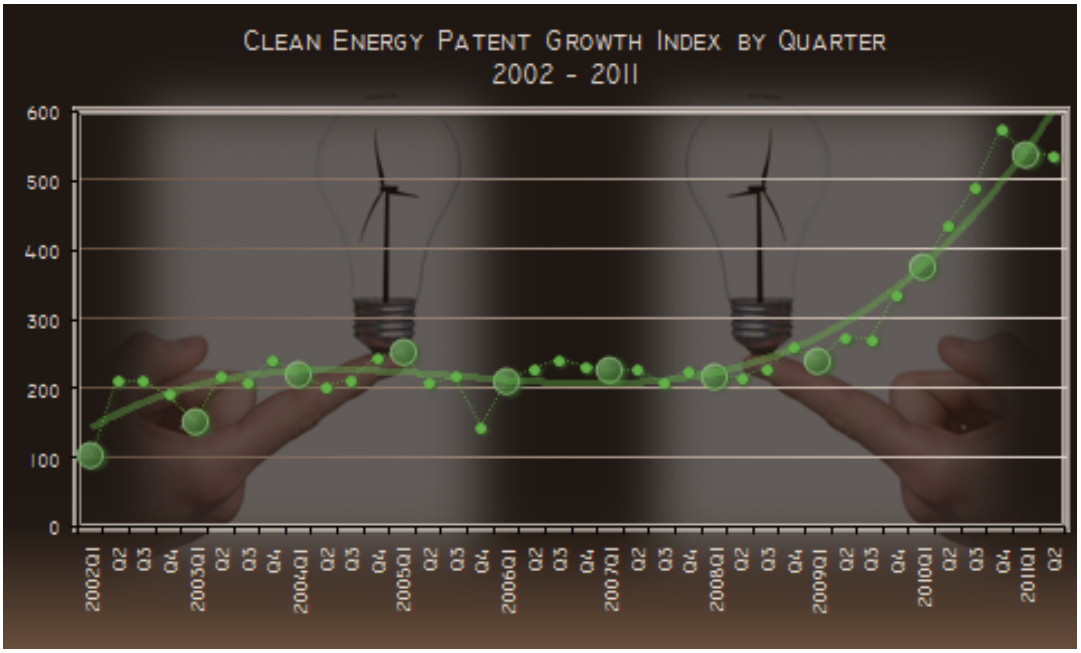

Michigan Patents by Quarter
2002 - 2011
60
50
40
30
20
10
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2

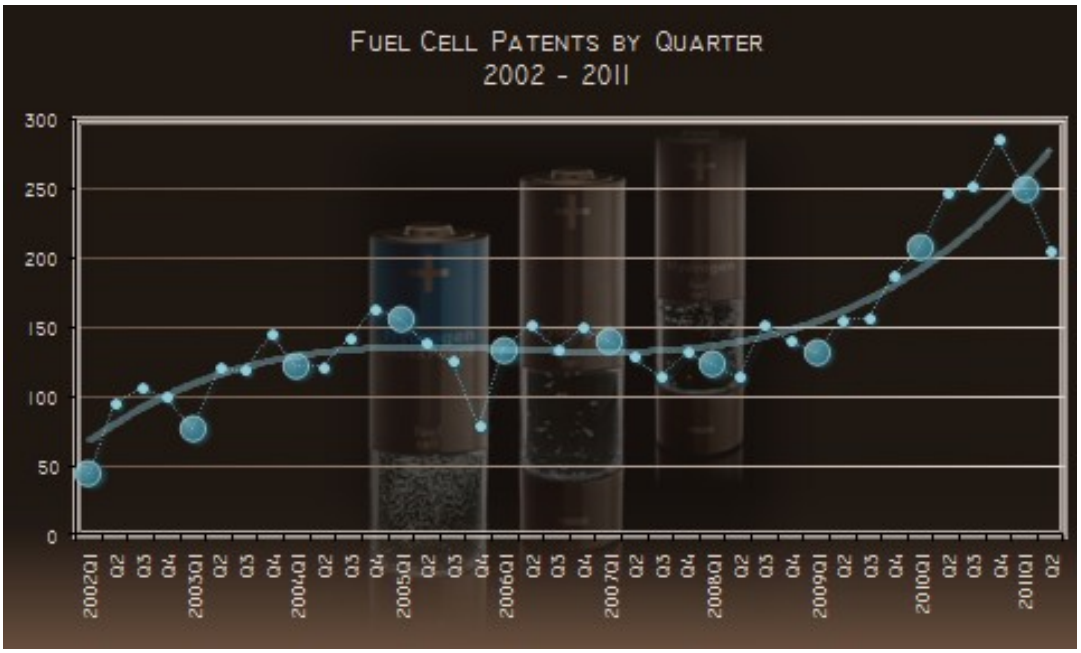

California Patents by Quarter
2002 - 2011
80
70
60
50
40
30
20
10
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2

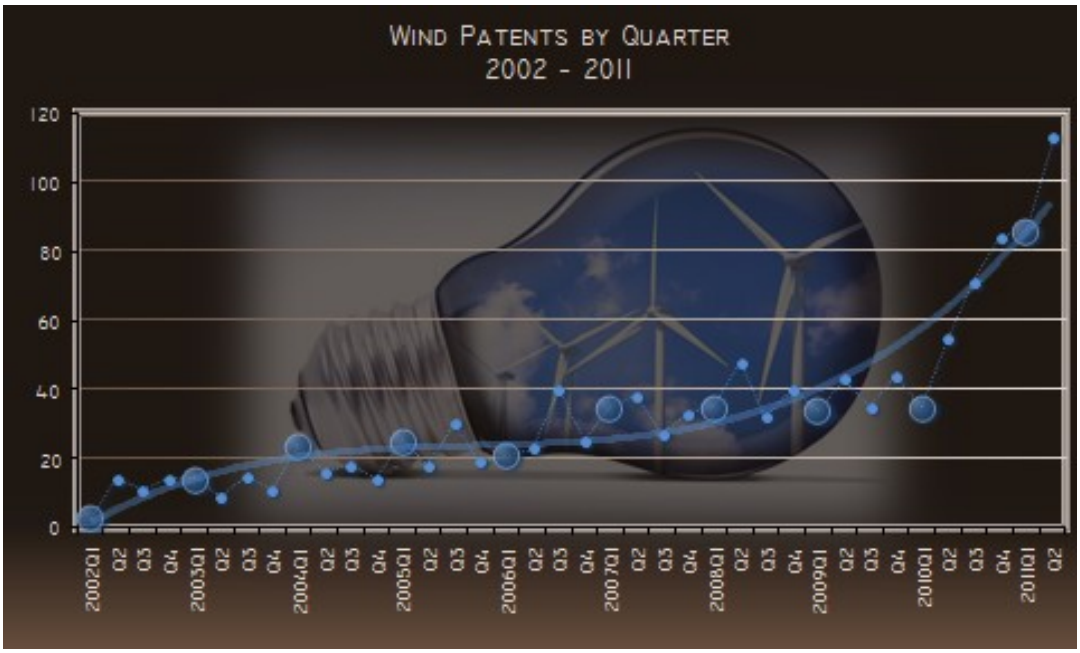

New York State Patents by Quarter
2002 - 2011
60
50
40
30
20
10
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2

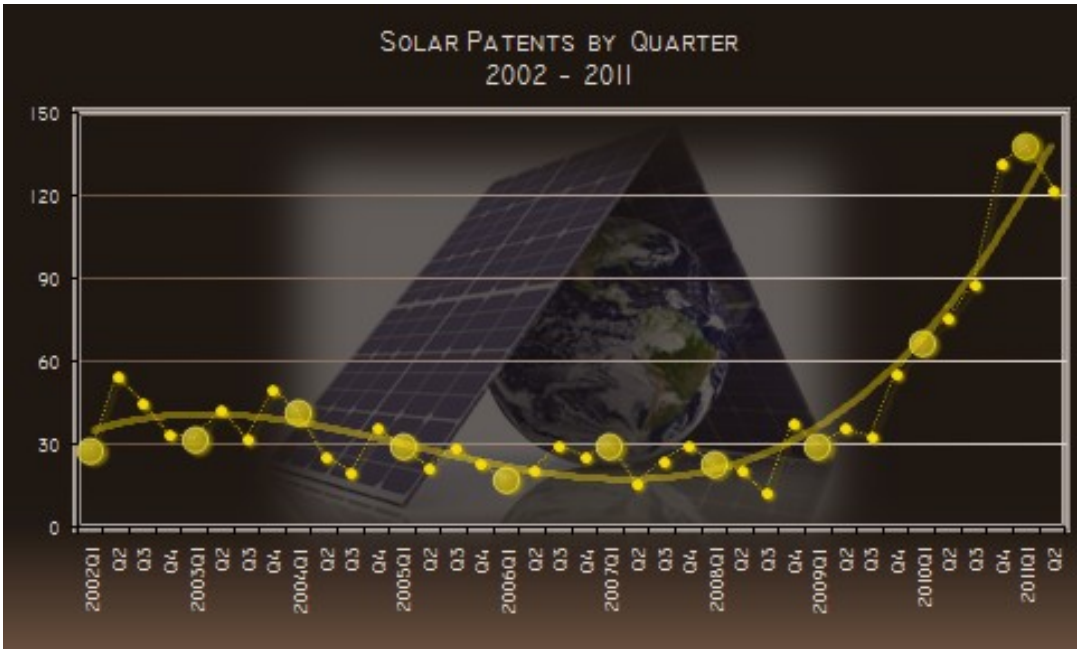

Connecticut Patents by Quarter
2002 - 2011
20
18
16
14
12
10
8
6
4
2
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2

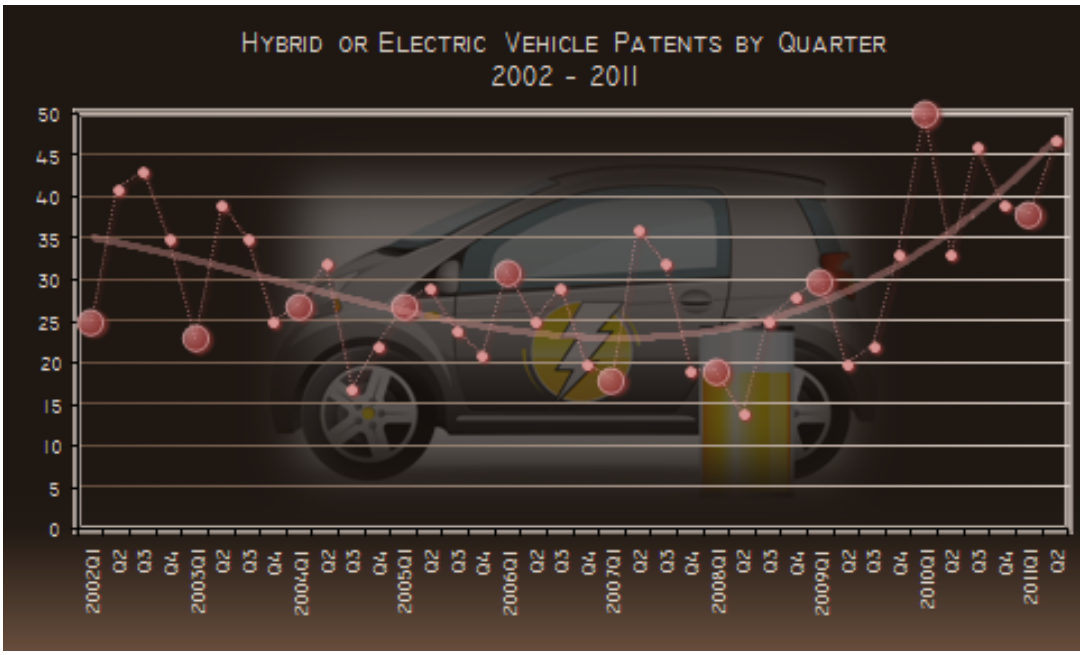
Trend lines by quarter through the second quarter of 2011 for the CEPGI and for each of the CEPGI components are depicted below:

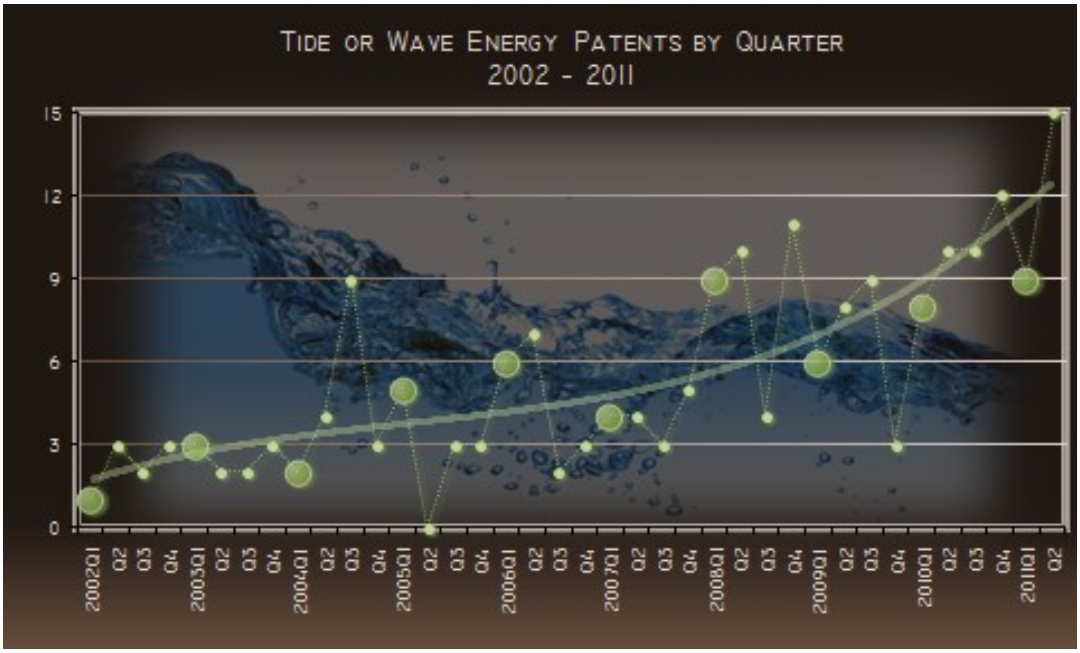


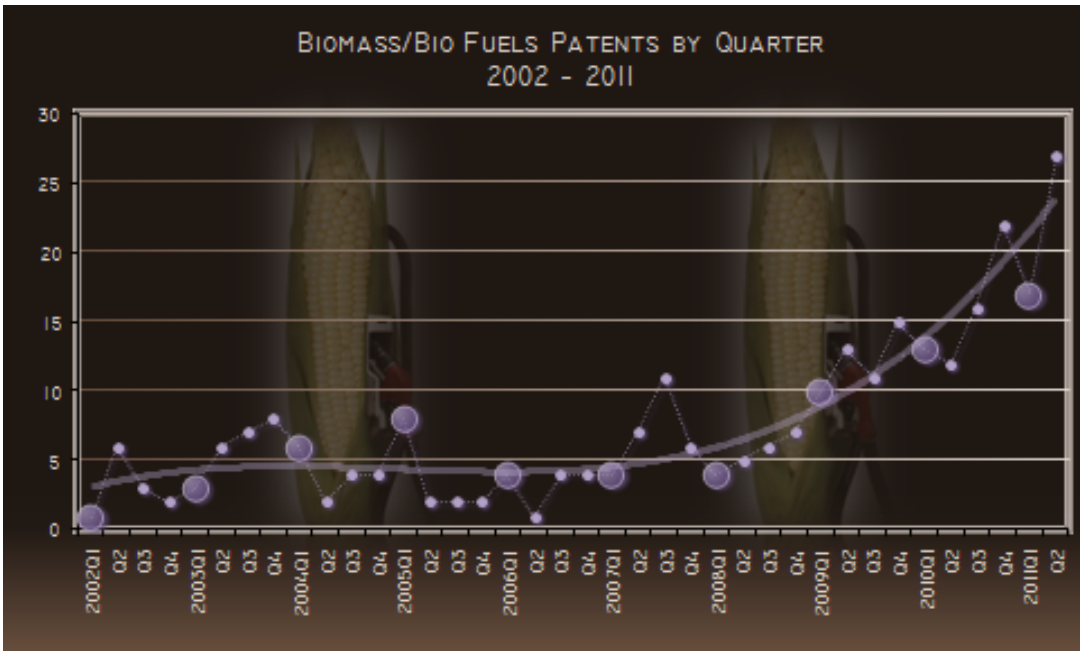


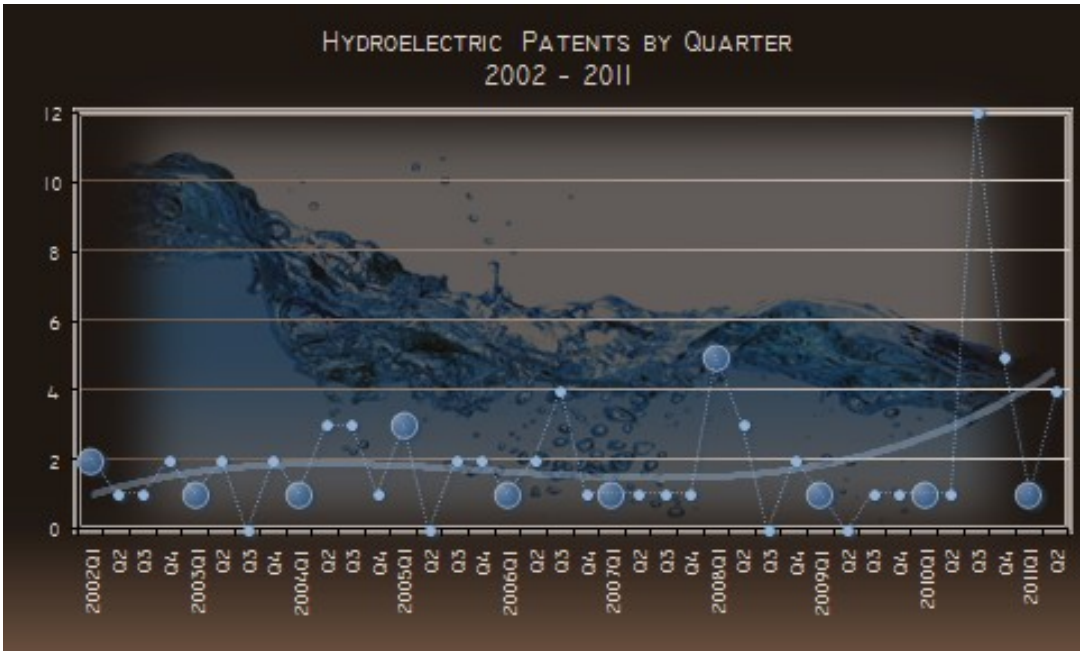

Wind Patents by Quarter
2002 - 2011
120
100
80
60
40
20
0
2002Q1
Q2
Q3
Q4
2003Q1
2004Q1
2005Q1
2006Q1
2007Q1
2008Q1
2009Q1
2010Q1
2011Q1

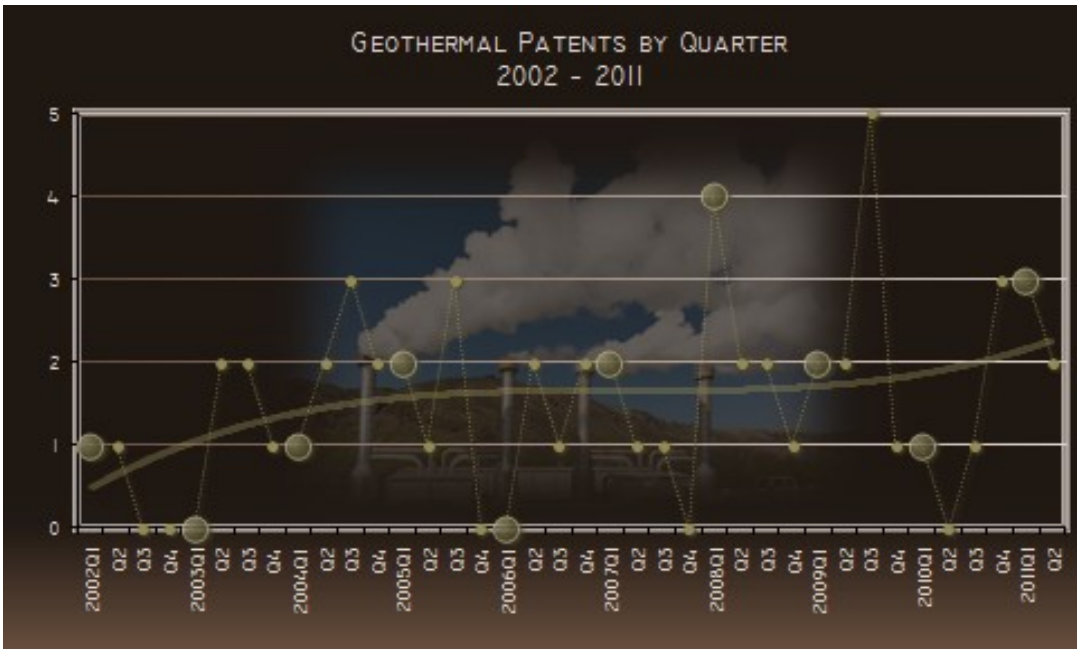

Solar Patents by Quarter
2002 - 2011
150
120
90
60
30
0
2002Q1
Q2
Q3
Q4
2003Q1
2004Q1
2005Q1
2006Q1
2007Q1
2008Q1
2009Q1
2010Q1
2011Q1

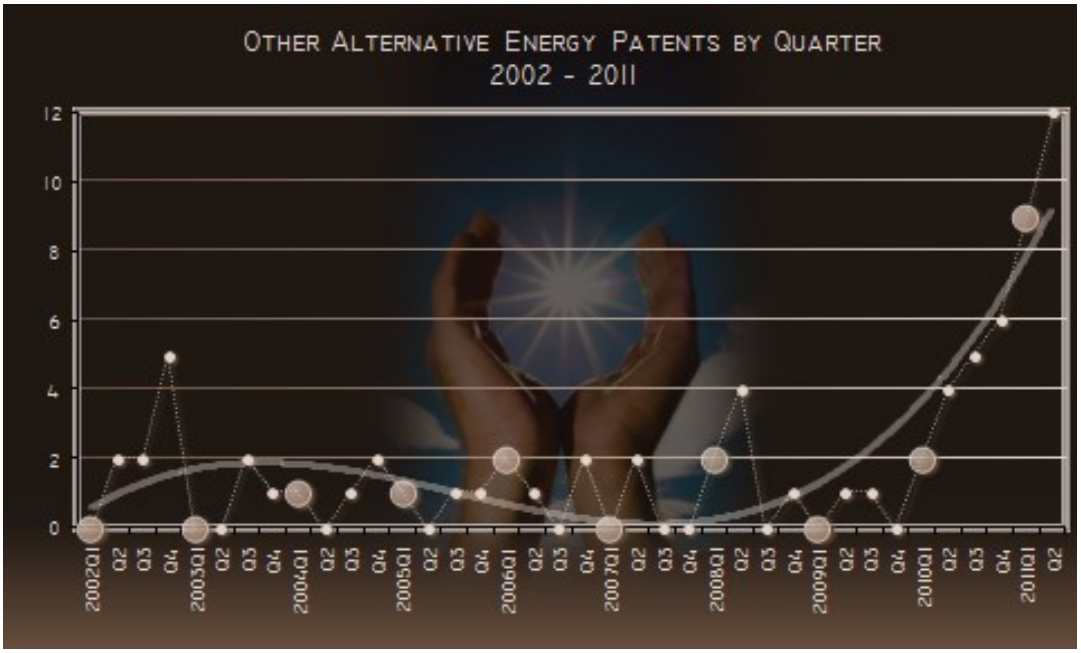

Hybrid or Electric Vehicle Patents by Quarter
2002 - 2011
50
45
40
35
30
25
20
15
10
5
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2


Tide or Wave Energy Patents by Quarter
2002 - 2011
15
12
9
6
3
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2

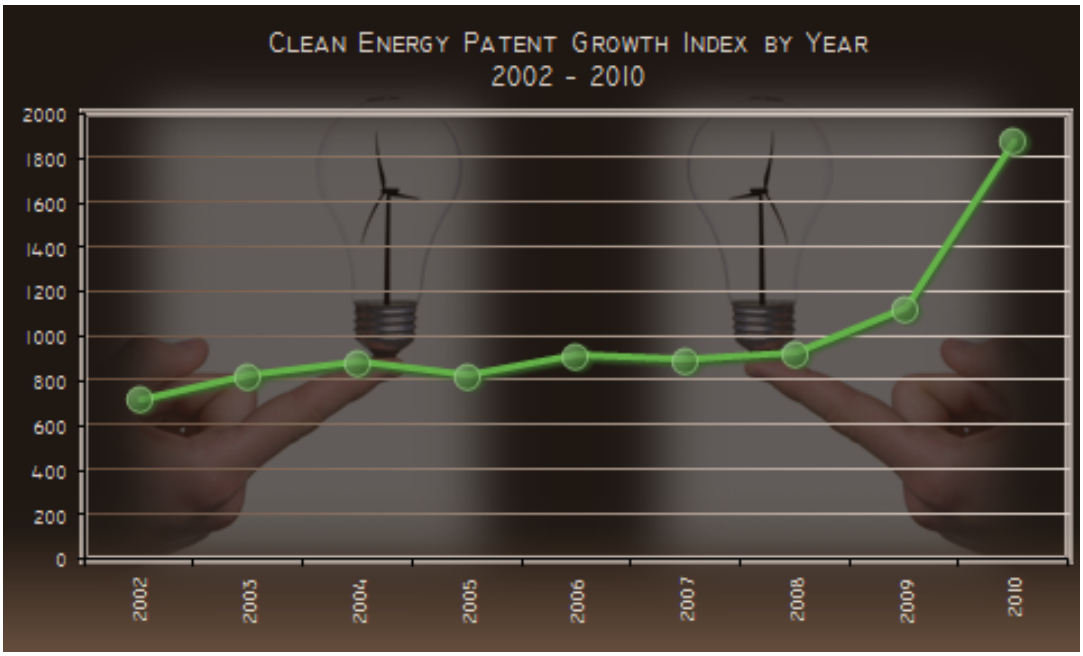

Biomass/Bio Fuels Patents by Quarter
2002 - 2011
30
25
20
15
10
5
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2


Hydroelectric Patents by Quarter
2002 - 2011
12
10
8
6
4
2
0
2002Q1
Q2
Q3
Q4
2003Q1
Q2
Q3
Q4
2004Q1
Q2
Q3
Q4
2005Q1
Q2
Q3
Q4
2006Q1
Q2
Q3
Q4
2007Q1
Q2
Q3
Q4
2008Q1
Q2
Q3
Q4
2009Q1
Q2
Q3
Q4
2010Q1
Q2
Q3
Q4
2011Q1
Q2


Geothermal Patents by Quarter
2002 - 2011
5
4
3
2
1
0
2002Q1
Q2
Q3
Q4
2003Q1
2004Q1
2005Q1
2006Q1
2007Q1
2008Q1
2009Q1
2010Q1
2011Q1


Other Alternative Energy Patents by Quarter
2002 - 2011
12
10
8
6
4
2
0
2002Q1
Q2
Q3
Q4
2003Q1
2004Q1
2005Q1
2006Q1
2007Q1
2008Q1
2009Q1
2010Q1
2011Q1

CEPGI yearly totals through 2010 are depicted below:



Please contact us at info@cleanenergypatentgrowthindex.com if you have any questions or would like us to email you when we have updated this page or the CEPGI.

CLEAN ENERGY PATENT GROWTH INDEX.COM

Heslin Rothenberg Farley & Mesiti P.C.

cleantechintellectualproperty.com