

# EnergyWatch



January 2014

<http://www.attardimarketing.com/energywatch/>  
[www.energywatchblog.com](http://www.energywatchblog.com)



***Something to Think About... The 'Smart' Revolution*** - The smart revolution will likely follow the breakneck pace of adoption set by predecessor innovations and perhaps will set entirely new records.

Now, does all of this talk of a smarter world teeming with billions of smart objects and trillions of dollars in economic impact seem too promising or simply preposterous? That's understandable but consider this: our TVs and computers and tablets and phones are all smart—and it has swiftly and entirely transformed the way our planet communicates, lives, works, and purchases. More to the point, we didn't have smartphones a mere seven years ago, and now we cannot fathom living without them.

The lighting industry wants to be smart too. It is estimated that the smart lighting market will grow 37% between 2013 and 2018. Smart lighting is an advance technology in lighting that makes use of intelligent lighting control systems to intelligently control light based on various parameters like occupancy, movement, color temperature, amount of natural/daylight etc. The smart lighting market is growing at a phenomenal pace and the main drivers for this growth are energy efficiency, development in electronics and sensor technology, eradication of inefficient lamps, favorable government policies and evolution of novel wireless technology. LED-based products which are based on wireless technology are being launched at a large scale as you know.

Smart Controls are user-defined or pre-configured automation tools accessed from a Mobile App. Before you walk into your office or home, each room can be lighted the way you choose, making safety and ambience yours to control. Lighting can be personalized just how you like it. Using Smart Controls you can create schedules to control the bulbs at set times of day, or put selected bulbs into a group so you can switch them on by a single press of a button. You can also set the brightness level of any bulb. When lighting legend Stan Angelo launched the Smart Bulb with his new company Smart Electric <http://smartelectric.com/> it's time to listen.

Soon enough, all the things that make up the world all around us will be smart. And, just as we now stand in awe at how we ever survived without our smartphones, all too shortly we will be positively mystified at how smart humans ever lived in a world once filled with so many dumb things.

In Tom Friedman's book "The World is Flat", he states: *we are now connecting all the knowledge centers on the planet together into a single global network, which – if politics and terrorism do not get in the way – it could usher in an amazing era of prosperity and innovation.*

## LED Issues to Watch...

- 1. *Smart Lighting Markets and Opportunities 2013*** - This report is NanoMarkets' latest analysis of the worldwide smart lighting market. It offers guidance on where new smart lighting business revenues will be generated over the next few years and beyond. The report shows how new value is being created in the lighting market by adding enhanced electronics and intelligent luminaires and how such product strategies will be able to build on the massive trend towards introducing LED lighting. Also included in this new report is an analysis of the smart lighting strategies of the firms that NanoMarkets expects to see as major players in the smart lighting space. For more information: [http://www.researchandmarkets.com/publication/mlo68qz/smart\\_lighting\\_markets\\_and\\_opportunities\\_2013](http://www.researchandmarkets.com/publication/mlo68qz/smart_lighting_markets_and_opportunities_2013)
- 2. *DOE's New CALiPER Snapshot Report on LED A Lamps*** - This report covers products listed as either A lamps or omnidirectional replacement lamps. The multitude of commercially available LED A lamps differ widely across a number of performance parameters – not just in their luminous intensity distribution, but in their energy efficiency, color quality, dimming, and compatibility with controls. Among the Snapshot's key findings:
  - The mean efficacy of all LED A lamps is now at 69 lm/W
  - 95 percent of those lamps meet the current ENERGY STAR efficacy criterion
  - There's still wide variation for individual products; e.g., those with lumen output equivalent to a 60W incandescent lamp range from less than 60 lm/W to nearly 90 lm/W.
  - Several LED A lamps are now available with lumen output equivalent to traditional 75W and 100W incandescent A lamps.
  - Approximately 91 percent have a CRI in the 80s, and a CCT of either 2700 K or 3000 K[http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/snapshot2013\\_a-lamp.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/snapshot2013_a-lamp.pdf)  
To download a PDF of all Snapshot reports, visit [www.ssl.energy.gov/ledlightingfacts.html](http://www.ssl.energy.gov/ledlightingfacts.html)
- 3. *DOE Announces Funding Opportunity for Solid-State Lighting R&D*** - The U.S. DOE announced a solid-state lighting (SSL) R&D funding opportunity on December 6, 2013. Under this funding opportunity (DE-FOA-0000973, “Solid-State Lighting Advanced Technologies R&D – 2014”), a total of **up to \$10 million in funding** is directed toward all three existing DOE SSL R&D program areas: [http://www1.eere.energy.gov/buildings/ssl/foa\\_12-2013.html](http://www1.eere.energy.gov/buildings/ssl/foa_12-2013.html)
  - *Core Technology Research*
  - *Product Development*
  - *U.S. Manufacturing*DOE will select up to 10 projects. Concept papers are due by January 8, 2014, and applications are due by February 24, 2014. For more information, visit <https://eere-exchange.energy.gov/>.
- 4. *DOE Awards Clean-Energy Manufacturing Tax Credits to Two SSL Manufacturers*** - Two SSL manufacturers are among the 12 businesses that collectively will receive a total of more than \$150 million in clean-energy tax credits: The SSL awardees:
  - *OSRAM SYLVANIA Inc.* has developed energy-efficient, cutting-edge single-point LED systems for automotive low/high beam projectors, reducing wattages by approximately 70 percent. The tax credit allows the expansion of production capacity.
  - *Cree, Inc.* will expand its manufacturing footprint, including the purchase, installation, and proprietary modification of new machinery that will allow the company to produce 304 million next-generation LED lighting systems.More information on these awards is available on the [DOE website](#)



5. **DOE Publishes Report on Accelerated Life Testing of SSL Luminaires** - The U.S. DOE has published the findings of a new study utilizing a highly accelerated life-test method (called the “hammer test”) intended to produce failures in SSL luminaires in a reasonable test period, with the goal of providing insight into potential failure modes. Entitled *Hammer Testing Findings for Solid-State Lighting Luminaires*, the report was prepared by RTI International for DOE's LED Systems Reliability Consortium. The report is available at [www.ssl.energy.gov/tech\\_reports.html](http://www.ssl.energy.gov/tech_reports.html)
6. **DOE Issues Guidelines for Conducting and Sample Test Results for Highly Accelerated Life Tests Known as "Hammer Testing"** - While lifetime in LEDs is how long an LED lasts until it emits no light, it is the useful lifetime that is important. A number of organizations have come out with procedures that give a good estimate of average lifetime based on a test of lumen maintenance. This is used to estimate useful lifetime usually referred to LM-79. The DOE has published the detailed protocol for "Hammer Testing" luminaires along with an explanation of their usefulness and rationale. <http://www.sslighting.net/news/?id=123669#top>
7. **Opportunities for the LED Luminaire Supply Chain 2012-2018** - LEDs are being increasingly used across a wide range of applications including portable electronics, TV backlighting, solid state lighting and also in automotive. This is an evolving market as LED efficacy continues to improve and the packaging and assembly market has to adapt accordingly. The report reviews the developments driving the future requirements for thermal interface and other relevant materials in the assembly and packaging supply chain and analyses the cost performance benefits of the various packaging technologies to determine the potential opportunities for the supply chain over the next five years. [http://www.researchandmarkets.com/publication/mejqz14/opportunities\\_for\\_the\\_led\\_luminaire\\_supply\\_ch](http://www.researchandmarkets.com/publication/mejqz14/opportunities_for_the_led_luminaire_supply_ch)
8. **BD+C Publishes Special LED Section by Craig DiLouie** - BUILDING DESIGN + CONSTRUCTION recently published a special LED section in its November issue. The special section talks about the relationship between LED technology and sustainability building practices, which was a general theme for the issue, and presents several projects that exemplify good design using LED lighting. <http://editiondigital.net/publication/?i=182550&p=83>
9. **LED Street Lighting the Newest Challenge to Old Utility Business Models** - In most cities around the country, the local electric distribution company provides overhead street lighting as a basic service at a flat monthly rate per light, which includes the light itself, maintenance, and electricity. Therein lies the rub—regulated utilities often have little incentive to invest in more efficient streetlights, which offer a reliable, consistent, and often lucrative revenue stream that comes at a time of day (or night) when demand is low. [http://blog.rmi.org/blog\\_2013\\_11\\_26\\_Street\\_Fight](http://blog.rmi.org/blog_2013_11_26_Street_Fight)
10. **Obstruction Lighting - Global Strategic Business Report 2013** - Global market for obstruction lighting is expected to remain buoyant supported by the growing need for aircraft warning lights against a backdrop of rise in construction of tall structures such as skyscrapers, telecom towers, refineries, and growing number of wind turbines and wind farms across the world. The market also stands to gain from the replacement of traditional incandescent fixtures with energy efficient LED obstruction lights that consume lesser energy and are easy to install. Advanced fixtures featuring built-in power module, GPS Synchronizer and controller are also gaining prominence in the market. Annual estimates and forecasts are provided for the period 2010 through 2018. More information at: [http://www.researchandmarkets.com/publication/mdvz9j6/obstruction\\_lighting\\_global\\_strategic\\_busin](http://www.researchandmarkets.com/publication/mdvz9j6/obstruction_lighting_global_strategic_busin)



**11. LED Lighting Facts** - DOE's LED Lighting Facts® program showcases LED products for general illumination from manufacturers who commit to testing products and reporting performance results according to industry standards. For lighting buyers, designers, and energy efficiency programs, the program provides information essential to evaluating SSL products. Central to the program is the LED Lighting Facts label, which presents independently verified performance data in a simple summary that facilitates accurate comparison between products. The data is measured by the industry standard for testing photometric performance, IES LM-79. <http://www.lightingfacts.com/>



**12. LED A-line Replacement Lamps Begin Making Inroads into the Market** - NEMA's index for LED A-line replacement lamps increased for the second consecutive quarter in Q3 2013. Shipments during the quarter registered a gain of 71.9 percent compared to the previous quarter. Shipments rose 60.2 percent on a year-over-year basis. Halogen A-line lamp shipments improved as well, eclipsing the level during the same period last year by 140.7 percent. Sales of incandescent A-line lamps returned to positive territory during the quarter, following declines in the previous three quarters, advancing by 16.2 percent. However, the index declined 14.8 percent versus Q3 2012. The index for CFLs dipped on both a quarterly and annual basis, declining by 2.8 and 11.2 percent, respectively. Despite their recent rapid gains, LED A-line lamps constitute just a tiny fraction of the market: 0.7 percent during the quarter. Their share increased 20 basis points to Shares of halogen and incandescent A-line lamps also grew, reaching 9.6 percent and 55.1 percent, respectively. Meanwhile, CFLs gave back 4.5 percentage points, falling to a share of 34.6 percent. <http://www.nema.org/News/Pages/LED-A-line-Replacement-Lamps-Begin-Making-Inroads-into-the-Market.aspx>

**13. Top 20 LEDs Magazine Stories of 2013** - <http://ledsmagazine.com/news/10/12/14>

- 1) Cree 60W LED replacement bulb review and tear down
- 2) Cree and Philips take divergent approaches to sub-\$15 LED lamps
- 3) Packaged LED market resumes moderate growth while the SSL market will enjoy 12% CAGR through 2017 (MAGAZINE)
- 4) What's inside the 3M/Walmart 60W LED replacement bulb?
- 5) Understand RGB LED mixing ratios to realize optimal color in signs and displays (MAGAZINE)
- 6) What's inside the Walmart 60W-replacement LED bulb?
- 7) Varying approaches to LED retrofit lamps show no limit (MAGAZINE)
- 8) Proper driver design optimizes LED lighting (MAGAZINE)
- 9) Understand color science to maximize success with LEDs – part 4 (MAGAZINE)
- 10) Philips Lumileds announces bare LED die and new multi-emitter components at SIL
- 11) Manufacturing LEDs on large diameter substrates: What's the holdup? (MAGAZINE)
- 12) Samsung hits 160-lm/W efficacy in new mid-power LEDs
- 13) LED lighting suffers bad press in Van Gogh paint-degradation study
- 14) Sharp announces 100W COB LED delivering 14,000 lm
- 15) Samsung touts ZigBee-based smart lighting at LFI, launches new packaged LEDs and modules
- 16) Myth busting as it relates to LED tubes (MAGAZINE)
- 17) Cree announces brighter and bigger COB LED arrays
- 18) Cree, Lumileds, and Nichia spar on LED future at The LED Show
- 19) Executives chart future of LEDs and lighting at Lightfair (MAGAZINE)
- 20) Lighting industry progresses on DC-power grids that pair well with LEDs (MAGAZINE)



- 14. Energy Efficient Lighting Systems, Application Market Worth \$53.5 Billion by 2015** - The global solid state and other energy efficient lighting systems market is expected to grow from \$28,248.7 million in 2010 to \$53,469.5 million in 2015, at an estimated CAGR of 9.7% from 2010 to 2015. The U.S offers a lucrative market to solid state and energy efficient lighting manufacturers as it is to grow at a CAGR of 10.7% from 2010 to 2015. The Asia Pacific is the largest market in the world and has 44.7% share of the global market revenues. Europe comes second in revenues and has the second highest CAGR. <http://www.international.to>
- 15. EW's LED Product Picks of the Week** - In this week's *Electrical Wholesaling's* Product Picks we highlight some of the more interesting LED products that hit the market recently. Making the *EW* Product Picks for this week are products from GE Lighting, McGraw-Edison/Cooper Lighting/Eaton, Cree, Lutron, Kichler Lighting and Modern Forms/WAC Lighting. <http://ewweb.com/gallery/ews-led-product-picks-week-12112013>
- 16. Lighting Research Center Releases Report on Plasma Lighting** - Plasma lighting systems, also known as electrodeless high-intensity discharge (HID), light-emitting plasma (LEP), high-efficiency plasma (HEP), or advanced plasma lighting (APL) are emerging in the marketplace primarily for high-bay and outdoor lighting applications. This National Lighting Product Information Program (NLPIP) report, *Lighting Answers: Plasma Lighting Systems*, helps lighting specifiers to understand plasma lighting systems and their performance characteristics, including light output, system efficacy, color characteristics, lumen maintenance, and rated life. This report also provides information about operating orientation, dimming, warm-up, and restrike times, electromagnetic interference and compatibility (EMI/EMC), and ultraviolet (UV) radiation. <http://www.lrc.rpi.edu/nlpip/publicationDetails.asp?id=936&type=2>
- 17. LED Phosphor Intellectual Property (IP) LED Phosphors and Down-Converters Patent Investigation Report 2013** - Phosphor IP is a major force in the LED industry. With more than 40 litigation cases, it is also used as leverage by companies which have negotiated close to 70 licensing and supply agreements to date. The report identifies the key players with the most relevant IP. It provides an overview of phosphor related IP litigation and licensing, that has shaped the industry since the mid-90s, as well as a detailed analysis for the major players involved. For more info: [http://www.researchandmarkets.com/publication/m3ikev4/led\\_phosphor\\_intellectual\\_property\\_ip\\_led\\_p](http://www.researchandmarkets.com/publication/m3ikev4/led_phosphor_intellectual_property_ip_led_p)
- 18. Cree's 60-Watt Replacement LED Is the Bulb to Beat** - Bulb technology has taken some big strides in recent years, leading to higher quality lights at increasingly affordable prices. Our current favorite among this new generation is the Cree 60-watt Replacement LED Bulb. With a light output of 800 lumens coming from just 9.5 watts of energy usage, the Cree bulb is a legitimate replacement for 60-watt incandescent bulbs, and one of the most efficient household LEDs currently available. [http://reviews.cnet.com/smart-home/cree-60-watt-replacement/4505-9788\\_7-35833107.html](http://reviews.cnet.com/smart-home/cree-60-watt-replacement/4505-9788_7-35833107.html)
- 19. Cree Ushers in the End of the Incandescent Light Bulb** - Home Depot has been selling 60w and 40w replacement Cree LED bulbs for about \$10. Now Cree has reached another milestone with the introduction of a 75-watt replacement bulb. At \$24 per bulb, it's going to take a while to catch on, but the thing uses just 13.5 watts to produce 1100 lumens of light. And it is cheaper than a competing offering from Phillips at \$30. Shares in Cree have been on a roller coaster ride in recent months, but are up nearly 350% in five years, and 79% in the past year. 12/09 Forbes



## National Energy Issues to Watch...

**20. Schools Face a Potential PCBs Threat from Dated Lighting Fixtures** -EPA released a management guide for PCB-containing fluorescent lighting fixtures. School administrators and maintenance personnel should take time to inspect fluorescent lighting fixtures as some may have ballasts that contain polychlorinated biphenyls (PCBs). The EPA has released information that provides guidance on what to do if this is the case. <http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/ballasts.htm>

**21. Inefficient Incandescent Light-Bulb Phase-Out Complete 1/1/2014** - The National Lighting Bureau, Silver Spring, Md., is marking the end of the iconic incandescent A-lamp, which will no longer be manufactured after Dec. 31, 2013 when the 60W and 40W versions go off the market. About 8.2 billion light bulbs and tubes – known collectively as “lamps” – are installed in the United States. Of these, some 5.8 billion are located in homes and other residential facilities and 2.1 billion are installed in commercial buildings. [http://nlb.org/index.cfm?cdid=10988&pid=10213&&cl=article\\_3](http://nlb.org/index.cfm?cdid=10988&pid=10213&&cl=article_3)



**22. New Law Leads to Light Bulb Hoarders** - As of Jan. 1, federal legislation will ban the manufacture of bulbs rated at 40, 60, 75, and 100 watts. Even though the manufacturing of 40-watt and higher bulbs will shut down, stores will be able to sell existing inventories that could last months, and specialized or lower wattage bulbs will still be permitted. 12/06 The Beaumont Enterprise

**23. Traditional Incandescent Bulbs - 2013 Global Strategic Business Report** - This report analyzes the worldwide markets for Traditional Incandescent Bulbs in US\$ Million. Annual estimates and forecasts are provided for the period 2010 through 2018. Regulations supporting phase out of lesser efficient incandescent bulbs are in place in all key countries with majority of them already carving out roadmaps for complete phase out over the next few years. For more information, click on: [http://www.researchandmarkets.com/publication/mvv2z4a/traditional\\_incandescent\\_bulbs\\_global\\_strat](http://www.researchandmarkets.com/publication/mvv2z4a/traditional_incandescent_bulbs_global_strat)

**24. USA High Efficiency Lighting Market Worth \$11.7B by 2017** - The US market for high efficiency lighting continues to adjust to the provisions of the Energy Independence and Security Act (EISA) of 2007, which is leading to a phase-out of incandescent lamps and supporting demand for products such as LEDs and CFLs. Technological innovations that are improving the performance of LEDs and many types of high efficiency lamps are also supporting demand. The market for energy efficient linear fluorescent lamps will also register strong growth, supported by heightened penetration of T5 and T8 lamps, in place of less efficient T12 products. <http://www.ciol.com/ciol/news/202406/us-efficiency-lighting-market-worth-usd117-bn-2017-report>

**25. ASHRAE/IES Publish 2013 Energy Standard 90.1-2013** - Energy Standard for Buildings Except Low-Rise Residential Buildings, incorporates 110 addenda, reflecting changes made through the public review process. Appendix F gives brief descriptions and publication dates of the addenda to 90.1-2010 reflected in this new edition. The most significant lighting changes include improvements to daylighting and daylighting controls, space-by-space lighting power density limits, thresholds for toplighting and revised controls requirements and format. <http://www.ies.org/store/product/energy-standard-for-buildings-brexcept-lowrise-residential-building-1307.cfm>



- 26. Fluorescent Bulbs - 2013 Global Strategic Business Report** - This report analyzes the worldwide markets for Fluorescent Bulbs in US\$ Million. Annual estimates and forecasts are provided for the period 2010 through 2018. The rapid penetration of LEDs due to its rising efficiency and declining price is forecast to dent prospects of other energy efficient replacements of incandescents over the coming years. For the present however, fluorescent lamps, including linear fluorescent and CFLs, dominate the global lighting market in value terms. The report profiles 77 companies...click on: [http://www.researchandmarkets.com/publication/mb441ak/fluorescent\\_bulbs\\_global\\_strategic\\_business](http://www.researchandmarkets.com/publication/mb441ak/fluorescent_bulbs_global_strategic_business)
- 27. Demand for Lighting Equipment Slips During Third Quarter** - NEMA's Lighting Systems Index subsided from a five year high posted in the previous quarter, decreasing by 1.6 percent on a quarter-to-quarter (q/q) basis during 2013Q3. However, demand remains robust compared to a year ago. On a year-over-year basis, lighting equipment shipments improved for the fourth consecutive quarter, increasing by 4.7 percent. Miniature lamps were the only component of the index in positive territory, while fixtures, emergency lighting, large lamps and ballasts declined q/q. [www.nema.org](http://www.nema.org)
- 28. NEMA Publishes ANSI\_ANSLG C78.81-2013 American National Standard for Electric Lamps—Double-Capped Fluorescent Lamps—Dimensional and Electrical Characters** - ANSI\_ANSLG C78.81 details the physical and electrical characteristics of the principal types of fluorescent lamps intended for application on conventional line frequency circuits and electronic high-frequency circuits. This revision includes the addition of four new fluorescent lamp data sheets for the following lamps: <http://www.nema.org>
- 15-Watt, 18-Inch T8, Fluorescent Lamp (7881-ANSI-1031-1)
  - 15-Watt, 24-Inch T8, Fluorescent Lamp (7881-ANSI-1032-1)
  - 21-Watt, 36-Inch T8, Fluorescent Lamp (7881-ANSI-1033-1)
  - 54-Watt, 96-Inch T8, Single Pin Instant Start Fluorescent Lamp (7881-ANSI-3015-1)
- 29. NEMA Publishes ANSI\_ANSLG C78.901-2013 American National Standard for Electric Lamps—Single-Based Fluorescent Lamps—Dimensional and Electrical Characteristics** - ANSI\_ANSLG C78.901 sets forth the physical and electrical characteristics required to assure interchangeability and to assist in the proper application of single-based fluorescent lamps. Single-based compact fluorescent lamps, both self-supporting and those requiring auxiliary support, are specified. Information for luminaire design is given for certain lamp types. <http://www.nema.org/>
- 30. NEMA BL 3-2013 Dimming Ballast Energy Performance** - Provides a methodology for applying existing test methods for program start ballasts to fluorescent dimming ballasts and provides a way to calculate BLE for fluorescent dimming ballasts. This standard offers BLE limits for ballasts of common four-foot bipin lamps, such as T8 and T5 lamps, that are not covered by the most recent Federal Rulemaking. <http://www.nema.org/Standards/Pages/Dimming-Ballast-Energy-Performance.aspx>
- 31. NEMA Publishes NEMA LSD 67-2013 Low Mercury Controllable Fluorescent Systems** - Discusses technical tradeoffs associated with reduced mercury dosing in fluorescent lighting systems and their environmental impacts. NEMA members are committed to providing fluorescent lighting systems that allow lamps to be controlled to save energy, while reducing the mercury content in the lamps to the extent that it is technically possible without sacrificing functionality. <http://www.nema.org/Standards/Pages/Low-Mercury-Controllable-Fluorescent-Systems.aspx>



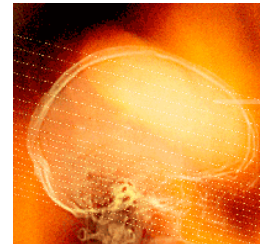
32. **Lighting Controls Handbook by Craig DiLouie** - Intended for energy managers, electrical engineers, building managers, lighting designers, consultants, and other electrical professionals, this book provides a practical description of major lighting controls types and how to apply them. It's a comprehensive step-by-step educational tour of lighting automation technology and its practical design and application, with useful discussion about the purpose and benefits of lighting controls, emphasizing the achieving of relevant energy savings, as well as support of occupant visual needs and preferences. <http://ecmweb.com/lighting-controls-handbook>



33. **DOE Excludes R20 Short Lamps from Coverage Under the EPCA Energy Conservation Standards** - DOE is granting the NEMA's petition specifically, to exclude the lamp at issue, a 100-watt R20 short (having a maximum overall length of 3 and 5/8 or 3.625 inches) IRL ("R20 short lamp"). <http://www.regulations.gov/#!docketDetail;D=EERE-2010-BT-PET-0047>

34. **Luminaire Manufacturing Industry Valued at \$10 Billion** - IBISWorld's Lighting Fixtures Manufacturing Market Research Report (NAICS 33512), published in October 2013, provides an analysis of the commercial and residential luminaire industry. Valuing the industry at \$10 billion in sales, the report forecasts growth due to healthy prospects for residential construction and government intervention driving demand for energy-efficient lighting. The four largest manufacturers represent about 45% of industry revenue. <http://www.lightnowblog.com>

35. **This is Your Brain on Lighting** - "Cognitive & Emotional Responses to Lighting: THIS IS YOUR BRAIN ON LIGHTING" is an excellent whitepaper about psychological responses to light (and lighting), written by Robert G. Davis, PhD, FIES, Director, Product Innovation & Marketing for Litecontrol. The whitepaper covers what we currently know and don't know, summarizing a wide range of research. <http://www.litecontrol.com/emotional-responses-to-lighting>



36. **USGBC Certifies 20,000th LEED Commercial Project** - The 20,000th LEED certification for a commercial building has been awarded to the Green Mountain Coffee Roasters plant in Knoxville, Tennessee, under LEED for Commercial Interiors. The Knoxville plant is the seventh LEED-certified facility for Green Mountain, based in Waterbury, VT. <http://www.usgbc.org/articles/us-green-building-council-certifies-20000th-leed-commercial-project>

37. **WattStopper Publishes New Product Selection Guide (PSG)** - A comprehensive catalog of energy-efficient lighting controls and services that help enable a net zero future. The PSG is available in print and as an eBook, and for the first time the content is also available as a mobile app. <http://lightingcontrolsassociation.org/wattstopper-publishes-new-product-selection-guide/>

38. **ENERGY STAR Lighting Road Mapping Meeting January 30, 2014** The U.S. EPA and NEMA welcome lighting stakeholders to a rescheduled initial road mapping discussion on **January 30, 2014 from 1:00 – 5:00PM EST at NEMA headquarters in Rosslyn, VA.** This meeting is expected to be the first in a series intended to facilitate engagement on ENERGY STAR lighting topics. A draft agenda is attached, and RSVP via email by **December 30<sup>th</sup>** to Alex Boesenberg at [Alex.Boesenberg@nema.org](mailto:Alex.Boesenberg@nema.org)





**39. Call for Papers – 32nd West Coast Energy Management Congress -** The Association of Energy Engineers is inviting those interested to submit an abstract for consideration to speak at the 32nd West Coast Energy Management Congress (EMC), being held June 25-26, 2014, at the Washington State Trade & Convention Center in Seattle. <http://www.energyevent.com>  
 To submit an abstract: [www.aeecenter.org/emcabstract](http://www.aeecenter.org/emcabstract)

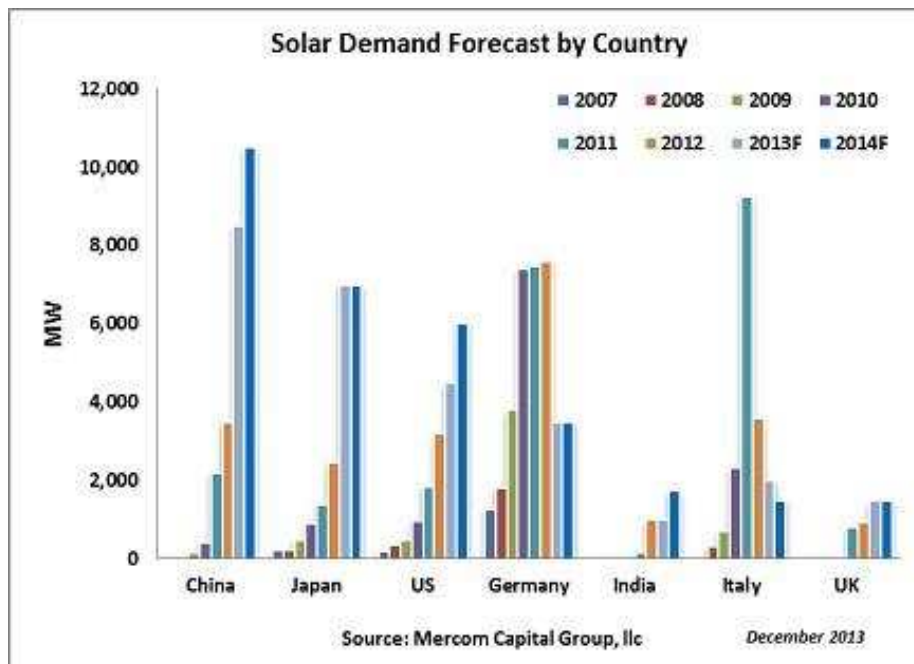


**40. Electricity Costs and Economics Report -** Electricity is the most important energy source in the modern age but also the most ephemeral, a source that must be consumed as fast as it is produced. This makes modeling the economics of electricity production more complex than carrying out the same exercise for other products. This report examines the optimum balance between renewable and conventional power generation in a carbon-constrained world. Available at: <http://ogjresearch.stores.yahoo.net/electricity-costs-and-economics.html>

**41. Ford to Debut C-Max Solar Concept Car at Consumer Electronics Show -** Ford plans to unveil at this month's International CES gadget show a solar-powered concept car that offers the same performance as a plug-in hybrid but without the need for a plug. The C-MAX Solar Energi Concept car uses a gasoline engine combined with a gizmo that acts like a magnifying glass to concentrate the sun's rays on the vehicle's roof-mounted solar panels. The automaker says the vehicle's estimated combined city-highway mileage is 100 mpg. 1/02 LA Times



**42. Solar May Reach 49 Gigawatts in 2014 -** <http://www.renewableenergyworld.com/>

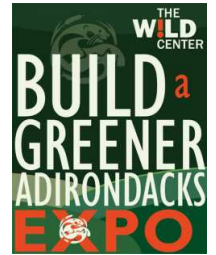


## State Energy Issues to Watch...

**43. Colorful Start to 2014 Planned at Times Square** - The sign, made by lighting company Philips, will light up the "14" in multiple colors using 207 LED bulbs which have more than 16 million color options each. A global TV audience of over one billion viewers is expected to watch this year's New Year's Eve Times Square celebration. <http://www.cbsnews.com/>



**44. Build a Greener Adirondacks (BAGA)** - The older housing stock and cold winters in the Adirondacks mean that even more energy is wasted in this region than in others. The Build a Greener Adirondacks (BAGA) conference and workshops provide information for local contractors, builders, code officers and others in the building trade to learn more about how new building technologies and ideas can erase energy waste for home owners and allow builders to offer real options for their clients. The BAGA conference on January 30th and GPRO training on January 29th are great places to join your fellow building professionals in learning what works in the Adirondacks. <http://www.wildcenter.org/baga>



**45. PSNH Downplays City Savings of Converting to LED Street Lights** - Public Service of New Hampshire is downplaying the savings that Manchester might realize by converting to efficient LED street lights. The city has nearly 9,000 street lights and is by far PSNH's largest municipal customer. Its electric bill to PSNH to keep the street lights on is approximately \$1.4 million annually. But under the tariff structure proposed by PSNH the city it would only see an overall estimated reduction in costs of 8 percent. This is because the city already uses HPS lights, which are considered relatively efficient, consuming 50-70 watts; LEDs consume 40 watts. Under PSNH's proposal, communities would bear all the costs associated with the purchase and installation of lights. At a cost of \$300 per light, the purchase of 9,000 lights could cost nearly \$3 million. 12/24 The New Hampshire Union Leader

**46. Duke Energy Offers Holiday Lighting Calculator, Information to Help Save Energy and Money** - Customers can estimate their holiday lighting costs using a calculator on Duke Energy's website: [www.duke-energy.com/lightscalculator](http://www.duke-energy.com/lightscalculator) 12/02 PRNewswire

**47. Utility Donating Light Bulbs to WVA Pantries** - West Virginia food pantries are getting a non-edible donation from Appalachian Power. The Huntington Area Food Bank will receive 44,000 energy-saving compact fluorescent light bulbs from the utility Wednesday. The bulbs will be distributed in packages of four to 11,000 West Virginia families through multiple food pantries. The partnership is part of the utility's GridSMART energy efficiency initiative, which helps inform people on ways to manage energy use, save money and protect the environment. 12/03 AP

**48. FPL Installs More Than 150 State-of-the-Art Streetlights to Help Brighten West Palm Beach** - Florida Power & Light Company (FPL) today completed its first commercial energy-efficient streetlight installation project. Since October, FPL has installed 166 light-emitting diode (LED) streetlights in the City of West Palm Beach's Coleman Park neighborhood, located just north of downtown. Through 2014, the city plans to convert approximately 1,100 additional streetlights to LED technology in various neighborhoods. 12/02 PRNewswire



- 49. 2014 DOE Solid-State Lighting R&D Workshop January 28–30, 2014 • Tampa, Florida** - Join DOE at the 11th annual SSL R&D workshop. This gathering of SSL R&D professionals is where industry, government, and academia meet to learn, share, and shape the future of lighting. View the workshop agenda: <http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/rdworkshop14-agenda.pdf> Register at: <http://www1.eere.energy.gov/buildings/ssl/rdworkshop14.html>
- 50. Michigan's Consumers Energy Efficiently Entering 2014** - As part of its sponsorship of the 2014 Fox KIA HOT New Year's Eve Party, Consumers Energy has replaced the 450 halogen light bulbs used the previous five years with Cree Inc. LED bulbs. The new bulbs use about 80 percent less electricity than similar halogen bulbs and will last up to 20 times longer. Consumers Energy has been a sponsor for all six years of the New Year's Eve party, which has continued to grow each year. More than 40,000 people are expected to fill the streets in downtown Grand Rapids surrounding Rosa Parks Circle. 12/30 PRNewswire
- 51. Lighting Authority Should Use LEDs on Detroit Streets** - The lighting authority is tasked with repairing the city's 88,000 streetlights, an estimated half of which are not working. It's expected to use revenue from the city's utility users' tax to finance about \$160 million in bond debt for anticipated improvements over three years. <http://www.crainsdetroit.com/>
- 52. The University of Minnesota's Lighting Retrofits** - The University of Minnesota campus in Minneapolis is poised for major changes. As with so many other institutional and commercial facilities, the university is looking high and low for new technology applications that will help hold down costs related to building operations and maintenance. A sizable part of the attention being paid to savings relates to retrofits of existing buildings involving LED lighting. <http://www.facilitiesnet.com/> See the video at: [A Closer Look Online Exclusive: The University of Minnesota's Lighting Retrofits](#)
- 53. Independence, MO Expects Large Savings with LED Streetlights** - The Missouri city-owned utility, Independence Power and Light, has calculated that moving from HID fixtures to the new LED fixtures it expects to save roughly \$450,000 per year in energy and maintenance costs. The new lights will give off a white light, improving the quality of light, and when citizens were informally surveyed, more than 75 percent gave a favorable rating to the new lights. The estimated cost of the project is \$4.2 million, and the city said it will use \$250,000 in funds from the federal stimulus bill to help pay for the streetlight LED project. 12/23 Public Power Weekly
- 54. Cree Supplies LEDs to Baytown, TX** - Baytown, TX became the first city in the state of Texas to light freeways with LED fixtures mounted on double-arm 54-ft poles spaced at 270 ft. The company also announced the new LEDway High Output (HO) family that extends maximum output to 26,800 lm, enabling easy retrofit of 400W HID fixtures. Caltrans, meanwhile, is installing LED lighting on the new eastern span of the San Francisco, California Bay Bridge. <http://ledsmagazine.com/news/10/12/8>
- 55. What's New for Lighting Control in the New California Title 24 by Charles Knuffke, WattStopper** Lighting professionals in California are watching the approaching New Year with some apprehension, for 2014 brings with it a completely revamped and far more aggressive energy code. Front and center is the new multi-level general lighting requirement. Indeed, the code explicitly states that when LED fixtures are used for general lighting in these spaces, these luminaires must be dimmable from 10-100%. Lots of changes in the area of daylighting and demand response also. <http://lightingcontrolsassociation.org/>



## Monthly Special Feature...*Smart Lighting Markets and Opportunities 2013*

[http://www.researchandmarkets.com/publication/mlo68qz/smart\\_lighting\\_markets\\_and\\_opportunities\\_2013](http://www.researchandmarkets.com/publication/mlo68qz/smart_lighting_markets_and_opportunities_2013)

This report is NanoMarkets' latest analysis of the worldwide smart lighting market. Revenues from smart lighting are expected to escalate rapidly in the coming decade, driven primarily by rising energy costs. However, NanoMarkets believes that the biggest wins in the smart lighting business will go to those who can differentiate themselves in the market by offering value-added features and interfaces to other building automation systems.

As it happens, it is becoming increasingly easy to achieve such differentiation. The latest lighting research indicates that smart lighting can also lead to improved health and mood, while newer technology is showing the way to using smart lighting systems for air quality monitoring and even the delivery of information services. At the same time, improved control algorithms will permit the basic lighting management functionality of smart lighting to be performed much more effectively.

With these important developments in mind, this report offers guidance on where new smart lighting business revenues will be generated over the next few years and beyond. The report builds on NanoMarkets' previous smart lighting report published in 2012 as well as on our seven-year experience of analyzing the solid-state lighting industry.

In this year's report, we have considerably extended the report coverage to include analysis beyond the energy-saving features of smart lighting to other business opportunities that the arrival of smart lighting is creating. But as with NanoMarkets previous report on smart lighting, this report shows how new value is being created in the lighting market by adding enhanced electronics and intelligent luminaires and how such product strategies will be able to build on the massive trend towards introducing LED lighting.

Also included in this new report is an analysis of the smart lighting strategies of the firms that NanoMarkets expects to see as major players in the smart lighting space. We examine what the prospects for start-ups are in this space. In addition, there is an eight-year market forecast with breakouts by type of product, end user market segment, and the regions/countries where this report will be sold.

NanoMarkets believes that this report will provide much needed data and strategic analysis for planners and marketers throughout the lighting, semiconductor, sensor and networking industries.

