

# EnergyWatch



February 2014

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

**George Bernard Shaw**

*If you have an apple and I have an apple and we exchange these apples then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.*

*The people who get on in this world are the people who get up and look for the circumstances they want and if they can't find them, make them.*

*Some men see things as they are and say why - I dream things that never were and say why not.*

## *Something to Think About...*



## LED Issues to Watch...

- 1. *World LED Lighting Markets - Government Initiatives and Declining Prices are Driving the High Growth*** - The key challenges that the LED lighting market face are the prevalence of alternate technologies and high initial investment. Raising awareness amidst residential end users, financing projects, and leasing and maintenance of lighting solutions in the professional lighting market can tackle these challenges and provide untapped opportunities. End users benefit from the savings on their energy bills due to decreasing payback period from using LED products. Infrastructure spending and new construction activities will open doors for new installation of this technology in the professional market. High level of consciousness towards energy efficiency and activity in the outdoor applications will also contribute to market revenue. The scope of the study includes LED lamps or light sources and luminaires and does not include packaged LED itself. For more info: [http://www.researchandmarkets.com/publication/m3i8jyn/world\\_led\\_lighting\\_markets\\_2013\\_update](http://www.researchandmarkets.com/publication/m3i8jyn/world_led_lighting_markets_2013_update)
- 2. *LEDs Shine the Light on Wi-Fi*** - The benefits of LEDs as a brighter, more efficient alternative to fluorescent lamps have become common knowledge. It may only be a matter of time before LEDs become the lighting source of choice for consumers. What is not so widely known is another beneficial use of LEDs—as a wireless network router. Light bulbs that produce their own wireless digital signal—light fidelity, or Li-Fi—are the subject of research around the world. While the technology has not reached the same degree of mainstream usability as its lighting counterpart, scientists have made notable gains this year. <http://www.ecmag.com/section/your-business/leds-shine-light-wi-fi>
- 3. *Outdoor Lighting Gets Intelligent as LED Installations Expand*** - Fixture by fixture, lighting in American cities is transitioning from the traditional metal halide domain to LEDs, not only on city streets, but also in landscaping and commercial building settings. LEDs are providing a long-lasting, energy-efficient light source with a lowering price tag, and they more frequently are coming with controls that further reduce costs for users—whether public entities or businesses. The GE LightGrid technology pilot in LA enables the city to remotely monitor each of its streetlights using data from a GPS unit on each fixture to mark the longitude and latitude of that unit. The controllers themselves twist into standard NEMA sockets on each of the fixtures and then encompass what GE Lighting calls the LightGrid network. With this network, the city can track energy usage and lighting data through a central management system accessible with a Web-based portal. <http://www.ecmag.com/section/lighting/under-control-outdoor-led-lighting>
- 4. *OSI Releases Light Bulb Study*** - The sixth annual SYLVANIA Socket Survey finds that 65 percent of Americans plan to switch to more energy-efficient lighting technologies, as a result of federally mandated legislation that is increasing efficiency standards. Yet, 30 percent of consumers say that they plan to buy a lot of traditional light bulbs where still available and will continue using them. This is a sharp increase from the 2012 Socket Survey which showed just 16 percent said that they plan to stockpile bulbs. Additional research highlights from this November 2013 study include:
  - 1) 4 in 10 consumers are aware of the January 2014 phase out of 60W and 40W bulbs
  - 2) More than half (59%) of consumers are excited about the phase out
  - 3) 46 percent of consumers plan to switch to CFLs, 24 percent will opt for LEDs, and 13 percent say that they will choose halogens

<https://www.sylvania.com/en-us/tools-and-resources/surveys/Pages/socket-survey.aspx>



5. **DOE SSL Postings 2013 in Review** - DOE continues to work to accelerate SSL technology advances and guide successful market introduction of high-efficiency, high-performance products, so that solid-state lighting can fulfill its energy-saving potential. [Solid-State Lighting Program](#)
- ⚙ [LED Lighting Facts](#)<sup>®</sup>
  - ⚙ [Adoption of Light-Emitting Diodes in Common Lighting Applications](#)
  - ⚙ [Residential Lighting End-Use Consumption Study: Estimation Framework and Initial Estimates](#)
  - ⚙ [Color Maintenance of LEDs in Laboratory and Field Applications](#)
  - ⚙ [Dimming LEDs with Phase-Cut Dimmers: The Specifier's Process for Maximizing Success](#)
  - ⚙ [SSL Pricing and Efficacy Trend Analysis for Utility Program Planning](#)
  - ⚙ [2013 Solid-State Lighting Market Introduction Workshop](#)
  - ⚙ [OLED roundtable](#)
  - ⚙ [Multi-Year Program Plan](#) and [Manufacturing Roadmap](#)
  - ⚙ [Municipal Solid-State Street Lighting Consortium](#)
6. **OLED vs LED Lighting 2013-2023 Report** - OLED and LED lighting are both solid-state technologies and offer overlapping value propositions per market segment. They will therefore compete directly in many instances. LED lighting has come a long way and offers a better performance than OLEDs, and that at a lower cost. OLED lighting will therefore only gain market success if it clearly defines its unique selling points and carves out initial market niches. This report is divided into two parts: (a) technology and (b) market assessment. The value proposition of OLEDs for all market segments is critically analysed. <http://www.digitaljournal.com/pr/1680434>
7. **Light-Emitting Disruption: How LEDs Are Changing Commercial Lighting by Doug Chandler** - LEDs are already bringing a technological revolution in the lighting market, but the turmoil they promise in the way commercial lighting is specified and sold has only just begun. In just a few short years, solid-state technology has erupted in the commercial lighting market, threatening to change the balance of power on lighting's bucolic hillsides and reshaping the terrain for generations to come. It's not so much the technology itself, though that is impressive enough. The real change will ultimately be seen in the altered business models of the various players who bring lighting to market. <http://ewweb.com/lighting/light-emitting-disruption-how-leds-are-changing-commercial-lighting>
8. **Two SBIR Grants Awarded for SSL Technology** - The U.S. DOE Office of Science has awarded two Small Business Innovation Research (SBIR) grants targeting advances in solid-state lighting (SSL) technology:
- MicroContinuum, Inc.: R2R Production of Low-Cost Integrated OLED Substrate with Improved Transparent Conductor & Enhanced Light Outcoupling
  - Pixelligent Technologies LLC: Advanced Light Extraction Material for OLED Lighting
- To learn more about these awards, visit the [DOE SSL website](#).  
To learn more about this program, visit <http://science.energy.gov/sbir/>
9. **Lighting for Tomorrow 2014 Competition Launched** - Lighting for Tomorrow announced its twelfth annual competition at the Dallas Market, Jan. 15-19. The 2014 competition seeks lighting control devices, solid-state lighting (SSL) fixtures, replacement lamps, and retrofit kits that meet market price points such as LED A-lamps under \$10 and fixtures under \$50, as well as high lumen A-lamps. Similar to last year, Lighting for Tomorrow awards bonus points for high CRI LEDs, OLEDs and products for senior populations. For more information: [www.lightingfortomorrow.com](http://www.lightingfortomorrow.com)



- 10. LED Lighting Market to Grow More Than 12-Fold by 2023** - Lux Research used historical trends as well as projected average price reductions to build a model that calculates the adoption rate of LEDs within each end-market application: office, industrial and street lighting. Lux predicts that recessed modular will emerge as the largest LED luminaire market, growing from \$1.5 billion in 2013 to \$14.5 billion in 2023 by replacing current lighting types, such as fluorescent. [http://www.novuslight.com/led-lighting-market-to-grow-more-than-12-fold-by-2023\\_N2152.html](http://www.novuslight.com/led-lighting-market-to-grow-more-than-12-fold-by-2023_N2152.html)
- 11. LED Lumen Maintenance and Light Loss Factors** - An article has been published in IES *LEUKOS* entitled "Lumen Maintenance and Light Loss Factors: Consequences of Current Design Practices for LEDs." The article was written by Michael Royer of Pacific Northwest National Laboratory and discusses complications related to the lamp lumen depreciation (LLD) light loss factor and LEDs. Because of the unique operating characteristics of LEDs and lack of a comprehensive lifetime rating—as well as the problematic relationship between SSL lifetime and lumen maintenance—determining an appropriate LLD factor for LED products is difficult. The IES recommends using an LLD of no greater than 0.70 when the quantity of light is an important design consideration. The article discusses the issue in detail, compares the performance of some conventional and LED products, and examines alternatives to the currently recommended approach for determining LLD factors for LED products. Access at: [http://www1.eere.energy.gov/buildings/ssl/tech\\_reports.html](http://www1.eere.energy.gov/buildings/ssl/tech_reports.html)
- 12. Zhaga References NEMA Dimming Spec for LED Drivers, Notes Safety Requirements** - The Zhaga Consortium has formally added requirements that LED light engines with integrated control gear support the NEMA SSL 7A-2013 dimming specification and also noted that socketable modules must meet new UL safety standards. The Zhaga Consortium has announced that it will now require dimmable LED light engines that include driver electronics — what Zhaga terms integrated control gear — to perform in compliance with the NEMA SSL 7A-2013 standard for phase-cut dimming. <http://www.ledsmagazine.com/articles/2013/10/zhaga-references-nema-dimming-spec-for-led-drivers-notes-safety-requirements.html>
- 13. LED Manufacturer Chosen for 2014 Forbes List of America's Most Promising Companies** - Noribachi [www.noribachi.com](http://www.noribachi.com) an LED lighting manufacturer, was chosen for the [2014 Forbes list of America's Most Promising Companies](#). Noribachi is an LED lighting company in Southern California specializing in creating retrofit lights for existing and brand new fixtures. The company has a large engineering staff with a substantial IP portfolio. Noribachi is committed to making commercial and industrial lighting an integral part of the connected world of tomorrow by including "Internet of Things" technologies in our products. <http://www.tedmag.com/>
- 14. Cree's Q2'14 Earnings Preview: Rising LED Penetration to Drive Demand** - The LED market dynamics improved considerably in 2013, primarily driven by the launch of new innovative products and the closing price gap with traditional lighting. Led by strong lighting demand, Cree provided guidance for revenue to grow to \$400-\$420 million, with gross margins of around 38% in Q2 2014. Backed by strengthening demand across business segments – LEDs, Lighting & Power and RF – the company reported a 24% annual increase in its revenue base last quarter. Additionally, backed by higher lighting demand, benefits from LED bulb cost reductions, and higher fixture sales, Cree's gross margins improved by 1.8 percentage points year to year. <http://www.forbes.com/sites/greatspeculations/2014/01/16/crees-q214-earnings-preview-rising-led-penetration-to-drive-demand/>



**15. Cree Shatters Efficiency Benchmark with First 200-Lumen-Per-Watt LED Luminaire** - Twice the efficiency of the best linear fluorescent luminaires. The latest DOE projections had estimated that this level of luminaire efficiency would not occur until after 2020, but Cree's latest innovation has made this possible six years sooner than projected. The prototype leverages Cree's vertical integration with innovations in LED chips, optics, materials technology and novel system design to deliver unprecedented performance. The 3,200-lumen concept luminaire delivered 200 LPW + at 80 CRI at thermal equilibrium while remaining within the ANSI color specification for 3000 K.  
<http://www.cree.com/News-and-Events/Cree-News/Press-Releases/2014/January/200-LPW-fixture>

**16. TCP Secures Patent Licensing Agreement with Philips** - As part of this agreement, the two companies have agreed to settle and dismiss the patent infringement lawsuit that was pending in the US District Court for the Northern District of Ohio. The royalty-bearing license allows TCP and its affiliates full worldwide access to Philips' LED-related patented technologies that Philips makes available to the lighting industry through its LED Luminaire and Retrofit Bulb licensing program. This license agreement with TCP follows earlier agreements between Philips and other companies.  
<http://www.tedmag.com/>

**17. Philips Introduces 'Lighting as a Service'** - While the model is commonly used to finance building retrofits, Philips will pay the upfront costs of installation and be compensated through a performance contract – the energy savings the retrofit produces. In Washington, DC, Philips will upgrade over 13,000 lighting fixtures in all its parking garages at no upfront cost to the city and provide a 10-year maintenance contract. Philips will get paid from the \$2 million in savings the LEDs are expected to provide each year. The project starts this spring and will take about a year.  
<http://www.sustainablebusiness.com/index.cfm/go/news.display/id/25461>

**18. LEDucation Expo Officially Sells Out Exhibit Space for 6<sup>th</sup> Consecutive Year** - The Designers Lighting Forum of New York (DLFNY) and the LEDucation organizers have both the exposition and educational sessions for LEDucation 8 will be held at the Sheraton NY Times Square Hotel located just five blocks from Times Square at 811 7th Avenue at West 52nd Street, New York, NY in the heart of Midtown. The educational sessions and expo will be held in the Empire and Metropolitan Ballrooms located on the second floor of the hotel. It is expected to draw more than 4,000+ lighting and design professionals during its new 2-day format on March 18 & 19th, 2014. Online Registration will open in late January at [www.leducation.org](http://www.leducation.org)

**19. 2014 Audi Sport Quattro Laserlight Concept** - Audi demonstrated the future of lighting technology at CES by combining matrix LED and laser light technologies. Two low-profile trapezoidal elements are visible within the headlights – the outer one generates the low beam light using matrix LEDs and an aperture mask, while the inner element produces laser light for high-beam functionality. This new lighting tech has twice the range and three times the brightness of Audi's previous LEDs. Audi claims it can illuminate the road for 500 meters (1,640 ft).  
<http://www.boldride.com/ride/2014/audi-sport-quattro-laserlight-concept#gallery/5>



**20. LED Street Lights in Europe: A Bright Tomorrow** - Incandescent and halogen lamps have been banned in Europe. The European Union (EU) has taken this strong step as a move toward meeting its 20-20-20 targets of increasing energy efficiency by 20%, increasing the share of renewable energy by 20%



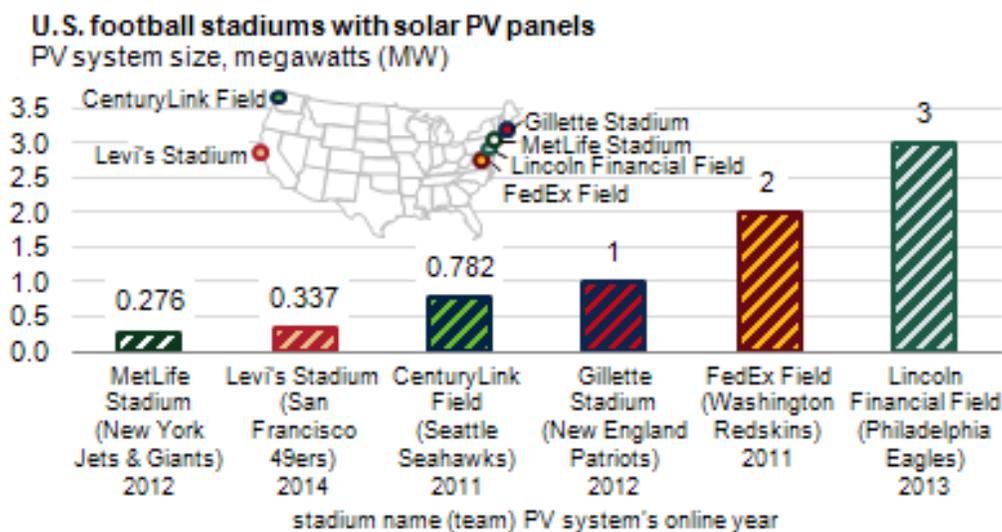
and reducing greenhouse gas emissions by 20%. The constantly declining price of LED lamps is boosting the LED lighting market in Europe. With the implementation of LEDs, around 70% of energy currently used in street lighting would be saved. Successful implementation of LED pilot projects in European countries including the UK, Germany, Spain, Poland, France, the Netherlands, Croatia, Portugal, Italy, Belgium, and the Czech Republic have proven its benefits and has accelerated the LED market. The PennEnergy Research is available at :

<http://ogjresearch.stores.yahoo.net/led-street-lights-europe-bright-tomorrow.html>

**21. China's LED Lighting Market to More Than Double to \$7.4 Billion in 2017** - The residential and commercial segments will drive the Chinese LED lighting market to a CAGR of 24%, far outpacing the 5.6% CAGR for the broader lighting market. A report published by Lux Research says China's LED lighting market will more than double to \$7.4 billion in 2017 from \$3.1 billion, as ongoing urbanization, local energy savings targets and price cuts make the technology more appealing. As a result, LED lighting will grow its share of the lighting market from 9.6% to 18%. The residential segment shows fastest growth. The Chinese residential LED market will grow from \$23 million in 2013 to \$310 million in 2017, a CAGR of 92%, the highest among five market segments, as average prices fall from \$6.02 per fixture in '13 to \$3.13 in '17. <http://ewweb.com/>

**22. Sony's PlayStation Vita Slim Ditches the OLED Display** - Slimmed-down size aside, the biggest change here is that the Vita's 5-inch display has been tweaked. The impressively high resolution remains, but instead of OLED, that broad panel now deploys LCD technology. OLED is tough to beat in terms of image quality, so it'll be interesting to see how the new screen compares in a side-by-side battle. It may be that the quality has been dropped slightly in order to make the Vita slightly cheaper. [http://reviews.cnet.com/consoles/sony-playstation-vita-2000/4505-10109\\_7-35827488.html](http://reviews.cnet.com/consoles/sony-playstation-vita-2000/4505-10109_7-35827488.html)

**23. NFL Stadiums Produce Onsite Energy with Solar PV Projects** - On February 2, MetLife Stadium in East Rutherford, New Jersey, will host Super Bowl XLVIII. During the game, aerial footage will likely show 916 external LED fixtures powered by 1,350 solar photovoltaic (PV) panels with a total generating capacity of 276 kilowatts (kW). <http://www.eia.gov/todayinenergy/detail.cfm?id=14831>



Source: EIA, based on information received from McKinstry, and NRG Energy



## National Energy Issues to Watch...

- 24. *What Does the End of EAct Mean for Commercial Efficiency?*** - With no national energy policy in the last six years and little hope for EAct renewal in a harshly partisan Washington, there are few reasons to be optimistic that similar policy encouraging corporate energy efficiency investment will happen in the near term. <http://www.greentechmedia.com/articles/read/what-does-the-end-of-eact-mean>
- 25. *DOE Publishes GATEWAY Report on Pedestrian Friendly Outdoor Lighting*** - Recognizing that pedestrian lighting has different criteria for success than street and area lighting, GATEWAY followed two pedestrian-scale lighting projects that required multiple mockups – one at Stanford University in California and the other at Chautauqua Institution in upstate New York – to gain insight into what those criteria might be, how they differ from street and area lighting applications, and how solid-state lighting can be better applied in pedestrian applications. The report presents the results of surveys and observations from residents and pedestrians, feedback from facility design and engineering professionals, thoughts and observations from lighting designers, and input from researchers and scientists. Conclusions at: [www.ssl.energy.gov/gatewaydemos\\_results.html](http://www.ssl.energy.gov/gatewaydemos_results.html)
- 26. *Linear Fluorescent Lamp Shipments Retreat During Third Quarter*** - NEMA's shipment indexes for T5, T8 and T12 lamps retreated during 2013Q3, decreasing by 7.3, 9.4 and 5.5 percent, respectively. Year-over-year (y/y) performance showed mixed results for the different lamp types. The T5 lamp index increased by 5.7 percent compared to 2012Q2. T8 lamp shipments improved as well increasing by 10.7 percent. Shipments of T12 lamps continued to decline, registering a decline of 6.3 percent (y/y). Market shares varied marginally: T5 lamps gained 20 basis points to secure a share of 10.9 percent; share of T12 lamps increased 0.5 percentage points to 16.5 percent, while the share comprised by T8 lamps decreased to 72.7 percent. [www.nema.org](http://www.nema.org)
- 27. *U.S. Military Embracing Energy Efficiency and Renewables*** - A study released recently by the Pew Charitable Trusts and Navigant Consulting looks at how the U.S. Department of Defense has been pushing hard to explore and make better use of energy-saving technologies and the benefits in cost savings, resilience and security that can be gained from renewable energy sources. <http://electricalmarketing.com/blog/us-military-embracing-energy-efficiency-and-renewables>
- 28. *NEMA Congratulates Winning Team in Public-Private Consortium Seeking to Strengthen U.S. Manufacturing*** - Known as the Next Generation Power Electronics Institute, it will provide the innovation infrastructure needed to support new product and process technologies, education, and training to become a global center of excellence for the development of wide bandgap semiconductor devices and industry-relevant processes. Supported by the DOE, the institute's headquarters will be located on North Carolina State University's Centennial campus. The North Carolina headquartered consortium of 18 companies and 6 universities include the following NEMA members: ABB, Cree, Delta Products, Toshiba International, and Vacon. [www.nema.org](http://www.nema.org)
- 29. *New Energy Efficiency Standards for Metal Halide Lamp Fixtures to Save on Energy Bills and Reduce Carbon Pollution*** - As part of the Energy Department's efforts to develop efficiency standards that cut carbon pollution and save money by saving energy, U.S. Energy Secretary Ernest Moniz announced 1/30/14 that the Department has finalized new energy efficiency standards for metal halide lamp fixtures. The current standards will save approximately 6.4 quads of energy and



result in approximately \$9.6 billion in energy bill savings for products shipped from 2009-2038.  
[http://www1.eere.energy.gov/buildings/appliance\\_standards/rulemaking.aspx/ruleid/16](http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx/ruleid/16)

**30. 5 Smart Trends to Watch in Commercial Lighting** - LEDs aren't the only story in lighting, of course, but they are laying the groundwork for innovations that could have a direct impact on your sustainable business agenda. Here are five related trends we're watching.

- 1) More lights get smarter, laying the foundation for more Internet of Things applications
- 2) Viable energy-efficient options to fluorescent tubes emerge
- 3) Solar-powered streetlights expand off-grid solutions
- 4) Smart glass adoption accelerates
- 5) Organizations test lighting to improve morale, health and productivity



<http://www.greenbiz.com/blog/2014/01/30/5-trends-watch-commercial-lighting>

**31. The Electrical Industry's Top Ten News Stories of 2013** – Two of the Top Ten stories in 2013 relate to what's happening in energy:

**#4. Lighting manufacturers acquire niche product manufacturers to fortify their positions in the LED market.** It would be tough to name another product market that has undergone such a complete transformation as [the lighting business's fast march toward LEDs](#). LED new products are obsoleting entire product categories, an entire generation of new players are moving into the lighting market from the semiconductor industry, and household names in the lighting business are trying to reinvent themselves to compete in the solid-state era.

**#8. Excitement over renewables dies down a bit.** With the exception of the states in the Wind Belt that extends from the Dakotas down through Texas and those areas where local utilities are building massive solar farms, it seems like most folks in the electrical business aren't quite as jazzed about the sales potential of solar and wind. The local financial incentives that help support solar in some states are drying up, and one New Jersey distributor who had been selling commercial solar supplies says this year he has had to chase solar contractors for payment. [Some companies have figured out how to make solar pay, including some distributors and reps in California](#), which continues to have an active solar market. But until the solar market can sustain itself without heavy incentives from states, local governments and the federal government, we don't expect to see many new distributors and reps entering the solar market.

<http://ewweb.com/news/electrical-industrys-top-ten-news-stories-2013>

**32. AEE Seminars [registrar@aeecenter.org](mailto:registrar@aeecenter.org)** - Top quality professional training online while earning the CEU / PDH credits by Association of Energy Engineers:

**Developing an Energy Management Master Plan**

Instructed by [Fredric S. Goldner, C.E.M.](#)

A 6-Hour Distance Learning Seminar

Earns 0.6 CEU / 6 PDH

Presented in three 2-hour live online sessions

New Program Starts **March 3**

**High Bay Lighting Advances: LED High Bays Coming of Age**

Instructed by [Stan Walerczyk, L.C., C.L.E.P.](#)

A 4-Hour Distance Learning Seminar

Earns 0.4 CEU / 4 PDH

Presented in two 2-hour live online sessions

New Program Starts **March 3**



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## State Energy Issues to Watch...

**33. 10 US Cities Plan Coordinated Attack on Building Energy Waste** - The City Energy Project is a national initiative to create healthier and more prosperous American cities by improving the energy efficiency of buildings. Working in partnership, the Project and cities will support innovative, practical solutions that cut energy waste, boost local economies, and reduce harmful pollution. The pioneering actions of the 10 cities involved in the City Energy Project will be models for communities nationwide and around the world.  
<http://www.cityenergyproject.org/about/>



**34. VA Commercial Loan Program Aimed at Energy Efficiency** - A new commercial loan program is available to help Charlottesville, VA area businesses implement energy efficiency improvements and technologies. UVa Community Credit Union has committed to lend up to \$1 million under this initiative. Organizers anticipate the average loan will be between \$25,000 and \$100,000 with terms of three to 15 years. Lighting upgrades; energy audits; insulation; and heating, ventilation and air conditioning system improvements are among the eligible projects. <http://leap-va.org/>

**35. LG&E, KU Plan to File Expanded Energy Efficiency Programs** - Louisville Gas and Electric Company and Kentucky Utilities Company will file Friday 1/24 with the Kentucky Public Service Commission plans to expand several of the utilities' most popular energy efficiency programs. It will offer programs and financial incentives to help residential and commercial customers better manage their energy usage and to help offset customers' costs for various energy-efficient products and services. Visit [www.lge-ku.com/savingenergy](http://www.lge-ku.com/savingenergy) for a complete list of the programs and services.

**36. South Bend, IN Energy Office Racks Up Savings** - The Energy Office has helped facilitate more than 30 energy projects in the community, resulting in about \$17 million in executed and anticipated energy savings through 2021. Among other things, the office has helped upgrade the lighting system in the three city-owned parking garages. In upgrading to LED lights in the three city-owned parking garages downtown, the Energy Office managed to secure about \$95,000 in grant money from Energizing Indiana to help pay for the \$225,000 project. The new lights are expected to save about \$92,000 per year in energy costs, for a full return on investment in about 19 months. 1/21 AP

**37. Van Meter Helps St. Luke's Hospital in Cedar Rapids, Iowa Convert Parking Garage for Better Light, Lower Cost** - During the three-month retrofit project, approximately 500 lights and pole lamps in and around two parking garages were replaced with new LED technology, with Kenall TekDek 50-watt fixtures on the ramps, on the west entry and in the hospital's new ambulance garage, and Hubbell-Spaulding Cimarron LED fixtures on the pole lights. The result was that the garage space was noticeably brightened and even the ceiling areas are now visible, and energy costs were cut significantly. <http://ewweb.com/>



**38. 2013 California Electrical Code Now in Effect** - The 2013 California Electrical Code, which is based on the 2011 NEC, was adopted and published by the state earlier in 2013 and went into effect on January 1, 2014. <https://law.resource.org/pub/us/code/bsc.ca.gov/gov.ca.bsc.2013.03.pdf>

**39. Revised Effective Date for the 2013 California Building Energy Efficiency Standards** - The California Energy Commission revised the effective date for the 2013 Building Energy Efficiency Standards (Title 24, Part 1, Chapter 10 and Part 6, and affected provisions in Part 11 [Cal. Green Building Standards Code]) from Jan. 1, 2014 to July 1, 2014. The public domain software for the 2013 Standards does not yet provide the full feature set needed for building and alteration projects seeking building permits in early 2014. Further, time is needed for the building industry and local building departments to learn and adapt to the new tools. [http://www.energy.ca.gov/title24/2013standards/2013\\_standards\\_revised\\_effective\\_date.html](http://www.energy.ca.gov/title24/2013standards/2013_standards_revised_effective_date.html)

**40. San Diego, CA to Put LED Lights in 3,000 Downtown Street Lamps** - The City of San Diego and General Electric announced that a program to replace 3,000 street lamps around the downtown area with energy-efficient LED lighting is underway. The new lights are expected to shine brighter while saving the city \$254,000 annually in utility costs. The \$5.3 million project, due to be completed this spring, is being financed by state and federal loans and grants, and San Diego Gas & Electric rebate funds. 1/28 City News Service

**41. Lakewood, WA May Switch to LED Streetlights** Lakewood, WA is considering replacement of its roughly 3,000 streetlights, exchanging the familiar orange glow for the blue hue cast by LED lights. The project is estimated to cost around \$2 million. Preliminary estimates show the city could save roughly \$250,000 a year from the switch, which includes energy savings and reduced maintenance costs. It also would improve visibility. 1/21 The News Tribune

**42. \$5.8 Million Deal Will Save Hawaii Hospital Energy and Money** - Kuakini Medical Center in Honolulu will save energy and money, thanks to a contract with efficiency services financier Metrus Energy. Metrus will finance and implement \$5.8 million in energy upgrades - including a new central cooling and heating plant, lighting upgrades and energy management and control systems. Kuakini will pay Metrus based on realized energy savings once the project becomes operational. Metrus is partnering with Energy Industries, which has a strong presence in Hawaii, to provide project installation and ongoing maintenance services. PRNewswire

**43. Jason Brown Bringing Youth, Charisma to US Olympic Men's Figure Skating Team** - Jason Brown loves to perform, and it shows. Maybe the name sounds familiar to you in the lighting business. Well, he's the son of Steve Brown, CEO of A.L.P. Lighting and grandson of the founder, the legendary Bill Brown. Talent and hard work is the secret to the Brown success. In the U.S. Figure Skating Championships last weekend at TD Garden in Boston, Jason Brown surprised everyone by scoring 182.61 points to win the free skate and 270.08 points overall to take home the silver medal. Just 19 years old, he has long, brown hair that gets pulled back into a ponytail when he skates, and he seems to bubble over with excitement as he speaks, a hallmark of youthful enthusiasm. **All the best in Sochi, Jason.**



<http://bleacherreport.com/articles/1922258-jason-brown-bringing-youth-charisma-to-us-olympic-mens-figure-skating-team> Video at: <http://www.youtube.com/watch?v=PzpyI5oavEo&feature=youtu.be>



## Monthly Special Feature...<http://www.ledjournal.com/main/blogs/improvements-in-led-lamps/>

*Improvements in LED Lamps by Arun Dutta – Osram Sylvania* - The LED lamp retrofit market continues to be a much sought after arena with more and more players entering the market. With an abundance of choices available, it is important to do your research to understand some key parameters of these novel light sources. This will help to find a LED lamp solution that not only fits your current needs, but also those in the future.

Have you ever wondered why the LED lamp that you just bought to replace your typical incandescent or halogen bulb is so much heavier? It is because of the need for thermal management in the LED lamp and the associated use of a heavy heat sink. Contrary to popular notion, LEDs do generate heat and unless that heat is dissipated properly in the lamp, the LEDs can heat up leading to lower lumens, lower energy efficacy, shorter lamp life and shift in color. Most LED lamps use a mass of shaped die cast aluminum as the heat sink material. However recent innovations in thermal management by some companies have enabled substantial reductions in LED lamp weight. This involves sophisticated thermal modeling and use of alternate forms of metal fabricated by different methods.

The LEDs in a solid state lamp are driven by DC but the socket into which the lamp is screwed is powered by AC. Electronics located in the LED lamp convert the AC into DC. Here, too, not all LED lamps are the same. Some innovative companies are using sophisticated electronic circuitry, which leads to high power conversion efficiency so that much less electrical energy is lost as heat in the circuit components and more is available to drive the LEDs. This leads to higher LPW (Lumens per Watt) and a more energy-efficient lamp.

The quality of dimming is another parameter that differentiates LED lamps from different suppliers. Robust dimming is the new trend among reputed suppliers who design their LED lamp electronics in such a way as to be compatible with a wide variety of leading edge dimmers. Flicker is minimized and the lower limit of dimming is on its way down to about 5 percent or less. Many people love the warm tone that results when you dim an incandescent lamp. Do you wonder if this nice ambiance can be achieved by dimming a LED lamp? The answer is: yes, it can be done. Using advanced technology, a few forward-looking companies have recently introduced LED lamps with this special effect. This is essentially done by using proprietary algorithms to vary the current through two or more strings of LEDs of different color temperature using specially designed driver electronics.

How about effortless interaction with the LED lamps in your house? Would you like to switch your lamps on/off and dim them using a smart phone? Would you like to have the ability to do this remotely, say from your office? Would you like to set lamps in different rooms to different scenes? All of this is possible with wireless LED lamps. These lamps incorporate a radio frequency (RF) controller board in the lamp along with the driver electronics. A hub located in the house talks to the radio in the lamp using a wireless protocol like ZigBee and using a smart phone and the web, one can control all the wireless lamps in the house. Some innovative companies have recently introduced such lamps for the retail market.

It is important for the consumer to realize that not all LED lamps are created equal. LED lamps incorporate a wide variety of technical disciplines: materials, thermal management, electronics, optics, LED and process engineering. The best providers are able to design high performance into the product at a good value.

