

# EnergyWatch



October 2014

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

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*Perfection is not attainable, but if we chase perfection we can catch excellence. -Vince Lombardi*

*If you laugh, you think, and you cry, that's a full day. That's a heck of a day. You do that seven days a week, you're going to have something special. -Jim Valvano*

*Whatever you do in life, surround yourself with smart people who'll argue with you. -John Wooden*

*The key is not the will to win... everybody has that. It is the will to prepare to win that is important. -Bobby Knight*

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## *Something to Think About...*

### *I Was There For That One...*

How lucky can anyone get you ask.....well, very lucky to be at Yankee Stadium last Thursday night to watch the walk-off hit by Derek Jeter on his last at-bat in his last game at Yankee Stadium. Walk-off means the Yankees WIN! He's all about winning. The Yankees are not in the playoffs this year but in his 20 year career playing shortstop for only one team, Jeter has played on a winning team every single year.....made the playoffs 16 out of 20 years. What a run.....WOW!



He sure has a flair for the most electrifying kind of sports drama and this night was destined to be no different than so many other memories:

- MR. NOVEMBER
- THE FLIP
- THE DIVE
- HISTORY WITH AN EXCLAMATION POINT
- yes even THE JEFFREY MAIER HOMERUN
- and now THE WALK-OFF

I joined thousands of No. 2's filling the seats, oh, that doesn't sound right.....whatever, it will be the last single digit number to ever be worn by a Yankee. In the top of the ninth inning and with the Yankees leading 5-2, it appeared as though the moment was sinking in for the Captain and it was likely that Jeter had already taken his last at-bat. We all took turns predicting the best way for Joe to take him out of the game. Then the Orioles hit two more home runs and tied the score. Unbelievable..... The Yankees had to play the bottom of the ninth and maybe beyond. Single, sac bunt, and then comes Captain Derek Jeter with a chance to win the game. Did I say, he was all about winning? Well, on the first pitch, his classic inside-out swing shot a line drive hit to right field. The Yankees had a walk-off win. Jeter went out the way he was supposed to and all was right with the world even if it was for just one shining moment.

One last thing from me: it wasn't just the longevity that made him special. Yes, it was all the hits, Gold Gloves, clutch plays but it was his class too. Jeter floated above the scandals and tabloid headlines that claimed so many stars of his generation. That's why his retirement year turned into a national love fest.

<http://hardballtalk.nbcsports.com/2014/09/25/video-derek-jeter-hits-walk-off-single-in-his-final-at-bat-at-yankee-stadium/>



## LED Issues to Watch...

1. **LED Global Luminaire Market for Outdoor and Parking Applications to Peak at \$1.4bn in 2021** - From \$921m in 2014 to \$1.4bn in 2021 according to a report from Navigant Research. Outdoor lighting systems are in the early stages of a transition from fluorescent, HPS and metal halide lamps to LEDs. As LED prices continue to fall, the case for replacing today's most prevalent lighting technologies in outdoor systems is becoming increasingly compelling, says the report 'Outdoor and Parking Lighting Systems', which analyzes the market for outdoor luminaires, lamps, and lighting controls in end-use applications including city parks and public areas, sports parks and stadiums, commercial site lighting, open air parking lots, indoor parking garages, and university and college campuses. [http://www.semiconductor-today.com/news\\_items/2014/SEP/NAVIGANT\\_030914.shtml](http://www.semiconductor-today.com/news_items/2014/SEP/NAVIGANT_030914.shtml)
2. **DOE Releases Latest Report on Energy Savings from LED Lighting** - Entitled *Energy Savings Forecast of Solid-State Lighting in General Illumination Applications* it provides a comprehensive overview of the expected path of LED lighting adoption within the U.S. and estimates the resulting energy savings out to year 2030, and has been widely used by industry and government, both here and abroad. The latest forecast – the sixth iteration since 2002 – has just been released: <http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/energysavingsforecast14.pdf>



3. **DOE's Upgrading Troffer Luminaires to LED** - Although the installation of LED troffer-style luminaires jumped from an estimated 40,000 units in 2010 to nearly 700,000 units in 2012, LED luminaires still represent less than 0.1% of the troffer luminaires installed in commercial buildings. It may be possible to achieve over 25% energy savings on a national level if LED technology reaches its projected market penetration in troffer luminaires of over 65% by 2030. The energy savings on an individual project can be much greater than 25%. This fact sheet provides guidance on the various factors to consider when deciding on an LED upgrade for a fluorescent system. [http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/led\\_troffer-upgrades\\_fs.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/led_troffer-upgrades_fs.pdf)



4. **How LEDs Are Going to Change the Way We Look at Cities by Uclia Wang** - Streetlights everywhere are going digital, cleaning up the night skies, saving billions in wasted energy—and offering major windfalls for those who embrace the gold rush. Los Angeles, New York, Chicago, Shanghai, Copenhagen and scores of other cities around the world are deploying LEDs in an attempt to solve most, if not all, of the problems created by inefficient traditional lamps. Of the 140 million streetlights installed worldwide last year, only 19 million were LEDs, according to IHS Technology. By 2020 LEDs are expected to account for 100 million of the installed base of 155 million streetlights. Annual sales of LED streetlights will jump from \$4.3 billion to \$10.2 billion in the same time period. New York's \$76 million project will be the largest in the country: replacing 250,000 lights by 2017. <http://www.forbes.com/sites/uciliawang/2014/09/10/bright-lights-big-profits/>



5. **Four Ways to Play the LED Boom** - Investors looking to get rich off the growth in LED cities don't have a lot of ideal options (and may need an offshore broker to buy relevant stocks). Some ideas:

- 1) **Osram** does it all, from chips to fixtures to services.
- 2) **Philips**, which pioneered conventional street lighting technology, is now a leader in the LED transformation. The company is selling hardware, software and services to help cities monitor and control the lights.
- 3) **Cree**, an LED pioneer and the biggest U.S. manufacturer, has great technology and solid growth prospects.
- 4) **Acuity Brands** sells both conventional and LED street lighting. It's been investing in LED lighting-control technology both to keep pace with competitors and to anticipate moves by cities to replace their conventional lamps with LEDs.

<http://www.forbes.com/sites/uciliawang/2014/09/10/four-ways-to-play-the-led-boom/>



6. **Updates on the ENERGY STAR Lamps Specification - September 30, 2014:** The new ENERGY STAR Lamps specification takes effect, which combines the Compact Fluorescent Lamps V4.3 and Integral LED Lamps V1.4 specifications. Any ENERGY STAR certified lamp manufactured on September 30, 2014 or later must be certified to Lamps V1.0 or V1.1. More than **1,800 LED and CFL lamps** have already been certified to the new specification, as of mid-September. The interactive graph of all ENERGY STAR lamps that have been certified to the new specification can be found here. <https://data.energystar.gov/Active-Specifications/Lamps-V1-0-by-Type/gtew-3ttu>

7. **LEducation 9 Official Dates and Schedule Announced - <http://www.leducation.org/>**

Below are some key dates:

- August - Exhibitor Registration opens
- August - Call for Speakers / Presentations
- December - Deadline for Exhibitor Full Payment
- January - Online Registration opens
- **March 5 - 6, 2015 at Sheraton NY Times Square Hotel**



8. **IES Progress Report Selects Acuity Brands as LED Leader -** A total of 11 LED lighting and controls solutions from Acuity Brands, Inc. were selected for the 2014 Illuminating Engineering Society (IES) Progress Report, which showcases the year's most significant developments in the art and science of lighting. Among the products selected were indoor and outdoor LED luminaires and advanced lighting controls that can be integrated to create a total lighting solution - ideal for reducing energy and maintenance costs - that delivers the finest quality of lighting tailored for a variety of facility needs. <http://www.tedmag.com>

9. **Putting Linear LEDs to the Test by [Craig DiLouie](#) -** Over the past two years, light-emitting diode (LED) luminaires have begun competing effectively against the fluorescent troffer as performance increases and costs decrease. With nearly 1 billion fluorescent luminaires installed in the United States, according to the Department of Energy (DOE), this is a big opportunity. However, it's possible to keep the hardware but replace the lamps with linear LED models. In recent years, these products have come a long way in performance and cost. The primary value proposition is energy savings and longer service life. The DOE tested this and published the results in three CALiPER program reports in spring 2014. <http://www.ecmag.com/section/lighting/putting-linear-leds-test>

10. **Navigant Report Evaluates Market for LED Streetlighting Controls -** Falling prices for LED street lights have spurred a global transition from older lamp technologies to the newer, more efficient, and more controllable lamp technology. Although the LED transition is in large part driving the adoption of new networked street light systems, most LED upgrades continue to be completed without any additional controls beyond simple photocells. However, a growing number of large-scale networked systems have proven that networked systems can work and can provide real benefits. This Navigant Research report analyzes and forecasts that global street lighting revenue will decline from \$2.5 billion in 2014 to \$2.3 billion in 2023. <http://www.navigantresearch.com/research/smart-street-lighting>



## LED Technologies to Watch...

**11. Next Generation Luminaires Design Competition Announces 2014 Indoor Winners** - The Best in Class came from four different manufacturers and covered four different areas of lighting:

- Koncept received Best in Class for its Mosso Pro LED desk lamp.
- Finelite, Inc., received Best in Class for its Series 11LED Micro Profile family of cove mounted luminaires.
- Cree, Inc., received Best in Class for its LS Series utility luminaire.
- Acuity Brands®-Mark Architectural Lighting™ received Best in Class for its Slot 2 & 4 LED-Direct and Bi-Direct family of surface mounted and pendant linear luminaires.

More information on all the winning entries is available at [www.ngldc.org](http://www.ngldc.org)

**12. EW's Top 10 LED Product Picks for September** - Check out this month's Electrical Wholesaling's picks which include LEDs from AAL/Hubbell Lighting, Cree, Ecosense, JESCO Lighting, Litecontrol/Hubbell Lighting, Litetronics, MaxLite, Nora Lighting, Orbit Lighting and Winona Lighting. <http://ewweb.com/product-galleries/ews-top-10-led-product-picks-september>

**13. Tangent by Volkslyte** - A 2-in.-wide luminaire available in suspended downlight and uplight/downlight as well as surface-mounted and recessed configurations. Volkslyte factory-curves the extruded aluminum profile to almost any radius or bent shape, lighting the contour from within. Standard- (6W/linear ft.) and high-output (12W/linear ft.) LED (T6 cold cathode also available), color temperatures 2700K-4000K, dimming options. <http://www.vokslyte.com/>



**14. GE's LightGrid Outdoor Wireless Control System** - Municipalities can benefit from reduced energy and more efficient management of street lights through GE's new LightGrid™ Outdoor Wireless Control System. With the technology of GE Lighting's central management software, the LightGrid can report energy usage and other operational data of street lights to a central database. A Web-based interface linked to the lighting controls allows authorized users and owners to remotely visualize real-time performance of their outdoor lighting system. Further software capabilities include scheduling, customized reporting, grouping and user access level management. GE's LightGrid technology has GPS in the lighting controls so municipalities can instantly identify usage and performance of street lights in specific locations. [www.gelighting.com](http://www.gelighting.com)



**15. Cree® XLamp® XP-L LED Is the Industry's Brightest and Most Efficient Single-Die LED** - Cree XLamp® XP-L LEDs are the first commercially available single-die LED to achieve breakthrough efficacy of up to 200 LPW at 350 mA. Delivering up to 1226 lumens in a 3.45 mm x 3.45 mm package, the XP-L LED enables an immediate performance increase of 50 percent or more as a drop-in upgrade for XP-G based lighting designs. As the brightest member of the industry's only family of high-density class discrete LEDs, the XP-L LED redefines performance, cost and size of LED lighting. <http://www.cree.com>



**16. Prudential Lighting LED Stream: More Architectural Feature than Fixture** - Introducing Stream, an illumination breakthrough that plays with depth perception, creating an uninterrupted line of light that extends as far as the blueprint dictates. Its “barely there” presence radiates wondrously uniform light that seems to emanate from nowhere. Stream creates an evenly illuminated alcove, free of unnecessary or cumbersome parts and pieces.



- **No lens.** An impressive industry first for slot lighting. Patent-pending, lens-free, indirect, high efficacy (90+ lm/w) LED illumination.
- **No seams.** Another industry first. A flexible reflector ships on a roll (up to 200') and installs in three easy steps.
- **Completely fixture-free.** Sleek and minimalist with its trim-less mud-over flange, Stream recedes into its environment, so you see nothing but light. <http://prulite.com/prod/?id=145>

**17. LG Innotek Announces AC-LED Light Engines For Downlights** - LG Innotek has announced plans to enter the market for direct-AC-driven LED technology. The company said it will deliver five new packaged LED products that are optimized for use in AC-driven systems. Moreover, the company is planning three families of modular light engines that combine the LED with AC-driver technology on a circuit board. The area of AC-driver technology is a popular one at the moment because the technology can eliminate the bulky and expensive AC-DC driver module used in most LED luminaires. <http://led.lginnotek.com/>



**18. Hubbell, Totus, and Axis Integrate LED and Surveillance Technologies into One Platform** - Hubbell Lighting and TOTUS Solutions, the leading provider of outdoor lighting based security platforms, will debut Spaulding Lighting's popular Cimarron LED fixture (CL1) controlled by the Integrated TOTUS Surveillance Platform™ (iTSP™) with a built-in Axis Communications multi-megapixel IP video surveillance camera (AXIS M3027-PVE) during the 2014 ASIS International Expo at Axis Communications' booth #1023. <http://www.tedmag.com>

**19. Aerelight Sees a Flat Future for Luxury Lighting** - OLEDs aren't just the stuff of high-end flatscreen displays -- in a few years, we could be lighting our entire homes with them. Big players like Philips, DuPont, and Konica Minolta are already making moves in the space, and LG has even gone ahead and dreamed up **an OLED table lamp**. The problem, however, is that the costs of OLED lighting is still prohibitively high, with single fixtures often selling for thousands of dollars. OTI Lumionics' Toronto-based design studio **Aerelight** wants to help change that, with a fancy-looking OLED desk lamp that retails for \$240, with a futuristic, high-end design, capacitive-touch controls, and Qi-powered wireless phone charging capabilities built right into the base. <http://www.cnet.com/products/aerelight-oled-desk-lamp/>



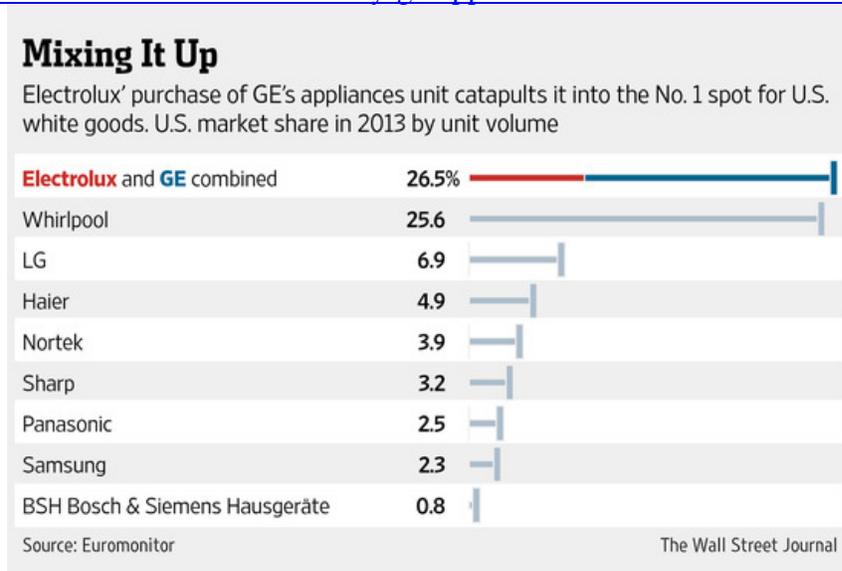
**20. Cree Enters the LED MR16 Lamp Market with TrueWhite** - The LED lamp delivers 92 CRI and R9 saturated-red performance above 50 to meet demanding applications in hospitality and retail. <http://www.cree.com/News-and-Events/Cree-News/Press-Releases/2014/August/MR16-bulb-intro>



## National Energy Issues to Watch

21. **Final Version 1.1 ENERGY STAR Specification for Lamps** - A list of eligible products and their corresponding Eligibility Criteria can be found at [www.energystar.gov/specifications](http://www.energystar.gov/specifications). Details are available at [www.energystar.gov/lamps](http://www.energystar.gov/lamps)

22. **Electrolux to Buy GE Appliances Business for \$3.3 Billion** - Electrolux will retain the GE brand, positioning it as a midrange brand between the mass-market Frigidaire and high-end Electrolux models. For its part, GE gets to exit a business that it has been eager to sell for several years as the conglomerate focuses more tightly on heavy-industry businesses such as jet engines, power turbines and oil-sector services. The transaction is expected to close next year. GE's century-old appliance business generated earnings before interest, taxes, depreciation and amortization of \$390 million on revenue of \$5.7 billion last year. It is reported that lighting would not be part of the sale. <http://online.wsj.com/articles/electrolux-to-buy-ge-appliances-business-for-3-3-billion-1410155847>



23. **GE Lighting Seen Following Appliances in Consumer Exit** - The light-bulb arm is the only remaining consumer-products business within GE, which has shifted its focus to aviation and oil and gas. GE's lighting business employs about 13,000 people and had sales of \$2.7 billion last year, or about 2 percent of total revenue. While GE is shedding its consumer-products manufacturing operations, the logo won't disappear from home appliances. Under the deal with Electrolux, the Stockholm-based maker of Frigidaire refrigerators and AEG stoves agreed to continue using the GE brand for 40 years. <http://www.bloomberg.com/news/2014-09-09/ge-lighting-seen-following-appliances-in-consumer-exit.html>

24. **GE Exec: Lighting Division 'Is Not For Sale'** - With rumors buzzing that General Electric will sell its lighting business, Beth Comstock, chief marketing officer and senior vice president for \$146 billion parent GE has told Lux there are no such plans. The company does not break out lighting revenues in its financial statements, but has lumped them in with revenue for homes appliances.. Financial results for Ohio-based GE Lighting should now become more transparent. GE showed revenue in appliances and lighting of \$8.3 billion, but profits of only \$381 million – a profit percentage of about 4.5 percent. <http://www.luxreview.com/news/>



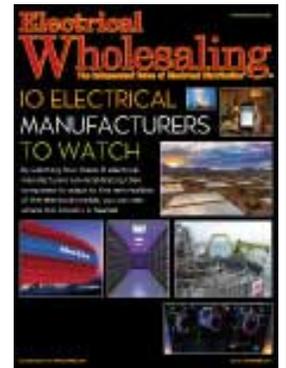
- 25. Philips to Spin-Off Lighting Solutions Business Into Separate Company** - The Philips Lighting Solutions business has annual sales of approximately US \$9 billion excluding the company's Lumileds (LED components) and Automotive lighting businesses, which were recently spun off into another separate lighting business. The press release said Philips' Lighting Solutions business, already the global leader in lighting and serving a growing market estimated to exceed \$77.1 billion, will be better positioned to capitalize on the fundamental changes taking place in the lighting industry, in which the value is shifting from individual products to systems and services. <http://ewweb.com/lighting/philips-spin-lighting-solutions-business-separate-company>
- 26. More than Half of U.S. Companies Project Increased Energy Efficiency Investment in 2015** - Three quarters of decision-makers at U.S. companies have invested in energy efficiency programs in the past 12 months, and more than half (56 percent) project that their investment in energy efficiency next year will be more than last year, according to survey results Schneider Electric released today. <http://www.facilitiesnet.com/>
- 27. DOE Announces Loan Guarantee Opportunity for Innovative Renewable Energy and Efficient Energy Projects** - DOE's Office of Energy Efficiency and Renewable Energy Loan Programs announced a solicitation making up to \$4 billion in loan guarantees available for innovative renewable energy and energy efficiency projects in the U.S. [full announcement](#)
- 28. NEMA Publishes NEMA LSD 64-2014 Lighting Controls Terminology** - This white paper, which was originally published in 2012, was updated to clarify terminology related to daylight responsive controls. NEMA LSD 64 defines terminology related to controls for lighting systems for non-residential and residential applications. The goal of LSD 64 is for NEMA definitions to ultimately be used as the definitive reference for codes, standards, and legislation. This will eliminate the creation of new meanings for already defined terms, will minimize misapplication of controls terminology, and will eliminate the need for customized glossaries and terminology sections. [NEMA LSD 64-2014](#) may be downloaded at no cost on the NEMA website. [www.nema.org](http://www.nema.org)
- 29. NEMA Publishes NEMA LSD 28-2014 - Minimizing the Potential of Base Arcing Between Certain Wattage HID Lamps** NEMA LSD 28 educates end users of high wattage HID lamps about lamp-bases and lampholders and recommends best practices for selection and maintenance. [NEMA LSD 28-2014](#) may be downloaded at no cost on the NEMA website. [www.nema.org](http://www.nema.org)
- 30. Webinar: Beyond Utility Rebates: PJM's EER Program for Lighting Manufacturers** - Lighting Solution Development (Dave Shiller) is teaming with Encentiv Energy (Lee Levitt) to host a free webinar about one of the largest untapped C&I lighting rebate opportunities in the USA. **DATE:** October 10, 2014 | **TIME:** Noon ET / 9am PT | **DURATION:** 45 minutes. Many lighting manufacturers are familiar with PJM Interconnect. What many do not know is a new commercial energy efficiency incentive program that PJM has launched called the Energy Efficiency Resource or EER Program. The program provides lucrative commercial lighting retrofit incentives, in addition to the rebates offered by individual utilities, within the PJM territory. Register at: <https://attendee.gotowebinar.com/register/2155552225331378946>



**31. EWs 10 Electrical Manufacturers to Watch** - Editors of *Electrical Wholesaling* find it hard to pull out just 10 companies from the hundreds of manufacturers who sell through electrical distributors, but feel you will agree that the companies selected are all movers and shakers in their own way.

They tend to be very large and have sales of over a billion dollars. Because of space considerations, this issue will include the five electrical manufacturers based overseas, and the Oct. 2014 issue of EW will include the picks for the five domestically-based electrical manufacturers to watch. 2013 electrical products sales:

- 1) ABB - Zurich, Switzerland, Ulrich Spiesshofer, CEO, \$41.48 billion
- 2) OSRAM - Munich, Germany, Wolfgang Dehen, CEO, \$7.29 billion
- 3) PHILIPS - Eindhoven, Netherlands, Eric Rondolat, CEO, \$11.59 billion
- 4) SCHNEIDER ELECTRIC - Rueil-Malmaison, France, Jean-Pascal Tricoire, Chairman & CEO, \$32.5 billion
- 5) SIEMENS - Munich, Germany, Joe Kaeser, CEO, \$102.5 billion in total, probably over \$80 billion in electrical products [www.ewweb.com](http://www.ewweb.com)



**32. Incandescent A-Line Lamps Decline Sharply in Second Quarter** - NEMA's shipments index for A-line lamps dropped 61.2 percent during 2014Q2, as the full effect of EISA 2007 lamp efficiency regulations took hold during the first six months of the year. Substitute lamp types such as LED A-line and halogen A-line posted increases of 35.8 and 9.9 percent q/q, respectively. Meanwhile, the index for CFLs declined by 2.7 percent compared to the previous quarter, as CFLs surpassed incandescent A-line lamps to assume the lead position with respect to market share, garnering a 36.4 percent share of screw-in base consumer type lamps. Incandescent A-line lamps slipped nearly 24 points to a share of 34.7 percent. The share of halogen A-line lamps climbed 10.5 points reaching 26 percent, while LED A-line lamps improved to 2.9 percent. [www.nema.org](http://www.nema.org)

**32. The 2014 IES Progress Report is Closed** - The IES Progress Committee selections for this year will be presented in a live presentation at the IES Annual Conference on Monday, November 3, 2014 in Pittsburgh. For information on the annual conference please visit [www.ies.org/ac](http://www.ies.org/ac)



**33. Lighting that Produces Wi-Fi** - A new fluorescent lamp emits Wi-Fi signals. Created by enclosing ionized argon and mercury gas in a common fluorescent tube, the device becomes functional when the lighting element is turned on, changing the gasses to a plasma. A coupling sleeve is used to store the electrical charge, making the resulting plasma column highly conductive and useful as a smart antenna for 3G/3.75G/4G Wi-Fi to be transmitted and received. <http://www.buildings.com/article-details/articleid/17943/title/lighting-that-produces-wi-fi.aspx>

**34. EC&M's 2014 Top 20 Electrical Contractors** - To find out more about the driving forces behind these firms' success, details on what solidifies their position as leaders in the industry, hot and cold market analysis, and key trends shaping the business climate this year and next, read the full **2014 Top 50 Electrical Contractors Special Report** and see the **Top 50 List** <http://ecmweb.com>

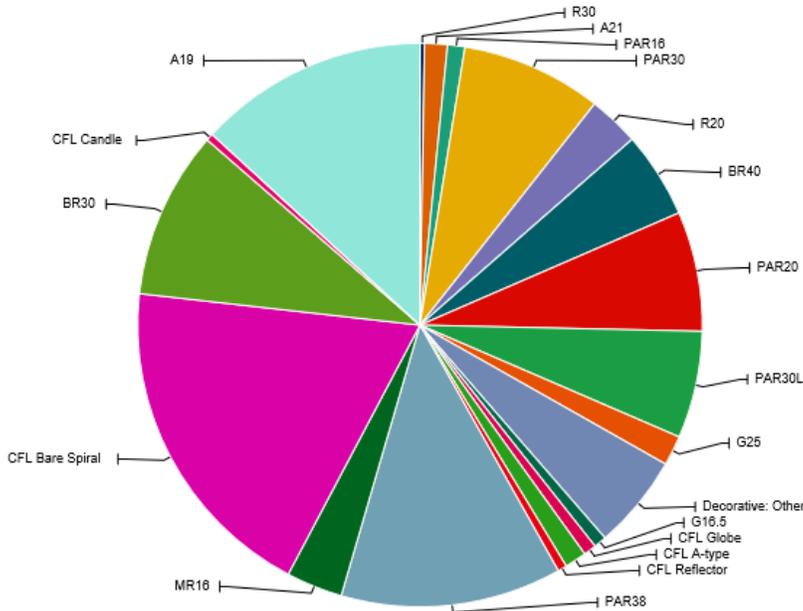
**35. US Renewable Electrical Generation Hits 14.3 Percent** - According to the U.S. Energy Information Administration (EIA)'s latest "Electric Power Monthly" report, with data for the first six months of 2014, renewable energy sources (i.e., biomass, geothermal, hydropower, solar, wind) provided 14.3 percent of net U.S. electrical generation. Not long ago, EIA was forecasting that renewables would not reach 14 percent until the year 2040. <http://www.renewableenergyworld.com/>



**36. What's New in ASHRAE/IES 90.1-2013 by Craig Dilouie** - The major changes to ASHRAE/IES 90.1 2013's Section 9 (lighting) include:

- adjusted lighting power densities (LPD)
- more stringent lighting control requirements
- a new table format for determining lighting power and control requirements in individual spaces <http://lightingcontrolsassociation.org/>

**37. <https://data.energystar.gov/Active-Specifications/Lamps-V1-0-by-Type/gtew-3ttu>**



**38. Light Bulbs Get Smarter, but Not Easier** - Connected bulbs are coming to a hardware store near you. But why would you want them? Smartbulbs can be programmed to wake you in the morning, turn on when you're coming home or change the mood to "romantic dinner" with a click on your phone. They can sync up with other electronics in your home like thermostats or TVs, manage themselves to save electricity and even alert you if there's a fire. The hard part is keeping things simple. <http://online.wsj.com/articles/light-bulbs-get-smarter-but-not-easier-1411495549>

**39. Stan Angelo's Smart Electric Make Light Do More** - On and off is so last year! Smart Electric's innovative lighting solutions include multifunctional incandescent and halogen light bulbs with auto-dimming, auto-off, 4-level dimming, emergency flashing and shatterproof/shatter-resistant bulbs that fit in standard base lighting fixtures and lamps for optimal consumer ease and convenience. The microchip in the base of each bulb acts like a minicomputer. Smart Bulbs are programmed to perform a variety of functions that control the light and provide intelligent lighting solutions to everyday problems. <http://smartelectric.com/>



**40. U.S. Electricity Generation by Energy Source** - In 2013, the United States generated about 4,058 billion kilowatt-hours of electricity. About 67% of the electricity generated was from fossil fuel (coal, natural gas, and petroleum), with 39% attributed from coal. Percent share were:

- Coal 39%
- Natural Gas 27%
- Nuclear 19%
- Hydropower 7%
- Petroleum 1%
- Other Gases < 1%
- Other Renewable 6%
  - Biomass 1.48%
  - Geothermal 0.41%
  - Solar 0.23%
  - Wind 4.13%

<http://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3>

## State Energy Issues to Watch...

**41. Ford Invests in Future with New LED Lighting at Manufacturing Plants Globally** - The new lights, valued at more than \$25 million, will save energy and money while improving safety and lighting quality. The 25,000 new LED fixtures will replace traditional HID and fluorescent lights, and are expected to reduce Ford's energy use at manufacturing facilities by 56 million kilowatt-hours annually. Work began at Dearborn Truck Plant late last month to replace worn and outdated overhead lighting. The LED replacement program will continue through the year at 17 other Ford manufacturing facilities across the globe. <http://www.businesswire.com>

**42. UConn's Gampel Pavilion to Get New Lighting** - The bright lights shining on UConn's national champion basketball programs will become more energy efficient and versatile. The school's Board of Trustees this week approved a plan to spend \$546,000 to replace the 216 lighting systems inside Gampel Pavilion with one that uses 100 energy-efficient LED lights. The new system also will have an entertainment value, allowing for strobe effects, color changes and the ability to be dimmed during player introductions. The school is requesting proposals from contractors and expects the work to take about two weeks to complete. 9/25 AP

**43. BGE Achieves Significant Energy Savings Milestones of \$2 Billion through the BGE Smart Energy Savers Program®** - Baltimore Gas and Electric Company (BGE) suite of offerings are intended to help customers reduce energy usage and demand in support of EmPOWER Maryland's goal of a 15 percent per capita reduction in energy consumption by 2015, and the smart meter enabled BGE Smart Energy Rewards® and Smart Energy Manager® programs, have allowed participating BGE customers to save nearly 1.8 billion kilowatt hours (kWh) a year. Participants in these programs have received more than \$380 million in incentives for their efforts to create more energy efficient homes and businesses throughout central Maryland. 9/16 BUSINESS WIRE

**44. APCo Expands Energy-Saving Programs in W.Va.** - Appalachian Power has expanded its energy efficiency programs for West Virginia businesses. Officials say changes to the programs allow manufacturers, hospitals, schools and other nonresidential energy users to receive funding or incentives for existing and new projects that help them become more energy efficient. Applicable projects include custom heating and air conditioning, lighting, motors, controls and data systems installation. Officials say there's \$550,000 budgeted for the programs this year. 9/12 AP



- 45. DP&L Awards Victoria Theatre Association a Rebate for Energy Efficiency Lighting Upgrades -** Dayton Power & Light Company (DP&L) awarded Victoria Theatre Association a rebate of \$67,650 for extensive lighting upgrades in The Arts Garage. Over the summer they replaced 445 lighting fixtures with energy efficient LED fixtures that will save 519,387 kilowatt hours of energy and about \$41,000 annually. More than 230 motion sensors were also installed to turn off unnecessary lighting based on occupancy. 9/23 BUSINESS WIRE
- 46. Memphis, TN Main Library Will Get an Energy-Saving Overhaul -** Each year, the Benjamin L. Hooks Central Library runs up a utility bill of \$666,000. The renovation project aims to cut the bill down to about \$474,000 -- a 29% decrease. Workers would reduce costs by replacing existing light bulbs with more-efficient LED lights, improve lighting controls, heating and air conditioning systems and water conservation. The City Council voted unanimously onto allocate \$2.4 million in bond money to the project. The bonds would be repaid through the savings on the utility bill. Siemens is guaranteeing that if the annual savings are less than the amount that it has predicted, it will pay the difference. 9-02 The Commercial Appeal
- 47. Ace Hardware Deploys Intelligent LED Lighting in Retail Support Center -** Digital Lumens has announced an intelligent lighting installation at the 1-million-ft<sup>2</sup> Ace Hardware Retail Support Center in Rocklin, CA that supplies goods to northern California retail stores. The wirelessly-networked lighting delivers 81% energy savings relative to the mix of fluorescent and metal halide (MH) products that were previously used in the warehouse space. The Digital Lumens system includes ZigBee-wireless-enabled high-bay LED fixtures along with the LightRules lighting management platform that can be used to establish operational settings and to monitor power usage and the health of the luminaires. <http://www.ledsmagazine.com>
- 48. 2015 Super Bowl to Be Played Under LED Lights -** University of Phoenix Stadium in Glendale, AZ has installed high performance LED stadium lights from Ephesus Lighting, Inc. According to Amy Casper, CEO of the Syracuse-based company, the facility will be the first NFL venue to illuminate the playing surface exclusively with LED lighting. In addition to serving as the Arizona Cardinals' home field, University of Phoenix Stadium is also the site of the Super Bowl on February 1, 2015, the Pro Bowl on January 25, 2015 and the Fiesta Bowl on New Year's Eve 2014. On September 21, 2014, the Cardinals hosted the San Francisco 49ers in the first game played under the new lights. <http://www.manufacturing.net/news/2014/09/2015-superbowl-to-be-played-under-led-lights>
- 49. Carolina Hurricanes Unveil Green LED Lighting for Pre-Season Opener -** PNC Arena is the first NHL venue in the United States to feature energy-efficient LED lighting, which will not only save money, but be a benefit to the fans who attend the more than 150 events hosted in the arena every year. In a history making move, 260 older HID lights in the arena were removed and replaced with 216 LED lights. The lights, which are manufactured by RTP-based Cree and installed by Musco Lighting can also be dimmed, setting a different mood for shows than for sporting events. PNC Arena GM Dave Olsen predicts all large venues will convert to LED in the next couple of years. <http://www.wncn.com/story/26550449/hurricanes-unveil-green-led-lighting-for-pre-season-opener>

## **Monthly Special Feature... DOE Releases LED T8 Caliper Reports -**

Video: LED Linear Lamps and Troffer Lighting: CALiPER Report Series 21:  
<http://ecmweb.com/lighting-control/doe-releases-led-t8-caliper-report>

The Department of Energy's CALiPER program performed a series of investigations on linear LED lamps. Each report in the series covers the performance of up to 31 linear LED lamps, which were purchased in late 2012 or 2013. The first report focuses on bare lamp performance of LED T8 replacement lamps, and subsequent reports examine performance in various troffers, as well as cost-effectiveness. There is also a concise guidance document that describes the findings of the Series 21 studies and provides practical advice to manufacturers, specifiers, and consumers. Report 21.4 was just released in June: [http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/caliper\\_21-4\\_t8.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/caliper_21-4_t8.pdf)

### **Application Summary Report 21: Linear (T8) LED Lamps**

This report focuses on the bare lamp performance of 31 linear LED lamps intended as an alternative to T8 fluorescent lamps. Data obtained in accordance with IES LM-79-08 indicated that the mean efficacy is similar to that of fluorescent lamps, but that lumen output is often much lower. This presents a situation where something must change in order for energy savings and equivalent illumination levels to be achieved simultaneously. In this case, the luminous intensity distribution of all the tested lamps was directional or semi-directional, rather than omnidirectional.

Also discussed in this report are several issues related to the electrical configuration of the lamps, such as the required socket types and power feed location. While no configuration is necessarily better, the multitude of options can make specifying and installing linear LED lamps more difficult, with the potential for safety issues. Similarly, the variety of color and power quality attributes adds a layer of complexity to the specification process. Many products offered good or excellent quality attributes, but some did not and thus could be perceived as inferior to fluorescent lamps in some installations. (31 pages, March 2014)

### **Report 21.1: Linear (T8) LED Lamps in a 2×4 K12-Lensed Troffer**

This report focuses on the performance of the same 31 linear LED lamps operated in a typical troffer with a K12 prismatic lens. In general, luminaire efficacy is strongly dictated by lamp efficacy, but the optical system of the luminaire substantially reduces the differences between the luminous intensity distributions of the lamps. While the distributions in the luminaire are similar, the differences remain large enough that workplane illuminance uniformity may be reduced if linear LED lamps with a narrow distribution are used. At the same time, linear LED lamps with a narrower distribution result in slightly higher luminaire efficiency. (23 pages, April 2014)

### **Report 21.2: Linear (T8) LED Lamp Performance in Five Types of Recessed Troffers**

Although lensed troffers are numerous, there are many other types of optical systems as well. This report looks at the performance of three linear (T8) LED lamps—chosen primarily based on their luminous intensity distributions (narrow, medium, and wide beam angles)—as well as a benchmark fluorescent lamp in five different troffer types. Also included are the results of a subjective evaluation. Results show that linear (T8) LED lamps can improve luminaire efficiency in K12-lensed and parabolic-louvered troffers, effect little change in volumetric and high-performance diffuse-lensed type luminaires, but reduce efficiency in recessed indirect troffers. These changes can be accompanied by visual appearance

and visual comfort consequences, especially when LED lamps with clear lenses and narrow distributions are installed. Linear (T8) LED lamps with diffuse apertures exhibited wider beam angles, performed more similarly to fluorescent lamps, and received better ratings from observers. Guidance is provided on which luminaires are the best candidates for retrofitting with linear (T8) LED lamps. (47 pages, May 2014)

### **Report 21.3: Cost-Effectiveness of Linear (T8) LED Lamps**

Meeting performance expectations is important for driving adoption of linear LED lamps, but cost-effectiveness may be an overriding factor in many cases. Linear LED lamps cost more initially than fluorescent lamps, but energy and maintenance savings may mean that the life-cycle cost is lower. This report details a series of life-cycle cost simulations that compared a two-lamp troffer using LED lamps (38 W total power draw) or fluorescent lamps (51 W total power draw) over a 10-year study period. Variables included LED system cost (\$40, \$80, or \$120), annual operating hours (2,000 hours or 4,000 hours), LED installation time (15 minutes or 30 minutes), and melded electricity rate (\$0.06/kWh, \$0.12/kWh, \$0.18/kWh, or \$0.24/kWh). A full factorial of simulations allows users to interpolate between these values to aid in making rough estimates of economic feasibility for their own projects. In general, while their initial cost premium remains high, linear LED lamps are more likely to be cost-effective when electric utility rates are higher than average and hours of operation are long, and if their installation time is shorter. (22 pages, May 2014)

In 2013, DOE completed a study that compared LED linear replacement lamps, retrofit kits, and dedicated LED troffers with fluorescent benchmark products in a simulated office space. Key findings highlight the benefits and potential problems likely to be encountered as LED options for lighting offices and classrooms become more popular, and offer valuable feedback for manufacturers of these products as well as specifiers and installers.

A practical, step-by-step guide to upgrading troffers to LED can be found at:

[http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/led\\_troffer-upgrades\\_fs.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/led_troffer-upgrades_fs.pdf)

