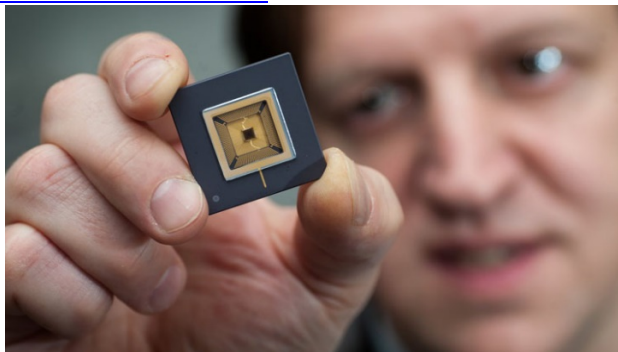# EnergyWatch

Attardi Marketing

July 2016

Excellence can only be attained if you:
- ➢ *Care more than others think is wise*
- ➢ *Risk more than others think is safe*
- ➢ *Dream more than others think is practical*
- ➢ *Expect more than others think is possible*

Something to Think About…

Is Li-Fi the Next Generation of Wireless Communication? by Robert Bain - In the office of the future, the luminaires won't just provide light, they'll also provide your internet connection. A new technology called Li-Fi can encode data in the light from normal LED luminaires, turning your office lights into a high-speed data network. It's done by modulating the light in a way that's invisible to the human eye, but can be picked up by a receiver plugged into a computer. Li-Fi is faster than Wi-Fi, more energy efficient (since the lights are on anyway) and eliminates interference problems with other electronic devices. And because light doesn't go through walls, it's inherently secure. Plus, the main element of the network – the light fittings – already exists in every building. The technology could also solve a growing problem with wireless communication systems: the radio frequency spectrum is overcrowded and we're running out of space. The visible light spectrum is 10,000 times bigger, so Li-Fi is well placed to become the next generation of wireless communications. http://luxreview.com/article/2015/06/is-li-fi-the-next-generation-of-wireless-communication-

Professor Harald Haas of PureLiFi holding the component that receives light from luminaires and turns it into cat videos

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LED EnergyWatch…

1. ***Visible Light Communication Market to Increase Exponentially -*** The global VLC/Light Fidelity/(Li-Fi) market was valued at $ 454.8 million in 2015, according to Grand View Research Inc. The company forecasts that rising adoption of communication technology and exponential increase in the number of internet users will drive the VLC market, expanding at a CAGR of over 80% from 2016 to 2024. Grand View Research says that as data traffic increases in developed countries, LiFi technology will be adopted at a higher rate during the forecast period. The company cites the growing demand for a secure, fast and reliable network as a driver of growth for the VLC industry. Integral in the expansion of VLC over the period is the increasing adoption of an LED-based lighting system in various applications such as retail sector, automotive and transport, in-flight communication, and smartphones. http://www.solidstatelighting.net/visible-light-communication-market-increase-exponentially/

2. ***The Designlights Consortium™ Releases The Final Technical Requirements Table V4.0 -*** The solid-state lighting market has grown and product performance has improved significantly in the nearly 3 years since the V2.0 efficacy levels were established. Therefore, to keep up with performance improvements, the V4.0 revision focuses primarily on efficacy. http://www.designlights.org/resources/file/TRT_V40_Final_FULLTABLE_FINAL_highlights

3. ***DOE Publishes Updated SSL R&D Plan -*** Widely referenced by industry and government both here and abroad, the R&D Plan reflects SSL stakeholder input on key R&D topics that will improve efficacy, reduce cost, remove barriers to adoption, and add value of LED and OLED lighting solutions over the next three to five years, and discusses those applications that drive and prioritize the specific R&D. While the entire R&D Plan was updated with the latest figures, some revisions were more extensive than others. Among the more noteworthy changes are revised discussions of global adoption of SSL technology. To download a PDF of the 2016 SSL R&D Plan, go to http://energy.gov/eere/ssl/technology-roadmaps

4. ***DOE Announces Selections for SSL R&D Funding Opportunity -*** Total DOE funding for the nine projects is more than $10.5 million and leverages a cost-share contribution from each recipient, for a total public-private investment of over $13.5 million. These 18- to 24-month projects will focus on the following existing DOE SSL R&D program areas:
   - *Core Technology Research*—the application of fundamental scientific concepts to SSL technology
   - *Product Development*—using the knowledge gained from basic or applied research to develop or improve commercially viable SSL materials, devices, or systems
   For more information: http://energy.gov/eere/ssl/doe-announces-selections-ssl-rd-funding-opportunity

5. ***Acuity Brands Goes Digital as Lighting Shifts to LEDs -*** "We rebuilt this organization while the car was going 40mph. Now we're going 70, and we need to get to 100," says Vernon Nagel, Acuity's CEO. Company sales have shot up 69% in five years to $2.7 billion while profit almost tripled to $222 million. http://www.forbes.com/sites/danielfisher/2016/06/15/acuity-brands-goes-digital/#204b344e6db8

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6. ***Current, Powered by GE Expands SSL Ecosystem -*** Celect, RetailNext, VideoMining, Motionloft, Soofa, and Comlight are its newest smart LED-based lighting ecosystem partners with each of the ventures planning to integrate network-centric software or hardware with Current solid-state lighting (SSL) products and networks as well as the Predix analytics platform. The Current announcement follows a number of similar partnership announcements that broke back in the timeframe of the LightFair International event. The company had acquired Daintree Networks. Subsequently, the company announced a long list of smaller ecosystem partners. And then Current announced a partnership with Honeywell in the Internet of Things (IoT) space. Current has clearly determined that the IoT revolution can deliver new value to its customers far faster than the company could develop new offerings organically. http://www.ledsmagazine.com/

7. ***LED Luminaire Sales for Horticultural Applications Are Expected to Total $2.8 Billion by 2024 -*** A recent report from Navigant Research examines the market for lighting within horticultural applications, including global forecasts for unit sales and revenue, segmented by region, horticultural type, lamp type, equipment type, and construction type, through 2024. The next five years are expected to bring great opportunity for lighting companies as new indoor growing facilities are built and as new horticultural market entrants make decisions on available brands. Light-emitting diodes (LEDs) are now the preferred lighting technology in an increasing number of facilities, despite being more expensive than other technologies, because of advantages that can increase energy efficiency and crop yields. http://www.navigantresearch.com/newsroom/led-luminaire-sales-for-horticultural-applications-are-expected-to-total-2-8-billion-by-2024

8. ***Energy Efficiency in Campuses and Other Building Complexes -*** This whitepaper looks at energy efficiency in general and specifically how energy monitoring through flow metering can help to achieve energy saving targets and enable various tenants within building complexes to pay a fair price for the energy they consume. It is important that the lights within a building are used intelligently to maximize the use of natural daylight and to ensure that they are switched on only when required. The key to energy efficiency is management. It really doesn't matter how much you spend on the building envelope and the latest energy-efficient equipment−without management, you will waste money–and energy. http://info.geoilandgas.com/flow-efficiency-whitepaper-thank-you.html?aliId=8737699

9. ***Why Apple's New Energy Business Should Scare Utilities -*** Backing large-scale solar farms in locales like California, Mongolia, China and Nevada may have just been a warm up for Apple's foray into clean energy. As the tech site http://9to5mac.com/2016/06/09/apple-energy-company/ reported, the i-device giant has filed a federal application to become a solar company in its own right — sort of. More specifically, Apple is asking the Federal Energy Regulatory Commission for the green light to begin selling excess power through a subsidiary called Apple Energy LLC within the next 60 days. The move is part of the company's efforts to both implement a $848 million California solar project and achieve an overall 100 percent renewable energy goal. Those watching the market for corporate renewable energy say the filing — which comes after similar steps by Walmart, Dow Chemical, Google and Amazon — could signal both a shifting competitive landscape for energy incumbents and a change in Apple's own product strategy. https://www.greenbiz.com/article/why-apples-new-energy-business-should-scare-utilities

10. 2016 Connected Lighting Systems Workshop Presentations Posted - More than 170 attendees joined DOE's Connected Lighting Systems Workshop, held June 8–9, 2016, in Santa Clara, CA. Top lighting and IoT experts examined key barriers and issues impacting development of connected lighting systems. Panel topics included configuration complexity, test beds, energy reporting, interoperability, and leading-edge indoor and outdoor installations. The 2016 workshop presentations and materials have been posted at: http://energy.gov/eere/ssl/2016-connected-lighting-systems-workshop-presentations-and-materials

11. Retail Abandons CMH Lamps in Favor of Flexible Solid-State Lighting by Tom Jory and James Zhai - Retail shops, with their long operating hours, have been among the earliest adopters of LED-based solid-state lighting (SSL) due to its high energy efficiency. Retail lighting is on anywhere from 12 to 24 hours per day, so the 80% improvement in energy efficiency for SSL pays off quickly. High-quality light and good lighting design are essential to attractive presentation of merchandise - and, therefore, to a store's success. Energy-efficient lighting is of no benefit to store owners if their merchandise appears dull and colorless. Retailers have thus helped to push the SSL industry to deliver higher quality of light with good color rendering and a broad range of color temperatures. With a total conversion to solid-state lighting, retailers can essentially future-proof their stores. They will now have enormous flexibility not only in selection of color quality and lighting design, but will also position themselves for adoption of new lighting control systems and integration with emerging Internet of Things (IoT) technologies. http://www.ledsmagazine.com/

12. DLC Networked Controls Specification Enables Utility Incentives - The DesignLights Consortium (DLC) has released a Networked Lighting Controls category in its Qualified Products List (QPL). The first qualifying products will be published in June 2016. The likely result is inclusion of networked lighting controls in rebate programs that annually allocate billions of dollars in funding to promote energy-efficient lighting. While lighting controls are common in rebate programs, penetration in existing commercial buildings remains low. The U.S. Department of Energy estimates that daylight harvesting controls are installed in only two percent of commercial buildings, for example. DLC estimates that networked lighting controls are installed in less than one percent of lighting projects in member programs. Nearly all current prescriptive rebates do not recognize networked lighting control systems. http://lightingcontrolsassociation.org/topics/utility-rebates/dlc-networked-controls-specification-enables-incentives-for-utility-incentives/

13. Osram Sheds Light on Corals with Oslon LEDs - AcroOptics, a research lighting company with product lines focused on aquaculture, algaculture, horticulture and biological research, has developed the CRAVE LED Reef Aquarium Lighting System, a configurable native habitat simulation lighting system for aquaculture and reef aquariums, illuminated with LEDs from Osram Opto Semiconductors. Designed to optimize the photosynthetic process, the CRAVE LED lighting fixture generates light peaks that correspond to the most efficient wavelength absorption ranges for the chlorophylls that power coral metabolism. Additionally, significant broad-spectrum coverage benefits both appearance and other light-sensitive biological processes. http://www.ledinside.com/products/2016/5/osram_sheds_light_on_corals_with_oslon_leds

14. AMA Urges Minimization of Blue-Emission from LED Streetlights - The American Medical Association (AMA) says that some LED streetlights are harmful to human health and the environmental. The AMA has officially taken a stand against light pollution and promoted the public awareness of the pervasive nighttime lighting's adverse health and environmental effects, especially from blue-rich LED lighting. According to the AMA, disability glare is caused by light scattered in the eye, especially blue light. The scattered light in the eye creates a luminous veil over the retinal image, which has the effect of reducing retinal contrast. The AMA asserts that the discomfort and disability from intense, blue-rich LED lighting can decrease visual acuity and safety, and potentially create a road hazard and has five times greater impact on circadian sleep rhythms than conventional street lamps. http://www.solidstatelighting.net/ama-urges-minimization-blue-emission-led-streetlights/

15. IES to Perform a Thorough and Reasoned Review of the AMA Report - On June 14, 2016, the American Medical Association (AMA) announced its adoption of recommendations contained in CSAPH Report 2-A-16 entitled *"Human and Environmental Effects of Light Emitting Diode (LED) Community Lighting."* This report was approved as part of the AMA's Council on Science and Public Health (CSPAH) proceedings. The IES was not consulted in this process. Of primary concern to the IES is the potential for this report and its ensuing press to misinform the public with incomplete or inaccurate claims and improper interpretations. We intend to respond to this through a proper analysis. We are working with a group of researchers familiar with these issues, representing different institutions and areas of practice, to review the AMA report. http://ies.org/emails/2016/june/ama-response.html

16. NEMA Comments on American Medical Association Community Guidance - The AMA recommendation encouraging the use of 3000K correlated color temperature (CCT) or lower may compromise the ability of the lighting system to meet all critical design criteria for each unique application and is not an appropriate solution for all applications, nor is it is supported by the current body of research. The AMA makes further recommendations regarding the spectral content of outdoor lighting installations that raise serious concerns for electrical manufacturers. NEMA agrees that spectral content should be one factor in effective lighting for outdoor installations. However, a single solution is simply not appropriate for all situations. http://www.nema.org

17. DOE Publishes New CALiPER Snapshot on LED Downlights - Among the key findings of the new Snapshot, which is based on DOE's LED Lighting Facts® database:
- Across all products listed with LED Lighting Facts, average efficacy gains continue to track at about 10 lm/W per year.
- The efficacy of LED downlights is lower than that of most of the LED luminaire types but higher than that of downlights using conventional sources. The mean efficacy for LED downlights has increased by just 8 lm/W over the past 20 months.
- Most of the listed LED downlights fall into traditional lumen-output ranges for residential and commercial applications, but a wide variety of performance is available.
- In contrast with other LED luminaires, the mean input power has dropped for LED downlights over the past five years, and the mean output has only increased slightly.
- LED downlights tend to offer better color fidelity than other LED product types, with 38% offering a CRI greater than 90. http://energy.gov/eere/ssl/downloads/snapshot-downlights

18. *NEMA Publishes NEMA LSD 74-2016 Considerations of Field LED Driver Replacement -* This new white paper discusses issues related to the field replacement of drivers in LED lighting fixtures, and how several aspects must be considered to ensure that the replacement driver will function the same as the original driver. Developed by the NEMA Ballast Section Technical Committee, NEMA LSD 74 is useful for the lighting industry and facilities management. Download at no cost at: http://www.nema.org/Standards/Pages/Considerations-of-Field-LED-Driver-Replacement.aspx

19. *Energy Efficiency Upgrades* **by** *David Lewellen -* **http://www.facilitiesnet.com**
    Part 1: Advances In Getting Funding for Energy Efficiency Projects Part n Environmental Defense Fund's Investor Confidence Project to standardize the process of performing energy efficiency upgrades.
    Part 2: Real Impact of New Energy Efficiency Funding Protocol Is Financial Part on EDF's Investor Confidence Project to standardize the process of performing energy efficiency upgrades.
    Part 3: SIDEBAR: Energy Efficiency Upgrades: Step By Step on EDF's Investor Confidence Project to standardize the process of performing energy efficiency upgrades.

20. *Philips Hue Covers the White-Light Spectrum with White Ambiance LEDs -* They won't put out light in pink, purple, or green like other Hue bulbs, but they will shift color temperatures within that white-light spectrum: warm, candle-like tones at one end and cool, bluish-white daylight tones at the other. The cost per bulb? $30, with a two-bulb starter kit available for $130. For the extra cash, the starter kit comes with a handy wireless remote as well as the second-gen Hue Bridge, which brings **Apple HomeKit** support into the picture. That means you'll be able to control the bulbs with Siri commands alongside **other HomeKit-compatible smart home gadgets**. And, if HomeKit isn't your platform of choice, you've got a number of other Hue-compatible third parties to work with, including **IFTTT**, **Wink**, **SmartThings**, **Nest**, and **Amazon's Alexa**. http://www.cnet.com/products/philips-hue-white-ambiance/

21. *Made of Light Too–A Closer Look at Light Video Series -* In November 2015, the tenth anniversary of the publication of MADE OF LIGHT, Speirs + Major collaborated with filmmaker James Newton to create 12 short, abstract videos highlighting the themes of the project: Source, Contrast, Surface, Color, Movement, Function, Form, Space, Boundary, Scale, Image and Magic. Posted at: http://www.lightnowblog.com/2016/06/made-of-light-too-video-series/

22. *Amerlux Joins Philips Lighting's EnabLED Licensing Program -*Philips Lighting announced that it has signed a patent license agreement with the USA company Amerlux. The license, based on Philips Lighting's EnabLED licensing program's published terms and conditions, provides Amerlux with full, worldwide access to a wide range of basic LED control and system-level technologies. As a result of the agreement, the outstanding litigation between the companies related to patents offered under the EnabLED licensing program for LED Luminaires and Retrofit Bulbs has been dismissed. To date more than 200 US companies have joined the EnabLED program and Amerlux is the second to be announced within a week. http://www.ledinside.com

23. *Number of Rebates for LED Tubes Went Up While Dollar Amounts Went Down* - This year, the number of programs providing incentives for these lamps increased 28%. An interesting trend we saw though was that the average prescriptive rebate for these lamps dropped 33% to $7.95 per lamp. http://www.briteswitch.com/news/2016RebateTrends.html

Global LED EnergyWatch…

*24. **What I learned from My £100 million LED Roll-Out** -* Simon
Waldron was part of the team which delivered an award-winning
£100 million LED lighting roll-out at UK supermarket chain
Sainsbury's. Here he shares what he learned from the
experience……..ascertain the project priorities:

- **Aesthetics** It may simply be about improving the appearance of the building for its occupants
- **Performance** Many lighting refurbishments are undertaken just to reduce running costs
- **Welfare** Clients are expressing an interest in 'human-centric 'lighting to improve occupant wellbeing
- **New technologies** The Internet of Things is on the cusp of breaking into estate management

Now watch the video.. https://youtu.be/eGb8laH_mkg
http://luxreview.com/article/2016/06/how-to-organise-a-100m-led-roll-out

*25. **A Campaign to Deploy 10 Billion High-Efficiency Bulbs** -* The Global Lighting Challenge is a race
to reach cumulative global sales of 10 billion high- efficiency, high-quality, and affordable advanced
lighting products, such as LED lamps. This race will showcase the ways businesses, governments,
and other public-sector leaders are taking action to accelerate this transition. Representatives from 12
countries and the European Commission endorsed the launch of the Challenge at the Sixth Clean
Energy Ministerial (CEM6) in May 2015. The Global Lighting Challenge is now seeking
commitments from public- and private-sector leaders to speed us toward the 10 billion goal.
http://www.globallightingchallenge.org/

*26. **GE's Current Extends Smart City Deal with China's Tianjin** -* A new MOU between the two
parties calls for Tianjin to extend the use of smart LED street lights beyond the city's central
business district, which has been operating a Current intelligent lighting scheme since late last year.
Tianjin, a northern city of over 15 million people on the coast, will add sensors to its street lighting
network and tie them into GE's Predix cloud data system "to pull and analyze data driving additional
outcomes, such as detecting real-time traffic patterns, pointing drivers to available parking spaces, or
helping emergency responders react to situations before they arrive on scene." Tianjin's central
business district has been using the Internet-connected LED street lights not just for illumination but
also for other operations, such as displaying messages and advertising on digital screens. Current has
made several strategic moves recently, including striking a deal with Honeywell division Tridium to
help collect and analyze building data. In April, it acquired Los Altos, CA-based Daintree Networks,
which makes wireless control systems for building automation.
http://www.ledsmagazine.com/articles/2016/06/ge-s-current-extends-smart-city-deal-with-china-s-tianjin.html

*27. **German Railway Set to Install 1 Million LED Luminaires** -* Deutsche Bahn says the $5.7 billion
program – which will take up to 15 years – will see all lights with traditional technologies including
fluorescent, mercury and sodium replaced on 5,400 railway stations, 4,700 rail yards and 50 maintenance
depots. The project is not strictly a roll-out but a highly structured and formalized replacement program.
Over 400 manufacturers made applications for the contracts to supply the luminaires, but currently only
five lighting companies – Norka, Philips, Pracht, Schmidt and Hellux – have products on the approved
luminaires list. http://luxreview.com/article/2016/06/german-railway-set-to-install-1-million-led-luminaires

28. *Paris Firm Wins Contract to Supply Li-Fi for the Paris Metro* - The ambitious project – which will allow over two million daily commuters to use lights as a form of Wi-fi, dubbed 'Li-fi' – now looks firmly on track. Paris-based Oledcomm, a spin-off of the University of Versailles, won the contract from RAPT to initially supply Li-fi installations in 66 stations across Paris, involving over 250,000 LED luminaires. The system needed to demonstrate that it could deliver on its core promises of a Li-fi installation, especially on four key criteria:

- The Li-fi can operate within a complex physical environment
- The system can provide the bi-directional communications needed for a secure internet connection
- Traffic and security information can be 'pushed' to smart phones as necessary
- A system of audio-messaging could be developed to enable tourists and people with impaired sight to be guided around the tunnels and concourses of an underground station

http://luxreview.com/article/2016/06/lifi-innovators-on-track-to-complete-paris-metro-installation

29. *Irish Researchers Have Discovered a New Form of Light* - Light travels in a straight line but also rotates around its axis. It was believed the angular momentum of these photos was a multiple of Planck's constant, which sets the scale for quantum effects. The researchers theorized certain quantum effects slowed the angular momentum of these photons. They passed light through a crystal and confirmed the theory, measuring angular momentum of half of Planck's constant. The result is a new form of light, which may have profound effects on optical communications.
http://www.lightnowblog.com/

30. *Irish Town Networks LED Street Lights with Silver Spring Mesh Technology* - Governing body Mayo County Council will use Silver Spring's Wi-SUN mesh network and its Streetlight.Vision software-as-a-service to connect and control about 300 LED street lights across the small Western Ireland town of Crossmolina, located in County Mayo. The mesh network, based on the IEEE 802.15.4g wireless interoperability standard, should improve the county's ability to monitor light performance and outages and provide proactive maintenance and better schedule lighting. Silver Spring is deploying similar systems in Copenhagen, Glasgow, London, Bristol, Chicago, San Antonio, San Jose, and in Kolkata, India. The "Internet of Things canopy" is part of a broader energy initiative that also connects the Silver Spring IoT network to smart utility meters.
http://www.ledsmagazine.com

31. *Market Data: IoT for Residential Energy Customers* - The residential Internet of Things (IoT) market continues to gather steam as consumers find value in connected devices that help automate their homes and provide greater energy efficiency. The result is an emerging paradigm where utility customers have access to affordable tools for creating more intelligent homes that enhance comfort, security, and efficiency. According to Navigant Research, global revenue attributed to residential IoT devices is expected to grow from $26.5 billion in 2016 to $117.3 billion in 2026. This Navigant Research report analyzes the global market for residential IoT devices and services. The devices covered include smart meters, connected or smart thermostats, connected lighting, smart appliances, security systems, smart plugs, EV chargers, solar PV systems, and onsite energy storage systems.
http://www.navigantresearch.com/research/market-data-iot-for-residential-energy-customers

LED TechnologyWatch…

32. EW's Top 10 LED Picks for June 2016 - Electrical Wholesaling's Top 10 LED Product Picks for June 2016 showcased products from Beacon Product, EYE Lighting, Cree, Lutron, RAB Lighting, WAC Lighting, Feit Electric, Forest Lighting, Soraa and Litetronics. http://ewweb.com/

33. Smart Electric Introduces Its Patent Pending Smart LED - The same technology that exists in the incandescent and halogen lamps have been built into the LED electronics. No remote dimmers or timers are required. The Smart LEDs have many different features including dimmers, timers and the increasing popular Smart Alert Emergency Flasher which has just won an award from the Journal of Emergency Management Services that claim the flashing lamp will save seconds trying to find a home which can result in saving lives. The product is also being bought my 55 and over communities, even a boy scout used it for his eagle project, giving away 200 flashers to wounded warriors and senior citizens. http://smartelectric.com/products

34. ConTech Lighting's New LPU2 Undercabinet Lighting - This newest addition to our undercabinet lighting family, the LPU2 has a three-position switch that allows the selection of three different color temperatures (2700K, 3000K, and 4000K) in one fixture. Resistant to shock and vibration, this fixture is only 7/8" in depth, making it barely visible. This fixture is also available in four lengths and lumen packages: 12"/300Lm; 18"/450Lm; 24"/900Lm; and 32"/1050Lm. John Ranshaw, President and CEO of ConTech Lighting: "With its assorted flexible connections to allow for continuous row applications and bends and corners, this product is sure to meet all your undercabinet needs." For more information on this product, visit: www.contechlighting.com

35. TCP Introduces the Allusion Line of Warm Dimming LED Lamps - TCP's Allusion LED products provide "incandescent-like" dimming capabilities mimicking a traditional incandescent or halogen lamp transforming from a traditional 3000 Kelvin color temperature to a warm 2000 Kelvin color temperature on a standard dimmer – all without an annoying delay or flicker. This lamp provides users up to 85 percent energy savings over traditional halogen solutions while maintaining the aesthetic appeal. TCP's Allusion LEDs are currently available for shipment in A-lamp, BR30, PAR38, PAR30, B11 Candelabra Blunt Tip shapes and Downlight Retrofit kits will be available later this summer. All Allusion lamps are damp location rated and have a 25,000 hour rated life. http://www.tcpi.com/news/tcp-introduces-the-allusion-line-of-warm-dimming-led-lamps

36. *Ushio America Introduces Ubiquity™ LED T8 Direct Wire Lamps -* An energy-saving retrofit solution for F32T8 fluorescent lamps and they eliminate the need for external ballasts and LED drivers. For OEM's and new installations all you need to do is simply connect the 120-277V line voltage directly to the tombstones. For retrofits, just bypass the existing ballast by cutting the wires and connect the 120-277V line voltage directly to the tombstones. The Ubiquity LED T8 Direct Wire lamps have the form, fit and function of traditional T8 fluorescent lamps. With a rated lamp life of 50,000 hours, these 12.5W lamps are available in a 4000K color temperature and are made with a shatterproof glass tube. The tube is frosted to prevent glare and allow the 240 degree beam angle (325 degree visible light area) to create a quality lighted environment. http://www.ushio.com/products/generallighting/ubiquity-led-t8-direct-wire.php

**37. *Echelon Corp. Enables the Convergence of Lighting and Building Controls with the Introduction of its BACnet Gateway for Echelon LumInsight™ Desktop -* Part of the *Lumewave by Echelon™ solution,* LumInsight Desktop software offers a BACnet gateway to address the growing desire of enterprise facilities managers to control, manage, and monitor all their lighting devices and sensors, indoor and outdoor, in an industry standard platform as well as supports multiple building operations from a single dashboard. By using the Echelon BACnet gateway, multiple facility networks — from lighting to sensors — can converge into a single, unified energy management system for insight into and control of building and lighting systems. Then, as new requirements for advanced applications are needed, such as space utilization and security monitoring, or the need to respond to emerging opportunities generated from IoT, building proprietors will be ready to expand with the BACnet LumInsight Desktop solution. http://echelon.com/products/luminsight

38. *Forest Lighting Troffers – EW's Top 10 LED Product for June -* Forest Lighting's 2x2 and 2x4 LED lighting troffers now offer dimming and motion-sensing capability, making them compatible with modern lighting control systems in offices, schools and retail settings. Forest Lighting LED Troffers deliver more than 100 lumens per watt. Color temperatures range from 3,500K to 5,000K and the rated life is 50,000 hours. They are easy to install, with no sharp edges, deliver even lighting through the space and come with seven-year warranties. http://forestlighting.com/troffer-led

39. *Universal Lighting Technologies Expands LED Linear Continuum with EVERLINE LED T8 Tubes and Drivers -* The LED T8 Tubes and Drivers are dimmable and may qualify for local utility rebates that require the retrofitted fixture to include a permanent (external) LED Driver. The LED T8 Tubes and Drivers are designed to be a step between the EVERLINE LED replacement T8 Tubes that operate with fluorescent ballasts and the EVERLINE LED Retrofit Kit. LED T8 Tubes and Drivers are combined together with unique bundled part numbers for two-, three-, or four-lamp configurations as well as universal input voltage (120-277V) and 347V. Each T8 Tube provides 2200 lumens and is available in 3500K, 4000K and 5000K CCTs. The T8 Tube uses the existing lamp holder and the driver replaces the existing ballast. www.unvlt.com

National EnergyWatch…

40. 10 Largest Electrical Distributors in the 2016 Top 200 - Check out these capsule summaries from *Electrical Wholesaling's 2016* Top 200: 1) Sonepar, 2) WESCO, 3) Graybar, 4) Rexel, 5) Consolidated Electrical Distributors, 6) HD Supply, 7) Anixter, 8) Border States Industries, 9) W.W. Grainger and 10) Crescent Electric Supply. http://ewweb.com/top-200/10-largest-electrical-distributors-2016-top-200#slide-1-field_images-33931

41. EC&M's 2016 Top 10 Electrical Design Firms in the Top 40 - Electrical design firms appear to have enjoyed another banner year in 2015, boosted by a largely favorable, if still uncertain, macroeconomic climate. In total, this year's respondents posted total electrical design revenues in 2015 of $1.858 billion, which is up 10.6% from $1.680 billion reported in 2014. This is a sneak peek at the companies making it into the Top 10: 1) Burns & McDonnell; 2) Stantec, Inc.; 3) Tetra Tech, Inc.; 4) CH2M; 5) Stanley Consultants; 6) Mesa Associates, Inc.; 7) Commonwealth Associates, Inc.; 8) Henderson Engineers, Inc.; 9) IMEG/KJWW/TTG; 10) Affiliated Engineers, Inc. http://ecmweb.com/

42. NECA 2016 Boston Registration Now Open - The National Electrical Contractors Association (NECA) has opened registration for NECA 2016 Boston, Oct. 7-10, at the Boston Convention & Exposition Center in Massachusetts. The trade show floor is a virtual classroom, providing the latest technological advances in such areas as power supply, security, tools, integrated building systems, lighting and controls, solar/PV and other energy markets. In addition to the trade show, there will be 19 free technical workshops. Early registration closes on Aug. 18. http://necaconvention.org/

43. U.S. Solar Market on Track for a Record-Breaking Year - In the first quarter of 2016, 1,665MW of solar PV were installed in the United States with the solar industry adding more new capacity during this period than coal, natural gas and nuclear combined, according to GTM Research and the Solar Energy Industries Association's (SEIA). This growth builds off the momentum of a record 2015, in which solar exceeded natural gas capacity additions on an annual basis for the first time ever. The report also says that this year the solar industry will install an unprecedented 14.5GW of capacity, a 94% jump over the 7.5GW in capacity installed in 2015. This growth cements solar energy's role as a mainstay in America's portfolio of electricity sources. http://ecmweb.com/green-building/us-solar-market-track-record-breaking-year

44. Acuity Brands Achieves Record Third Quarter Results - Fiscal 2016 third quarter net sales of $851.5 million increased $167.8 million, or 25 percent, compared with the year-ago period. Operating profit was $121.0 million, an increase of $21.8 million, or 22 percent, over the year-ago period. Net income was $74.0 million, an increase of 15 percent. http://www.tedmag.com

45. 2016 State of E-Commerce in Distribution - E-commerce in distribution continues to expand. In this whitepaper, sponsored by Unilog and produced by Modern Distribution Management, learn:
- E-commerce as a percentage of distributor sales & expectations for growth
- Distributor priorities for e-commerce
- How distributors drive customers to their e-commerce channels
http://www.mdm.com/2016-State-E-Commerce-in-Distribution-Unilog

City & State EnergyWatch…

46. *Newmark Holdings Retrofits 24 NYC Commercial Properties with Independence LED Lighting* - The project qualified for just under $1,000,000 in incentives and is expected to generate an energy cost savings of nearly the same amount annually for Newmark Holdings. The return on investment (ROI) for the entire project is over 65%, with an operating cost savings over the next decade that will reach $10 million. Bay City Metering has worked closely with Newmark Holdings for over three decades as its utility submetering company and energy consultant and aligned Independence LED with Newmark Holdings. 6/23 AP

47. *Wrigley Field Project Showcases Wireless Lighting Control* − Only time will tell if 2016 will be the year that the Chicago Cubs' 108-year title drought ends. ☺ For now, fans are reveling in new improvements to the stadium and the surrounding area. The improvements began several years ago and are expected to continue into 2018 or 2019. One of the showpieces of the new construction and retrofit project was the installation of the Audacy wireless-energy-management and lighting-control-system, manufactured by Ideal Industries Inc., Sycamore, IL. All controls are administered through an iOS or Android mobile device. In the next several years, the project will include the additional installation of Audacy sensors, control units, gateways and reporting components into the team's facilities, retail spaces, entertainment clubs, suites and new five-story office building. http://www.ecmag.com/section/systems/wrigley-field-project-showcases-wireless-lighting-control%E2%80%A9

48. *LEDs Bring Quality and Sizzle to Baseball Venues* - Five of the 30 ballparks that host Major League Baseball (MLB) teams now use LED lighting to illuminate the playing field. The light quality is important to players and fans, and the instant on-off ability of LED-based lights combined with network controls allows the teams to present dynamic light shows before or after games and for special events such as concerts. Prior to the 2016 baseball season, only the Seattle Mariners had installed LED lights by GigaTera. The New York Yankees installed GigaTera fixtures last December just before Yankee Stadium hosted the Pinstripe Bowl college football game. For the 2016 baseball season, the San Diego Padres, Texas Rangers, and Houston Astros all installed LED lighting. Musco Lighting supplied the SSL luminaires to the Padres and Astros. Eaton's Ephesus Lighting supplied the SSL luminaires to the Rangers. http://www.ledsmagazine.com

49. *GLP LEDs Wow Audiences for New Human Nature Jukebox* - Leading Australian pop vocal group, **Human Nature**, have returned to **The Venetian** in Las Vegas for a three-year run with their new Jukebox production, which effortlessly blends retro pop classics with Doo-Wop, Motown and Soul. The aim of the show is to bring some of the greatest vocal hits of all time to the cabaret stage in their own personal jukebox. **GLP lighting** is used extensively to add both drama and subtlety to the show. **David Rudder,** the group's production manager and technical director specified **GLP's X4's** as well as the **Spot One** and **Wash Ones**. Overall, he says the **GLP** fixtures tick all the boxes. "*I love the color and punch from these small fixtures in a difficult space, and the new possibilities with the X4 Bars allow us to do things that the audience hasn't ever seen before.*" http://ziogiorgio.com/2016/06/16/glp-leds-wow-audiences-for-new-human-nature-jukebox/

50. ***Soraa Lights and Protects Rare Native American Artifacts -*** Soraa's full visible spectrum LED lamps have been installed in the new state-of-the-art Forrest E. Mars, Jr. Building at The Brinton Museum. The company's LED lamps were chosen to illuminate, protect and accurately render the colors of rare Native American artifacts exhibited in the $15 million 24,000 square-foot space, located in the foothills of the Bighorn Mountains. Rare tribal war shirts and ceremonial robes, hives, painted drums and other Plains Indian artifacts, many of which have natural pigments, are perfectly illuminated and protected by Soraa's LED lamps. That's because Soraa's GaN on GaNTM LED with Violet-Emission 3-Phosphor (VP$_3$) LED technology renders the widest range of colors in the objects that we see, without ultraviolet (UV) or infrared (IR) radiation that can fade or harm the artifacts. http://www.tedmag.com/

51. ***Kinston, North Carolina Plan to Upgrade to LED Streetlights -*** The city has installed nearly 800 LED streetlights, which were installed in 2011 after receiving grants. The city's new public service has requested close to $600,000 for an upcoming budget to replace the remaining 1,200 lights in the city. The city council will approve the final budget for the LED streetlight upgrades later this month. 6/02 AP

52. ***Nation's Largest Net Zero Plus Commercial Building Retrofit Opens in Los Angeles -*** The 144,000-square-foot demonstration center and living laboratory on advanced and emerging clean energy technologies showcases the future of smart energy efficiency design, microgrid system integration, energy storage solutions, building resiliency in the wake of natural disasters or grid interruptions, and a suite of integrated electrical technologies and controls. The Net Zero Plus Electrical Training Institute will generate more energy than it consumes each year. This excess energy, generated by an onsite photovoltaic solar array, can be stored in the center's battery storage system or be discharged back into the electric grid system. http://ecmweb.com/green-building/nation-s-largest-net-zero-plus-commercial-building-retrofit-opens-los-angeles

53. ***World's First True Li-Fi Office to Open in Paris -*** Tech start-up pureLifi – based in Edinburgh, Scotland – will provide the technology and French manufacturer Lucibel will supply the LED luminaires for the ambitious installation at the headquarters of Sogeprom, the property arm of French bank Société Générale. The suppliers are stressing that the project will be true high-bandwidth bi-directional Li-fi, with a user experience similar to Wi-fi. Employees will use a special dongle inserted into their computers and other devices to receive the internet via visible light from the LED lighting. A photoreceptor on the dongle will receive the data embedded in the modulated visible light. Similarly, they will upload data using an infra-red transmitter embedded on the dongle. US information company Grand View Research predicted the market for data-over-lighting technologies including Li-fi and visible light communication (VLC) would be worth $100 billion by 2024. http://luxreview.com/article/2016/06/world-s-first-li-fi-office-to-open-in-paris

Monthly Special Feature…*Rebates for LED Tubes: Huge Opportunity But Hard to Get -*

As the efficiency of LED tubes has increased, and prices have come down considerably, we see an enormous amount of projects where T12 and T8 solutions are being replaced by LED tubes. With the market for LED tubes really taking off, many rebate programs have adapted their guidelines to allow rebates for these products. Unfortunately though, as these rebate programs have been rolled out, they have also created a lot of confusion. As opposed to the relatively straightforward one-for-one LED screw-in lamp upgrades, with these projects you have to worry about various ballast and wiring options. On top of that complexity, there are 3 different types of LED tube technologies available; Type A, Type B and Type C.

- **Type A LED tubes** - Uses the existing fluorescent ballast
  Also called "Plug and Play", "Direct Install", or "Direct Retrofit"

- **Type B LED tubes** - Old ballast is removed and the lamp runs directly off line voltage
  Also called "Ballast Bypass", "Direct Wire", or "Line Voltage"

- **Type C LED tubes** - Paired with a specific driver that is used in place of a fluorescent ballast
  Also called "tube and Driver" or "tube with Remote Driver"

Rebates for LED Tubes	Type A	Type B	Type C
# of utilities with rebates	736	689	706
Average rebate per lamp	$4.98	$5.02	$5.27

*Assuming a 32W F32T8 with NBF ballast going to a 15W LED tube.

Each rebate program decides which type of LED tubes they will allow. Some utilities will provide rebates for all 3 types. Others feel one specific LED tube technology is superior and will only provide incentives for that type. On top of that, rebate program staff are rarely well trained in the differences between the various LED tube types which leads to additional confusion when filing applications. Products that should qualify for a rebate are regularly rejected because of poor wording on a spec sheet or a staff's misunderstanding of what type of lamp it is. In those cases, you really have to be persistent, have lighting knowledge, and be able to get supporting documentation from the manufacturers to go back and forth with the utilities to ensure you won't miss out on your rebates.

Also, you should be aware that many rebate programs will cap the rebate dollar amounts in a certain way. They may limit the payout to a specific % of material cost, total project cost, or one-year simple payback. **Even if a program is advertising a rebate of $15 a lamp, you may actually get far less in the end.**

What's the best solution? There is no one answer. It just comes down to what works for you and can be influenced by things such as the age of your ballasts, the rebate program in your location, the light levels needed and budget constraints. BriteSwitch's knowledge of lighting and rebate programs can help guide you through the various scenarios. http://briteswitch.com/maximizing.html

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Our business is changing your future…