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## LED Energy Market Observer:

- 1. U.S. Army Seeing the Light: LiFi Will Revolutionize IT on Mission Command Posts** - The technology will be used in expeditionary mission commands. U.S. Army Soldier Center has come up with a concept for using LiFi within any enclosed mission command platform. LiFi eliminates the problems associated with the time-consuming task of running data lines in tactical operation centers and command posts. Moreover, since the technology does not use radio waves, it cannot be detected outside the confines of the mission command platform. <https://www.army.mil/article/213936/>
- 2. Why 2019 Is Set to be the Year of Bluetooth Mesh** - Early applications of the technology are demonstrations of how Bluetooth (and specifically Bluetooth Mesh) are not only shaking up smart lighting but pushing the boundaries of what the industry thought could be done with lighting. Executives have long held the ambition to turn the lighting installation into a digital backbone - an 'Internet of Things' platform which would allow other technologies, services and tasks. With Bluetooth Mesh, that's actually becoming a reality. The ratification of the Bluetooth Mesh in the summer by the Bluetooth Special Interest Group (SIG) was clearly a bit of a game changer. The move followed three years of research and effectively boosted Bluetooth's reach far beyond the typical 10m range that's familiar to consumers sharing things like audio files among smartphone, computers, tables, TVs, and other devices. <http://luxreview.com/article/2018/12/why-2019-is-set-to-be-year-of-bluetooth-mesh>
- 3. How We Can Make Human-Centric Lighting Usable by Steve Stark** - The easy controllability of LED lighting makes it possible to replicate the ideal characteristics of natural light. Although today's LED lighting has been adopted primarily for environmental reasons, the new technology also brings unprecedented user controllability that creates opportunities to use lighting for extra benefits such as enhanced productivity, performance, and wellbeing in the workplace. Traditional electric lighting has typically allowed dimming but provided few - if any - other practicable options to adjust the light to suit users' needs. Now, with simple electronic or software control and the right combination of emitter types, an LED light engine can manage the spectral content with great precision to produce almost any colour or adjust 'white' light throughout a range of correlated colour temperatures (CCT) expressing ambiances from warm, to cool, to daylight white. <http://luxreview.com/article/2018/12/how-we-can-make-human-centric-lighting-usable>
- 4. Top Experts to Kick Off SSL R&D Workshop Discussions** - January 29-31, 2019 | Dallas/Fort Worth, TX. Lighting scientists continue to come up with breakthrough innovations in LED and OLED technology that drive the limits of energy-efficient lighting higher and higher. At the same time, new frontiers in lighting raise important considerations for lighting and related energy savings in the next century. Join DOE at the 2019 SSL R&D Workshop for deep-dive technical discussions, jump-started by these industry thought leaders. <https://www.energy.gov/eere/ssl/2019-ssl-rd-workshop>

5. **Register Now for the 2019 DLC Stakeholder Meeting** - April 1-3, 2019, in St. Louis, Missouri, for the eighth annual DLC Stakeholder Meeting. This unique event will be unlike any Stakeholder Meeting you've attended in the past. The next generation of DLC policies will be changing more substantially and in different ways than they ever have before – as the DLC prepares to release SSL Technical Requirements V5.0 and NLC Technical Requirements V4.0, this working meeting is THE opportunity to learn, provide feedback, and collaborate on the direction of these policies. Register Now: <https://www.designlights.org/news-events/events/2019-dlc-stakeholder-meeting/register/> View preliminary agenda.
6. **The IES Street & Area Lighting Conference Call for Speakers** - September 22-25, 2019 - Sheraton San Diego Hotel & Marina, 1380 Harbor Island Drive, San Diego, CA 92101. The 2019 IES SALC Conference speaker submissions are now being accepted. Seminar sessions generally run 25-35 minutes. The Street and Area Lighting conference is an educational conference and presentations must follow IES non-commercial policy. The Conference appeals to a broad spectrum of attendees with a primary focus of improving outdoor lighting and related technologies. The IES SALC is the only forum specific to the interests and challenges facing outdoor lighting professionals. Deadline for submission: January 18, 2019. <https://www.ies.org/events/street-area-lighting-conference/>
7. **RealTerm Energy to Replace Streetlights with LED in New York State** - Six municipalities of New York State have partnered with RealTerm Energy for LED streetlights conversion. The municipalities of Great Neck, Newark, Nyack, Goshen, Florida and Piermont to replace their current HID (high intensity discharge) streetlights to LED lights. Smart Street Lighting NY aims to install at least 500,000 LED streetlights in New York by 2025. Based on the partnership, RealTerm Energy will remove the existing fixtures and install new LED streetlights as well as providing customized lighting designs. The company will also be offering financing and ongoing maintenance options. <https://www.ledinside.com/>
8. **Progress Updates about LiDAR Industry Players in 2018** - LiDAR (Light Detection and Ranging) has been one of the technology focuses in the past two years as it is a key technology for automotive vehicles and many other applications. According to "2018 Infrared Sensing Application Market Report" by LEDinside, the market value of LiDAR laser is expected to reach US\$ 154 million in 2020. Worldwide LiDAR sensor producers and semiconductor firms have been pushing LiDAR development and extending applications through collaboration with other technology partners. Apart from self-driving technology, LiDAR sensors could be widely utilized in various applications including intelligent transport system, drone, geographical measurement and more. <https://www.ledinside.com/>
9. **Cree Changes Head of Its LED Business Unit** - Cree has adjusted its management team. After the new CFO and chairman were appointed and the new members of the board of directors were elected in the six months, the head of the LED division has stepped down, reported Triangle Business Journal. The executive vice president and general manager of Cree's LED business unit, David Emerson, has left the position. Claude Demby, formerly senior vice president of strategy and corporate development, took over the duty. The company has been through a shuffle in the senior management team since its new CEO Greg Lowe shifted the priority of the company to the Wolfspeed business. Lowe, who became the CEO of Cree in 2017, believes that Wolf-speed is going to outpace the company's lighting and LED products in revenue. <https://www.ledinside.com/>
10. **Building the Evidence Outside the Lab by Morgan Pattison** - Research in the field is uncovering lighting's impact on human health and performance. LED lighting systems provide new opportunities for controlling the spectrum, intensity and duration of light exposure. These levels of control can be engaged as we come to better understand the effects of lighting on human health and performance. There is already good evidence that lighting can be alerting, affect melatonin secretion and affect sleep. Lab-scale studies have shown these impacts under highly controlled conditions. And these effects can have large-scale health and productivity implications. But right now, there's still a lot we don't know about physiological responses to light. Most research to date has been conducted in laboratories, where the conditions don't always match what happens in the real world, so there's a need for more studies in real-world settings where the light stimulus is realistic and the physiological responses can be collected from a sufficiently large group of participants. The U.S. Department of Energy (DOE) is working to address these needs. <https://www.ies.org/lda/>

11. **Farm Bill Includes Support for Rural Energy Efficiency** - The American Council for an Energy-Efficient Economy (ACEEE) issued a statement applauding Congress for passing the Agriculture Improvement Act of 2018, generally known as the 2018 Farm Bill. The bill included updates to the Rural Energy Savings Program (RESP), which offers low-interest loans for energy efficiency improvements in homes and small businesses. Technologies supported by REAP include heating, ventilation and air conditioning systems; cooling or refrigeration units; high quality doors and windows; electric, solar or gravity pumps for sprinkler pivots; insulation; and efficient lighting. <https://www.ecmweb.com/renewables/farm-bill-includes-support-rural-energy-efficiency>

12. **TM-30 Is a Chance to Get 'Right Light First Time'** - The new TM-30 metric, designed to replace the decades-old colour rendering index (or CRI), is a more useful and robust way of telling how colours will look under a particular light. CRI is a key piece of information on the data sheet for any lighting product. But lighting engineers and designers have always known that CRI is a pretty blunt instrument. It gives the light source a score between 0 and 100 for how faithfully it shows colours - but this still leaves a lot of uncertainty. The old CRI metric takes the average of eight colour samples. It also doesn't cover colour saturation - only colour fidelity. The new TM-30 metric sets out to change all this. First published in 2015 and due to be updated this year, the new TM-30 metric uses 99 colour samples taken from real-world objects and grouped into categories such as skin, textiles, nature and paint. This provides much more consistent coverage of the visible spectrum than the old system based on just eight colours. <http://luxreview.com/article/2018/12/tm-30-is-a-chance-to-get-right-light-first-time>

13. **WHITE PAPER - Samsung's Horticulture LEDs Using Full Spectrum** - Samsung has made several attempts to develop new spectrum for horticulture lighting. One solution is to utilize white LED alone or in conjunction with monochromatic LEDs to create a very broad spectrum. These approaches using Samsung white LEDs can deliver the full spectrum of light to promote plant growth, as well as comfortably perform cultivation management, with even better color rendering. Download this white paper and learn: <https://www.led-professional.com/resources-1/white-papers/white-paper-samsung2019s-horticulture-leds-using-full-spectrum>

- Comparison of horticulture light sources
- Functions of visible wavelength on plant growth
- Superior spectrum for leafy greens and herb
- Advantages of white-based full spectrum

14. **Osram Ready to Demonstrate Its Latest Technologies at CES 2019** - Osram announced that it is going to showcase its cutting-edge technologies in a wide range of applications including mobility, connectivity, safety and security, and well-being and health at CES 2019. Osram will present sensors for self-driving vehicles, as well as Advanced Driver-Assistance Systems (ADAS), and biometric identification applications. With the introduction of two new infrared LEDs, Osram enable biometric applications such as iris scan, driver monitoring, as well as facial and gesture recognition in vehicles. As for light emitting applications, Osram will showcase the NASA adopted horticultural sensing and lighting solutions. <https://www.ledinside.com/>

15. **Legrand, North & Central America Acquires Kenall** - Legrand, North and Central America (LNCA), today announced that it has acquired Kenall, a leading manufacturer of innovative, energy efficient and sustainable specification grade lighting and control solutions for commercial, industrial and institutional buildings. LNCA has a strong presence in the lighting market and adding Kenall to its portfolio gives the company the ability to participate in additional market segments, with products that customers demand, while appealing further to the lighting specification community. <https://www.legrand.us/aboutus/press-room/news.aspx>

16. **15 DC Metro Stations Got Much Brighter in 2018** - In less than six months, the Washington Metropolitan Area Transit Authority has installed new trackbed lighting systems at 15 underground stations – making them an average of six-times brighter – as part of a multi-year \$50 million capital investment in state-of-the-art, energy efficient LED lighting. The new lighting infrastructure improves visibility and enhances safety and security, all while cutting energy use in half and reducing ongoing maintenance requirements. All of Metro's 48 underground stations will be upgraded to LED systems over the next 30 months. <https://www.masstransitmag.com/>



## Global LED Energy Market Observer:

17. **The Airport with 50,000 Downlights** - The main terminal building at Istanbul New Airport – seen here in an architect’s computer render – is set over two levels, with more than 10,000 downlights, all angled. The US\$11.4 billion airport – which began its phased opening last month – is set to be the world’s largest when fully operational. Hoare Lea has been instrumental in a lighting scheme influenced by the symbols and imagery of Istanbul’s mosques as well as the creative use of sunlight and daylight design. From a lighting perspective, the project is also massive. From beginning work in November 2014 to handing over to local architects in December 2016, more than 260 drawings were completed, 60 documents and more than 360 calculations. In terms of design, the airport features skylights and an overarching vaulted ceiling in geometric patterns. <http://luxreview.com/article/2018/12/the-airport-with-50-000-downlights>



18. **Revealed: Winner of Contract to Light 15 London Bridges** - PHILIPS Lighting, recently rebranded Signify, has won the contract to illuminate 15 of London’s iconic bridges as part of the ambitious Illuminated River project, Lux can reveal. It will supply around 13,000 Philips Color Kinetics LED luminaires and its Interact Landmark control system for the prestigious £10 million scheme, which gets underway in 2019 with the initial lighting of four bridges over the River Thames: London Bridge, Cannon Street Railway Bridge, Southwark Bridge and the Millennium Bridge. <http://luxreview.com/article/2018/11/>

19. **Unveiled: The Downlight with Built-In Li-Fi** - A revolutionary downlight which enables internet access through light rather than radio waves has been unveiled by French manufacturer Lucibel. The luminaire, which has a Cat 6 cable port and a built-in Li-Fi transceiver – can offer internet speeds of up to 54 Mbps to devices using the linked dongle. PureLiFi, using light to create next-generation wireless networks, has provided its Li-Fi technology for the range, which includes LED panels and other commercial form factors. The product design allows a better integration of the lighting and connectivity functionalities. Additionally, Power over Ethernet (PoE) technology, which eliminates the need for an electrical cable, is now integrated natively in the Li-Fi luminaires, so the fittings can receive both power and data on the same Cat cable. <http://luxreview.com/article/2018/11/>

20. **Progress Updates about LiDAR Industry Players in 2018** - LiDAR (Light Detection and Ranging) has been one of the technology focuses in the past two years as it is a key technology for automotive vehicles and many other applications. According to [“2018 Infrared Sensing Application Market Report”](#) by LEDinside, the market value of LiDAR laser is expected to reach US\$ 154 million in 2020. Worldwide LiDAR sensor producers and semiconductor firms have been pushing LiDAR development and extending applications through collaboration with other technology partners. Apart from self-driving technology, LiDAR sensors could be widely utilized in various applications including intelligent transport system, drone, geographical measurement and more. <https://www.ledinside.com/>

21. **Dubai Framed with Signify’s LED Lighting** - “The biggest picture frame on the planet”, the Dubai Frame, has been lit up with Signify. For lighting up the fascinating frame, Signify used 380 Philips Color Kinetics ColorBlast 12 Powercore Gen 4 RGBW luminaires together with 34 Philips Color Kinetics ColorReach Powercore LED floodlights, providing more punch and light quality for exterior long-throw applications. In addition, 114 Philips Color Kinetics ColorGraze MX4 Powercore luminaires and 56 Philips Color Kinetics ColorGraze QLX Powercore luminaires highlight the stainless gold cladding of the frame. The installation took six months by Uniled, a certified partner of Signify. <https://www.ledinside.com/>



22. **U.S., China Explore Deal as Leaders Meet at G-20 Summit** - Washington would hold off on further tariffs and the two sides would discuss big changes in Chinese economic policy under the deal. The U.S. and China, looking to defuse tensions and boost markets, are exploring a trade deal in which Washington would hold off on further tariffs through the spring in exchange for new talks looking at big changes in Chinese economic policy, said officials on both sides of the Pacific. 11/29 <https://www.wsj.com/>
23. **NEC to Sell Lighting Subsidiary in April 2019** - NEC announced that it will remove the lighting business from its group and sell its lighting subsidiary, NEC Lighting, to a new company founded by Japan Mirai Capital on April 1st, 2019. According to the announcement of NEC, the intense price competition in the LED lighting market has led to deficit of its lighting business in the recent ten years. Therefore, NEC decided to withdraw the lighting business which the company has been running for more than six decades. <https://www.ledinside.com/>
24. **50,000 Streetlights Changed to LED in Montreal** - The City of Montreal announced that it has reached the benchmark of 50,000 streetlights converted to LED, as part of its urban lighting modernization program. This project was set to replace 132,500 existing streetlights to LED models and install smart lighting management system simultaneously. As the biggest street-light conversion project in North America, the project represents a total investment of US\$ 82.39 million in five year and is part of Montréal's overall development as a city of innovation. <https://www.ledinside.com/>
25. **Osram Infrared LED Tells Growers When to Harvest Crops** - Osram has upped its game in the agricultural LED market, adding another near-infrared chip that reads the content of crops such as fruit or cereal to determine when they are ready for harvesting. The new SFH 4736, part of Osram's Oslon Black line, is designed to fit into a smartphone or tablet, and marks an improvement over Osram's earlier SFH 4735 LED, which was positioned for the same horticultural niche. Like the 4735 and other similar Osram chips, the new LED deploys near-infrared spectroscopy. In the case of the 4736, the technology scans a grain or fruit to ascertain the amount of sugar, water, and fat. Growers use this information to determine whether the crops are ready or whether they require more time before harvest. Osram's near-infrared spectroscopy chips shine infrared light on a subject and measures the light that reflects. By inference, the rest of the light has been absorbed in a manner that would be characteristic at certain levels of sugar, water, fat, and other substances. <https://www.ledsmagazine.com/>

## Monthly Feature:

**2019 Market Planning Guide by Jim Lucy, Doug Chandler, Kristin Letourneau**

<https://www.ewweb.com/market-planning-guide/2019-market-planning-guide>

The economic indicators are pointing toward one more year of good-but-not great growth in 2019. 2020 may be the start of a different story.

Some conflicting economic signals and forecasts are making it more difficult to peg 2019's business conditions in the electrical market. The 340-plus distributor respondents to EW's survey for the 2019 Market Planning Guide expect industry sales to increase +6.1% next year to \$114.77 billion after a +5.1% increase in 2018. One important economic indicator that continues to scream out "Full Speed Ahead," is electrical contractor employment, which has been averaging more than 900,000 over the past year, well over the 800,000-level that is the rule-of-thumb indicator of a healthy construction market.

All things considered, EW's editors see a green light for growth in the electrical wholesaling industry next year. It might not be the +6.1% growth that our optimistic survey respondents are forecasting for 2019, but it should be decent growth, if a bit slower than last year. There's some cause for concern as we head around the next bend into 2020, but depending on your region of the country and mix of business, 2019 should be a decent if not great year.

