ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

Amerlux's Elegant Linear Lighting System Casts Financial Firm in a New Light

Amerlux provides some of the world's most elegant solutions for modern commercial spaces, office buildings, and institutional environments. We design top-tier performance-grade products to make offices work for everyone. We see light before we see anything else. As humans, we immediately interact with light on a subconscious level. The light sets the tone for the space. The light can say "we build great things here" or "we don't care about the details because 'good enough' is good enough."

It all starts with the light. We treat lighting solutions as the foundation for a space and take it from there. The light sets the mood for the space and directs people where to go and encourages the desired behavior. Our engineers create products to enhance the comfort of a room and boost the space's functionality.

Amerlux casts Boston firm in its best light - Nestled among the historic buildings of Boston's Fort Point Channel neighborhood that overlooks the busy channel waters, a leading financial firm needed to revitalize its high-rise offices. They found the answer in Amerlux's linear pendant LED product—a solution that delivered perfect light and secured a utility incentive.





National LED Market Observer

1. **Inflation Reduction Act Costs to Exceed Projections** - The cost of the Inflation Reduction Act's energy and climate provisions is now expected to be significantly higher than previously projected, at least partially because of greater-than-anticipated investment in climate-friendly technology. In total, the Congressional Budget Office (CBO) says the law's energy provisions will cost \$428 billion more than originally projected. While the increase in claims on tax credits is a major factor in that, the agency also said it is reducing its projected revenues from gasoline excise taxes based on technical factors. <u>Greater-than-expected investment in EVs, wind, solar swells cost of Inflation Reduction Act: CBO | The Hill</u>

2. LEDucation 2024 Trade Show and Conference - REGISTRATION IS OPEN!

LEDucation – Presented by the Designers Lighting Forum of New York

- Virtual Sessions Thursday and Friday, March 14-15 7:00am 7:30pm EST
- Trade Show Hours at the New York Hilton Midtown Tuesday, March 19, 2024
 Registration Opens 9:00am
 Exhibition Open 10:00am – 8:00pm
 Reception on the Show Floors 6:00pm – 8:00pm
 Wednesday, March 20, 2024
 Registration Opens 8:00am
 Exhibition Open 9:00am – 3:00pm





ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

3. LEDucation Is Presented by the Designers Lighting Forum of New York - Organized by the Designers Lighting Forum of New York, LEDucation is the ultimate marketplace for solid-state lighting innovations, giving industry professionals a chance to experience new technologies as well as continue their education through a wide range of accredited seminars. LEDucation is a non-profit event, and its proceeds help stimulate future LED advancements by supporting a variety of grants, scholarships and lighting programs. Over 400 exhibitors for 2024! The exhibits will span four halls at the New York Hilton Midtown Hotel. Make your plans early for the ultimate tradeshow covering LED products and technology! <u>VIEW 2024 EXHIBITOR LIST</u>

4. EdisonReport to Announce Top 10 Must-See Products or Services at LEDucation - EdisonReport judges will reveal the best-of-the-best, the Top 10 products or services, on Monday, 18 March, the day before the show kickstarts. This list is your ultimate guide, your treasure map to maximize your experience at the show. Think you've got a standout product or service that deserves a spot on our Top 10 list? There's still time to enter! Get those submissions in by 26th February. Submit your product or service today at marketing@edisonreport.com

5. Lighting Controls Association's 2024 LEDucation Product Guide - The Lighting Controls Association is proud to announce the latest offerings in lighting controls from industry-leading manufacturers in this year's annual product guide. Check them out at: Lighting Controls Association's 2024 LEDucation Product Guide

6. The Electric Tortoise and the Fleet Hare by Tim Kridel - As rental cars, trucks, buses, and other fleets increasingly go elec-

tric, charging infrastructure has emerged as a major roadblock. Henry Ford and Thomas Edison were friends for half a century. When he's making presentations about fleet electrification, Rajiv Singhal includes a slide with a photo of Ford whispering into Edison's ear. "It's like he's saying, 'Our two industries are going to intersect,'' says Singhal. "And that's what's happening. Transportation never spoke utilities, and utilities never spoke transportation — and now they have to speak those two languages. This picture is from 1925 (almost exactly 100 years). Who would have thought this was going to happen?" Finally, some electrical contractors and design firms are leveraging their fleet electrification experience to help utilities plan grid upgrades that need

to accommodate more than home charging. <u>Challenges with Charging Infrastructure and Fleet Electrification | EC&M (ecmweb. com)</u>

7. **NBA to Play on an LED Glass Court for Some All-Star Events** - The NBA unveiled a video of a high-tech basketball court that will be used during the 2024 NBA All-Star Weekend. That means the skills competition, the 3-point contest, the slam dunk competition and the shooting matchup between Stephen Curry and Sabrina Ionescu will take place on the glass floor on Feb. 17, as will the celebrity game on Feb. 16. The actual All-Star Game itself on Feb. 18 will remain on a wooden court. The court itself is actually two layers of laminated safety glass, each five millimeters thick, the NBA said. The surface is opaque, and all the designs will be provided by the LED panels. Courts will have a different look for each event — and part of what'll be displayed are real-time game stats, replays, video content and even player tracking animations. 2024 NBA Slam Dunk Contest - Introductions #NBAAllStar (youtube.com)

8. Newtown, PA Replacing Lights with LED Fixtures Aiming to Save Lots of Money Over Time - Before agreeing to replace Newtown Township's streetlights with LED fixtures, officials did the math and it added up: spend \$720,000, but save \$43,679 annually so that in 20 years there will be a yearly gain of \$153,210. A total of 190 cobrahead streetlights and more than 1,400 four-sided decorative Colonial fixtures will be converted to LED lighting under the \$720,000 project to be undertaken this spring. A brighter 4,000k LED will target higher traffic areas and major roads, while subdued 3,000k LED will be on local and residential streets. About 70 area municipalities already have mad the witch to LED, including Middletown Township, Newtown Borough, Buckingham, Langhorne Manor, New Britain, New Hope, Tullytown, Penndel, Warrington and Bensalem. Newtown replacing lights with LED fixtures aiming to save lots of money over time - LEDinside





A MONTHLY NEWSLETTER FROM AMERLUX®

9. Wearable LED Tech Immerses Fans in Half-Time Show Experience - Enter PixMob, a Montreal-based developer of LED

technology for entertainment experiences, which provided LED wearables for Sunday's Super Bowl LVIII Half-Time Show. Not only did the company's colorful X4 wristbands enhance the field performance of artists, dancers, and musicians at Las Vegas' Allegiant Stadium, but some 60,000 fans sported Pix-Mob LED badges to participate in the immersive lighting effects. All of the wearables can change color, dim and brighten, pulse, and transition in time with music, or deliver animated graphics across a crowd depending on the effects selected by the entertainment crew. <u>Wearable LED tech immerses fans in Half-Time Show experience | LEDs Magazine</u>

10. **Hail Horticulture?** - The disappointment once again included horticulture in the quarter. But that could soon change. "Horticulture was still very muted," ams Osram's CEO Aldo Kamper told analysts. "The greenhouse lighting product tendering season in the first half of '23 was particularly soft, if you remember. We believe that the tendering season this year will be stronger, especially on the back of our latest <u>Hyper Red LED</u> product, which boasts market leading efficiency, and should convince even more customers." Asked by one analyst to elaborate, Kamper reiterated that "we expect a lot more tendering activity in the first half of this year." His prognosis for renewed horticultural activity was similar to one given recently by <u>Signify CEO Eric Rondolat</u>. <u>Sales</u> and income fall, but automotive drives up ams Osram outlook [LEDs Magazine]

11. **DLC Announces Formation of Horticultural Controls Technical Working Group** - The DesignLights Consortium (DLC) announced the formation of a Horticultural Lighting Controls Technical Working Group that will advise and assist the DLC in efforts aimed at accelerating the horticultural lighting industry's transition to optimized energy and production practices through networked lighting solutions. The nine working group members appointed by the DLC include lighting manufacturers, lighting controls and sensor manufacturers, engineering /design/construction consultants, non-profits, researchers and cultivators. More members, up to a total of 13, may be added to the group. The US CEA market is predicted to hit \$3 billion this year, with annual growth of about 24 percent. As horticultural lighting has become one of the fastest growing segments of the electric load for numerous US utilities, the US Department of Energy has recommended that the nation's growers transition their lighting to all LED technology, cutting electricity usage by 34 percent and costs by approximately \$350 million annually. Lisa Capone <u>lisacapone410@gmail.com</u>

12. **Can Intracanopy/Intercanopy LED Grow Lights Be Used to Increase Greenhouse Vegetable Crop Yields?** - A U.S. greenhouse grower in the Midwest was able to increase its yields of 'Macxize' tomatoes-on-the-vine crops by 17 percent by combining intracanopy LED lighting with high pressure sodium top lighting. Hort Americas is partnering with a U.S. greenhouse vegetable grower to determine if intracanopy/intercanopy LED lighting can improve tomato yields with the potential to increase revenue. A critical factor in growing greenhouse vegetables is ensuring the crops are produced in an environment that not only maximizes yields, but consistently produces predictable yields. The U.S. greenhouse tomato grower had installed high pressure sodium (HPS) lamps to maintain the proper top light levels year round to maintain consistent fruit production. The HPS lamps were used to provide supplemental light from November to March. https://www.ledinside.com/news/2024/1/2024_01_31_04

13. **Navigating the Brave New World of Horticultural LEDs by Kasey Holland** - Indoor growing facilities are on the rise. Fueled by consumers' demand for locally-produced food, as well as legalized medical and/or recreational cannabis cultivation in many states, projections show the US controlled environment agriculture (CEA) market is predicted to hit \$3 billion this year, with annual growth of about 24 percent. Although CEA uses less space and can produce higher yields than traditional agriculture, a January 2024 <u>US Department of Agriculture study</u> noted that "the primary concern of indoor farms is the energy cost, specifically the lighting needed to grow crops." Horticultural lighting is one of the fastest growing segments of the electric load for many utilities, prompting the <u>US Department of Energy</u> to recommend that the nation's growers transition their lighting to all LED technology, which would cut electricity usage by 34 percent and costs by approximately \$350 million annually. <u>Navigating the Brave</u> <u>New World of Horticultural LEDs | EC&M (ecmweb.com)</u>





Global LED Energy Market Observer:

(lightedmag.com)

14. Dubai's Green Initiative Illuminates Metro Stations, Saves Millions with LED Lights - Dubai's Roads and Transport

Authority (RTA) has concluded the initial two phases of its energy conservation project, deploying 19,968 energy-efficient LED bulbs across metro stations and facilities. Over two years, this effort saved 16.7 million kilowatts, valued at Dh7.6 million, and cut the carbon foot-print by 7,283 tonnes of CO2. This initiative has been implemented to make Dubai a more sustainable and liveable city worldwide. It is a part of RTA's effort to achieve sustainability by providing an environmentally friendly transportation system and showcasing its support for Dubai's integrated energy strategy, which aims to conserve energy by 30 per cent by 2030. Dubai's green initiative illuminates metro stations, saves millions with LED lights - LED inside



15. **RESEARCHI:** Global Street and Roadway Lighting Market to Reach \$16.5 Billion by 2030 - The <u>"Street and Roadway</u> Lighting – Global Strategic Business Report" report has been added to ResearchAndMarkets.com's offering. The global market for Street and Roadway Lighting estimated at US\$10.6 Billion in the year 2022, is projected to reach a revised size of US\$16.5 Billion by 2030, growing at a CAGR of 5.7% over the analysis period 2022-2030. Below 50 W, one of the segments analyzed in the report, is projected to record a 5.3% CAGR and reach US\$4.4 Billion by the end of the analysis period. Growth in the 50 – 150 W segment is estimated at 6.4% CAGR for the next 8-year period. The report provides an introduction to street and roadway lighting, outlining its significance and role in urban infrastructure. <u>Global Street and Roadway Lighting Industry Report 2024 – lightED</u>

16. WHITE PAPER: Global Energy Trends 2024 and beyond by Joe Hayden - In an era defined by uncertainty, complex geopolitical tensions, volatile supply chains and the urgent need for rapid cuts in global emissions, the energy transition has reached a critical inflection point. But the need to reach net zero remains as critical as ever. In its latest White Paper, which is the 2023-24 edition of our Global Energy Trends series, GridBeyond's experts looked at the reality of, expectations for, and pathways towards net-zero. <u>Global Energy Trends 2024 and beyond | Energy Central</u>

17. **A Hydrogen "Gold Rush"?** - Geologists are touting the imminent arrival of hydrogen production and this could radically change the conversation when it comes to alternative energy. It is estimated that 5 trillion tons of hydrogen exists in underground reservoirs. It has been stated that the vast majority of this hydrogen is inaccessible but 500 million tons a year can be relatively easily extracted and that is well more than would be currently required. At this point hydrogen is mostly used in agricultural and is derived from gas conversion (Blue and Grey hydrogen). The type of hydrogen that has geologists excited is called "Gold hydrogen) and is extracted directly from these reservoirs. The technology exists now to start drawing this carbon-neutral fuel and it could be immediately used for industrial purposes and for power plants. <u>Flagship-240219.pdf (armadaintel.com)</u>

18. **PRODUCT SPOTLIGHT | Light + Building 2024** - A selection of products highlighting trends at the Light + Building tradeshow in Frankfurt, Germany, March 3–8, 2024. In 2022, more than 92,000 members of the lighting industry attended the first in-person edition of L+B since 2018, distributed across sectors including manufacturers, designers, and system integrators, as well as skilled tradespeople, construction/real estate, architectural and engineering, and building and energy service providers. As of this publication, organizers Messe Frankfurt report that they expect to host more than 2,100 exhibitors. Following is a small curation of lighting and controls products and services from L+B exhibitors that LEDs Magazine finds reflective of the trade show organizers' <u>"megatrends"</u>: Visit <u>light-building.messefrankfurt.com</u> for more information on the schedule of events and full exhibitor list. <u>PRODUCT SPOTLIGHT | Light + Building 2024 | LEDs Magazine</u>



ENERGY OBSERVER

A MONTHLY NEWSLETTER FROM AMERLUX®

19. **Researchers Demonstrate RGB OLED LiFi** - South Korean researchers have demonstrated a new approach to LiFi using a red, green, and blue (RGB) OLED array. The Pohang University of Science and Technology team utilized an organic photodiode (OPD) array as the receiver. Their study was published October 19, 2023, in the publication, Advanced Materials. The new approach to LiFi reduced interference compared with broad white spectrum LiFi. The reduced interference improves stability and accuracy of the data transmission. OLEDs are commonly used in displays for TVs, smart phones, and laptops. OLED is also beginning to be used in automotive tail lights. <u>Researchers Demonstrate RGB OLED LiFi | LightNOW (lightnowblog.com)</u>

20. **Fluence and Innexo BV's Research Partnership Explores Eliminating Vegetation Phase** - Fluence and Innexo's research partnership is focused on assessing the viability of cultivating cannabis without a standard vegetative phase, a practice generally associated with lower energy use that passes savings directly to growers in Europe and around the globe. Preliminary data from Fluence and Innexo demonstrates the potential of the "no-veg" growing method to help growers save money while improving quality and consistency. Most commercial cannabis cultivators use a vegetative phase to ensure proper plant growth to support flower weight and to gain a full and dense canopy. This phase can last anywhere between seven days and four weeks, requiring a significant investment of time, electrical energy and resources. Initial findings from Fluence and Innexo demonstrate the potential of this method to maintain crop quality and yield while creating up to 55% savings on annual electrical costs directly associated with lighting. When the plants would typically enter the vegetative phase, they were instead transplanted to the flowering room, where they immediately received their maximum light intensity. https://www.ledinside.com/news/2024/2/2024_02_02_05

21. HORTICULTURE | LED Grow Lights Can Feed Circular Economy - Indoor farming has been championed as a viable solution for the global food and climate crisis. The vital role of LED grow lighting in <u>controlled environment agriculture</u> (CEA) offers growers several benefits, including a reduction in long-term operational and capital expenditures, improved energy efficiency, and an extended operating life. However, the industry also needs to focus on engineering horticultural products for greater sustainability and circularity, urges Simon Deacon, the founder and CEO of Light Sciences Technology (LST) <u>Circular design helps</u> LED grow lights deliver on green potential | LEDs Magazine

Monthly Feature:

Commercial Lighting Rebate Trends for 2024 - The past couple of months have seen a flurry of activity as organizations updated their rebate programs for 2024. Each year, these incentives, which have been instrumental in driving energy efficiency since the mid-80s, continue to evolve to reflect the changing industry and market dynamics. Now, the dust has settled, and most of the new programs have launched, and it's very favorable for those in the lighting industry.

Here are the rebate trends for commercial lighting and control rebates in 2024.

- Most of the US Has a Commercial Lighting Rebate Program Available
- <u>Rebate Amounts for LEDs Are Still Strong</u>
- Program Funding Stretches Further
- Networked Lighting Control Rebates Get a Bit Stronger

Most of the US Has a Commercial Lighting Rebate Program Available

Over the last 15 years, the availability of commercial lighting rebate programs across the United States has been subject to fluctuations. In that time, the portion of the country covered by a lighting incentive varied between 42% to 79%. However, recent years have seen a welcome trend towards stability.

This year, 78% of the country boasts access to such a program. It's the fourth year in a row we've seen this coverage level, a good sign for distributors and contractors who rely on these rebate programs to help close business. However that doesn't mean everything stayed the same. For example, some utilities in Ohio debuted new programs in mid-2023. Until that point, the state had no rebate opportunity due to legislation that stopped the energy efficiency rebate programs in Ohio in 2020.



MAR 2024

Generally speaking, the Northeast and Northwest remain the best areas with the strongest incentives and good coverage. States like North Dakota and Kansas remain holdouts with no commercial lighting programs at all. The states with the highest populations, California, Florida, and Texas, still have some of the worst rebate opportunities with very few programs which are usually very complex.

Rebate Amounts for LEDs Are Still Strong

When LEDs were first introduced in rebate programs, the amounts were very high, but quickly, a pattern emerged where the rebate amounts declined every year by 10-20%. It was a disturbing trend that had many wondering if it was a race to the bottom. In 2021, that all turned around. Between the soft market, due to a lack of demand for projects and cost increases, the rebate decline slowed down. The incentives started to level out, and over the past few years, we've noticed relative stability.

In fact, rebate amounts for 2024 are up 2% on average for LEDs and 5% for controls. For most LED products, the average rebate across North America is near the highest recorded levels.

The best rebates are still for LED fixtures replacing HID fixtures like high bays and pole lights. It makes sense since these fixtures typically cost the most and also offer the highest energy savings. With the changes from EISA that went into effect in July 2023, it was expected that the rebate amounts for A19s, PARs, and Downlights would decrease significantly, but to everyone's surprise, they increased. While many programs like Duke Energy's Smart Saver Program, Energizing Connecticut's Instant Lighting Program and the state-wide MassSave program discontinued rebates for these types of lamps, many other programs still continue to include them in their offerings at a higher average dollar amount.

2024 Average Rebate Amounts in North America					
Type of LED Solution	2024	% Change vs 2023	Type of LED Solution	2024	% Change vs 2023
Replacement Bulbs (A19, PAR, MR)	\$9	22%	Accent / Track Lighting	\$53	6%
Linear Tube	\$4	4%	Screw-in HID (corncob)	\$56	-3%
Pin-Based (cfl-ni replacement)	\$5	-8%	Outdoor Wall Mount	\$105	7%
Downlights	\$24	-14%	Parking Garage Fixtures	\$108	7%
Troffers / Panels	\$32	-3%	Outdoor Pole/Arm Mount	\$112	6%
Retrofit Kits (1x4, 2x2, 2x4)	\$39	3%	High Bay Fixtures	\$123	-3%

*Based on prescriptive and midstream rebates as reported in BriteSwitch RebatePro for Lighting 2/24

Program Funding Stretches Further

The volatility of commercial lighting rebate programs makes it more challenging for contractors, manufacturers, and lighting distributors to take advantage of. Historically, one of the big issues has been programs running out of funding before the program year is over. According to RebatePro for Lighting, 10 - 25% of programs would traditionally run out of funding before the year ended.

However, recent trends indicate a shift towards sustained funding. In 2023, less than 5% of programs ran out of funding before year end. In the late Fall, when programs would typically announce their lack of funding, the announcements instead focused on bonus programs. These limited-time spiffs offered increases of 10-100% for some of the most common upgrades. Less than 5% of rebate programs ran out of funding in 2023, down from 10-25% in previous years.



A MONTHLY NEWSLETTER FROM AMERLUX®

By the end of 2023, 22% of the programs provided some type of bonus. Some of these bonus programs have even continued into 2024. Right now, over 30 different bonus or trade ally programs are running, which is quite uncommon to see in the first quarter. One example is Georgia Power's program which is is offering a 50% bonus on all standard rebates through June 30. These changes are most likely not because of increased overall funding levels but decreased participation. With the lighting retrofit market slowing down and most of the easy targets already having upgraded to efficient lighting, the remaining holdouts will take more convincing. At the same time, contractors and distributors are turning their attention to other opportunities, looking at more attractive and rapidly growing markets like EV Chargers (EVSE) and battery storage/backup. Higher incentives are needed if programs are going to meet their annual energy savings goals.

Networked Lighting Control Rebates Get a Bit Stronger

There's been a lot of talk in the lighting industry about the savings potential of Networked Lighting Controls (NLC). While lighting has become more and more efficient over the years, turning it off altogether, or offering just the right amount of light when needed, offers even more energy savings. But NLC's extra cost and complexity make them a tougher sell for many contractors and distributors. Thankfully, this year sees some improvement in the structure, availability and amounts of NLC incentives. 8% more utilities are offering a rebate for Networked Lighting Controls in 2024.

In 2024, 8% more utilities are offering a rebate specifically for Networked Lighting Controls. That means a majority of rebate programs in the US have now written these controls specifically into their programs. For the other programs, NLC projects will typically qualify under a performance or custom program.

Standardization of Networked Lighting Control incentives has also increased this year. This year, 70% of the NLC rebates are now paid per fixture, rather than the more complex calculations like kWh saved, Sq Ft or connected watt. The type of rebate has also shifted, with 53% of NLC rebates being prescriptive, up from 44% last year. In terms of dollar amounts, the average NLC rebate amount increased by 4% over 2023.

Don't Overlook Commercial Lighting Rebates in 2024

With a softer market for commercial lighting retrofits and many in the channel looking to diversify their interests in other markets, rebates are increasingly important. Incentive programs are more stable than ever, with near record-high dollar amounts. Millions of dollars in incentives are out there and available for your projects. For every project, you should look into the potential rebates and see how they will impact the payback of the upgrade.

RebatePro for Lighting Makes It Easy

Need help taking advantage of the rebate market? RebatePro for Lighting contains virtually every commercial lighting rebate and incentive across North America. Whether you're part of a rebate processing team or a contractor looking to start using rebates as a sales tool, RebatePro for Lighting makes it easy. Quickly estimate the rebates for a project, find the best rebate areas in the county or see where you have to become a trade ally to take advantage of the incentives.

Source: BriteSwitch RebatePro for Lighting 2/2024

Commercial Lighting Rebate Trends for 2024 (briteswitch.com)

