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SUSTAINABILITY CASE STUDY SERIES

Scaling LED Capabilities

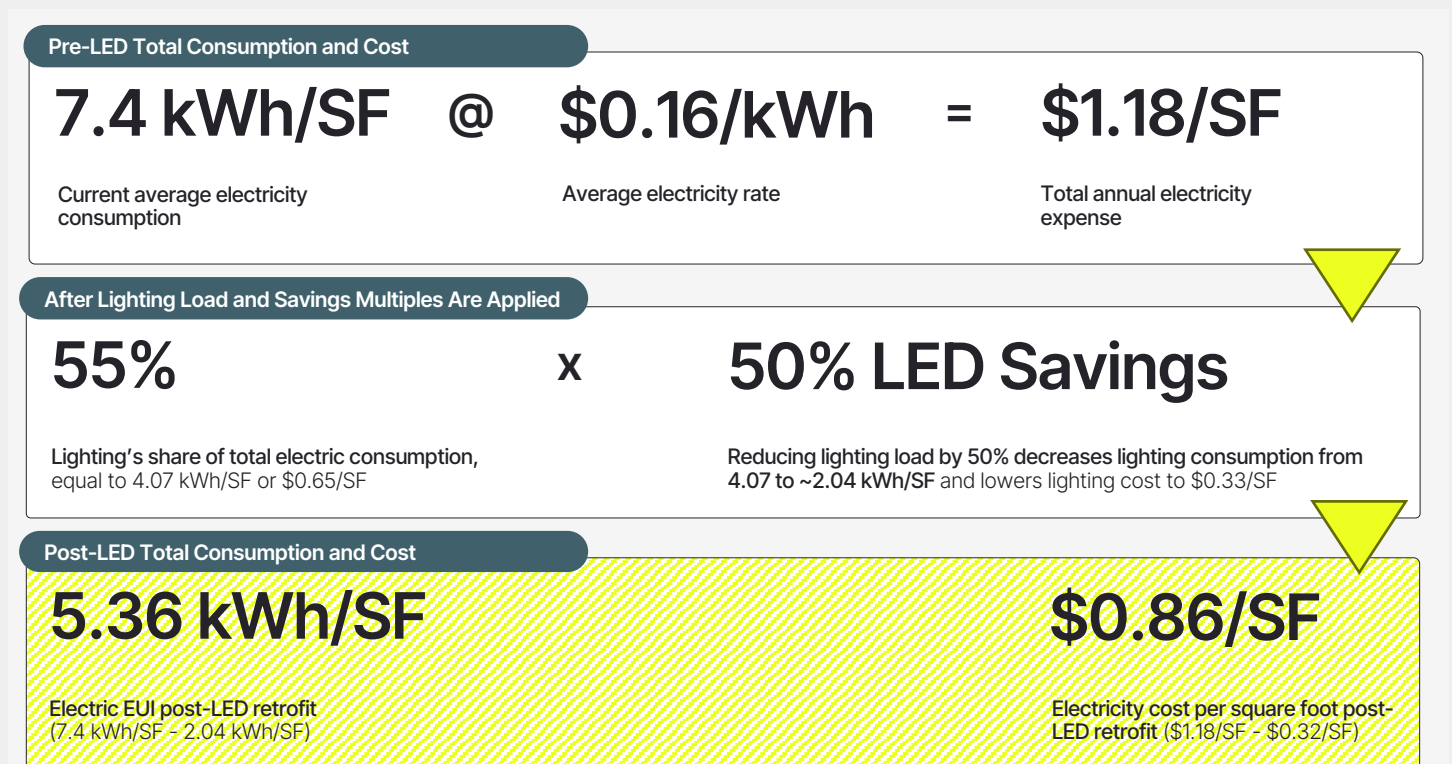
The Link Logistics Sustainability Case Study Series explores how the firm is driving both decarbonization and value for its customers. Previous installments focused on the firm's Energy Solutions product, utility operations and energy management functions, unique power hedging program, and use of the U.S. Environmental Protection Agency's ENERGY STAR® Portfolio Manager® tool. This fifth case study examines how Link Logistics has strategically scaled its LED program through a standardized process that supports energy efficiency and savings on utility costs.

Business Thesis

Lighting accounts for 55% of power usage and electric utility expenses in the average Link Logistics warehouse¹. Installing LED or high-efficiency lighting can reduce warehouse power consumption by up to 50%². Implementing this at scale can dramatically enhance energy efficiency and reduce operating expenses for both Link Logistics and its customers. Efficiently scaling LEDs across Link Logistics' 500-million-square-foot portfolio requires partnering with a single vendor and leveraging a dedicated internal team of energy experts to standardize the audit, ROI analysis, spec design, procurement, and execution processes.

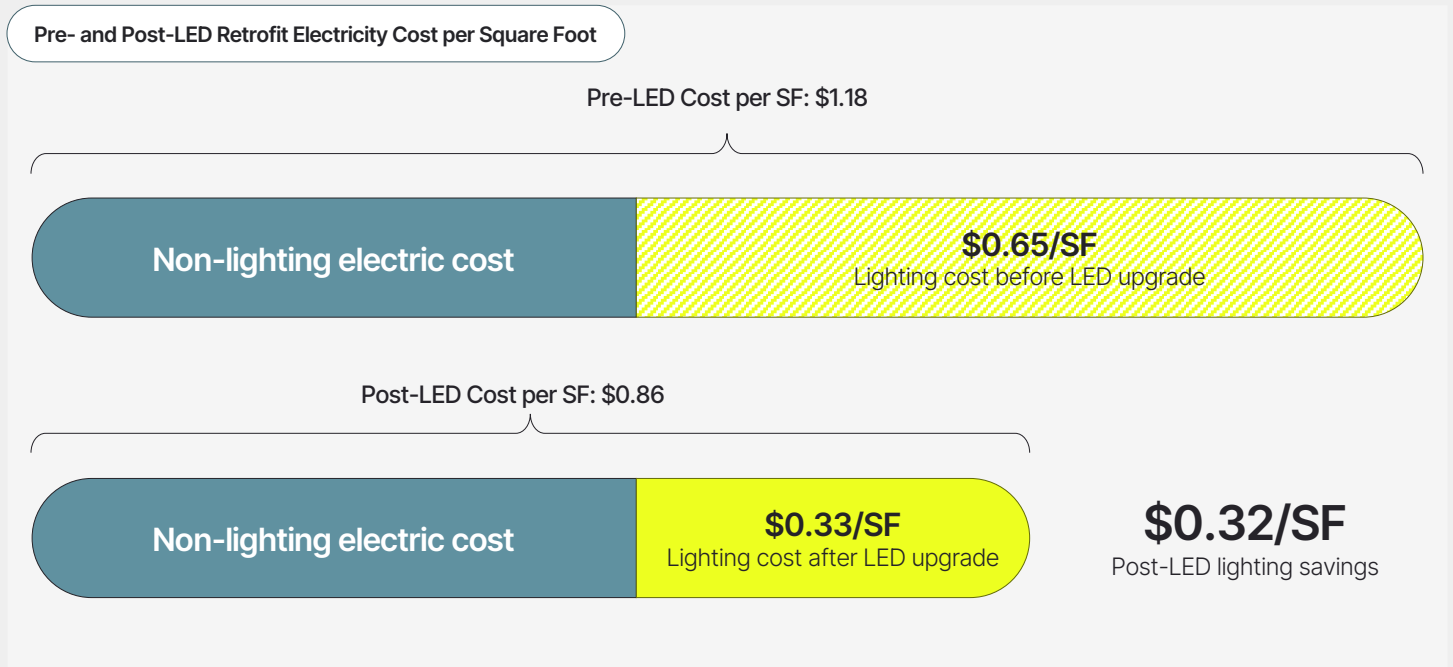
The Opportunity

LED lighting offers a clear economic advantage, reducing operating expenses for customers during occupancy and for Link Logistics during vacancy periods. Switching from standard T8 or metal halide lighting, an LED retrofit can save about \$0.32 per square foot while lowering total net electricity consumption from 7.4 kWh to 5.36 kWh per square foot. Here's how it works based on Link Logistics portfolio averages³.



1. Figure based on an internal energy load analysis of Link Logistics properties that received energy audits in 2020.
 2. Sourced from electric consumption data pre- and post-LED retrofit of Link Logistics properties in which all units have received an LED retrofit executed exclusively by Link Logistics' national lighting vendor.
 3. Current average energy use intensity taken from electricity consumption data submitted for Link Logistics' 2023 Global Real Estate Sustainability Benchmark (GRESB) assessment. Actual average electricity rate sourced from all 2023 electricity bills paid on behalf of customers by Link Logistics.

For a customer in a 100,000-square-foot unit using standard T8 or metal halide lighting, **an LED retrofit can save about \$32,000 annually.**



LED fixtures can last up to five times longer than traditional fixtures⁴, providing a strong ROI through reduced operating expenses and, subsequently, increased property values⁵. Properties with LED lighting also have improved color rendering, enhanced visual comfort and increased employee productivity⁶. In a 2021 Link Logistics survey, more than 70% of customers rated LED lighting as “important” or “very important” to their operations. This feedback reinforced the firm’s conviction in making LED lighting a standard feature across its portfolio.

Recognizing both the economic and customer-driven benefits, Link Logistics set an ambitious target of achieving 100% LED or high-efficiency lighting across its 324-million-square-foot 2020 portfolio by the end of 2025. This target includes both new LED installations and the verification of existing high-efficiency lighting through comprehensive audits.

The Approach

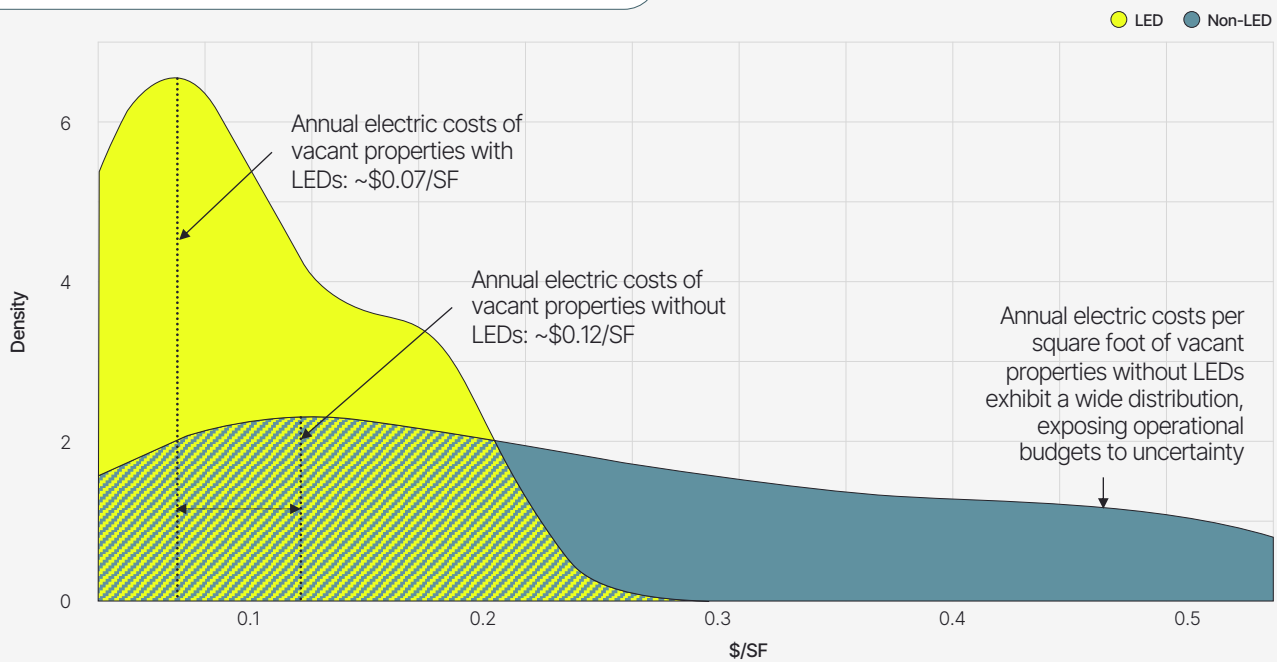
After setting its target, Link Logistics took a phased approach over three years to establish a national LED program.

- 1 Developed portfolio-level lighting standards, installation processes, data systems for reporting, and measurement and verification methodologies.
- 2 Partnered with a national LED vendor, following a competitive RFP process, to streamline procurement and RFP efforts.

4. "LED Lighting." U.S. Department of Energy, www.energy.gov/energysaver/led-lighting. Accessed 2024.
 5. "LED Lighting Retrofits Long Lasting, Highly Efficient Lighting Upgrades That Enhance Building Performance and Occupant Well-Being." NYC Retrofit Accelerator, 2019.
 6. "Overview of Industry Research on LED Lighting Technology and Application to the Federal Sector." U.S. Department of Energy, June 2021.

- 3 Implemented lighting standards aligned with ASHRAE 90.1-2016 and IECC standards. Key elements include:
 - Target foot-candles⁷ defined for various warehouse areas
 - A control strategy for integrated occupancy sensors to optimize efficiency opportunities
 - Lighting grids tailored to market standards and/or individual customer needs
 - Four fixture manufacturers contracted via reverse auction to ensure quality, competitive pricing and flexibility for construction managers
 - A high-efficiency lighting standard informed by lighting audit data to identify LED retrofit opportunities; spaces with a lighting power density below 0.45 W/SF are targeted for replacement
- 4 Launched a portfolio-wide lighting audit initiative in 2022, running in parallel with LED project execution. So far, 84% of the firm’s industrial portfolio has been audited.
- 5 Implemented LED projects on vacant units to reduce non-recoverable utility expenses and test processes and data analysis methodology including ROI calculations.

Link Logistics’ 2020 Vacant Space Electric Cost per Square Foot Density Plots of LED and Non-LED Properties⁸



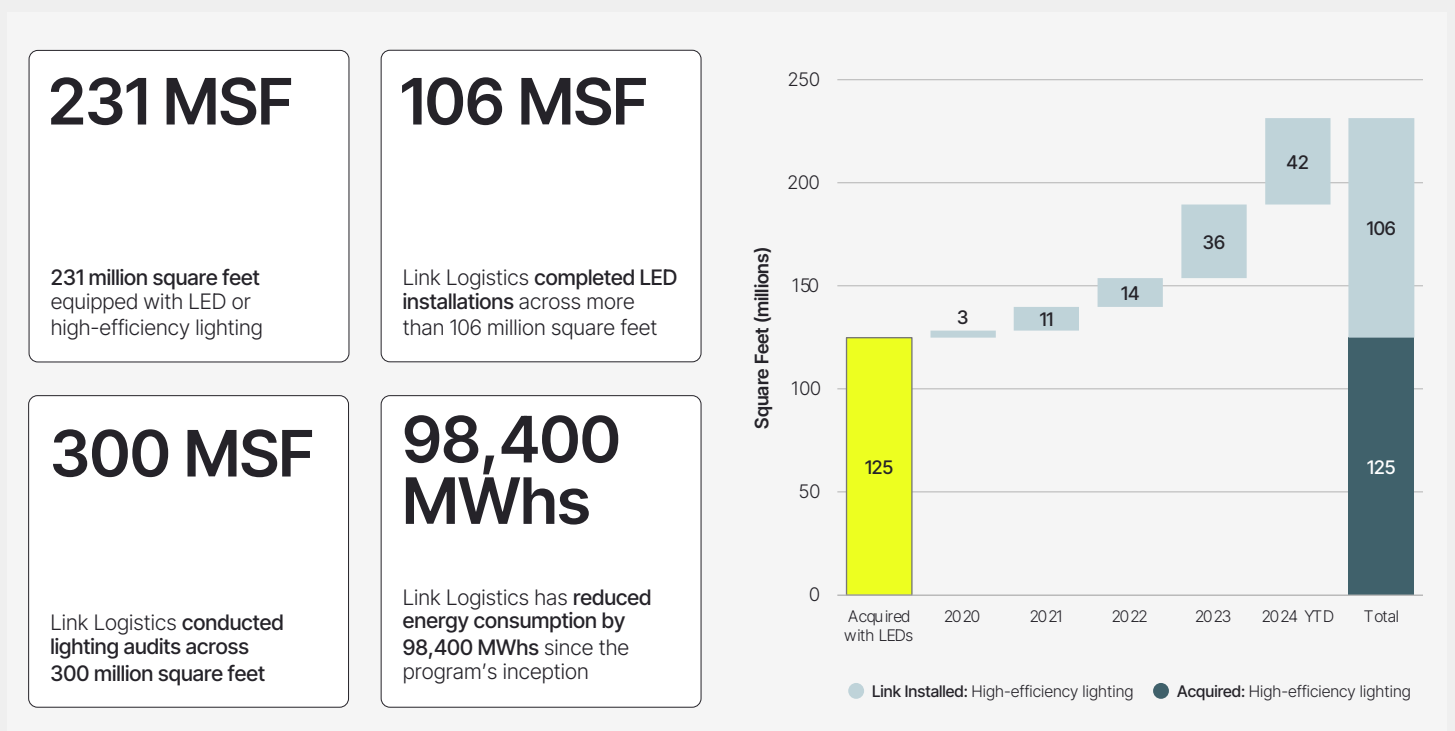
- 6 Established a policy that all eligible vacant units and those with renewing or new leases be converted to high-efficiency lighting to minimize disruption to customer operations while still scaling LED program across the portfolio.
- 7 Proactively engaged customers on mid-lease LED retrofits, beginning in 2024, as a benefit of Link Logistics’ Energy Solutions program. Customers enrolled in Energy Solutions grant Link Logistics access to the data necessary to identify opportunities to enhance energy efficiency and deliver measurable benefits to customers while generating an attractive return on capital.

7. A unit of illuminance or light intensity equal to one lumen per square foot.
 8. 48 properties at 100% vacancy for 12+ months are plotted on an area graph and segregated by LED and no-LED.

The Results

Link Logistics' standardized approach and team expertise have significantly accelerated the pace of its national LED program. In 2023 alone, project volume more than doubled compared to 2022, growing from 14 million square feet to 36 million square feet. Since the program's inception in 2020, Link Logistics has completed LED installations across more than 106 million square feet and conducted lighting audits across 300 million square feet of its portfolio.

To date, 231 million square feet are equipped with LED or high-efficiency lighting. This represents 71% of the firm's target of completing 324 million square feet of LED or high-efficiency lighting coverage by the end of 2025, with the remaining project volume to be completed in 2025.



Additionally, because of the data environment developed as part of its national LED program, Link Logistics can clearly measure and report on project benefits. Since the program's inception, the firm has executed 106 million square feet of LED projects and reduced energy consumption at Link Logistics' warehouses by 98,400 MWhs, leading to a carbon reduction benefit of 43,453 metric tons. This is equivalent to the carbon sequestered by 43,586 acres of U.S forests in one year.

What's Next?

This report concludes the 2024 edition of the Link Logistics Sustainability Case Study Series. In 2025, the series will explore innovation in stormwater management, the firm's approach to scaling solar development, and collaboration with customers to achieve shared sustainability goals around decarbonization and expense reduction.

If you are a Link Logistics customer interested in learning more about Energy Solutions, please contact EnergySolutions@linklogistics.com.