Connected Street Light Market Set to Transform Urban Infrastructure with Smart, Energy-Efficient Lighting Systems 2025

The Global Connected Street Light Market is estimated to grow at a CAGR of 30% during the forecast period 2024-2031.

AUSTIN, TX, UNITED STATES, January 7, 2026 /EINPresswire.com/ -- Market Overview:

> The Connected Street Light Market is transforming urban infrastructure by enabling smart, energy-efficient, and data-driven lighting systems for safer, sustainable cities."
>
> *DataM Intelligence*

The Connected Street Light Market represents a critical segment within the broader smart city and intelligent infrastructure ecosystem. Connected street lighting systems integrate LED luminaires with sensors, controllers, communication networks, and centralized software platforms to enable remote monitoring, adaptive lighting, and real-time data analytics. These systems allow municipalities and utilities to optimize energy consumption, improve public safety, reduce maintenance costs, and support additional smart city applications such as traffic monitoring, air quality sensing, and emergency response. As urban populations continue to rise and governments prioritize sustainable infrastructure, connected street lighting has transitioned from pilot projects to large-scale citywide deployments.

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Key growth drivers include the rapid adoption of energy-efficient LED lighting, increasing investments in smart city initiatives, rising electricity costs, and the growing need for intelligent traffic and pedestrian management. The hardware segment, particularly smart LED luminaires and lighting controllers, currently dominates the market due to widespread replacement of conventional street lights. Geographically, North America leads the market, driven by early adoption of smart city technologies, strong government funding programs, and the presence of major technology providers.

Key Highlights from the Report:

Connected Street Light Market

Rising global smart city investments are accelerating large-scale connected street light deployments across urban and semi-urban areas.
LED-based connected street lighting systems account for the largest market share due to superior energy efficiency and longer lifespan.
Wireless communication technologies such as LoRaWAN, NB-IoT, and Zigbee are increasingly preferred for scalable deployments.
Municipal and public infrastructure end users remain the primary adopters of connected street lighting solutions.
North America dominates the market, while Asia-Pacific is expected to witness the fastest growth during the forecast period.
Integration of street lights with sensors and data platforms is expanding use cases beyond illumination into smart city services.

Market Segmentation Analysis:

The Connected Street Light Market is segmented based on component, connectivity technology, application, and end user. By component, the market includes hardware, software, and services. Hardware holds the largest share, encompassing LED luminaires, lighting controllers, sensors, and communication modules. The ongoing global shift from traditional sodium vapor and halogen lamps to LED-based systems continues to fuel demand for smart lighting hardware. Software platforms, however, are gaining momentum as cities seek centralized dashboards for real-time monitoring, predictive maintenance, and data-driven decision-making. Services such as installation, system integration, and maintenance support further complement market growth, particularly in large municipal projects.

Based on connectivity technology, the market is divided into wired and wireless solutions. Wireless connectivity dominates due to its flexibility, lower installation costs, and ease of scalability. Technologies such as cellular networks, RF mesh, and low-power wide-area networks (LPWAN) enable cities to deploy connected street lights without extensive cabling infrastructure. Wired solutions are still used in specific applications where reliability and security are prioritized, but their adoption remains limited compared to wireless alternatives.

In terms of application, connected street lights are used for highways and roadways, urban

streets, public spaces, and industrial campuses. Urban streets and public spaces represent the leading application segment, as city authorities focus on improving urban livability, safety, and energy efficiency. By end user, the market is primarily driven by municipalities and local governments, followed by utilities and private infrastructure developers. Municipalities remain at the forefront due to their responsibility for public lighting infrastructure and access to public funding and sustainability mandates.

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Regional Insights and Trends:

North America currently leads the connected street light market, supported by strong federal and state-level smart city initiatives, high awareness of energy-efficient technologies, and early adoption of IoT-based infrastructure. Cities across the United States and Canada have implemented large-scale street light modernization projects, often integrating lighting with surveillance cameras, environmental sensors, and traffic management systems. The region also benefits from the presence of established technology providers and system integrators offering end-to-end connected lighting solutions.

Europe represents a mature and steadily growing market, driven by stringent energy efficiency regulations, carbon reduction targets, and smart city programs across countries such as the United Kingdom, Germany, France, and the Nordic region. European municipalities are particularly focused on reducing greenhouse gas emissions and operational costs, making connected LED street lighting an attractive solution. Interoperability and open standards are key priorities in the region, influencing procurement decisions.

The Asia-Pacific region is expected to register the fastest growth over the forecast period. Rapid urbanization, expanding infrastructure development, and government-led smart city missions in countries such as China, India, Japan, and South Korea are major growth contributors. Large-scale urban expansion and the need to modernize aging lighting infrastructure create significant opportunities for connected street light deployments. Meanwhile, regions such as Latin America, the Middle East, and Africa are gradually adopting connected lighting solutions, supported by international funding programs and increasing awareness of energy-efficient urban infrastructure.

Market Dynamics:

Market Drivers
One of the primary drivers of the connected street light market is the global push toward energy efficiency and sustainability. Connected LED street lights can reduce energy consumption by up to 50–70% compared to traditional lighting systems through adaptive dimming and real-time monitoring. Additionally, smart city initiatives worldwide are encouraging the integration of

digital technologies into urban infrastructure, with connected street lighting often serving as the foundational layer. The ability to reduce operational and maintenance costs through predictive maintenance and remote fault detection further strengthens the business case for adoption.

Market Restraints

Despite strong growth prospects, the market faces certain challenges. High initial investment costs associated with smart lighting hardware, communication infrastructure, and software platforms can be a barrier, particularly for smaller municipalities with limited budgets. Interoperability issues between different vendors' systems and concerns related to data security and privacy also restrain market adoption. In some regions, a lack of technical expertise and standardized regulations slows down large-scale implementation.

Market Opportunities

The market presents significant opportunities through the expansion of value-added services and multi-functional use cases. Connected street lights can act as platforms for deploying sensors for air quality monitoring, noise detection, traffic analytics, and public safety applications. The integration of artificial intelligence and advanced analytics into lighting management platforms opens new avenues for optimization and urban planning insights. Emerging markets with rapidly growing urban populations offer untapped potential for connected street lighting projects in the coming years.

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Frequently Asked Questions (FAQs):

How big is the Global Connected Street Light Market today?
Who are the key players in the global connected street light market?
What is the projected growth rate of the connected street light market during the forecast period?
What is the market forecast for the connected street light market in 2032?
Which region is estimated to dominate the connected street light market through the forecast period?

Market Companies:

General Electric Co.
Koninklijke Philips NV
Echelon Corporation
Osram AG
Cisco System Inc.
Triliant Holdings Inc.
AxiomTek

Tech Mahindra Limited
Schréder Group GIE
Silver Spring Networks Inc.

Recent Developments:

United States:
November 2025: The Washington, DC Smart Street Lighting Project advanced with Acuity Brands contributing to the upgrade of over 75,000 streetlights to energy-efficient LEDs with remote monitoring, enhancing Wi-Fi coverage and reducing energy by over 50%.

September 2025: Itron Inc. partnered with Los Angeles DOT to upgrade 100,000 fixtures using its IoT-enabled Streetlight Vision platform, incorporating predictive maintenance via edge computing to cut outage response time by 50%.

October 2025: Signify Holding deployed 50,000 Interact City connected LED street lights in New York City, featuring AI for adaptive brightness and air quality sensors, reducing energy use by 40% and supporting 5G small cells.

Europe:
October 2025: Isle of Man announced upgrades to ageing street lights in a southern village using new 'dark sky' approved LED fixtures designed to minimize light pollution while integrating smart control features.

October 2025: Malta launched a €13 million project to replace 34,000 conventional street lights with modern energy-efficient LED systems by the end of 2028, focusing on reduced consumption and advanced connectivity.

May 2025 (expansion phase): O2 Telefónica and 5G Synergiewerk began nationwide rollout of 5G-integrated streetlights in Germany, targeting the 25 largest cities like Hamburg and Munich, with 50 additional units planned by end of 2025 for enhanced network capacity.

Conclusion:

The Connected Street Light Market is evolving rapidly as cities worldwide prioritize intelligent, energy-efficient, and data-driven infrastructure. With strong support from smart city initiatives, advancements in LED and wireless communication technologies, and growing awareness of sustainability benefits, connected street lighting is becoming a cornerstone of modern urban development. While challenges related to cost and interoperability remain, ongoing technological innovation and expanding use cases are expected to unlock significant growth

opportunities. As a result, the market is poised for sustained expansion, playing a vital role in shaping the future of smart and connected cities.

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