

Copenhagen

Copenhagen Deploys Itron's Smart Streetlight Network as Foundation for Multiple Smart City Applications

OVERVIEW

Copenhagen, one of the world's most sustainable and smartest cities, has set the ambitious goal of becoming carbon neutral by the year 2025. For that reason, the city is deploying a multi-purpose Industrial IoT platform to enable smart city applications that can reduce energy waste, improve safety on the roadways, and encourage carbon-free transportation. Copenhagen's commitment to the smart city transformation begins, in part, through more efficient and networked street lighting systems supported by Itron.

A COMPREHENSIVE, COLLABORATIVE APPROACH

Key stakeholders are taking a comprehensive approach to rethinking smart city innovation. City leaders have collaborated through partnerships involving government, research institutions and solution providers. The Copenhagen Solutions Lab is one of the leading organizations at the forefront of this movement. By bringing together manufacturers with municipal buyers, the Copenhagen Solutions Lab has catalyzed the development and deployment of next-generation smart city innovations. Copenhagen is leveraging this unique approach to accelerate the implementation of smart city solutions. One of the primary focus areas is LED street lighting.

Copenhagen chose Itron and partners Citelum and SELC to deploy an enhanced city lighting system designed to improve energy efficiency, enable remote lighting management and control, and improve citizen safety. The goal is to provide a flexible smart city platform for street lighting and many other smart city applications. To date more than 19,000 light points have been upgraded with LEDs and advanced controls. In addition, the city has mandated that all new lighting endpoints will be required to have advanced controls.



CUSTOMER

Citelum

SERVICE TERRITORY

Copenhagen, Denmark

GOALS

- » Save energy and create a city-wide wireless network
- » Develop next-generation smart city lighting solutions that drive value and improve citizen quality of life.
- » Improve safety for the city's large and growing population of commuter cyclists

SOLUTION

- » 19,000 networked LED's
- » Dynamic lighting via motion and occupancy sensors
- » Advanced controls for remote dimming and scheduling

BENEFITS

- » 76% energy savings for upgraded streetlights

Investment in street lighting is a clear example of how a common network can serve as a foundation for those goals. By leveraging Itron's multi-application network, Copenhagen can avoid having to manage multiple, siloed systems as it adds applications in the future. Itron's network canopy supports the various bandwidth and latency requirements of different smart city applications, while also collecting and integrating data from various environmental sensors to provide the maximum benefit for its citizens.



BENEFITS OF COPENHAGEN'S SMART CITY PROJECT

Saving Energy and Money

Copenhagen is replacing its high-pressure sodium lamps with highly efficient LED fixtures that not only provide a better quality of light but also ensure energy savings of 55%. As part of the deployment, Copenhagen is implementing Itron's radio modules to allow for instant alerting on failures as well as an additional layer of energy savings by managing the light output throughout the night. Lights will first change intensity based on a schedule, but a future addition could be to dynamically dim or brighten based on the presence or absence of humans—maximizing both safety and energy efficiency.

Enabling Smarter, Safer Human-Powered Transport

In this city of 600,000 inhabitants, nearly half of commuter trips are taken by bicycle! As this number is expected to rise, increasing the safety of the trip is paramount. One application uses a fusion of intersection-based occupancy sensors and light controls to sense an approaching bicyclist and provide extra light as they cross vehicle intersections. This, combined with other new applications that leverage smart traffic signals such as the bike 'green wave' system, can help cyclists avoid red traffic lights and inform them of the quietest or fastest route to their destination.

Leveraging One Network for Multiple Applications

Investing in a network foundation is core to Copenhagen's unique approach. Copenhagen Connecting, one of the Copenhagen Solution Lab's most celebrated projects, demonstrates the value of a comprehensive data strategy for accelerating smart city solutions. By building a truly comprehensive, open-data hub, the city is leveraging efforts in multiple sectors to optimize resource allocation across a number of smart city applications. This unique approach promotes integrated uses of technologies and services that improve citizen services and overall quality of life.

¹Source: <https://urbandevdevelopmentcpk.dk/artikel/city-cyclists>



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