TVILIGHT

Case Study

Smart IoT Street Lighting - Bangladesh

By embracing Smart Street Lighting Solution, Chattogram takes a major step towards achieving its dream of becoming a leading Smart City in Bangladesh

The Chattogram City Corporation chooses Tvilight smart street lighting system to:

- Take seamless control of its entire public lighting infrastructure from a centralized location
- Significantly improve public safety by ensuring adequate illumination, even during the dark rainy days when the visibility is poor
- Maximize energy savings, cut energy bills, and improve grid reliability
- Lower carbon emissions and curb light pollution
- Optimize day-to-day operations
- Turn reactive maintenance to predictive maintenance
- Create a strong foundation for smart city applications

Customer Challenge

Cut energy bills, improve public safety and reduce maintenance costs

Old conventional public lighting infrastructure resulted in heavy energy bills and increasing maintenance costs. Poor illumination from such traditional street lights, especially during the severe weather conditions, was also becoming a concern for the Chattogram (Chittagong) City Corporation.

The city administration wanted to address these major issues, and wished to become a true Smart City. The city aspired to be energy-efficient, reliable, sustainable, technologically sound, and equally important, deliver greater safety for the citizens.

Solution

Radio Frequency (IoT) based Smart Street Light System for finer control and easier implementation of Smart City

5.200 lamps have already been replaced/ newly installed with high quality LED luminaires manufactured by our partner – Thorn Lighting (UK), equipped with our OpenSky NEMA IoT.

This state-of-the-art radio frequency (RF) based street lamp controller unit (LCU) connects individual street light directly with Tvilight CityManager, an intuitive and feature-rich centralized light management system (CMS).

Through CityManager, the operator can monitor the performance of each street light and set suitable dimming levels for different time periods of each day to achieve maximum energy savings, lower energy bills and cut carbon emissions, while maintaining public safety and comfort.

The system also supports automatic alert / fault notifications, enabling the operator / maintenance crew to take swift, well-informed actions before any problem heightens. Automatic notifications also helps keeping the lighting infrastructure up-to-date, benefitting the city corporation to optimize its day-to-day lighting operations and minimize the maintenance costs.

Our City Manager smart street lighting system is Open, supporting vendor-neutral interoperability and enabling easy integration with third-party IoT applications, empowering cities to become true Smart Cities.

Project Achievements

Visible benefits from day one

Smart IoT street light controller and intuitive light management system from Tvilight deliver visible benefits from day one, helping the city realize all its primary goals.

Total Control

By adding intelligence to every street light, the Chattogram City Corporation (CCC) is now able to monitor and manage its public lighting infrastructure remotely from a centralized location.

Thanks to the inbuilt energy meter, the operator can accurately monitor and measure the energy usage and performance status of individual street light.

Further the system operator can easily set the suitable lighting levels based on time, calendar, astronomical clock, ambient light sensor, centrally deployed photocells, and even motion sensors – for each light point individually through CityManager.

> The Corporation today really has a complete control over the public lighting. We can see how each street light is performing and effortlessly set the lighting levels right from our desk.

Engr. Jhulan Kumar Das, Superintending Engineer (Electrical), Chattogram City Corporation

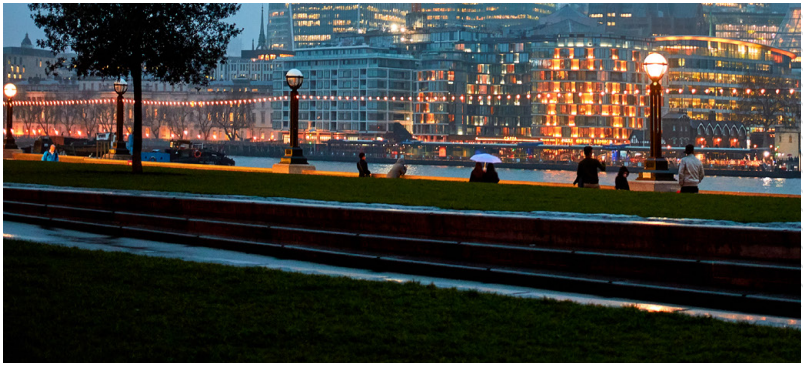
Improved Safety

With the ability to pre-program the illumination levels based on the local demand or situation, the city is able to offer the right amount of light, at the right time and at the right place, significantly enhancing the road safety for the public.

To further improve public safety, Tvilight implemented in Chattogram the OpenSky IoT controllers with built-in ambient light sensors (ALS).

ALS enables autonomous operation during emergencies. For instance, during the overcast conditions or heavy rains, when the visibility is low (even in the daytime), the street lights automatically turn on, making the citizens feel safe to use the road.

At the same time, when the surrounding light levels rises above a pre-programmed lighting level, the respective street light(s) will automatically DIM down to a required level to prevent unnecessary consumption of electricity, and thus cutting electricity bills.



> Monsoon is long in Bangladesh, especially in a coastal city like Chattogram. With smart street lights that turn ON according to the ambient lighting level of the surroundings, without any human intervention, it is a major benefit for the city in terms of improving safety of the Citizens during the overcast days.
>
> **Engr. M Mahbub Hussain,**
> **Managing Director of Trademajestic Limited**

Optimized Operation and Reduced Maintenance Costs

Through Tvilight's central management system, the operator can now see the performance and health status of each street light in a near real-time.

By analyzing and fine-tuning the performance of street lights, the city corporation is able to cut down on the energy usage, and at the same time prolong the life of luminaires.

With the automatic fault alerts / notifications, the city corporation is able to move from reactive maintenance to proactive maintenance.

The system simply pinpoints where and what type of failure has occurred, enabling the maintenance crew to arrive at the right location with the right spares to perform quick repairs. This process cuts the unplanned night patrols and greatly minimizes the maintenance costs.

> Knowing where the street lights have failed and due to what reasons, helps us make a planned trip. We now carry only the right spares to the right place at the right time. It greatly optimizes our transportation costs, overhead and turnaround time.
>
> **Sohanoor Rahman, HTMS Limited**

Smart City Ready

Open standards and Open APIs are at the core of our intelligent street lighting system, making it vendor-neutral, and more importantly, future-ready.

By deploying Tvilight's open system, the city gets an efficient technology foundation for implementation of other Smart City Services such as:

- Smart Environmental Monitoring
- Adaptive Traffic (Signal) Management
- Smart Waste Monitoring & Optimized Collection System
- Street/Drainage System Water Level, Flow and Quality Monitoring
- Smart Parking Management
- Structural Health Monitoring & Planning of City's Infrastructure and Establishment
- Integrate Public Broadcasting
- Public Emergency Alerts and Reaction Management
- Connected Citizen Network to implement an efficient information value chain for city services management, and many more...

> Our dream is to become the first true Smart City in Bangladesh, and thanks to this open system, we are now a step closer to realizing our dream.
>
> **Engr. Jhulan Kumar Das, Superintending Engineer (Electrical), Chattogram City Corporation**

Project Summary

Location :
Chattogram, Bangladesh

Client(s) :
Chattogram City Corporation

Application Areas :
Main Roads, Secondary Roads,
Residential Roads,
Part of National Highway under CCC

Products :
OpenSky NEMA IoT (Street Light Controller),
CityManager (Central Management Platform)

Project Partner(s) :
Thorn Lighting (UK) Ltd.,
Trademajestic Ltd., HTMS Limited

About TVILIGHT

TVILIGHT PROJECTS B.V. is a European market leader specializing in motion sensors, wireless lighting controllers, and a complete portfolio of street light management software – to manage, monitor, operate and maintain citywide public lighting infrastructure. Our smart lighting platform and open API allow integration to city's preferred software platform and thus constitute an open, reliable and future-proof base for Smart Cities and the Internet of Things. The company has installed over 600 projects globally across 20+ countries, including iconic cities and critical infrastructure around the world. Tvilight's international projects include Amsterdam Airport Schiphol, Dutch Railways, Port of Moerdijk, Seoul, Beijing, as well as some of the largest German cities such as Düren, Münster, Cologne, Dortmund, and Berlin. To discover more about us and our products, visit **www.tvilight.com**