TVILIGHT

Case Study

Grid Independent Smart Solar Street Lighting with Motion Sensors

Makes Roads Safer for Cyclists and Motorists in Hungary

Smart solar street lights with motion sensors at M25 expressway in Andornaktálya (Hungary), illuminates only in human presence – increasing traffic safety and maximizing energy savings.

> The uniqueness of the solution is the use of solar LED street lights with motion sensors. LED solar street lights are already energy efficient. Pairing motion sensors further boost significant energy savings – up to 90%! Motion sensors illuminate street lights only when there is someone around. Rest of the time, street lights remain dimly lit. This drastically cuts energy waste and the consequent carbon footprint.
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> **Tamás Árvai, HOFEKA Kft.**

Customer Vision

Safe Intersection for Cyclists & Motorists

The M25 expressway is built to connect the city of Eger with M3 motorway, the main road link between Eastern Hungary and Budapest. The core objective of this project is to reduce traffic accidents, achieve energy neutrality, and improve access to the TEN-T (Trans-European Transport) network.

With the residential area of Andornaktálya nearby and a bicycle path to cater to the travelling needs of the locals, the primary focus of the National Infrastructure Development Corporation (NIF) was to provide a safe intersection after dark to both motorists and cyclists.

With Hungary's increased climate ambitions and energy independence in mind, the NIF preferred a smart lighting solution that could offer adequate illumination with better energy efficiency.

> Progressing with the spirit of the times, taking into account the sustainable future, we definitely thought in terms of energy-saving lighting. We looked around the options available in Hungary, but we were actually looking for something that couldn't just be taken off the shelf.
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> **József Pántya, Road Development Director, NIF**

Solution

Smart Motion Sensor Solar Street Lights

NIF chose grid-independent solar LED street lights from our partner Hofeka. These solar street lights were paired with Tvilight's industrial street light motion sensors and outdoor luminaire controllers. The overall system, including the storage capacity, has been designed to cover the streetlight energy needs every day of the year. Including winters, when daylight hours are minimal.

With smart street lighting control system in place, the street lights at the Andornaktálya roundabout illuminate to an adequate level only when needed. With street lights brightening automatically in human presence, the safety perception of the road user increases significantly. And when there is no activity in the area, the street lights remain to a preset dim level, reducing energy waste and light pollution.

Tvilight also delivered smart street light management system, CityManager, to help the operator monitor and manage individual street light remotely from a centralized location. The system provides automatic alerts and notifications. This helps the operator to quickly identify and locate faults, and enables them to take swift corrective actions. This approach turns reactive maintenance to pro-active maintenance – keeping the lighting infrastructure up-to-date.

CityManager platform is Open, Interoperable and TALQ certified. Thanks to this, it was easy to integrate Tvilight smart street lights with the HDMR Smart City system, organized by Magyar, the company responsible for the operation and maintenance of all the national roads across Hungary.

> With the help of the HDMR Smart City system, excellent energy is saved, when there is little or no car traffic. This is an important factor in the case of a solar power based streetlights.
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> **Attila József Szilvai, CEO, Magyar Közút Nonprofit Zrt.**

Benefits of Smart Solar Street Lights with Motion Sensors

The adaptive smart solar lighting system at Andornaktálya delivers the following benefits:

- Excellent illumination only when and where it is needed
- Exceptional energy savings
- Increased road safety
- Significant reduction in light pollution
- Reduction in electricity waste and consequent carbon footprint
- Lower operational and maintenance costs

> Certain roundabouts and intersections are necessary on highways. Although roundabouts are known for traffic incidents, they cannot be avoided. I am proud that our experts came up with an excellent solution. These smart solar street lighting system makes the roundabout safer for both – bicyclists and motorists. Plus saves so much energy. I believe that this application is unique in Hungary, and a beautiful example for rest of Europe.

Dr. Gábor Pajtók, Member of Parliament of Heves County

Project Summary

Location :
The roundabout at the Southern-end of Andornaktálya, M25 Expressway (Hungary)

Client(s) :
NIF – Nemzeti Infrastruktúra Fejlesztő Zrt.
Zöld Garden
Magyar Közút Nonprofit Zrt.

Products :
SkyLite Prime, CitySense Plus, CityManager

Application Areas :
Highway Roundabout

Project Partner(s) :
HOFEKA Ktf.

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**

References: **NIF – Nemzeti Infrastruktúra Fejlesztő Zrt., Magyar Építő, ASECAP, Füzes Hírek, World Highways**