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Case Study

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Smarter and brighter

See how combining Vaisala environmental sensors and Seak EV chargers in smart streetlights is helping one city measure air quality, get real-time weather data and improve energy efficiency

SEAK Energetics specializes in creating smart lighting solutions. Their flagship outdoor streetlights do much more than provide energy-efficient lighting; they integrate technology for better living.

SEAK

Sabinov is a small city in Slovakia with a Medieval city center. Medieval towns were built for pedestrians and horses and are typically short on modern technology. This city was about to change all of that.

The challenge: Make room for energy efficiency and insight

Sabinov was looking for innovative ways to integrate modern energy efficiency. For example, residents and visitors had started driving electric vehicles (EVs), which are great for the environment but posed a problem for Sabinov: There was not a single EV charging station in the city.

At the same time, the city wanted to start monitoring weather and air quality in the district. Historical data would help them understand if air quality was being improved by increasing the use of EVs and other energy efficiency measures and inform the public in case of poor air quality.

The solution: Establish smart city technology

Sabinov integrated modern technology from Seak Energetics and Vaisala to improve energy efficiency and establish environmental monitoring — starting with a public parking lot.

The city launched a pilot to replace standard lighting with smart streetlights in a public parking lot near the city center. Each streetlight is integrated with a Vaisala Weather Transmitter WXT530, Vaisala Air Quality Transmitter AQT420 and LUMiCHARGER EV charger.

The all-in-one WXT530 provides six of the most important weather parameters: air pressure,

The client:

Sabinov, Slovakia

Vaisala provided:

Weather Transmitter WXT530

Air Quality Transmitter AQT420

temperature, humidity, rainfall, and wind speed and direction. The AQT420 provides accurate air quality data on gaseous pollutants (NO_2, SO_2, CO and ozone O_3) and particles ($PM_{2.5}$ and PM_{10}). The combined sensors provide a complete picture of current environmental conditions.

The smart streetlights are connected to a SEAK SMART lighting control system that uses existing power lines for communication and data transfer. While Sabinov collects and analyzes data about lighting efficiency and environmental conditions, they also maintain an app that provides citizens and visitors with local weather and air quality plus charging station availability.

The benefits: Get new insights and energy savings

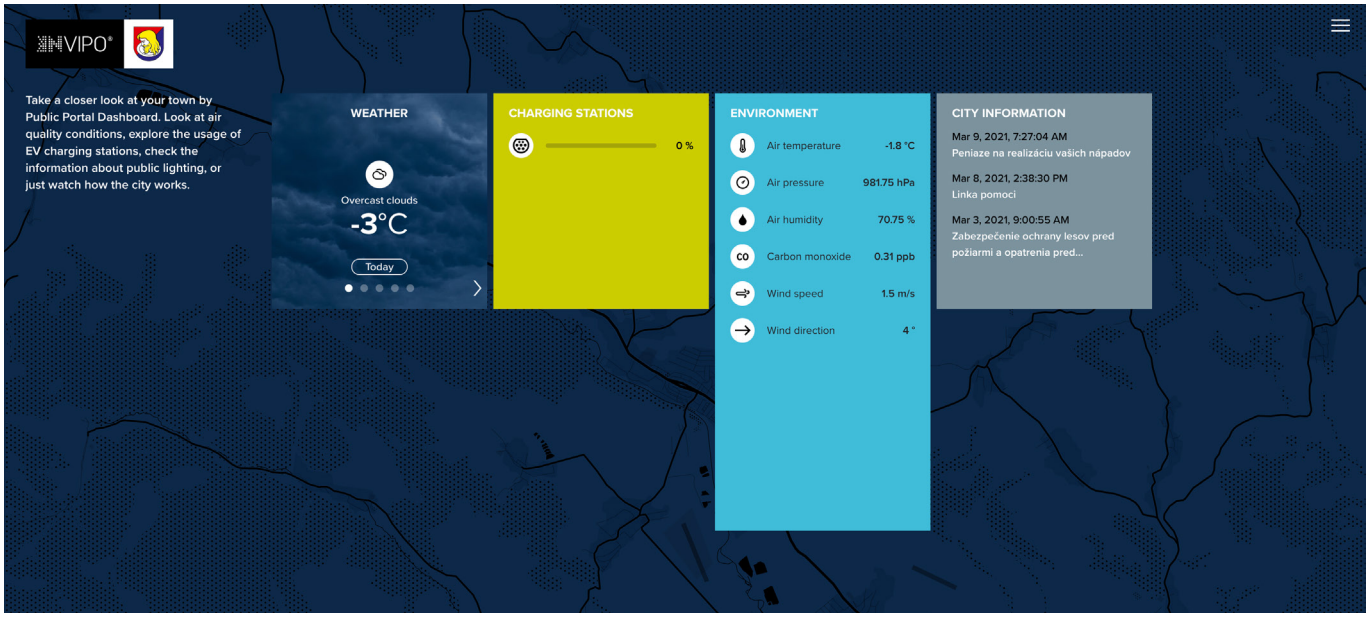
The new streetlights are putting Sabinov on the smart city map. The devices serve multiple energy-efficiency purposes for the city as well as residents and visitors, and the Vaisala sensors are helping to lay the foundations for weather and air quality awareness.

The streetlights are being used more each week, which will increase energy efficiency and lead to better local air quality. Real-time air quality monitoring enables Sabinov to alert locals when pollution levels are higher than normal so they can take steps to minimize exposure. The sensors are also giving the city greater awareness of their local climate, which will help them determine future streetlight locations.

Residents and visitors also benefit from the solution since they have access to streetlight availability plus weather and air quality information at their fingertips. Smart city technology is paving the way toward a cleaner future for Sabinov.

"The greatest benefit of weather sensors for Sabinov is that collecting of such data has started at all. Until now, the city had not been collecting any environmental data. The benefit for the city to archive the history of the data is that we will be able to compare it in the event of any deterioration in air quality, it will help the city to take appropriate action."

JUDr. Martin Judičák
Head of Office in Sabinov



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