



# Actility

## Success Story

- Buildings and Facilities -



### SOLVERA LYNX BTC KEY FIGURES

## SOLVERA LYNX - BTC CITY -



**470,000 meters<sup>2</sup>**  
Area of BTC City



**60 million kWh/year**  
Total energy consumption

**10%** of total budget  
Energy costs

### A Smart Response to a Slovenian Shopping Mall's High Energy Costs

*Solvera Lynx provides an energy management system for BTC City Ljubljana*

#### A Shopping Center The Size of a City

BTC City Ljubljana is one of the largest business, shopping, entertainment, recreation and cultural centers in Europe, located just three kilometers from Ljubljana city center and 200m from the Ljubljana ring road. It is considered a must-visit destination by city residents and tourists.

Due to the large number of facilities, wide area, high consumption of electricity, water and heating, BTC's energy needs are comparable to those of urban centers.

In a bid to reduce energy consumption and costs as well as subsequent CO2 emissions, BTC sought to implement an energy management (EM) system for its multi-purpose facilities, such as those used by Smart Cities, and in line with the ISO 50001 standard, aimed at supporting organizations to conserve resources and tackle climate change.

BTC turned to Solvera Lynx, the region's leading provider of comprehensive

**“Energy management is an economic necessity.”**  
*Tomaž Damjan, Energy Manager, BTC City*

energy management solutions, to help devise their own system to monitor and reduce energy consumption.

Specialists from Solvera Lynx described the key to greater efficiency and energy management coordination was to provide BTC City with “systematic control” over energy consumption.

“Due to the large number of BTC facilities, it was important to control the consumption of individual energy products and monitor consumption by individual end-users,” explained Janez Klančnik, Project and Energy Manager at Solvera Lynx. “BTC needed tools that allowed the easy collection of data, performance analysis and production of automated reports.”

### Step Reduction in Costs and Consumption

Once Solvera Lynx implemented the network, deployed the sensors and connected them to the GemaLogic platform, results were instantly observed.

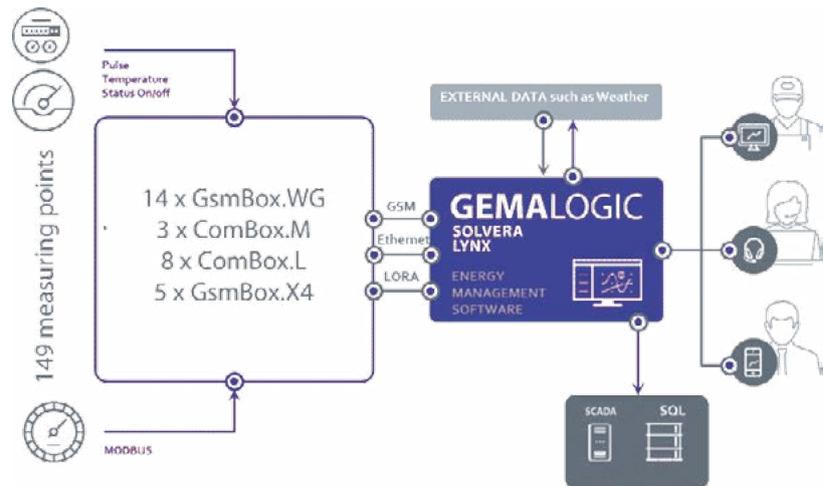
For example, once the energy data was digitized, energy managers could immediately start monitoring and

analysis in real time, and start benchmarking and forecasting. Solvera Lynx EM solutions also include an alarm system that can detect deviations in consumption, such as those caused by a water leakage, alerting the managers for a quick response. EM systems can be improved over time and the easy monitoring leads to taking effective measures to continuously increase BTC City's efficient consumption of energy.

In fact, after one year of implementing Solvera Lynx's EM system, BTC City has reduced its energy consumption by 5%. Water leakages have been reduced by up to 90% and energy loss overall caused by water leakage has been reduced by up to 6%. Even more staggering, BTC City has observed that before, water loss was measured at 40%, whereas after the EM solutions were installed, that figure plummeted to 4.5%.



Moreover, early detection of equipment defects, such as in air-conditioning units, has led to replacement of parts that have cut electricity consumption by half!



**“The system has paid-off”** said Tomaž Damjan, Energy Manager at BTC City. **“We will continue using the GemaLogic energy management platform.”**

Meanwhile, the case study has also been a major win for the collaboration between Solvera Lynx and Actility, according to the former’s Toni Žužek.

**“We really appreciate the timely and professional support from Actility’s experts”** said Žužek. **“They helped meet our needs and strategic milestones, as well as plan and organize more effective sales and marketing activities in order to promote our advanced EM software and hardware solutions.”**

## Applying Smart City Energy Management (EM) Tools

Solvera Lynx set several objectives for implementing their Smart City EM solutions:

- To gain remote control over energy consumption
- To implement an alarm system
- To define and analyze key energy efficiency indicators in real time
- To introduce an energy accounting system with a clear, transparent view of energy use
- To provide a tool for employees to carry out relevant and efficient energy management activities

To achieve these objectives for BTC, Solvera Lynx had four types of communication equipment in mind: GsmBox.WG, ComBox.M, ComBox.L and GsmBox.X4. These wireless, long-range sensors

utilize LoRaWAN technology to send data to GemaLogic, an advanced energy management software platform.

The idea was to connect and deploy this network of sensors and communication equipment throughout the entire BTC City, digitizing utility meters that could then send data on electricity, heat, natural gas and water consumption from all facilities to the GemaLogic software, where energy managers could constantly gather, process and analyze the data and produce automated reports.

Deploying a network of indoor/outdoor sensors requires a special communication technology to overcome a variety of obstacles. LoRaWAN was the natural choice and Actility supported the Solvera Lynx team on its use.

To easily understand the benefits of LoRaWAN-enabled sensors, it is useful to compare it to WiFi, the commonly known indoor, wireless networking

technology. Covering the wide area of BTC City would require dozens of WiFi access points, whereas only two LoRaWAN gateways were needed. With LoRaWAN, BTC City was able to set up its own private network within a week.

In addition, the battery life of LoRaWAN-powered sensors is much higher—5 to 8 years on average.

The most exciting aspect for Klančnik was observing the small time intervals of sending data from normally inaccessible places.

“Once we connected the meters in the water shafts to the ComBox.L devices, we could receive data on water consumption every 15 minutes. Before, that was not possible and water leakages were not detected in time” said Klančnik.

This was just the tip of the iceberg.