Energy Management in glass industry
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**Steklarna Hrastnik Company** is the leading glass products manufacturer in Slovenia with a 150-year tradition.

The company specializes in special glass packaging, glassware and lighting, as well as handmade items etc.

**Challenge**

The company has a strong environmental regulation compliance strategy and is dedicated to optimizing and reducing energy consumption. In order to comply with European energy regulation and meet the energy consumption reduction target, Steklarna Hrastnik decided to carry out an energy management project.

The project included complete digitalization of energy data with the purpose of implementing an energy management system, that provides a transparent view of energy consumption, offering a tool for employees to perform more relevant energy management and energy efficiency activities in order to reduce energy costs.

Energy optimization of glass manufacturing in such large and dispersed industrial area was possible due to new innovative LoRaWAN communication technology instead of the classical wired system.

**Steklarna Hrastnik Key Figures**

- **Locations:** 2
- **Consumption of resources:** Electricity, compressed air, natural gas, water, oxygen

**Measurements**

- 315 metering points
- 64 from the SCADA system
- 2 through Gass supply system

**Solvera Lynx Solutions for Industry**

Check more information regarding our solutions at www.solvera-lynx.com
Our Solution

Energy consumption monitoring
- Electricity
- Compressed air
- Natural Gas
- Oxygen
- Water (sanitary water, cooling water)

Energy efficiency analysis and predictions
- Energy efficiency performance indicators (EE of machines)
  - Energy consumption vs production output
  - Energy consumption vs m3 compressed air
- Energy performance and targeting
  - Targeting energy consumption quantities and costs
  - Alarming in case of consumption or cost deviations

System and process monitoring
- Machine status monitoring
  - Machines
  - Furnaces
  - Lighting and Cooling technologies
  - Vacuum pumps
- Air and Water conditions monitoring
  - Temperature
  - Pressure
- Alarming in case of system failures, inefficient operations and water leakages
In order to effectively connect the meters and the network, we set up the LoRa wireless communication. In order to reach and carry out the measurements and prices, we selected ComBox.L, an innovative product by Solvera Lynx. Expanding the existing LoRaWAN network enabled us to cover the entire industrial area and set up the communication devices in all the less accessible places.

Energy management software
GemaLogic®

The solution is designed modularly and provides easy future upgrades.
Project achievements

Energy management transparency

- Digitalization of energy data
- Alerts and short response times in case of system deviations
- Alerts and short response times in case of energy consumption deviations

Energy efficiency improvements through

- Real time energy monitoring
- Advanced analysis, benchmarking and forecasting

Benefits

- Energy consumption reduction in the 1st year of solution implementation
  - Electricity consumption reduction
  - Natural gas consumption reduction
- Reduction of energy loses caused by water and compressed air leakages
- Alarming in case of water and gas consumption increase
- CO2 emission reduction
- Support in ISO 50.001 implementation

Time-independent review and evaluation of energy consumption in accordance with tariffs, schedules, and the like, thus allowing optimisation of production.