

don't hesitate to  
contact us

your solution is in our hands



**PANNON  
INNOVATION  
AGENCY**

**Pannon Innovation Agency GMBH**  
**HUNGARY**

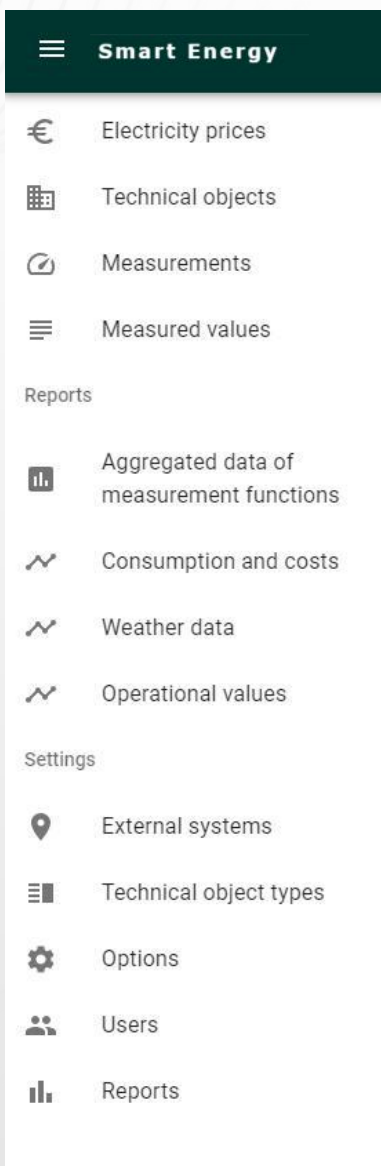
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end-to-end  
energetic  
solutions

# Every organization has it's own energetic challenges



We offer you a wide range of solutions, adapted to your circumstances.

the clarification of goals:

- stabilization
- cost saving
- greening
- KPI-s

planning the solution based on:

- your actual infrastructure
- conditions of asset guarantee
- national standard and energetic strategies
- energy pricing

using our specialized toolbox:

- retrofitting - brown field IIoT
- custom made electronics, connections
- full service implementation
- our cloud based SEM
- energy storage systems from Alteneva

What is SEM?

Our **Smart Energy Management** platform offers a cloud-based, flexible solution of managing your own energy system, including:

- process control methods
- data collecting and visualisation
- alerting, reporting and KPI-s
- flexible communication with third party systems
- open to costumizing needs
- developed in a partnership with SilverFrog Industrial IT solutions

## OUR METHOD

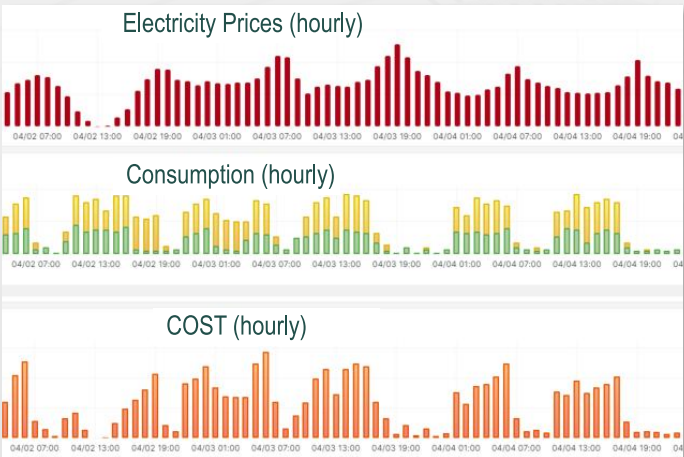


### Optimizing the energy costs of cold stores - **USECASE1**

The client's aim was to reduce energy costs, which we achieved above expectations, with a **more than 30% saving** rate.

- based on the hourly prices of the Hungarian power exchange
- there is no private energy storage or additional energy generating system, only the network as the source
- maintaining the cooling system warranty
- assurance of no damage with 15 tons of meat while stored at a safe temperature

We built frequency converters for the compressors of the cold stores, which were controlled by a SCADA system. The SCADA system continuously receives information from our SEM system about electricity prices and other control information. Based on this, the controlling is constantly changing within the technical parameters of the compressors. **The meat product is used as an energy buffer.** It is over-cooled with cheap electricity and then it is allowed to warm up to the maximum operating temperature with the expensive one. The SCADA system then transmits the data coming from the sensor array and the controlling to the SEM system at every second, which uses it for reports and further predictions.



### Intelligent controlling of Weidmüller ECO charging boxes - **USECASE2**

**The Challenge:** the disadvantage of the Weidmüller ECO charging unit is that, during operation, it cannot consider the current consumption and the amount of local (solar) energy production.

**The Solution:** a controlling program communicating with a network consumption meter on a serial RS-485 line adjusting the power consumption of the ECO charger to the actual consumption needs. Written in JavaScript and HTML in a modern Node-Red environment, so it can be installed on simple Raspberry pi units or on PLCs that manage the Node-Red environment.

**The Result:**

- a validated dynamic load control and charging management with adjustable values
- simple design
- prioritized charging control (4 chargers)
- web installation

