

Smart consumption management system for energy-efficient industrial companies

August 15 2018



Credit: CYSMETER

Energy use in industrial buildings continues to skyrocket, contributing to the negative impact on global warming and Earth's natural resources. An EU initiative introduced a disruptive system that's able to reduce electricity consumption in the industrial sector.

Using energy efficiently helps industry save money, conserve resources and tackle climate change. ISO 50001 supports companies in all sectors to use energy more efficiently through the development of an [energy management](#) system. It calls on the [industrial sector](#) to integrate energy management into their overall efforts for improving quality and environmental management. Companies can perform several actions to successfully implement this new international standard, including creating policies for more efficient energy use, identifying significant

areas of [energy consumption](#) and targeting reductions.

Innovative system to improve energy efficiency

The EU-funded EFICONSUMPTION project set out to improve energy efficiency based on the monitoring, modelling and smart management of [electricity consumption](#). To do so, it addressed the problem of electrical energy efficiency from two different dimensions. "Electric energy savings, on the one hand, thanks to a more efficient and effective consumption, in turn determines lower CO2 emissions," says project coordinator and CEO of CYSNERGY SL, Vicente Rodilla. "On the other, savings lead to business activities that are developed with a greater degree of sustainability and higher return."

Project partners analysed real industrial data obtained to implement the improvements and modifications necessary to achieve reductions in [electricity](#) consumption of up to 40 percent, as expressed in unitary energy cost (kWh/unit). This fed into the development of a solution that includes several key components.

The core system consists of a voltimetric clamp technology (CYSMETER) that measures specific electricity consumptions, cables temperatures and vibration parameters, directly on the receptors. This hardware is supported by a Big Data software (CYSCLOUD), that analyses and sends an automatic diagnosis and list of actions for the energy-efficiency improvement. The patented plug and play machine-to-machine measuring device is directly connected to electrical wires through a metallic spike. This allows it to obtain the voltage waveform along the cables without cutting or extending them. It's autonomous and measures the voltage and current at the same point of an electrical conductor. As a result, the CYSMETER&CYSCLOUD solution optimises the accuracy of electrical efficiency measures, without interrupting production or services.

Electric energy savings are good for business and the environment

CYSMETER works together with the mentioned software cloud platform CYS CLOUD, that receives real time data and can establish efficient consumption patterns to effectively lower electricity costs. "It is providing important savings for industrial companies – they are receiving electricity bills, with specific consumption reductions of up to 20 percent to 40 percent less than before," notes Rodilla. "This decrease will also contribute to proportionate reductions in the associated carbon footprint and emissions."

The system was successfully tested at several plants of industrial and services companies based in Spain and other countries.

Rodilla highlights the innovation's business potential thanks to its unique features. It functions as an electrical modeller, and a safety and quality controller, that can be adapted to all industrial sectors and a wide variety of facilities. The components can be seamlessly integrated into networks, the system can be scaled up to cover a very complex network and it's easy to operate for non-professional users.

"Efficient consumption of electrical resources, predictive maintenance and electricity savings are the most relevant benefits of the EFICONSUMPTION technology, particularly for industrial production plants and buildings," concludes Rodilla. "It's a win-win proposition, profiting the EU economy, boosting the competitiveness of European industry and positively impacting the environment."

Provided by CORDIS

Citation: Smart consumption management system for energy-efficient industrial companies (2018, August 15) retrieved 28 April 2024 from <https://phys.org/news/2018-08-smart-consumption-energy-efficient-industrial-companies.html>

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