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Commitment for Energy and Material Efficiency

How zenon supports Food & Beverage plants with their ISO 50001 implementation

I find every visit to Food & Beverage manufacturing plants very exciting; having the chance to get to know people's challenges. The real satisfaction I experience year by year is when zenon's strengths are of great help to production teams on their way to even better performance.

Therefore I would like to share with you some of my findings in an area which is currently gaining in importance: the management of energy and resources. There are many factors motivating production teams in their efforts to produce even more, but with less resources:

- the continually growing costs of energy
- a business orientation to sustainability principles
- the simple desire to improve the financial margins of production processes
- standards and regulations becoming mandatory or being connected with financial assistance supported by government

Whatever the motivating factor, the standard ISO 50001 plays a key role in achieving this goal.

WHAT IS THE STANDARD ISO 50001:2011?

The ISO 50001 standard not only answers the question "What should an energy management system do?", but it also gives support to production teams when implementing one. In fact, the goal is to create the organizational conditions in order to enable continuous improvement in respect to the efficient consumption of energy and resources (water, fuel, etc.). The idea is not to take decisions such as "cut consumption here or there", which only focus on quantities. Production volume and quality should not be negatively influenced. The complete approach is a qualitative one. The sources of optimization have to be identified, by measuring data, by widely involving people in the plant, by setting targets and by controlling results. How does one succeed in this? The answer is given by the standard itself, which is based on the "Plan-Do-Check-Act continual improvement framework".

PLAN: Before starting any improvement process, it is essential to know the current situation, to set goals and plans for improvements, based on energy performance indicators (EnPIs).
DO: Just act according to your plans!
CHECK: Measure again, observe and document the results: Is this what you expected? Without negatively affecting other parameters of your production?

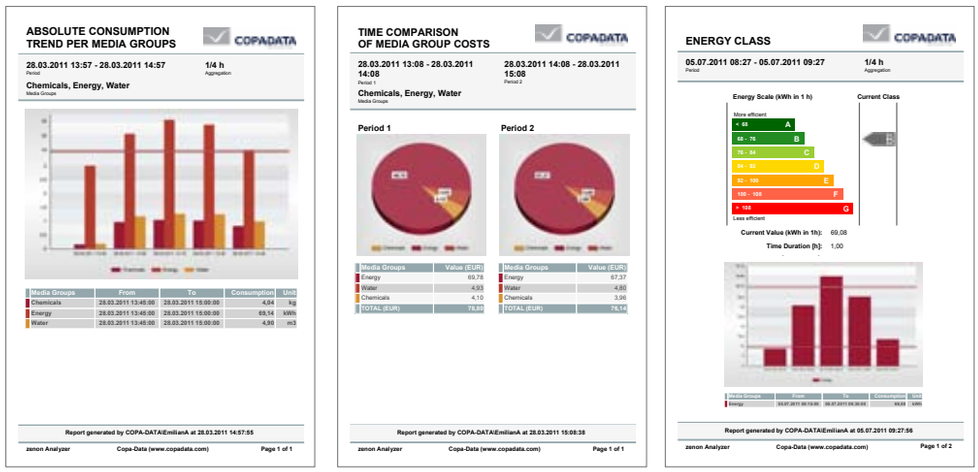

Figure 1: Consumption reports in zenon Analyzer

ACT: Good experiences have to be consolidated, rolled out and built upon further across the complete organizational system and various production teams.

These basic principles of ISO 50001 make obvious how important it is to measure, collect, process and analyze consumption and production data. The central tool for doing all of this is an Energy Data Management System (EDMS), which includes all hardware and software components – from energy counters to software reports.

AN ENERGY DATA MANAGEMENT SYSTEM WITH ZENON

Well, here we arrive at our central point: the zenon Product Family has proven itself in operation as the core of an EDMS. What makes zenon a strong instrument in the hands of end users and system integrators? Here we could say a lot about our product philosophy, but also about recent developments. Let´s take just a few examples.

HOW TO COLLECT DATA FROM EVERYWHERE?

Over 300 communication protocols are available for you in zenon. Therefore, it allows you to connect practically all measurement devices, automation components, production equipment or building automation infrastructure. The more data you collect, the more scope for valuable analysis you will have. Most importantly, the data communication is robust and has diagnosis mechanisms: we know that a correct analysis is possible only by using correct data.

HOW TO ARCHIVE AND PROCESS DATA?

Once available in zenon, the collected information can be processed in real-time, then scaled, pre-calculated, filtered etc. zenon offers powerful calculation and processing functions, for instance, by using zenon Logic or the Logic Driver. For data storage, the Historian module enables users to choose from different sources and formats of data, including relational databases (SQL).

HOW TO DISPLAY INFORMATION IN A VALUABLE WAY?

zenon Supervisor and zenon Analyzer are two members of the zenon Product Family which have been specially developed for presenting data in various ways, from key performance indicators, trend curves, alarm lists and events to complex graphical reports. Using pie charts or bar graphs, filters on consumers, time frames or production entities, data can be transformed into relevant information for energy management. Consumption distribution by single consumers or groups of consumers, the evolution of consumption – absolute or relative to production, comparisons across different time periods, and cost calculation overviews are just a few examples of the analysis tasks which are easy to accomplish using zenon.

HOW TO INVOLVE AS MANY PEOPLE AS POSSIBLE?

A successful implementation of an Energy Management System is closely linked to the involvement of as many members of the production team as possible, across the complete plant hierarchy from plant floor to management. zenon's network technology – networking by mouse click – which supports client-server, redundancy and web server configurations assists here perfectly. No matter if the user is using automation or IT infrastructure, zenon allows easy extensibility and universal access to the appropriate information.

HOW DIFFICULT AND EXPENSIVE IS IT TO UPDATE THE SYSTEM?

Cost-effective flexibility is a general property of zenon based systems, due to our product philosophy. This is essential in the case of an EDMS because it is a part of the continuous improvement process. The zenon development environment is characterized by setting parameters instead of programming, out-of-the-box modules and usability, making all functionality updates to the EDMS efficient. Adding one more measurement counter, one more calculation or one more report user will not impact investment considerably.

What is your experience? In which phase is your ISO 50001 implementation? How have you integrated your Energy Data Management System? I look forward to hearing from you – e-mail me at *EmilianA@copadata.com.*

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