NEW ISO 50003 SUPPLEMENTS ISO 50001

Compulsory verification for energy efficiency

Improve energy efficiency, lower energy supply costs, reduce greenhouse gases and thereby reduce the burden on the environment: For good reasons, the worldwide ISO 50001 standards for operational energy management have largely become firmly established in German industry. Now, the new ISO 50003 is supplementing the set of directives. Especially for small and medium-size enterprises, this results in new challenges – and new opportunities.

Already in 2014, the worldwide valid ISO 50003 standard was published as a supplement to the existing ISO 50001. October 2017 marked the end of the transition period associated with the new release. Since that time, companies are required to implement the new specifications in the certification process for energy management systems according to ISO 50001. This equally applies to companies seeking certification for the first time within the scope of an initial audit according to ISO 50001, as well as for a successful recertification to renew ISO 50001 status.
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ISO 50001 + ISO 50003

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Focus on continual **improvement of energy efficiency**

Whereas the existing ISO 50001 governs the introduction and implementation of operational energy management, the new ISO 50003 supplements the related tasks with an essential new feature: As a prerequisite for the (re)certification according to ISO 50001, it requires proof of continual improvement in energy efficiency. It literally states in Chapter 5.9 of the standard: "Confirmation of continual energy performance improvement is required for granting the recertification."

In concrete terms, this means that the energy auditor within the scope of the ISO 50001 certification audit is to inspect and confirm the continual improvement in the company. Companies certified according to ISO 50001 are thus required, effective immediately, to document the continuous improvement of energy-related performance.

Above and beyond the new ISO 50003, in this context it is worthwhile to explore another current supplemental document of the ISO 50000 family: The focus of the new ISO 50006 are the key indicators on all aspects of a company's energy performance. Using a hands-on approach, the standard describes the path towards substantive data (energy performance indicators, EnPI) and a solid energy starting basis (EnB). In this, it distinguishes between four different types of indicators: "absolute" and "relative energy performance indicators", along with a "statistical" and "technical model". The four types vary in their complexity and in the manner in which they are compiled.
This means that there is a suitable energy performance indicator available for every field of application.

Whereas the ISO 50006 is not yet binding, since the end of the transition period, the ISO 50003 redefines the prerequisites for successful (re)certification according to ISO 50001.

Achieving **transparency** through energy data

The implementation of energy management according to ISO 50001 requires a company to undertake several steps: from development, through operational energy policy, right down to final certification. In the process, the measures in the areas of energy procurement, supply, and utilization, have to be carefully coordinated to one another. That is why a holistic approach is necessary, and one that places demands above all on management: The conscious and careful handling of energy must be second nature to all employees in the company.

The starting point for successful optimization is a continuous process that constantly monitors energy consumption, develops various efficiency measures and implements the optimal concept.

In developing concepts, right down to implementation and operation of an efficient power supply, it needs to take all levels of the enterprise into account – from management right down to the field level. And finally, it needs to create transparency throughout the entire product life cycle, e.g. through constant data monitoring and visualization of all energy flows. In this manner, companies can identify areas of potential where energy costs can be sustainably lowered. The improvement of energy data transparency thus becomes a key task in the implementation of energy management.

Power monitoring as technological basis

Up to now, the main tools in terms of reaching the targets outlined in the ISO 50001 standard have already been power monitoring systems. Aided by the correct software, they enable companies to log energy flows across all production and auxiliary installations in great detail and to analyze and assess energy consumption. This data can then be used to indicate areas where savings can be made and continuous improvements can be achieved across the whole company.

With the SENTRON Powermanager power monitoring software and measuring devices from the SENTRON Portfolio, Siemens is offering a high-performance power monitoring system. The complete package with software, measuring devices, and switches has been tested by TÜV Rhineland for conformity to support an energy management system according to ISO 50001. The electrical energy data, including voltages, currents, power, energy values, and frequencies, can be measured both using traditional measuring devices from the SENTRON measuring devices 7KM PAC series and via the SENTRON air circuit breakers 3WA, SENTRON molded case circuit breakers 3VA, and SENTRON 3NA COM LV HRC fuse links intelligent switching and protection devices.

The monitoring of recorded energy flows can be easily performed out of the box via the integrated web interface of SENTRON Powercenter 3000, from any location using the SENTRON Powermind cloud app, or entirely via the SENTRON Powermanager power monitoring software. SENTRON Powercenter 3000 and SENTRON Powermind require no additional hardware infrastructure. The software monitors and archives the electrical parameters collected by the devices. It makes no difference whether the data originates from a measuring device, a communication-capable molded case circuit breaker, or an existing counter.

The power averages of the characteristics monitored are displayed on the PC as load curves for comparison. This allows load profiles of different production lines or company sites to be compared with one another. Also indicated in the display are power distribution faults, permitting a fast response. Reports can be drawn up using pre-installed templates, for example to show cost center allocations, measured value comparisons, or duration curves.

Conclusion

The new ISO 50003 requires companies seeking certification or recertification according to ISO 50001 to provide proof concerning the improvement of their energy efficiency. In return, the companies profit from long-term savings. The recording, evaluation and documentation of energy data is thus gaining greater importance.

Today, many technical solutions are available for making constant improvements to satisfy any requirement and any budget. This makes it possible to consider both investment costs and operating costs and thus make the best possible investment in terms of lifecycle.

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