

# A Systematic Approach to EDMS Certification

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Companies intent on saving energy need to know exactly how much energy they consume where and when. This process produces an enormous amount of data. For companies choosing the right data management solution that brings their own needs into line with regulatory and legal requirements is of critical importance.

If we want to reach the target set in the energy programme launched by the German government, which provides for a 50 per cent reduction in the use of fossil fuels by 2050, energy efficiency in Germany must rise by an annual 2.1 per cent in terms of total energy consumption. Comprehensive energy management is one building block of the strategy to reach this goal.

As an incentive, companies that have established a certified energy management system in accordance with the EN ISO 50001 standard will benefit from tax reliefs from 2013 onwards. Besides, as energy prices continue to rise, energy costs are becoming the crucial factor in companies' cost management and competitive strength. These are plenty of reasons for

the energy industry, energy-related industries, energy suppliers, and municipal utilities, manufacturers of power stations and systems and energy service providers to rely on dependable and sustainable energy management systems.

Basically, energy management aims to achieve steady and sustainable reduction in business energy consumption. The key elements of an integrated energy management system are organisational and operational measures, provisions governing the implementation and strategic focus of energy targets, and the Energy Data Management System (EDMS). Every Energy Management System is only as good as the measurements and the analysis of the relevant data on which it is based. Dependable data are imperative if opportunities for

improvement and saving are to be reliably identified and the necessary actions developed from them and implemented.

## Host of Commercially Available Solutions

Given the many different Energy Data Management Systems (EDMS) offered on the market, companies find it challenging to choose the system that best matches their needs. In view of sector-specific requirements, legal framework conditions and the large number of interfaces in companies, a good EDMS offers not only general features, but also the possibility to integrate customised solutions.

Systems that fulfil the comprehensive and demanding requirements of the standard become certified and are awarded a certificate. Within the scope of the certification process, the auditors examine the distribution and usability of the system and its hardware and software components. The decisive properties and features of the system are regarded at four levels: field, automation, management and service.

## The Four Product Levels of the Certified System

At the service level, the auditors examine the system-related services offered by the manufacturer. These include seminar and training offerings or regular software updates. Further aspects examined include the service levels offered and the response times in case of incidents or necessary repairs. The experts also take a look at the technical execution and quality of data collection, processing, analysis and visualisation.

Very important factors in the assessment of an Energy Data Management System are the possibilities of data generation



and storage at the field level. The quality and quantity of the data collected are crucial for the quality and informative value of subsequent data processing and analysis. Standard bus systems are critical for precise and complete data collection. They ensure interoperability with sensors and measurement systems from various suppliers, thus permitting problem-free expansion of the system and the addition of further points of measurement.

At the automation level, high-performance data storage devices, multi-functional data loggers, programmable controls and precise date and time management are imperative for successful certification. Reliable automatic recording and storage of all measurement data and permanent, reliable data backups are fundamental to exclude data losses in the overall system early in the process. Likewise at the automation level, a standardised bus system is indispensable to ensure interoperability between all components from various suppliers.

The actual analysis of the collected data is performed at the system's management level. The EDMS experts also check the option and quality of manual and mobile data input, the generation of energy reports and performance indicators by the system and the mapping of trends in energy consumption. In addition to mere functionality, the certification process also verifies the clarity of displays and visualisation as well as usability. As in a cockpit, the results of data analysis and actions taken must be visualised in a simple and transparent manner in order to communicate them to other departments and the management team in charge to derive further measures if needed.

## Energy Management makes Good Economic Sense

An energy data management system serves as a basis for companies to derive targeted energy efficiency measures and integrate them into a system. It also visu-

alises the effects of modernisation and, if any, counterproductive investments. One example in this context is the "Snackwell Effect" described by leading energy economists from Berkeley, who discovered that the purchase of energy-efficient devices sometimes triggers a change in consumer behaviour. As the costs of operation decrease, consumers tend to use these devices more heavily and for longer periods, abandoning former prudence. This can result in a negative rebound effect, so that energy costs increase in spite of more efficient systems and devices. A certified EDMS reliably visualises this effect.

TÜV SÜD Industrie Service provides assessment and certification of energy data management systems in accordance with its own TÜV SÜD standard. Based on lists of criteria and checklists, the standard was developed by experts with long-standing experience in the certification of energy management systems according to EN 16001 and EN ISO 50001.



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Shri Bipin Khatri  
Minister of Coal, Govt. of India



Shri B. K. Chatterjee  
Member, Planning Commission, Govt. of India



Shri E. C. Chatterjee  
Secretary to the Govt. of India, Ministry of Petroleum & Natural Gas



Shri S. K. Sinha  
Secretary to the Govt. of India, Ministry of Coal



Shri P. Uma Shankar  
Secretary to the Govt. of India, Ministry of Power

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