

BEST PRACTICES – MANAGEMENT FACTSHEET



Managing energy in a systematic manner

There are many reasons for dealing with energy in a systematic manner. A dominant motive is decreasing the energy bill. When referring to “energy management”, the first thing to come to mind is often an “energy management system”. Yet realizing energy savings does not necessarily require a formalized management system. Progress can already be made when workers are sensitised about energy-related issues.

Energy management: Why at all?

There are many motivations for managing energy. A straight forward and obvious reason are the economic benefits from reducing energy demand by decreased energy costs. Yet there are other motives, as well, that make conciously dealing with energy-related matters attractive. One is improving the security of supply by achieving more inpedendence from external energy suppliers. Another is that taking a closer look on energy

costs can help to bolster a company against fluctuating and in particular rising energy costs. Thus, it is akin to risk management. Knowing where and when energy is used may also open up possibilities to adress areas with heavy energy consumption. And finally, energy savings mean a contribution to environmental protection. Dealing thorugly with them may also allow for advertising this to customers and to position oneself as environmentally friendly company.

‘Don’t simply buy energy, manage it!’

Europe

TRL 9

Investment (real or estimated)

Starting from 0 €

Savings

Depends on level of ambition

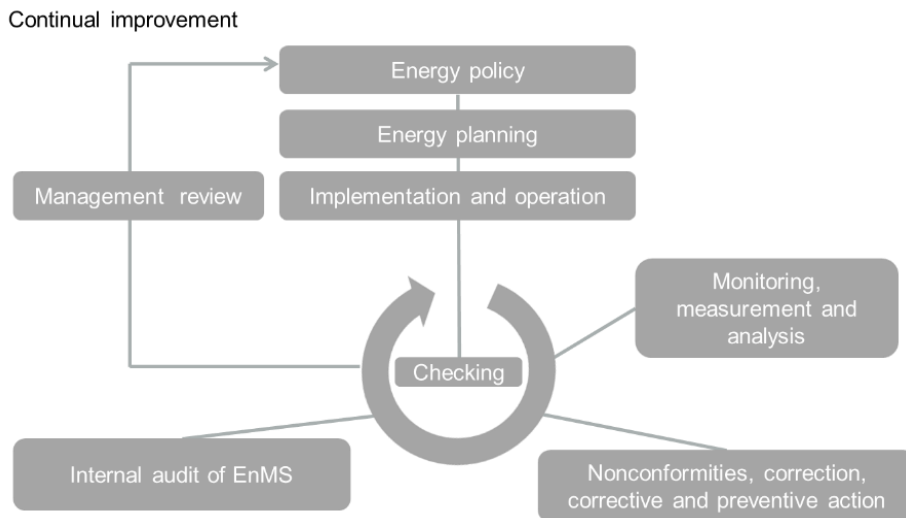
Main NEBs (Other benefits)

Increase transparency
Higher motivation
Green image

Energy management: From informal approaches to formalized systems

Referring to energy management is often taken identical to introducing a fully-fledged energy management system according to ISO 50001. Yet energy management as a general term can be perceived more broadly, running and well-maintained production.

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Experience shows that in small companies in particular, the topic is driven by individuals who are interested in keeping a smoothly. Thereby, they also look on energy demand among the various aspects related to running the operation, even without relying on a formalized energy management system. Larger companies, on the contrary, need to rely more on structured energy management systems due to the distribution of specialized tasks and responsibilities within larger organizations. Input by third parties within energy audits can also be valuable to get a neutral and better understanding of the energy saving opportunities within a company.

Energy audits as one-off interventions

The general nature of an energy audit is that it is typically designed as a one-off intervention. Energy auditors check on the energy flows, identify major energy consumers and compile a report with recommendations for reducing energy demand.

An energy audit is “a systematic procedure with the purpose of obtaining adequate knowledge of the existing energy consumption profile of a building or group of buildings, an industrial or commercial operation or installation or a private or public service, identifying and quantifying cost-effective energy savings opportunities, and reporting the findings.”

Energy management systems as frameworks for regular reviews

As compared to the energy audits, energy management systems are more comprehensive approaches that seek to integrate energy-related issues in the management system of an organization. Usually, these management systems follow the structure as laid down in ISO 50001 series. Their elements are based on the plan-do-check-act (PDCA) cycle, i.e. a continual improvement process. The entire system seeks to establish an energy policy, an energy planning and an implementation within the organization and a regular

review of the achievements (see also illustration).

Due to the continuous approach to energy related-matters, energy management systems are usually more sustainable in terms of the achieved savings in the longer run. Yet it also has to be kept in mind that the management framework has to be filled with “life” to get beyond a mere certification issue. Estimations on the actual effects and benefits of energy management systems vary, e.g. depending on organizational structure and prior activities in energy-related issues.

Energy benchmarks: Managing energy by comparisons

The general idea of energy benchmarks is to allow comparing energy demand values of objects to derive helpful conclusions about their energy performance. In one of the most simple of cases, the consumption of two identical lines with the same product is compared to each other. If there are differences in their energy consumption values, this could be an indication that a more thorough investigation on the differences is needed. While this general idea is appealingly simple, there are many challenges in the details. Identical lines with the same outputs are rather the exception than the rule and many factors affect the overall results including:

- Product-related factors (e.g. number of pieces, weight, length, volume, material)

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- Organizational factors (e.g. shift models, staff at site, frequency of energy analysis)
- Process-related factors (e.g. operating time, cycle time, speed, number of different setups, quality rate)
- Personnel (e.g. user behaviour, intensity of instruction and education, presence of specialized staff members)
- Ambient conditions (e.g. external and internal temperature, humidity, pressure, light)
- Location-specific factors (e.g. area, space, refurbishment, age of equipment, status of supply infrastructure)
- Production structure (e.g. degree of vertical integration, product segments, number of different products)
- Economic factors (e.g. turnover, production costs, energy costs)

Such factors have to be considered for meaningful comparisons. In practice, this can be challenging, especially when the amount of

details or knowledge about the factors is limited. Helpful benchmarks can therefore be quite difficult to establish, yet if properly done, they are valuable to better understand performance issues. •

Case study: The story of how Berriak saves 20.300€ annually

Berriak Supermarkets is a leading company in the food industry around the Basque Country (Spain). The main challenge for GESE Servicios Energéticos was to reduce the consumption without modifying the comfort conditions of the clients in Berriak. Exemplary saving measurement & results from introduction of EMS¹:

- Improved vertical display refrigeration management
- Optimized bakery oven on/ off schedule
- Improved lightning technology
- Optimization of contracted power and free market terms
- Savings verification

- Reduction of CO2 emissions by 34.000 kg
- Reduced electricity bill with 37% of saving out of the total

Opportunities and barriers to implementation

Opportunities	Barriers
More broadly running and well-maintained production	Additional staff capacities, training and education of employees
Possibility to address areas with heavy energy consumption and reduce energy costs	Lack of available data, time-consuming recording of data and measurements
Improved security of supply (f. ex. by achieving more independence from external energy suppliers)	
Green Image for advertising to customers	

¹ https://get.dexmatech.com/hubfs/Whitepapers/SMEs_EN.pdf

References

- [1] Dexma, Energy Management for SMES. 2016.
 [2] JRC (EU), Best Environmental Management Practice for the Food and Beverage Manufacturing Sector. 2018.

About ICCEE

The project ICCEE, www.iccee.eu, funded by the EU programme Horizon 2020, aims at improving energy efficiency in the cold chain of the food & beverage sector and making it easier for the sector to undertake energy efficiency measures across the entire supply chain and accelerate the implementation of energy audit results. ICCEE follows a holistic approach that moves from a single company perspective to the assessment of the entire cold supply chain. Existing financing schemes for SMEs will be assessed: the optimal ones will support the implementation of energy efficiency measures. ICCEE objectives build on 2 pillars: an analytical tool and a capacity building programme.



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