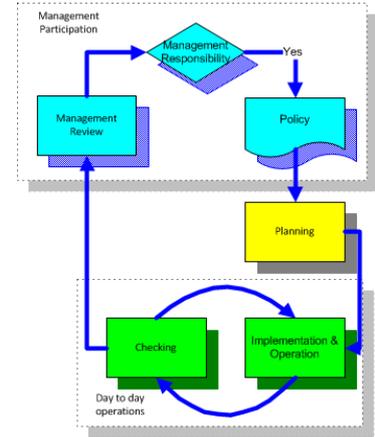


# FACTSHEET

## Steam Efficiency: Energy Management



### 'Running energy systematically'



# Energy Management

Energy management is a systematic approach to continually improve energy performance of your organisation. Organisations from all over the world that implemented energy management show energy efficiency improvements ranging from 5 to 25%. This can be achieved since energy management uncovers the energy efficiency potential of people created activities like operations, maintenance and control. These account for app. 70% of the implemented energy efficiency measures. Energy management within your organisation can be designed following the guidelines of ISO 50001. But this is no necessity. Focussing on the 6 key elements of energy management can already make a big difference for the energy performance of your organisation. Focussing on these 6 elements only also enables the organisation to implement an energy management system with minimal efforts. Finally practise shows that energy management can bring more to the surface than energy (cost) benefits alone. This non-energy benefits generally exceed the identified energy benefits.

**Investment**  
Low

**Savings**  
Up to 25%  
energy efficiency improvement

**Other benefits**  
Reduction of Cost  
Lower energy tariffs  
Better operational management

### What is energy management?

Energy management is a systematic (organisational) approach in order to continually improve energy performance. This includes drafting of an energy policy, defining targets, making energy savings plans, monitoring and verification and feedback of the results to management in order to get and retain commitment. The approach is based on the plan-do-check-act methodology for

continuous improvement being used for all currently used management systems.

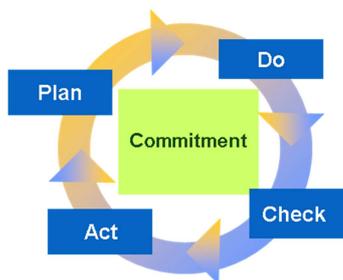


Figure 1: Continuous improvement

### Best Practises

Organisations from all over the world that implemented energy management show energy efficiency improvements ranging from 5 to 25%. A study by Deloitte showed that organisations leading in energy management reached an average annual reduction in energy use of more than 7%<sup>1</sup>. Also in countries running energy management based energy efficiency programmes companies ▶



## BEST PRACTICE FACTSHEET

show an average energy efficiency improvements of 2% for some decades. And even there incidental annual savings of 10-20 are still seen<sup>ii</sup>.

### Risks of not having it!

A studies done by Sustainable Energy Authority Ireland<sup>iii</sup> shows that from the realized savings only 1/3 is based on equipment i.e. optimizations of existing or procurement of new (energy efficient) equipment. The rest (2/3) comes from people created activities like control, energy services, operations and maintenance, etc. This shows that energy saving is not only a matter of investing in better equipment but also in influencing people (and their behaviour) that can affect energy use. Since that kind of 'measures' can't be fit into an (investment) project with a begin and an end the attention for this should be organized. Energy management is a way to organize this structural attention for this enormous potential for energy efficiency that otherwise will remain untapped.

Moreover from experience in the Netherlands, this was before the existence of such a thing as energy management, it showed that energy performance of organisations fluctuated over time. After a period of investments and savings an inevitably period of increasing energy use followed. Reached savings based on, sometimes huge investments vanished (almost) completely. It showed an ad hoc approach doesn't guarantee long term savings and that structural and continuous management on energy is needed.

### Six key elements

Only six elements are key to a good functioning energy management system.

The rest of the system exists to support these. An effective system should contain, at least, these six elements:

- ✓ **Commitment** (from management) and agreements on who does what and is responsible for what;
- ✓ **Significant energy users:** knowing where your energy is going by executing an audit. What are the biggest users or which users show high opportunities for improvement;
- ✓ What are the **KPI's** for energy efficiency and how will they be monitored or verified;
- ✓ **List of opportunities:** What opportunities for energy efficiency improvement are there or can be found to meet your energy targets?;
- ✓ **Operational control:** Implementation of measures. Not just investment in equipment (procurement) or improving of equipment (design) but also optimizing operation- and control settings and maintenance;
- ✓ **Review:** Check and analyse the results and make recommendation for improvements.

There would be already good savings in most plants if people understood and implemented these 6 items properly.

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### What energy management users say:

*"It makes energy to become part of our daily operations"*

*"Energy management helps us to prioritize (energy) investments"*

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### ISO 50001

The in 2011 published standard for Energy Management Systems ISO 50001 offers a good guideline for the design and implementation of an energy management system. Since its

publication more more than 12000 certificates (2015) are being issued<sup>iv</sup>.

### Ease of implementation

But how hard is it really to implement ISO 50001 and can also SME's do it? The answer is yes and not with so much effort. It is about making it as practical and workable as possible. In that way the Lidl organization succeeded in having certified 380 individual stores with an average of 20 employees<sup>v</sup>. Trainings, communication and working procedures where designed is such a way that it suited the competencies of the employees and that they could easily act on deviations on energy use.

### It's more than just energy!

Running energy management in a good way, and companies that are used to do so can confirm, can bring more to the surface than just energy (cost) benefits. It is not only the focus on energy but also the organisational structures that are built. This enables the organisation to have continuous attention for improving its daily operations. By doing so inevitably all kind of other opportunities, so called **non- or multiple energy benefits**, for improvement will be discovered. This can be for production, quality, safety, maintenance etc. These benefits can be 2.5 times as big than the (originally) envisaged energy efficiency benefits. •

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<sup>i</sup> Deloitte Resources 2013 Study *The Power Shift: Businesses Take a New Look at Energy Strategy* (2013)

<sup>ii</sup> [Results Netherlands Voluntary Agreements 2007-2014](#)

<sup>iii</sup> Sustainable Energy Authority Ireland, *Large Industry Network Annual Report 2010*

<sup>iv</sup> <http://www.iso.org/iso/iso-survey>

<sup>v</sup> [http://www.unido.org/fileadmin/user\\_media\\_u/grade/Media\\_center/2014/Events/9.Experience.in.Netherlands\\_Vermeeren\\_.pdf](http://www.unido.org/fileadmin/user_media_u/grade/Media_center/2014/Events/9.Experience.in.Netherlands_Vermeeren_.pdf)

