ISO 50001 applications and changes in the 2018 version and much more

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Agenda

- Whats new in ISO 50001-2018
- What can be achived with a well implemented EMS?
- How do you get a well implemented EnMS ?
- ISO 50001's role as a policy measure in EU
  - Voluntary agrements
  - EU obligation for energy audits or substituted by
    - ISO 14001 plus 6.3
    - ISO 50001

Elevator sales pitch

Elevator sales pitch

Not that simple

New ISO50001 – New Structure

- All the ISO standards – 9001,14001,50001 etc. – will follow the same format – called the High Level Structure

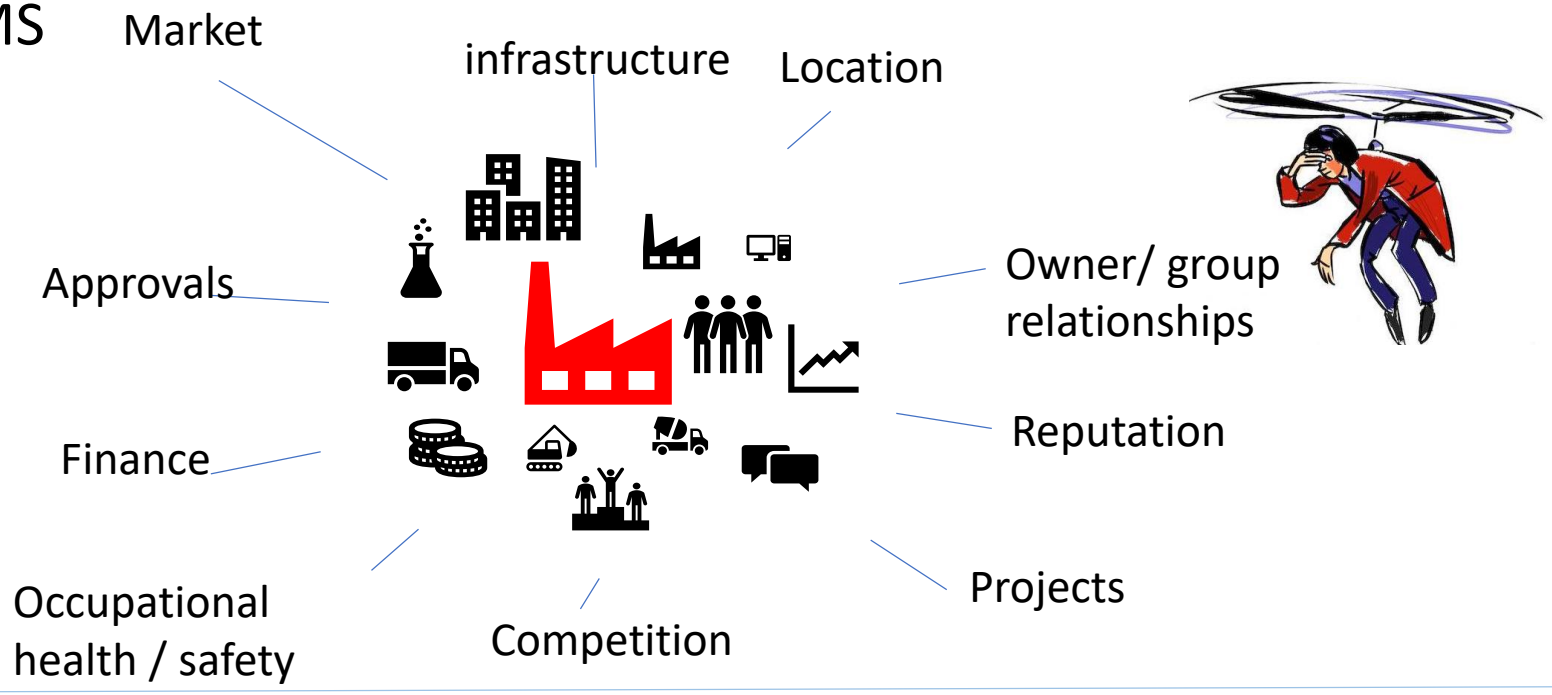
- This should make it easier to adopt multiple standards if you already have 1 as they will all follow the same structure making it easier to integrate – more commonality means you don't have to keep re-inventing the wheel

ISO High level Structure

- 4. Context of the organisation
- 5. Leadership
- 6. Planning
- 7. Support
- 8. Operation
- 9. Performance Evaluation
- 10. Improvement

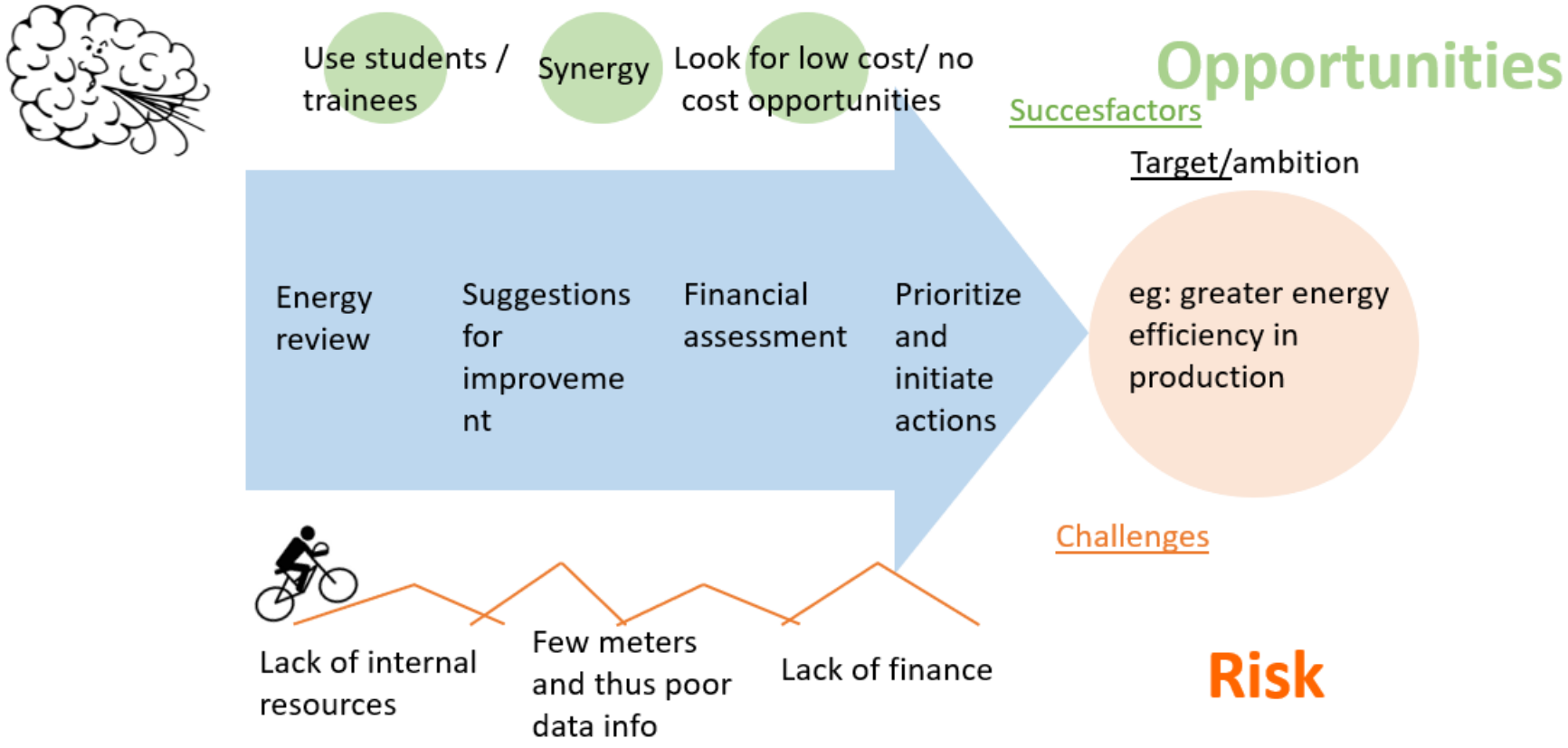
4. Context

- Understanding the business environment – internal and external - you are working in and what risks and opportunities that provides relevant to the EnMS
- After considering the context, then consider the needs and expectations of Interested parties – stakeholders – customers, suppliers, shareholders, general public – relevant to the EnMS
- High level understanding



6. Planning

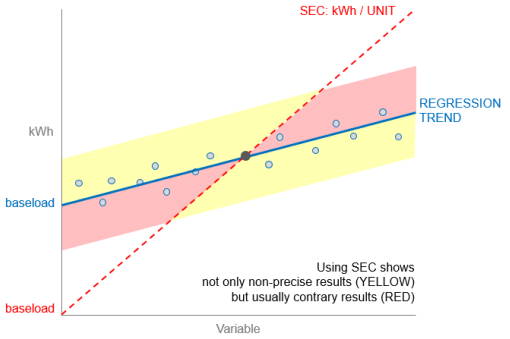
- Identify risks and opportunities relevant to the EnMS and take action to address them (high level review)



Performance Evaluation & Improvement

- Improvement has it's own clause
- Energy performance improvement now defined
- Normalization of energy performance indicators (EnPI(s)) and associated energy baselines(EnB(s));
- Energy performance indicator (EnPI) and energy baseline (EnB) text has been clarified to improve understanding of these concepts.
- ISO50003, which applies to auditors, prohibits (a) the initial certification of organisations that cannot already prove energy performance improvement and (b) recertification of those that have not subsequently achieved continual performance improvement.

Regression vs SEC



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CONTINUOUS IMPROVEMENT

How do you get a well implemented EnMS ?

- Real interest from top management
- Real involvement from employees (project groups)
- Time allocated to work with EMS
- Stable organisation
- Personal involvement
- External consultants, sparring partners
- External attention
- Satisfying allocation of resources
- Internal project groups, networking
- Concrete results
- Excellent communication

What do you get with well implemented EnMS?

GO' ENERGI CASE

Energiledelse

Go'Energi

Maj 2012

Energiledelse skaber overskud hos Scanola

Hos madolieproducenten Scanola har man sat energiforbruget i system. Det har betydet store økonomiske besparelser, en mere effektiv produktion og et bedre sammenhold mellem de ansatte. Ved at sætte fokus på energiforbruget i det daglige har Scanola også styrket sin grønne profil som en foregangsvirksomhed på energiområdet.

ENERGILEDELSE HOS SCANOLA

Emne: Energiledelse, energistyring

Segment:

I alt 2,7 mio. kr. over 13 år

Årlig kontant besparelse: 1,9 mio. kr. (2011)

Årlig forrentning: ca. 450 %

Sat forbruget i system

"... vi kan mærke en forskel

Energy savings

Annual interest rate

Årlig energibesparelse:
880.000 kWh el og
3.150.000 kWh varme

Investeringer:
I alt 2,7 mio. kr. over 13 år

Årlig kontant besparelse:
1,9 mio. kr. (2011)

Årlig forrentning: ca. 450 %

Increased productivity

24 hour production

Less scrap

"Fabrikken kører kon

en bedre. Vi har sparet

Kapacitet er steget

Claus Emmertsen

NON ENERGY BENEFITS HOS SCANOLA

Fordele ved energieffektivisering ud over energibesparelser kaldes Non Energy Benefits eller NEB. NEB'erne hos Scanola er blandt andet:

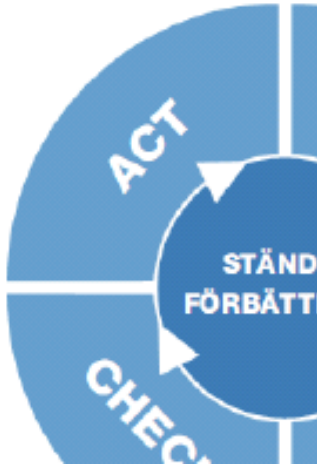
- Øget produktionskapacitet 30-35 %
- Mulighed for at producere i døgndrift
- Overvågning gør det muligt at fange fejl i opløbet

your energy
CONTINUOUS IMPROVEMENT

From Sweden PFE

Programme for Energy Efficiency in Energy Intensive Industry (PFE)

- Standard, ISO 50001
- Systematic improvement of energy performance in the organization
- Certification by accredited certification bodies
- Cost for certification: ~ 10 000 €



Results for 103 enterprises

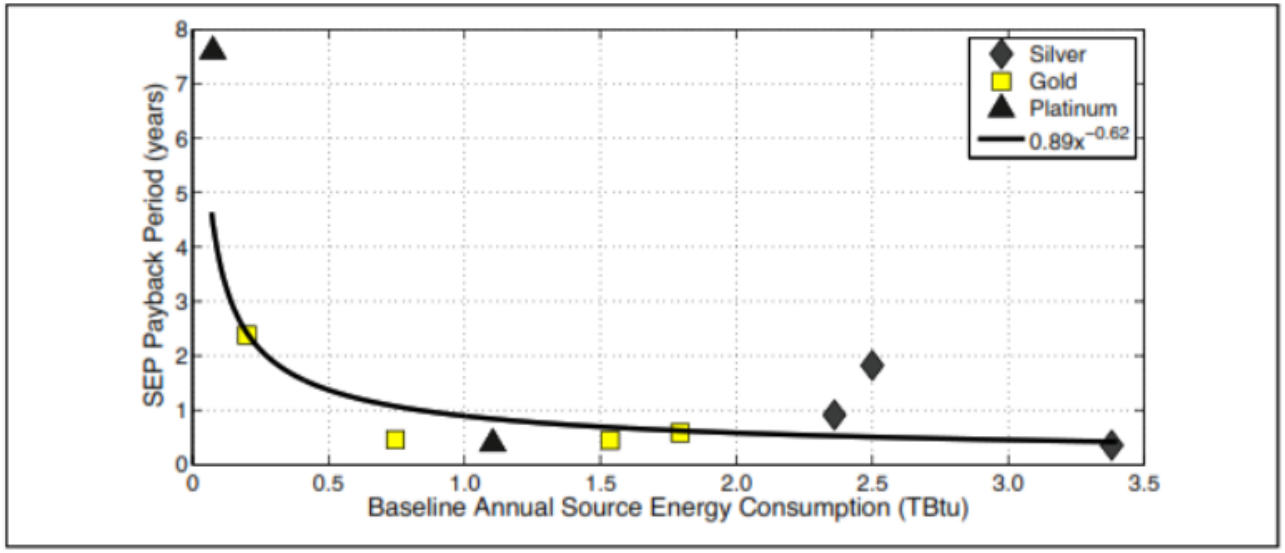
- Improvement: - 1,45 TWh electricity use (5%)
- 1247 measures + routines
- Investments: ~75 M€
- Voluntary reports of other measures:
  - increased use of renewables,
  - efficient use of heat,
  - increased production of electricity
- 2 enterprises excluded from the programme

What is the cost to implement EnMS

- Difficult qustion :
  - How experinced is the company with management systems?
  - How much will they do them self or leave to consultant's?
  - How ambitious ?
  - What's the hourly rate
  - Etc.

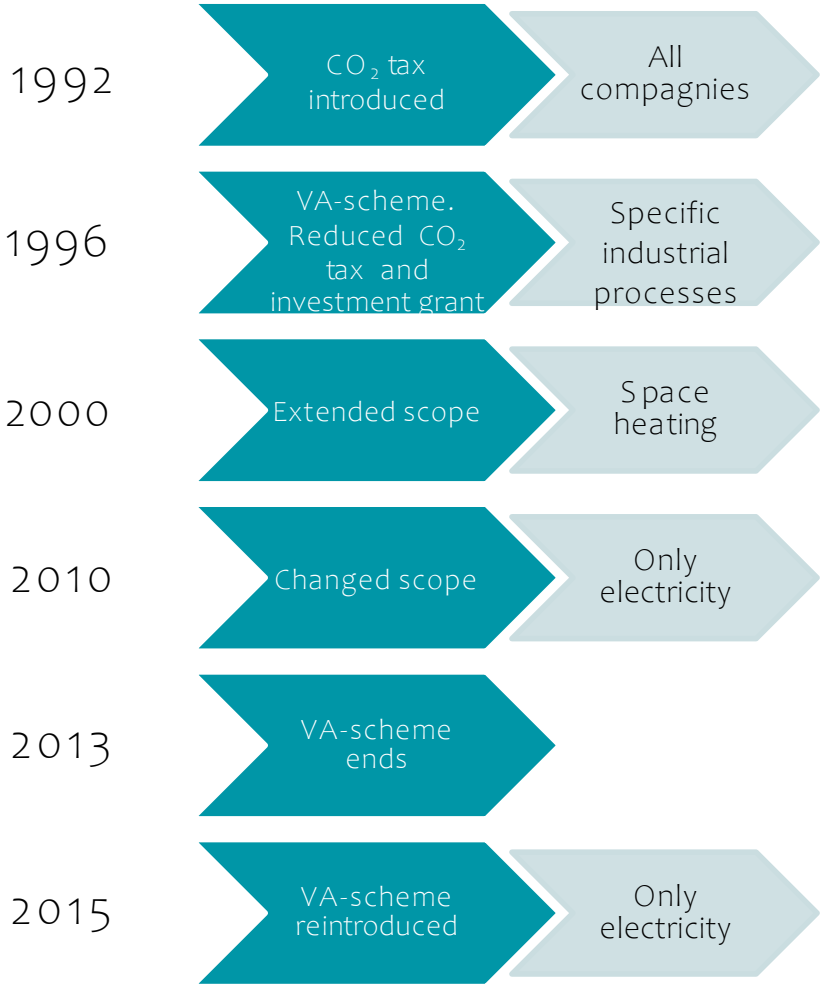
ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY

Assessing the Costs and Benefits of the Superior Energy Performance



ISO 50001's role as a policy measure in EU countries

- Certified energy management has been part of industrial energy policy in Denmark since 1992, Sweden and Ireland followed later.



Elements of the VA-scheme

To get an agreement the company must:

- Be certified by ISO 50001 energy management system + DEA additional
- requirements (procurement, design, reporting)
- Implement energy saving project with a pay back time up to 5 years
  Examine special investigations for energy efficiency (mandatory areas
  + inspiration from DEA)
- Send a yearly report to DEA regarding progress on energy saving
  projects (completed and new ones)

- DEA and the company negotiate the conditions of agreement
- Agreement will be signed by both parties
- An agreement last up to 3 years
- In return the companies get a subsidy to their electricity tax of, up to 85% of the tax (2018 ~ 0.13 EURO/kWh)
- If requirements are not met, the subsidy must be paid back

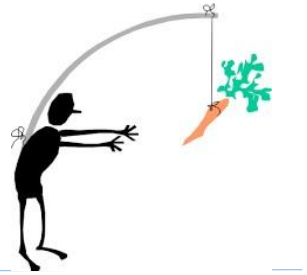
Danish Energy Agency evaluation results

Evaluation made by different consultants		COWI, 2005	HHS Teknik, 2013	Andersen and Petersen, 2017
Period cov				2010-2013
Final energ				611
Energy cor				85
- share of DK energy cons.	%	17	15	14
Energy consumption, VA-companies	PJ	58	45	59
- share of manu. industry energy cons.	%	51	47	69
- share of DK energy cons.	%	9	7	10
Obtained energy savings	PJ	2.8	2.4	3.3
- share of energy cons., VA-companies	%	5	5	6

Independent evaluation of industrial energy efficiency tools have again and again pointed out that VA is one of the best tools

Key-points if the voluntary system should deliver savings

- Set requirements to companies – instructions and requirements towards which energy saving projects to implement.
- The VA-scheme must comprise a strong economic incentive like tax reduction
- Competent team at the energy agency
- Evaluate regularly in order to improve and develop the VA-scheme.
- The authority should take lead in identifying and developing new approaches, findings, and technologies
- Keep close dialogue with industries and industrial experts to understand new agendas, challenges, and ways to integrate energy efficiency activities with company life.
- Ensure that qualified consultants, and technical experts are available



These key points are often referred to as a combination of “carrot and stick”.

EU obligation for energy audits or substituted by a management system

- In 2016, the energy directive requires EU countries to ensure that large enterprises carry out energy audits.
  - The energy audit is a thorough assessment of the energy consumption of a company including its buildings, processes and transport use
  - It has to be carried out every 4 year
  - No requirements for action
  - So far poor results –based on 2018 evaluation done by DEA
  - Challenges
    - Audit every 4 year, an obligation- how do I fulfill it in the cheapest way, no top management involvement, no focus on behavior change, no requirement for action
- Can be replaced with,
  - A certified ISO 50001
  - A certified ISO 14001 plus 6.3 from ISO 50001, the energy review , if energy is a significant environmental conditions it has to be integrated in the whole system

THX and You can find Erik here ☺