

Cu

International Copper
Association
Copper Alliance

Why SMEs can (and should) benefit from better energy management

ECEEE
ZERO CARBON INDUSTRY
ANTWERP 22 NOVEMBER 2023



Radiologists and the pitfall of search satisfaction

Routine chest radiography

60%

of radiologists
failed to identify
missing clavicle



~~Radiologists~~ and the pitfall of search satisfaction ? Energy auditors

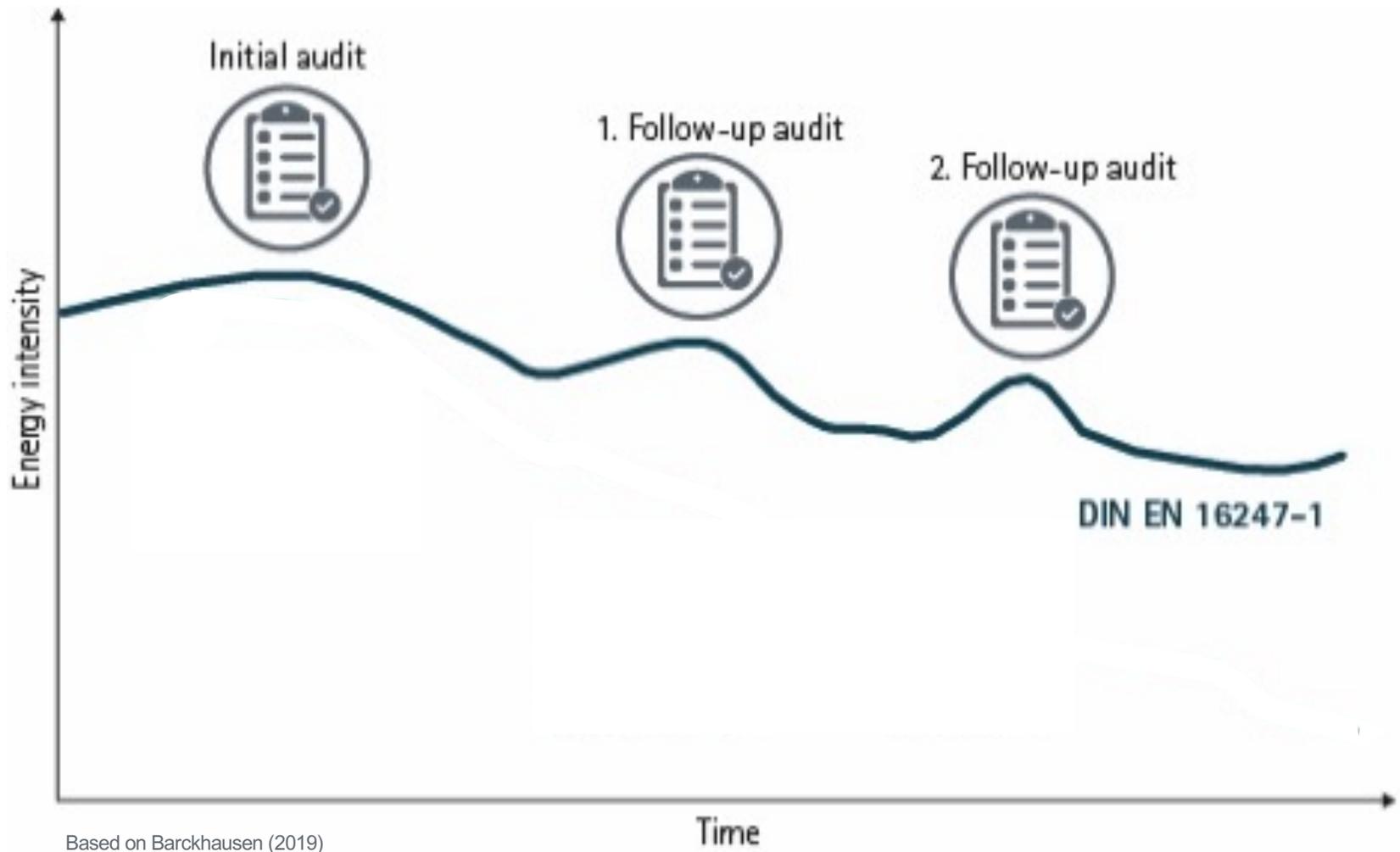
Routine energy audit

10-30%

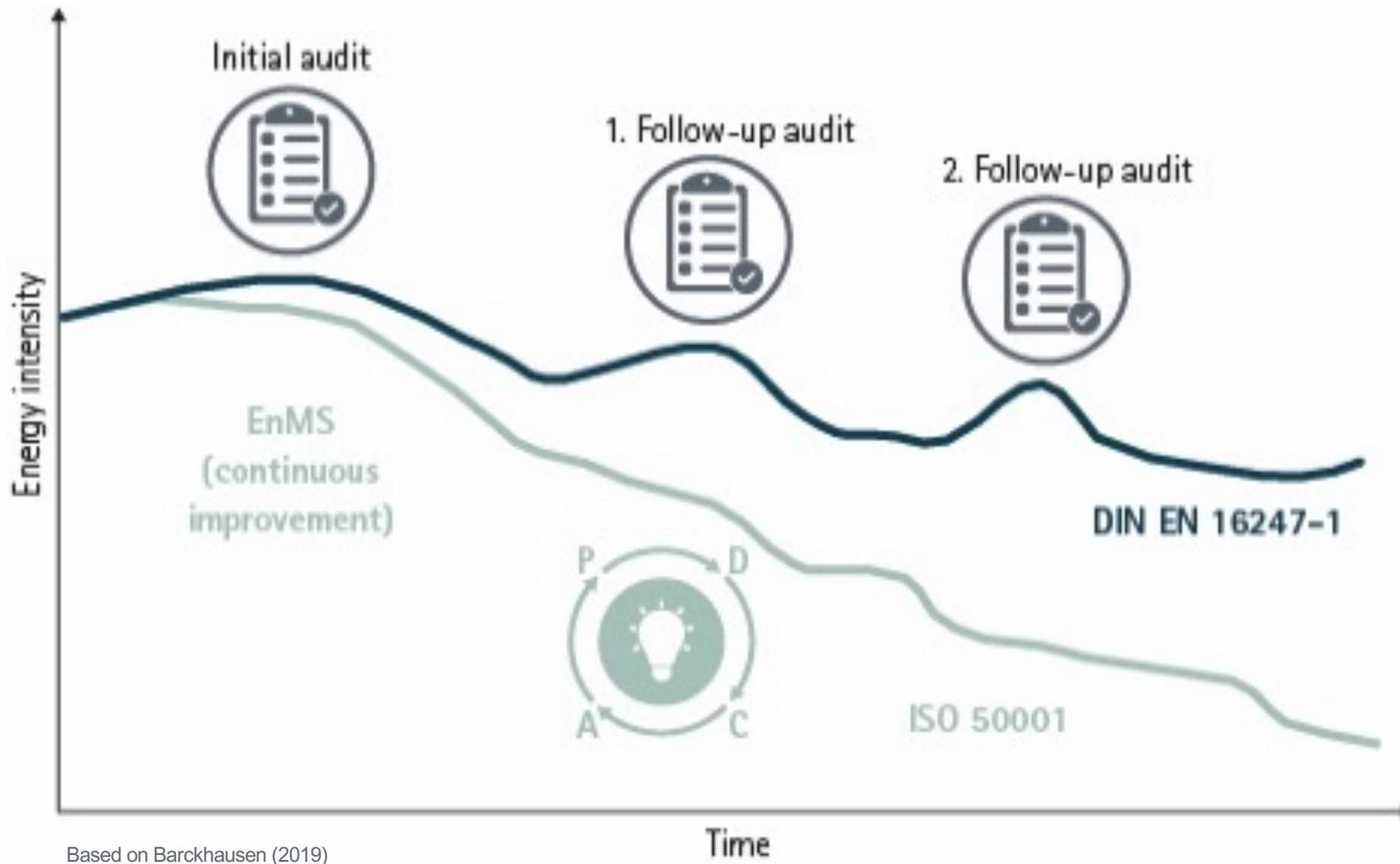
potential annual energy savings missed compared to energy management approach

A person in a white lab coat is holding a tablet. The tablet displays the text 'Energy Audit' at the top. Below the text, there is a graphic of a house with a vertical bar chart representing energy efficiency levels from A (top, green) to G (bottom, red). To the right of the house is a glowing green lightbulb with a plant sprout growing from it. The background of the image is a blurred laboratory or office setting.

IEA (2022) and WSE (2016)

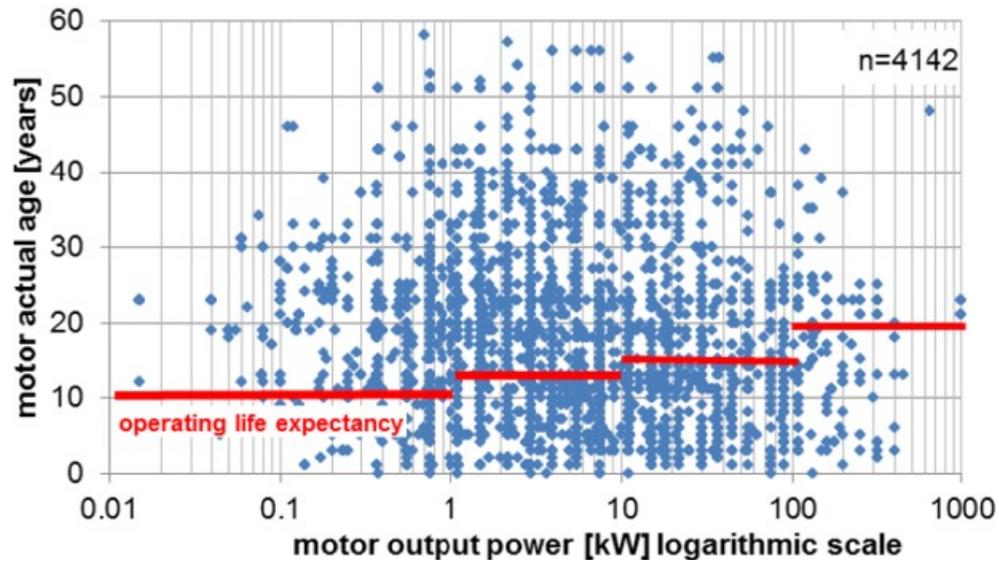


Based on Barckhausen (2019)



Based on Barckhausen (2019)

Where's the clavicle?



56%
of all motors (and systems)
are older
than expected operating lifetime

A one-off energy audit is a good start, but on top of it energy management assures:

LARGER SAVINGS

Adds even more substantial savings.



LONG LASTING IMPACT

Promotes structural measures that last.



CONTINUOUS IMPROVEMENT

Avoids returning to business-as-usual all too quickly.



Much More Than Savings



Energy has become a key factor in gaining a competitive edge.

1 COMPETITIVE ADVANTAGES ACROSS THE GLOBAL MARKET

2 MAXIMUM BENEFIT FROM FINANCIAL SUPPORT

Many governments couple financial incentives with sustained energy management.



3 IMPROVED PRODUCTIVITY AND PRODUCT QUALITY

Energy management creates a culture of continuous improvement, positively effecting productivity and quality.

The Business Case for Energy Management is Clear...

...but the uptake is low

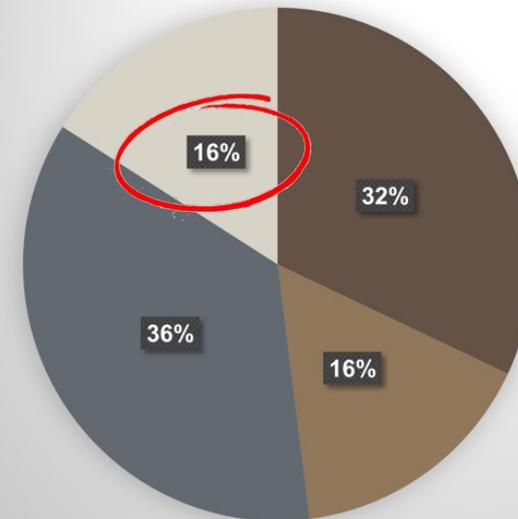
Only

16%

of SMEs

have (some form of)
energy management system
in place

“Does your company implement energy efficiency measures?”



- Not really
- Ad hoc, no systematic approach
- Systematic approach but no EMS
- Energy Management System

<https://copper.fyi/EnMg>

...but the uptake is low

Only

16%

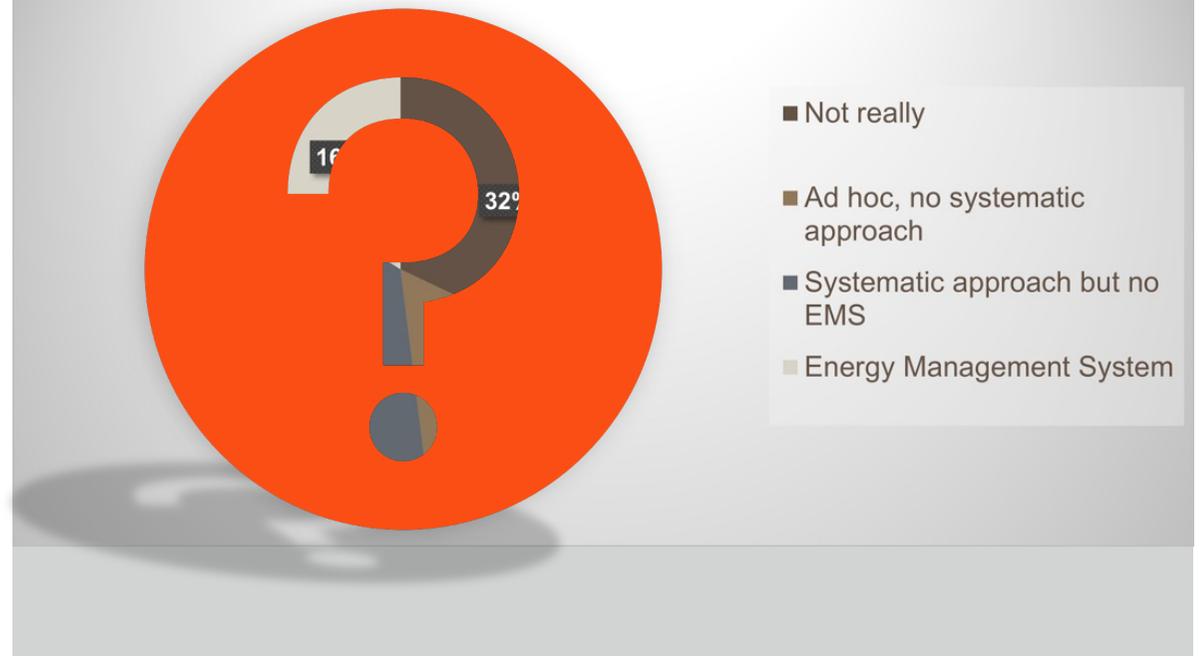
of SMEs

have (some form of)
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in place

...this was early 2021

...today?

“Does your company implement energy efficiency measures?”



<https://copper.fyi/EnMg>

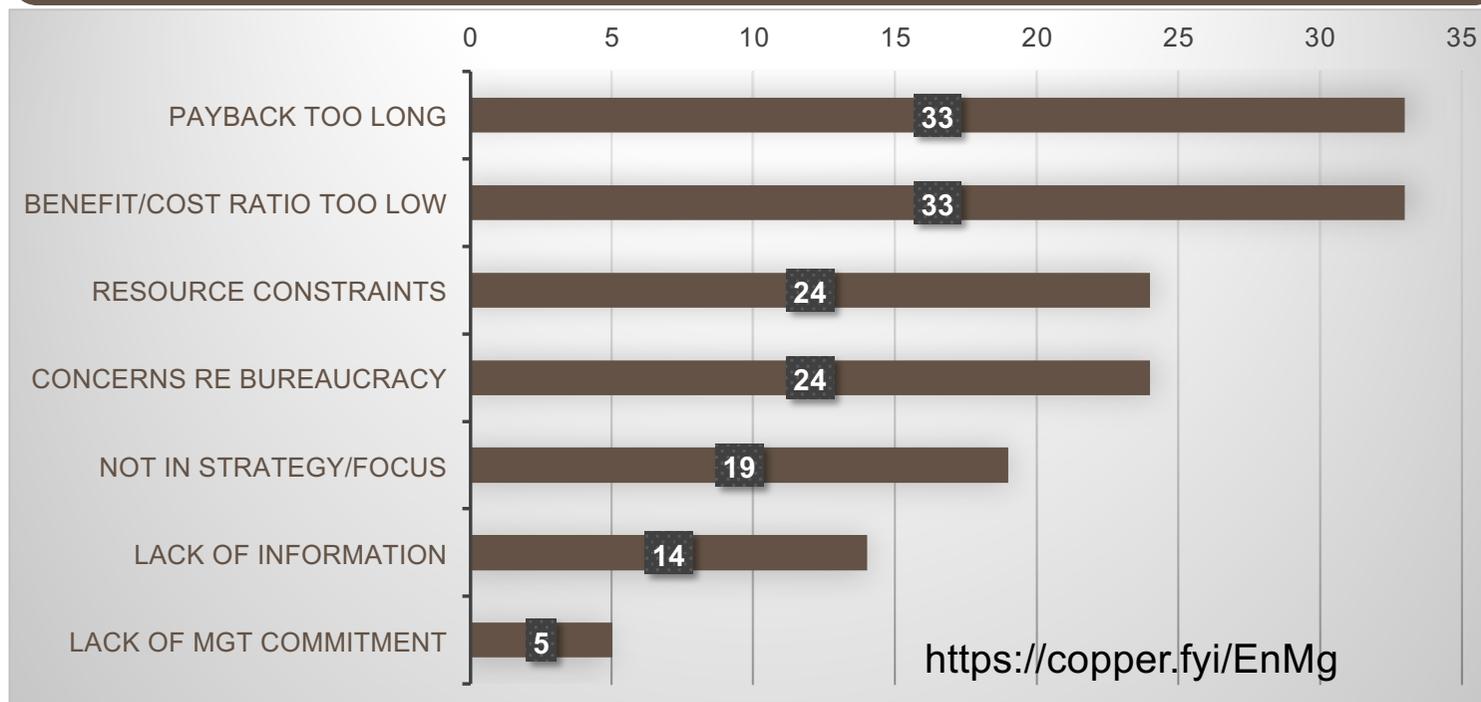
A photograph of Thierry Breton, Commissioner for the Internal Market, speaking at a podium. He is wearing a dark suit, white shirt, and dark tie. He has grey hair and is smiling slightly. A microphone is visible in the foreground on the right. The background is a blue wall with some papers on a desk.

*“For Europe to recover,
SMEs need to
recover.”*

– Thierry Breton, Commissioner for the
Internal Market, announcing
SME Relief Package

Energy management practices in SMEs: online survey (2021)

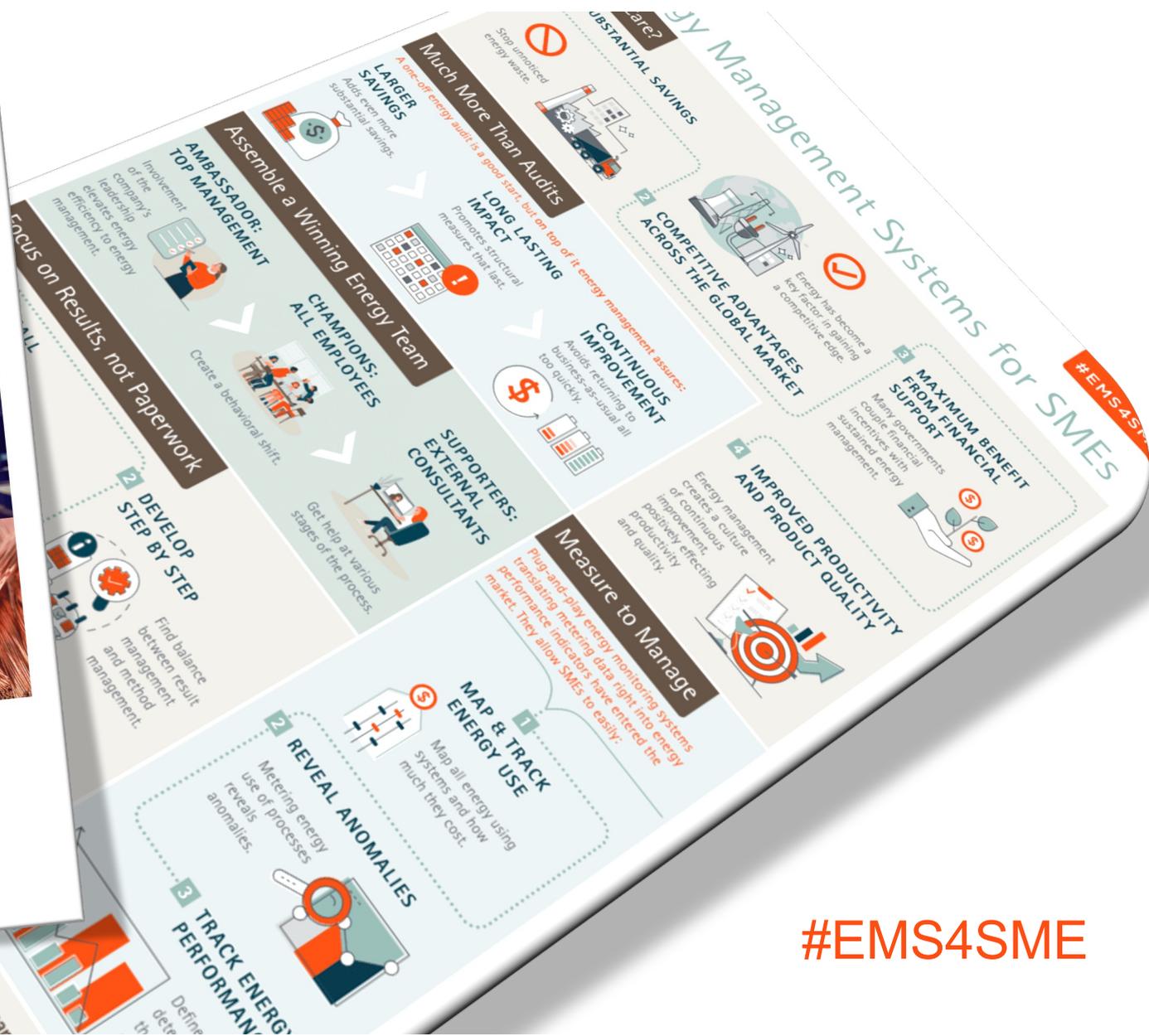
What is the main resistance in your organization towards implementing Energy Management System?





APPLICATION NOTE
Energy
Management
in SMEs

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#EMS4SME

Assemble a Winning Energy Team

AMBASSADOR: TOP MANAGEMENT



Involvement of the company's leadership elevates energy efficiency to energy management.



CHAMPIONS: ALL EMPLOYEES



Create a behavioral shift.



SUPPORTERS: EXTERNAL CONSULTANTS



Get help at various stages of the process.

Focus on Results, not Paperwork

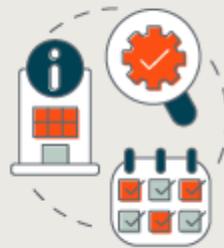
1 START SMALL AND HUMBLE



Reflecting the size and resources of your organization.



2 DEVELOP STEP BY STEP



Find balance between result management and method management.



3 CERTIFICATION NOT ALWAYS NEEDED



Certification, such as ISO 50001, can be a burden. An Energy Management "light" Standard tailored to SMEs should be considered.

Measure to Manage

Plug-and-play energy monitoring systems translating metering data right into energy performance indicators have entered the market. They allow SMEs to easily:

1 MAP & TRACK ENERGY USE

Map all energy using systems and how much they cost.



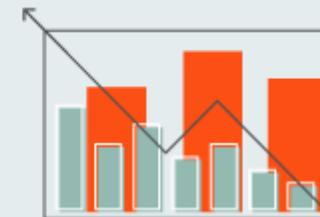
2 REVEAL ANOMALIES

Metering energy use of processes reveals anomalies.



3 TRACK ENERGY PERFORMANCE

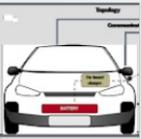
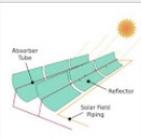
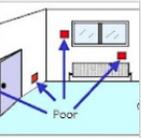
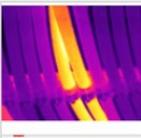
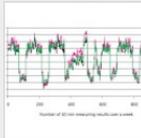
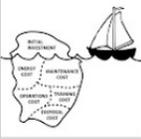
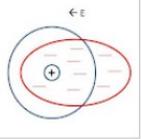
Define KPIs and determine how the data will be gathered and reported.



<https://lpqi.org>

Good Practice Guide

Classic Flipcard Magazine Mosaic Sidebar Snapshot Timeslide

Recent	Date	Label	Author										
	Assessment of energy savings	Measuring earth resistance	Life cycle costing case studies of RES and EE projects	Design for electrical safety			MV transformer replacement decisions	Investing in long-life renewable energy and energy efficiency assets	Heat pumps for larger buildings	Energy efficiency in low voltage building wire		Electrical storage systems: efficiency and lifetime	
		Small and medium scale cogeneration systems (CHP)	Medium size PV plant	Economic analysis of wind projects			Energy efficiency self-assessment in industry		Stochastic life cycle costing	Load management of industrial systems	Wind power: introduction	Copper busbars	
Behind-the-meter energy storage systems for renewables integration	Wind farm development and operation - A case study	Neutral sizing in harmonic-rich installations	Purchase and design decisions		Small hydroelectric power	Replacement decisions for ageing physical assets		Interharmonics	Transient overvoltages and currents	Transformers in power distribution networks		Resilient and reliable power supply in a modern office building - case study	
Introduction to industrial electrical process heating	Energy management		Compressed air	Active harmonic conditioners	Introduction to power quality (PQ)	Electric motor asset management	Earthing systems - Basic constructional aspects	Voltage dips in continuous processes: case study	Industrial heat pumps	Earthing systems: fundamentals of calculation and design	Passive filters for minimum life cycle cost	Integrated earthing systems	
New loads on old switches, relays and contractors	Induction heating	Capacitors in an harmonic-rich environment		Infrared heating	Fundamentals of electromagnetic compatibility (EMC)	Electricity systems for hospitals	Fire safety cables	Isolation transformers	Nuisance tripping of circuit breakers		Cable conductor sizing for minimum life cycle cost		

Copper makes a significant net contribution to the clean energy transition



A circular metal
Cu can be endlessly recycled without loss of properties. Near 50% of copper produced in EU is obtained through recycling

Decarbonising Cu production
Copper producers that ECI represents in Europe are committed to working towards carbon neutrality by 2050

European Copper Institute

- Leading advocate for the copper industry in Europe
- Part of the International Copper Association (ICA)
- Promoting copper's crucial role in the energy transition and in achieving the EU's policy goals
- Via robust methodologies based on business and scientific data

copperalliance.eu

Many partnerships

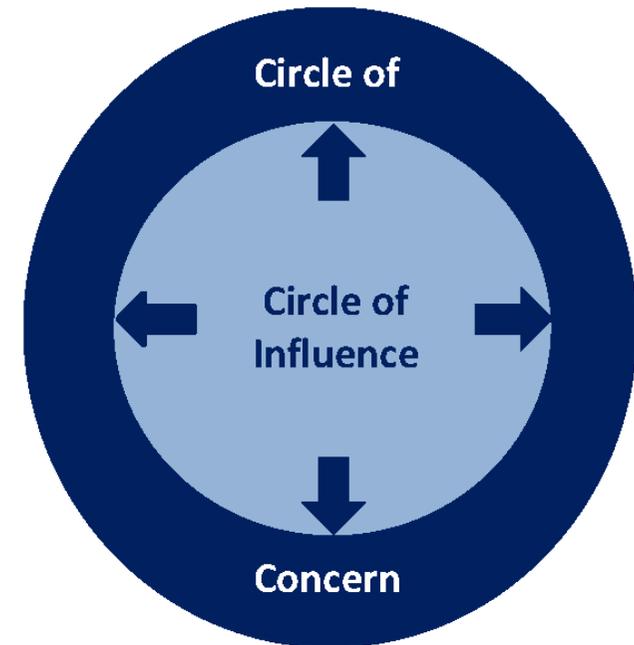


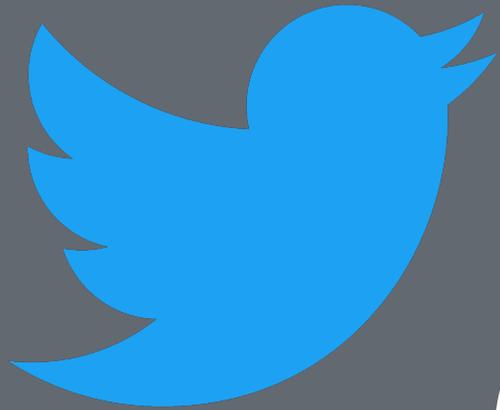
ELECTRIFICATION
ALLIANCE

EM | **Eurometaux**



Think of
one action
you'll do
within the next 24h
in your circle of influence
to help SMEs
benefit from EMS





@ThinkEMS

EMS4SME

Together we'll find the
missing clavicle



Thank you!

diedert.debusscher@copperalliance.org