Energy Management Systems

Solving the Technology + People + Data Equation

Global Energy Efficiency Accelerator Platform and Progress in Accelerating Industrial Energy Efficiency

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Summary of Achievements
(9 countries of UNIDO-GEF Program)

• 303 UNIDO Qualified EnMS Experts
• 271 Enterprises with EnMS implemented
• 5,183 energy efficiency practitioners and enterprise personnel received training in EnMS
• Average annual energy savings of 7,149 GWh
• Annual CO2 emission reductions of 4,302 ktCO2
• Annual savings of $82,000,000 without considering non-energy benefits
Change in technology

New production line

EE project

New building

Monitor

Develop models

React

Use of data

Change in driving factors

Product mix

Production

Occupancy

Weather

Leadership

Culture

Operational control

Change in behaviour

Change in energy consumption

Leadership

Operational control
EnMS - ISO 50001 simplified

Commit to change

Check the results

kWh ($ + CO₂)

Plan the changes

Make the changes
MWh per year -17%

Different purposes and views

Actual MWh -9%

kWh/hl +2%

Brewing industry
Energy per unit of production

Car assembly industry
"How many managers have been told by their staff that bad coal consumption was due to low output? How is it possible for them to judge whether this is an excuse or a reason?"

These are the opening words from a fuel efficiency bulletin, published in 1943 by the Ministry of Fuel and Power, which criticises the "ton of coal per ton of output" metric as a misleading indicator of fuel efficiency.

The author was Oliver Lyle, managing director of the eponymous sugar refinery, a very knowledgeable and eminent engineer who had no time whatever for the Specific Energy Ratio. Any works engineer today will know that SERs vary continuously for reasons nothing to do with energy efficiency.
Barriers

- **People**
  - Lack of leadership
  - Training

- **Technology**
  - Finance
  - Understanding it

- **Data**
  - Specific Energy Consumption (SEC) based goals
  - Lack of tools
What should we do next?

- Improve alignment at policy level
  - Efficiency v Renewable
  - Promote energy conservation
  - Targets – Action Plans – Measurement

- Capacity building
  - Operation of technology
  - Performance measurement
  - Policy, Agency, Organisation Levels
Is it easy to improve?

No thanks!

We are too busy