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Process management technologies

PowerLogic Users Group Conference 2016

Shoestrings & Duct Tape Developing an Energy Management System on a Tight Budget



Life Is On





Shoestrings & Duct Tape

The boss calls you in to his office and says your facility is the highest cost producer in the company.

He wants you to reduce costs and make the facility cost competitive within the organization.

Since profits are down your budget looks like this...



...and here are your resources.





Manufacturing



Water & Waste Water Treatment



Healthcare Facilities



How did I get myself in this position?

Are you the

- Electrical Superintendent?
- Maintenance Superintendent?
- Production Manager?
- Facility Manager?

You could be asked to be the
Energy Management System Champion



How do I get started?

Determine the expectations

- What is our energy policy?
- What are the goals & targets?
- What is the time frame for results?
- Do I have the support of senior management?

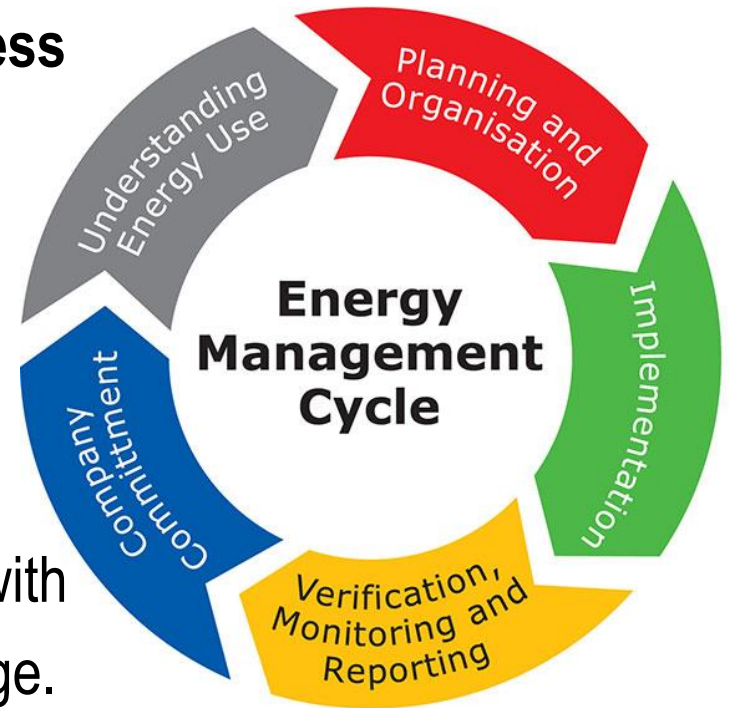


You need to know these things to build an effective Energy Management System.

What is an Energy Management System?

An EMS is a Management Process with a Systematic Approach for Continuous Improvement.

Anything less will only generate short term results and leave you with a system that can't adapt to change.





How does this help me with my tight budget?

1. Having a management process gives your project credibility and will help you gain support which leads to funding.
2. It gives you a plan to pitch to the departments that have the manpower and resources you will need.
3. Having a plan and a process will help you access funding from various levels of government.



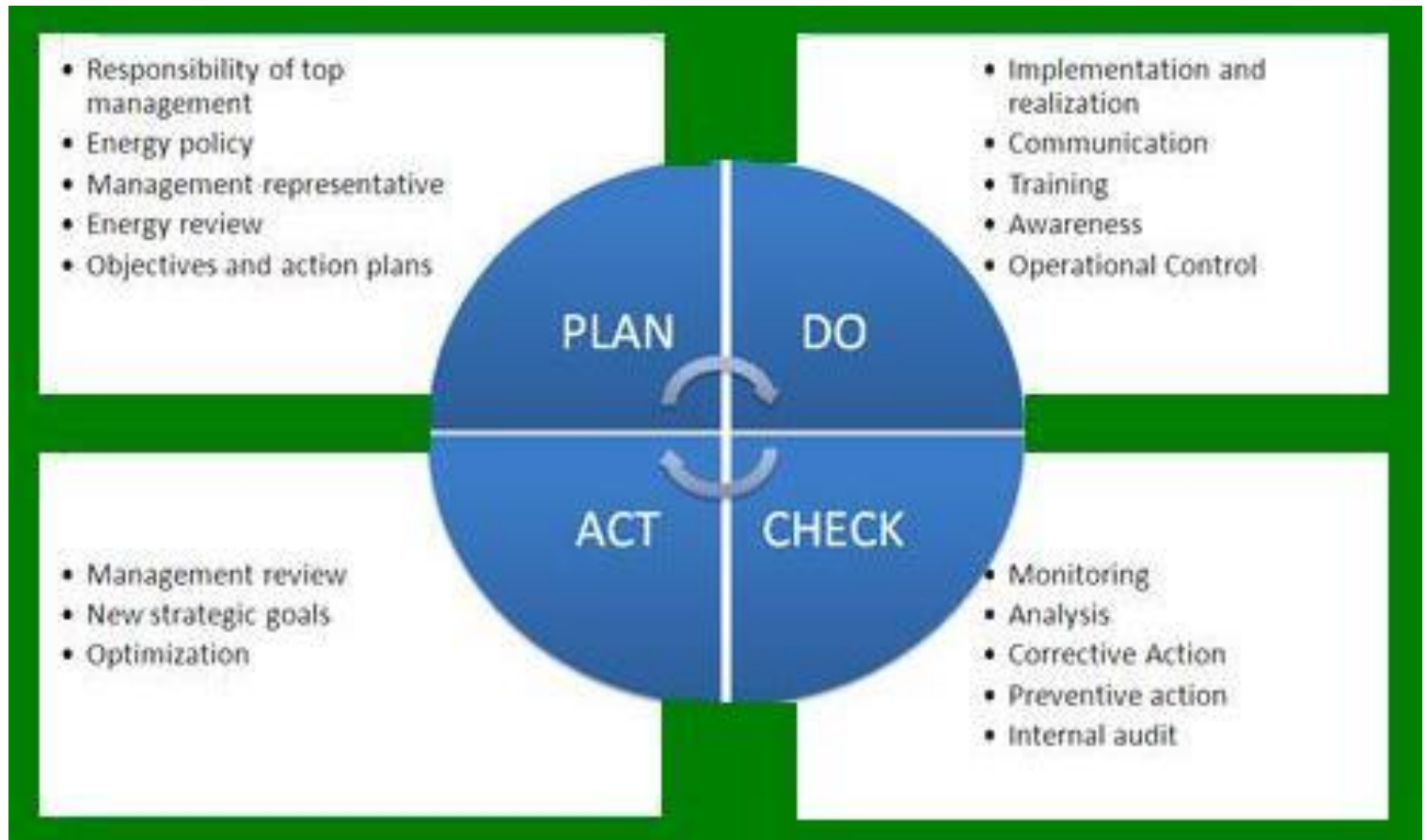


ISO 50001 – Energy Management Standard

- International auditable standard that is based on a management system model familiar to many companies.
- It establishes a framework for industrial plants, facilities and organizations to uniformly apply operational procedures for short term and future benefits.
- ISO estimates that the standard could influence up to 60% of the world's energy use.



How does ISO 50001 work?





Why Should You Focus on Data Collection?

You Need to...

- have quantitative data to base your planning on
- establish what types of data you require
- establish a baseline
- ensure your data is accurate
- ensure your data can provide the metrics you will use for determining if your EMS is successful





Low Cost Ways to Optimize Data Collection

Go Hunting for Data

Electricity, Water and Gas

- Main revenue meters will exist for these commodities
- You will want access to these meters for real-time data
- Talk to the accounting department to see what billing information is available, they may also be aware of sub-metering that is used for departmental allocation

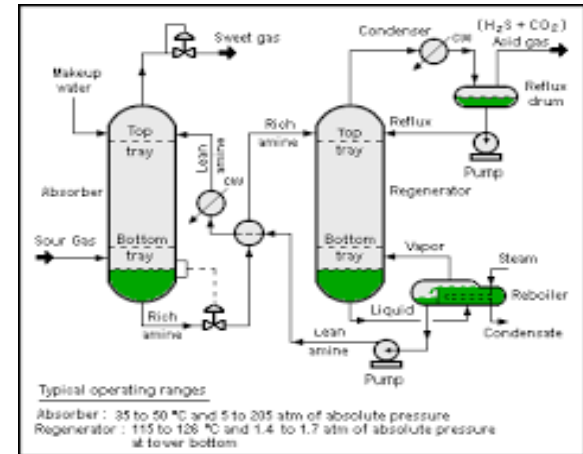


More Data Hunting Tips

Go Hunting for Data

Electricity, Water and Gas

- Talk to maintenance and engineering departments to find physical sub-metering sources
- Obtain single line electrical drawings and process flow diagrams to determine equipment locations
- Collect face plate data on equipment and manufacturer specifications for energy requirements

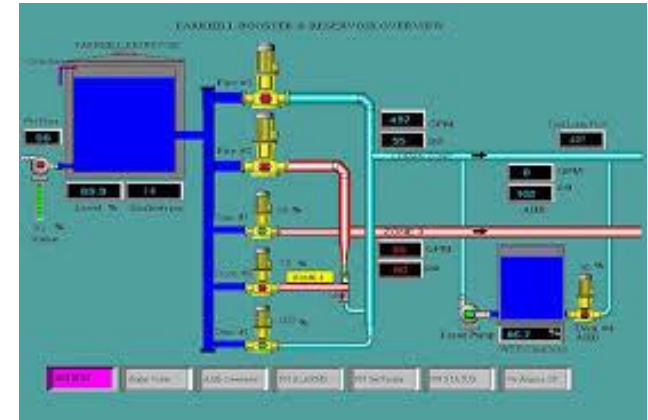


More Data Hunting Tips cont.

Go Hunting for Data

Air & Steam

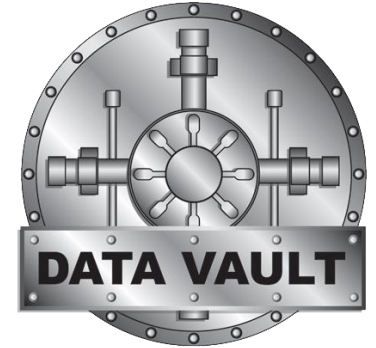
- Often these are internally generated energy sources
- They are likely metered with local instrumentation and the data can be obtained from control systems or SCADA
- Instrumentation and process personnel can provide data and information on calibration and units of measure





Data Storage & Manipulation

Once data sources have been identified you need to have a place to store and manipulate the data.



- Does your company have a software product for this purpose?
- Do you have the internal resources to use business databases and reporting tools?
- Is there a meter vendor with a product that can input data from multiple sources?



Metering Connectivity

Migrate old meters to network compatible communications technology

- Convert communications ports from serial to Ethernet or implement serial server devices
- Look for metering devices that use standard communications protocols
- Utilize vendor migration paths to replace aging meters with low cost, high accuracy, network friendly devices.





Government Programs & Incentives

Government funding is available to assist with almost every aspect of EMS planning and implementation.

- Energy Managers
- Audits
- Process Improvements
- Operating Incentives (Demand Response)





Other Programs & Incentives

Funding can also be obtained from natural gas providers





TOP TIPS FOR EMS ON A BUDGET

1. Establish an Energy Management System Process

2. Focus on Data Collection

3. Investigate Government & Private Funding Programs and Incentives



Reference Material

<http://www.iso.org/iso/home/standards/management-standards/iso50001.htm>

http://www.energy.gov.on.ca/en/saving-energy-for-business/helping-small-businesses-save-energy/#_Toc6

<http://www.nrcan.gc.ca/energy/efficiency/industry>

Contact Les Perrault at Digital Engineering Inc.

For assistance locating other links and reference materials

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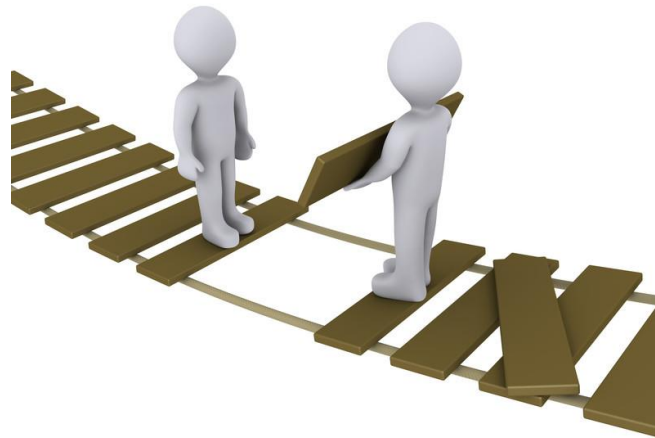
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Questions & Answers (hopefully)



Thanks for Your Attention!

Benjamin MacKay – Automation Specialist
Laurie Hayton – Energy Systems Technician



**We've been building bridges between process
and business systems for 40 Years.**