



Fast track development of an energy management system

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October 17, 2018



Steps to developing an energy management system



- Support from upper management for a system
 - Measurement and monitoring
 - Utilize no cost/ low cost resources
 - Have a direction and long term vision
 - Set goals
 - Employee engagement and awareness
 - Celebrate successes
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Support from upper management



- Existing systems include
 - Environmental ISO 140001
 - Quality ISO 9001 and IATF 16949
 - Health and Safety OHSAS 180001
- Large cost for utilities with potential for savings

Measurement and monitoring



- Started with focus on one process
- Assumed that the meters were accurate-wrong!
- Check and recheck data
- Develop an energy equipment inventory



Utilize low cost and no cost resources- Better Plants



- Department of Energy Better Plants program
 - Phast tool
 - 50001 Ready
Saukville and Fostoria
 - Fan training
 - Aluminum casting process heating
 - Energy Treasure hunt Cleveland and Saukville
 - Process heating in plant training
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Focus on Energy



- Strategic Energy Management program
- Over \$100,000 in funding
- Technical support
- Networking
- Energy equipment inventory
- Auditing
- Internal auditor training



focus on energysm

The power is within you.

Additional resources



- ENERGY STAR
 - Information and training resources
 - Potential for benchmarking tool with certification based on criteria
- Industrial Assessment Center
- Ohio Energy Group
- WIEG



Have a direction and long term vision



- Put together a 3-10 year plan
- Move beyond just projects and audits
- Develop stretch goals



Task	Duration	Start	Finish	3rd Q	4th Q	1st Q 2016	2nd Q	3rd Q	4th Q	1st Q 2017	2nd Q	3rd Q	4th Q	1st Q 2018	2nd Q	3rd Q	4th Q
Develop Energy Management program	18 months	Aug-15	Feb-17	[Gantt bar from 3rd Q 2015 to 1st Q 2017]													
Develop team of 4-8 key personnel to provide information participate in monthly meetings	1 month	Aug-15	Sep-15	[Gantt bar from 3rd Q 2015 to 4th Q 2015]													
Gap analysis to determine current efforts and areas for improvement	1 month	Sep-15	Oct-15	[Gantt bar from 4th Q 2015 to 1st Q 2016]													
Energy review that will quantify primary and significant energy sources	1 month	Nov-15	Dec-15	[Gantt bar from 1st Q 2016 to 2nd Q 2016]													
Conduct assessments at all 3 plants to determine opportunities for improvement	4 months	Dec-15	Mar-16	[Gantt bar from 2nd Q 2016 to 4th Q 2016]													
Energy team meetings to support the program development	ongoing	Sep-15	Feb-17	[Gantt bar from 3rd Q 2015 to 1st Q 2017]													
Implement opportunities and identify effective processes to pursue energy saving	ongoing	Jan-16	Feb-17	[Gantt bar from 1st Q 2016 to 1st Q 2017]													
Energy model creating a baseline and track energy performance	2 months	Mar-16	May-16	[Gantt bar from 2nd Q 2016 to 4th Q 2016]													
Energy IT assessment to evaluate hardware and software needed to collect, analyze and utilize energy data	2 months	May-16	Jul-16	[Gantt bar from 3rd Q 2016 to 1st Q 2017]													
Develop dashboard for visibility to energy use and cost	2 months	Aug-16	Oct-16	[Gantt bar from 4th Q 2016 to 1st Q 2017]													
Operational control limits to determine boundaries around expected energy use and assessing deviations	1 month	Nov-16	Dec-16	[Gantt bar from 1st Q 2017 to 2nd Q 2017]													
Administrative infrastructure for requirements and procedures to ensure a sustainable program	3 months	Nov-16	Feb-17	[Gantt bar from 1st Q 2017 to 4th Q 2017]													
ENERGY STAR Challenge 10% savings in 5 years	5 years	Jan-16	Dec-21	[Gantt bar from 1st Q 2016 to 4th Q 2021]													
Better Buildings Challenge 25% savings by 2025 using 2014 baseline	10 years	Jan-16	Dec-26	[Gantt bar from 1st Q 2016 to 4th Q 2026]													
Conduct steel process audits with DOE experts	2 months	Jan-16	Mar-16	[Gantt bar from 1st Q 2016 to 2nd Q 2016]													
Add checklist for ON BASE capital expenditure approval process	2 months	Sep-15	Nov-16	[Gantt bar from 4th Q 2015 to 1st Q 2016]													
Maximize annual rebate and incentive payments (\$45,000) and compare dollars paid to programs with rebates received	ongoing	Aug-15	Aug-20	[Gantt bar from 3rd Q 2015 to 4th Q 2020]													
ISO 15001 development August 2016-August 2018	2 years	Aug-16	Aug-18	[Gantt bar from 2nd Q 2016 to 4th Q 2018]													
Training available through Focus on Energy grant	1 month	Jan-16	Feb-16	[Gantt bar from 1st Q 2016 to 2nd Q 2016]													
Superior Energy Performance August 2018-August 2020	2 years	Aug-18	Aug-20	[Gantt bar from 4th Q 2018 to 4th Q 2020]													

Energy

Strategic Outlook



2018 Major Events & Accomplishments

- ISO 50001 certification of Fostoria
- Cleveland flicker resolution
- Transmission savings tools and events in Cleveland and Saukville
- Cleveland back up contract due to bankruptcy
- Consolidated natural gas meter in Saukville
- Evaluation of on site generation and heat recovery

Key Areas of Focus

- Talent- planning for an energy presence in Cleveland with electrical engineer
- Compliance- Moving toward the Department of Energy 25% reduction by 2026. 2017 reduction of 1.5%
- Partnership with business- membership in OEG and WIEG
- Technology & Continuous Improvement- dashboard and statcom installation

2019 – 2023 Major Events & Decisions

- ISO 50001 certification of Cleveland
- Enterprise ISO 50001 system combined for all locations
- Installation of statcom and battery in Cleveland
- June 2021 re-bid Cleveland contract
- Saukville rate case or settlement in 2020
- On site generation in Fostoria

Talent & Engagement Actions

- Fan training event in Saukville
- ISO 50001 internal auditor training for 11 attendees
- Saukville plant energy awareness survey
- Focus on Energy “Energy Efficiency Excellence” award
- Ben Franklin energy team and individual awards

Set goals



- ISO certification
- Energy dashboard
- Better Plants – 25% reduction on a per ton basis in 10 years
- Improved awareness



Employee engagement and awareness



- Newsletters
- Quarterly meetings
- Lunch N Learn
- Teams
- Training events
- Charter Fair
- Employee survey



2017 Celebrate accomplishments



- 2017
 - Better Plants Best Practices Award
 - IETC Leadership in energy efficiency and environmental stewardship



2018 Celebrate accomplishments



- 2018
 - The Ben Franklin Awards: Teams and individual awards
 - Focus on Energy: Energy Efficiency Excellence
 - Young Energy Professional of the Year

