SAVING WITH ENERGY

LOW COST-HIGH VALUE ENERGY SOLUTIONS

"Focus on what is important." *TCM*

Advanced On-Site Energy Assessments

1. Improve your energy management skills.
2. Experienced CEM Instructor.
3. Hands-on Training using your own facility as the classroom.
4. Learn to identify hidden opportunities using electronic data loggers and thermal imaging.
5. Typical Results:
    1. 7-10 new projects/actions.
    2. 10% reduction in costs.
    3. Average payback < 1 year.

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Pre – Assessment Data	Included in each assessment	Compare to others
Compilation of historical data including a minimum of 13 months electric, gas, and water usage and cost. Includes tariff data.	√	
Obtaining electrical and gas interval data for 13 months when available.	√	
Compilation of daily weather data for the previous 13 months.	√	
Compilation of productivity measures by month for the previous 13 months, and by shift for the previous month.	√	

Measurement Phase: On-Site Assessment	Included in each assessment	Compare to others
Conducted by a Certified Energy Management Engineer (CEM) with experience in more than 600 industrial facilities worldwide.	√	
Hands on training with participation of 1 to 5 staff members to promote sustainability through awareness and understanding.	√	
Pre-assessment data review, safety meeting, and initial facility walk-through with participants.	√	
Installation of data loggers on major energy using equipment with site electrician assistance. *1 minute interval readings for 7 consecutive days for 30+ pieces of equipment.*	√	
Completing a detailed facility walk-through checklist with participants using a thermal imaging camera, light meter, air flow meter, and including major equipment observations.	√	
Reviewing the use of a 7 day facility activity log which will be completed with assistance from participants.	√	
An exit meeting presented to the participants and facility managers by the CEM discussing initial observations and program expectations.	√	

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Analysis Phase: Developing Projects	Included in each assessment	Compare to others
Rates and Tariff reviews to determine potential saving options.	√	
Graphical trend analysis of collected data including utility data, interval data, weather, productivity, and the 30+ data logger profiles.	√	
Project development focusing on projects which individually have paybacks less than 2 years and a combined average payback < 1 year.	√	
Savings, costs, financial, and carbon reduction analysis for each project .	√	
Action Phase: Final Report and Support	**Included in each assessment**	**Compare to others**
Presentation of a final report to facility participants and to management via net meeting and electronic copy.	√	
Typically 7 to 10 projects or actions are identified which result in reduction of energy costs by 10% with an average payback of <1 year.	√	
One year of back-office support by subject matter experts for each project identified and presented in the final report.	√	
Costs	**Included in each assessment**	**Compare to others**
Total cost including the expert CEM, travel, data logger, current transformers, thermal imaging and other hand held equipment, final reports, one year of back office support, and warrantee. (For Facilities with $200,000 to $2 million energy spend per year. Custom quotes are available for other facilities.)	$7,520	
Payment for the assessment will be delayed for 60 days after the assessment final report to allow time to implement projects and achieve savings prior to payment.	√	
A warrantee that at a minimum, projects will be identified that will result in savings exceeding two times the cost of the assessment or there will be no charge for the assessment.	√	

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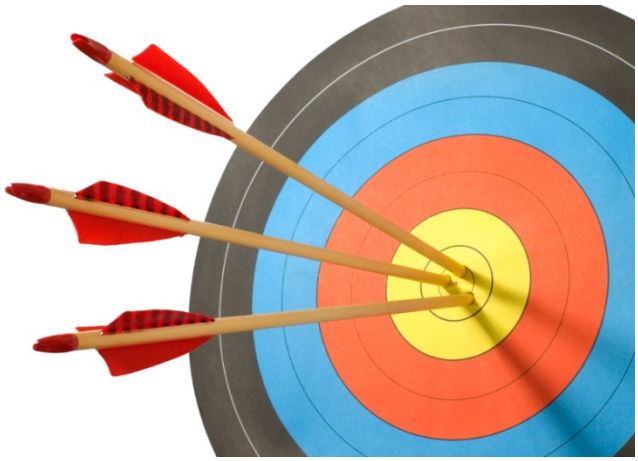
Key Areas Reviewed During Assessments	Included in each assessment	Compare to others
Demand Control: load shifting, load shedding, power factor, shut it off when not in use, reducing loads, and demand response options.	√	
HVAC: supply and exhaust air management, temperature controls, heat exchangers, economizers, and load following controls.	√	
Compressed Air: shut off and isolate, pressure management, blowers and vacuums, flow controllers and receiver tanks, flow nozzles, distribution lines, and partially loaded compressors.	√	
Lighting: positioning of fixtures, light intensity, fixture efficiency, potential for occupancy sensors, ambient light options, and fixture upgrades.	√	
Heat Recovery: identification of heat loss both low grade water and air, potential uses for the low grade heat, free cooling options, economizers, and insulation.	√	
Other: utility bill analysis, trending of use vs productivity and weather, tariff analysis, and funding resources from utilities and government.	√	



"The process, often referred to as a Kaizen blitz for energy, is highly effective in achieving significant measurable results in a short time." TCM

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Research, Benchmarking, Experience

Results from previous assessments for a company with 102 plants in 12 countries.
(Average savings: 10%, Average payback: 9 months.)

Key Project Areas	Number of Projects identified	Savings from Completed Projects
Demand Control	241	$3,002,740
HVAC	106	$1,062,669
Compressed Air	126	$1,537,364
Lighting	102	$960,199
Heat Recovery	69	$276,536
Water/Sewer	29	$935,576
Other	82	$2,333,379
Totals	**755**	**$10,108,463**

Business Sector Experience includes:
Automotive parts manufacturers; containers of glass and plastic; injection and blow molding; electronics; machine shops and auto repair; poultry and food processing; paper, packaging, and printing; technical centers; laboratories; warehouses; hotels; grocery stores; and restaurants.

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