ROAD TO ENERGY MANAGEMENT

zenon
do it your way

WHY?

Marketing and PR
Company Policy
Word of Mouth
REPUTATION
Corporate Social Responsibility

higher margins
Cost Savings
through political support
Increase Profits
Increased Sales → Lower prices enable more sales
through better reputation
FINANCIAL PROFITS

Higher margins
Reducing Energy Costs
Lower prices
Energy prices
Energy Price Index
in 2011
in 2002

Lower emissions
Less resource consumption
ENVIRONMENTAL
Sustainability
Life Cycle Assessment (eco balance)

LET´S GO!

ROAD TO ENERGY MANAGEMENT

Consumers
Shareholder
State: Law and Regulations
STAKEHOLDER
Society

General Efficiency
Overcome a lack of Resources
Avoid blackouts
Defeat uncertainties in energy supply
INFRASTRUCTURE
supply
prices
Less Dependency

„Never touch a running system!"

Outdated Equipment
Heterogeneous system landscape
Missing equipment
Lack of Awareness
Uncertainty
Indifference
Personal and mental
Technological

Return on Investment
Additional efforts
Lack of personnel
Financial
Human
Resources
Indifferent to EM
Corporate Policy
Institutional
BARRIERS

POLITICS
Measures
Advisory Support
Subsidies
Tax Incentives
Member States Implementation
Italy: Certificati Bianchi
Austria: Energieffizienzgesetz
Germany: Certification of energy management system
EU Regulation
EU Directive 2012/27/EU
Goal: more energy efficiency
Reduce 20% on energy consumption by 2020
Implementation on national level

Continuous improvement
MANAGEMENT CONCEPTS
Lean Manufacturing

Maintenance
Engage Person in charge
Change-Management
PDCA
Kaizen
Constant Evolution
Continuous Improvement Process
IMPLEMENTATION

Chemical Industry
Pulp & Paper Industry
Glass Production
INDUSTRIES heavily effected
Non-ferrous metals
Prod. of building materials
Steel Production
Food & Beverages
THE WORLD OF CONSUMPTION

READY FOR EFFICIENCY!

WHO SHOULD CARE?

- Corporate Communications
- Energy Management Team
- Top Level Management
- Machine Operators
- Production Teams
- Supply Chain Management
- Purchasing

ENERGY LABELS
RELEVANT STANDARDS
STANDARDS
ISO 50001
ISO 14001
SEP
INSTITUTIONS

10000 (kgoe/a)
Iceland, Trinidad and Tobago, Qatar, Kuwait, Luxembourg
Highest Energy CONSUMPTION per capita, p.a.

50000 (Quadrillion of BTU)
China, USA, Russia, Saudi Arabia, Canada
Highest Energy PRODUCTION, p.a.

50000 (Trillions of BTU)
USA, China, Russia, Japan, India
Highest Energy CONSUMPTION in total p.a.

Logistics & Transportation
Utilities
Building
Production
AREAS OF CONSUMPTION
Disposal

WATER
AIR
GAS
ELECTRICITY
STEAM

ROAD TO ENERGY EFFICIENCY

Portfolio of methods
Energy management capability
Energy awareness
STRATEGICAL
Corporate energy policy

LET´S LOOK CLOSER!

ENERGY DATA MANAGEMENT

Re-use of waste energy
Shutdown or standby
Smartly tuned interplay of processes
Efficient usage

Benchmarking
Time to invest?
poor cost/benefit ratio
Maintenance and renewal
OPERATIONAL

e.g. increased friction through bad lubrication
Avoiding energy losses through wear-off
e.g. air pressure system leakages
Bad efficiency factor
Efficient purchasing
Comparative periods
Forecasting
Know your Business
Avoidance of peak loads
Day/night tariffs
Optimized consumption timing
Mutual supply

ENERGY EFFICIENCY

EFFICIENCY NIRVANA

Realtime visualization
Including most actual data
Visualize
Statistics and Reports
Energy Classes (A/B/C/D/E ..)
Energy Monitoring Schemes
Energy Consumption Targets
MANAGEMENT
Analyze
Accessible charts and tables
Who needs which data?
Decision making
Collect Data
Risk of errors
Manually
Time consuming
Automated
Ergonomic
Requirement for easy integration
Display and distribution of information needed
Compare against the best available standards
Benchmarking
Creative opportunities
User
FLEXIBILITY
Develop/ Improve your methods
Develop your own figures
Exceed all conventional system limits

New Installations
Production
Maintenance
Planning and Control Level
Business Level
Integration
Process Level
Purchasing and Prices
Consumption
Connectivity
TECHNOLOGY
Industrial PCs
PLCs
Machine Control Equipment
Hardware
Software
Smart meters
Ingelligent Sensors
Ergonomics
Facility Control Equipment

Energy Consumption per Batch
Energy Consumption per production unit
Energy Consumption per machine
ENERGY PERFORMANCE INDICATORS
Energy Consumption per time unit
Energy Consumption per main consumer
Energy Consumption per cost center

http://kaywa.me/c3Kei