



Activities Presentation

Proactive Energy Management

Integrated Energy Management

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Consultancy:

Proactive Energy Management
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Mission Statement

We see our mission in scanning, developing and implementing methodologies in order **to improve the profitability and effectiveness** of your operation. Therefore our mission is not limited to technical matters but covers full-integrated management system, involving all stakeholders acting along the Value Creating Chain.

Our services cover:



- Energy / Facility Management
- Searching and making use of synergies within the chain wastes-heat-cold and e-power
- Biomass, Biogas, Biomethanisation, Gasification & Pyrolysis and other valuable uses.
- Reduction of the global cost impact of the facilities on the product (core-business)
- Management approach based on "Lean Thinking", "Six Sigma", etc.

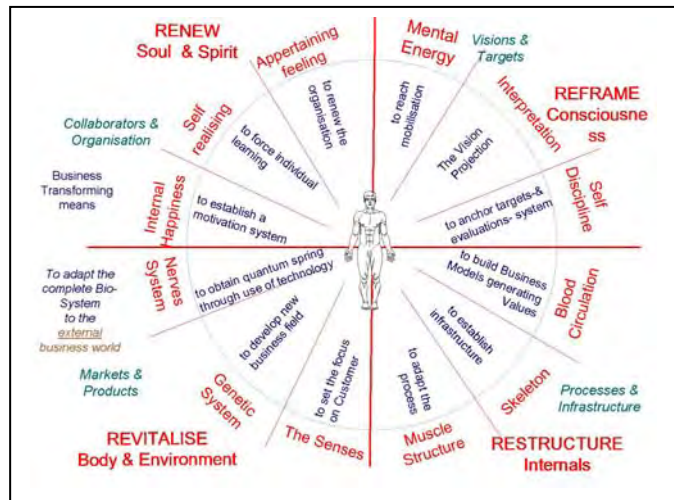
Proactive Energy Management focuses especially on the field of "Energy" and "Facilities" Management, and **contributes to the downsizing of the impact of "Energy" and "Facilities" like water, wastes, compressed air etc... on the cost of the production.**

Acting in a fully integrated management concept (or implementing it), the basis for a successful mission is:

1. Transparency and information related to the energy/facilities suppliers and consumers
2. Responsiveness of the deciders inside the organisation and sensitivity to cost savings through rational use of energy/facilities
3. Motivation of all personnel, to reinforce in the company the responsiveness to energy/facilities

Integrated Management System

We will coach your organisation to transform in developing the vital functions



Visions & Targets

- Reaching mobilisation
- Projecting a vision
- Anchoring targets and evaluation system

Processes & Infrastructure

- Developing Business Models generating values
- Establishing infrastructure
- Adapting the process

Markets & Products

- Setting focus on customer
- Developing new business field
- Obtaining quantum spring through use of technology

Stakeholders & Organisation

- Establishing a motivation system for all stakeholders (Customer-Employee-Suppliers)
- Focusing on individual learning
- Renew the organisation

Objective of the Energy/Facilities Management

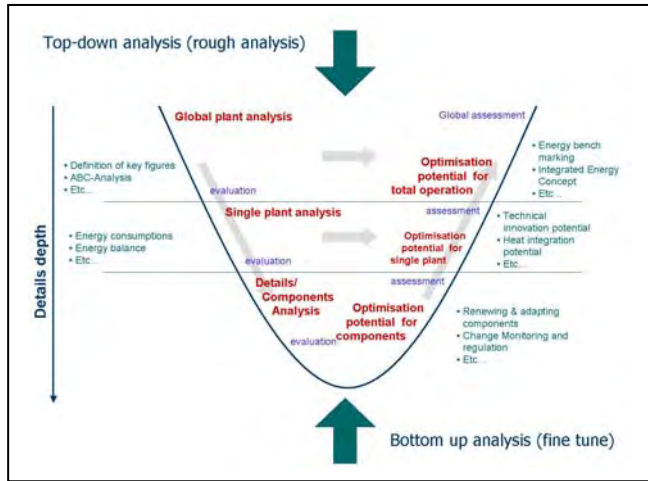
The primary objective is the reduction of energy/facilities cost through rational operation of the plant with energy/facilities.

Further and not minor objectives are:

- Improvement of the transparency on the operation, through which are discovered some technical, structural or organisational weak area as well as improvement potentials
- Reduction of the environmental impact, specially though saving of resources and decreasing of CO₂ (GHG: Green House Gas) emissions
- Improvement of internal communication and coordination in all energy connected matters
- Improvement of the reaction capability with regard to deviation and disturbances
- Increase of the reaction capability on changes in the energy policy and economy within the enterprise environment
- Increase of the transparency of the quantitative and qualitative development of the energy requirement in connection with improvement measures and investment decision
- Better use of resources (chain waste to energy): synergies between energy and environment

Methodology:

Top-down and bottom-up complementary methodologies



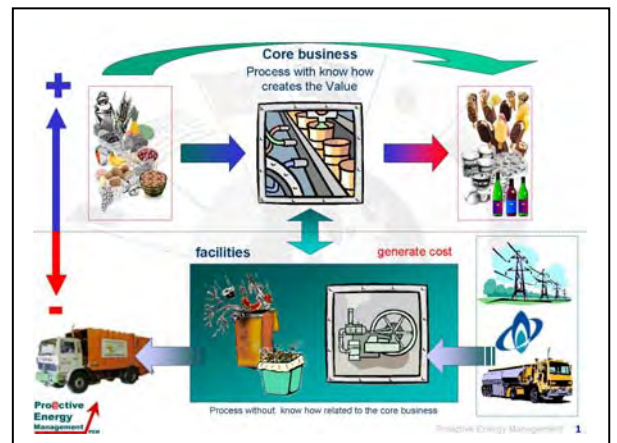
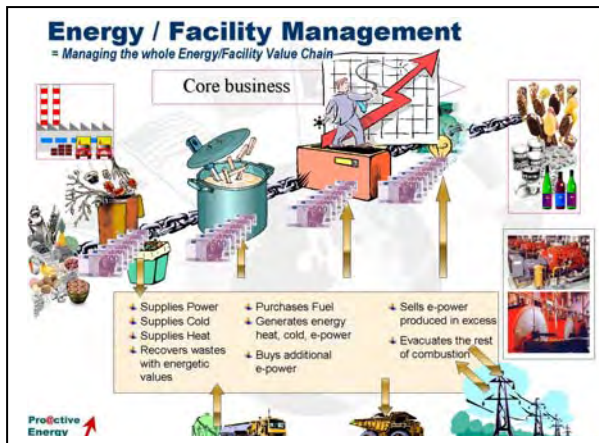
7 objectives of a top-down analysis

1. Investigation about the general energy consumption profile and its development during the last years
2. Evaluation of the purchasing contracts and tariffs for each kind of energy
3. Transparency related to the distribution of the energy trough the all plant (which single plant is fed with electricity, Gas etc ..)
4. Investigation about the main consumers in the total plant
5. Investigation about the energy data collection in the plant
6. Discovering the first weak area and potential optimisation
7. Establishing the area first to be scanned

4 objectives of a bottom-up analysis

1. Implementation of the Data related to the purchasing of energy and the utilisation structure through the plant
2. Investigation about the energy efficiency of the most important energy operating systems
3. Discovery, quantify and evaluation of the weak area
4. Work out a possible improvement for the energy system

Views on Energy / Facilities



Energy means:

Heat, Cold, Lighting, E-Power, Gas, Compressed air

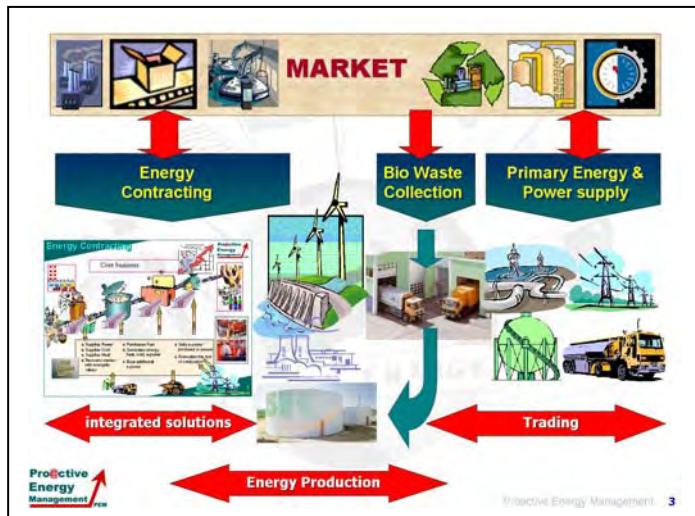
Facility means:

Waste, Water, HVAC, Decentralised Energy production

Energy / Facilities Management means:

Managing the whole related Value Chain including the interfaces to the core business process and their relations. The target is:

REDUCING THE GLOBAL COST OF HEAT, COLD, E-POWER, WATER, COMPRESSED AIR AND WASTES ON THE FINISHED PRODUCTS.

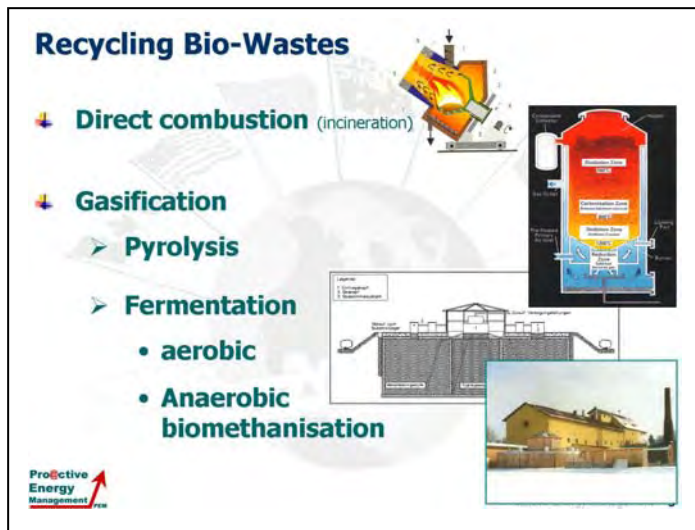


Energy/Facility Managing means also taking the whole responsibility for all activities related to the facilities on a **reliable base**:

- Procurement
- Maintenance
- Repairs
- Operation
- etc ...

The picture left gives a view on energy market; notice that **Waste is a fuel with negative cost!**

Integrating the chain Waste to Energy



Synergies between Waste and Energy generate values!

Involved industries:

- Meat industry (slaughterhouse, process,)
- Breweries
- Chocolate industry
- Deep frozen food
- Fats & Oils
- Paper industry
- Chemical
- Industrial estates
- Etc

Example from the meat industry



Gasification plant with CHP (decentralised energy production)

Investment: approximately 2,9 Mio €

Expenses

- Capital cost (8%)	232 000 €
- Running costs	247 000 €
	<u>479 000 €</u>

Incomes

- Grey electricity	394 000 €
- Green Certificates (green energy)	394 000 €
- Heat produced (gas savings)	75 000 €
- Waste removal costs savings	575 000 €
	<u>1 438 000 €</u>

Net profit 959 000 €

Payback time approximately 3 years



Services

Within a mission Proactive Energy Management will implement jointly with you the following:

Formulating and implementing your Energy Management programme

Deploying profitable energy policies to increase your company's efficiency and competitiveness

Defining the most suitable energy policy for your company

- Establishing the strategic principles of Energy Management
- Identifying the objectives of Energy Management programmes
- What advantages can you expect from such programmes?

Evaluating Return on Investment (ROI) in terms of Energy Savings: calculating the return in an industrial environment

- Economic analysis of the necessary investment for Energy Savings

Implementing an Energy Efficiency Plan with a view to changing the production equipment: high-reliability / high-efficient equipment versus low-investment equipment

- Cost/benefit analysis of the planned changes: examining the production and the equipment return
- Evaluating potential savings

Energy Audits

Installing practical methodology for framing and developing an Energy Audit Plan in your industrial environment

Quantities consumed and induced cost analysis

- Developing an Energy Saving Plan as a preliminary stage of the audit
- Using energy accounting to obtain and define consumption levels
- Defining an energy maintenance policy improving cost and consumption controls

Framing and developing an Energy Audit programme

- Developing the audit so that it will enable you to identify the critical points of your equipment and installations
- Identifying the necessary data and methods for beginning the audit

Cost Estimation / Energy Budget

- Implementing a budgetary plan in keeping with your energy needs

Implementing a Cost Reduction Plan

Optimising your resources and reducing your energy consumption and costs in your production processes

Analysing in-plant energy consumption

- Identifying energy consumption by "item": air-conditioning, ventilation, lighting...
- Taking measures to discover the strong and weak points in industrial processes

Establishing the relationship between energy consumption and production levels

- Relationship between monthly consumption and production
- Trend analysis: identifying seasonal and production variations
- Establishing consumption standards for each industrial process
- Identifying economy points for each production unit

Formulating a general energy consumption plan

- Defining consumption and its various structures within the factory
- Establishing measurement points of maximum precision
- Comparing planned consumption against actual consumption
- Analysing overshoots and proposing remedial action

Ratio optimisation

- Establishing representative ratios for production sites
- Implementing overall measures and establishing ratios per sector
- Holding production accountable for ratio compliance
- Maintenance as a ratio optimisation factor

Adapting a negotiating strategy enabling you to reduce your costs in a market undergoing liberalisation

Concluding optimal contracts in relation to your site's consumption

Comparing and selecting the best offer

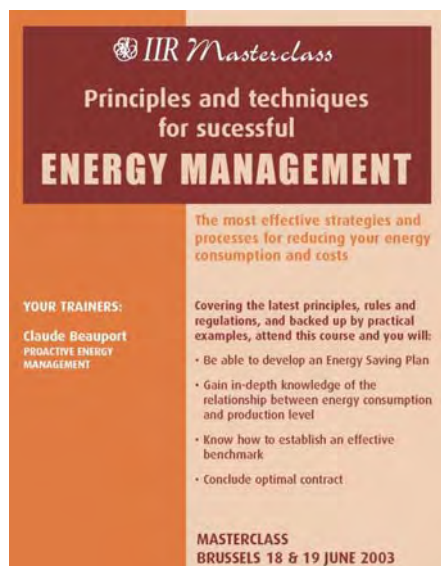
- Electricity market developments
- Analysing the different possibilities offered by the market
- Contract typology

Establishing an effective benchmark

- Analysing your demand and your potential
- Establishing consumption perspectives enabling you to negotiate prices as well as possible
- Establishing technical aspects to be considered when negotiating a contract.
- Establishing key information to be obtained from the various suppliers.

Negotiate prices, volumes and other conditions

- Increasing purchasing power: consumer groups
- Techniques to be applied to negotiate offers and to obtain the best prices
- Factors influencing the offer: quality and guarantee



This subject has been presented by Claude Beauport, Proactive Energy Management, for the IIR-Masterclass of the Institute of International Research on 18 & 19 June 2003 in Brussels.

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