

# Support Mechanisms - Best Practice Energy, Cost & Carbon Reduction

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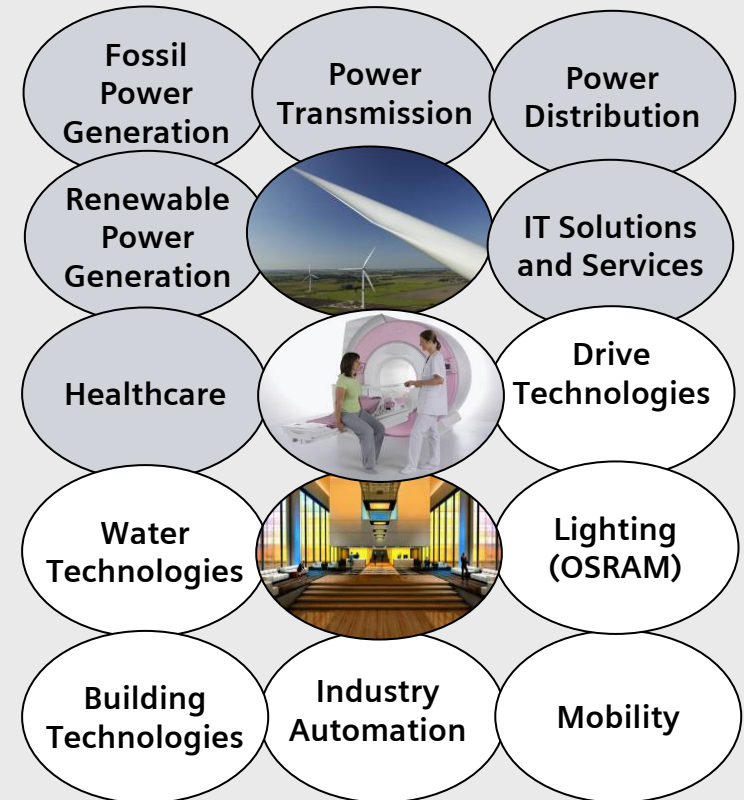
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## Introduction:

The Siemens “Environmental” Portfolio: **> £20 Billion!**

### Siemens Environmental Portfolio

- In fiscal 2008/9, products and solutions in our environmental portfolio saved about 210 million tons of CO<sub>2</sub> for our customers .
- ...which exceeds the total CO<sub>2</sub> emitted by New York, London, Singapore, Paris and Hong Kong
- .....and is more than 40 times greater than our own annual emissions



Siemens' Industry Sector makes the largest contribution to the overall Environmental Portfolio

# Introduction:

## The Policy Landscape Drives Concrete Measures

### Global, EU & UK Policy

- Kyoto Protocol and targets on greenhouse gas reduction
- IPCC reports
- Stern report on the financial implications of climate change
- UK government targets – 80% CO<sub>2</sub>e reduction by 2050
- UK energy policy
- Climate Change Act
- Low carbon strategy:
  - Transport
  - Manufacturing

### EU Regulation & Standards

- Eco Design directive (“EuP” & “ERP”)
- Energy performance of buildings directive
- Landfill directive
- Waste Incineration directive (WID)
- Measuring instruments directive
- Environmental permitting programme.
- European emissions trading scheme (EU ETS)
- International standards:-
  - EN 16001
  - EN 15232
  - Pr EN 15900

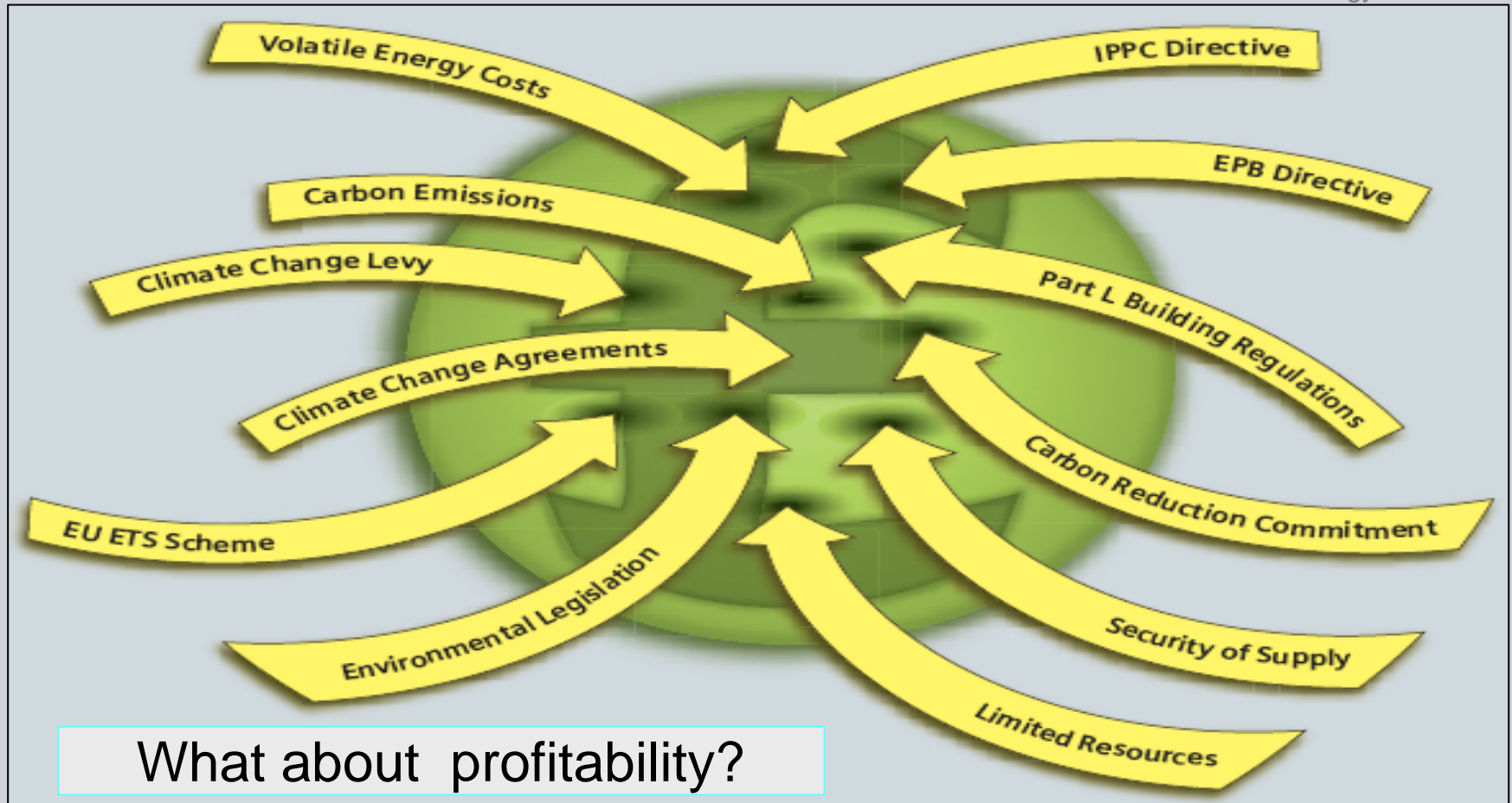
### UK Specific Measures

- Climate change levy (CCL)
- Renewable obligations
- Climate change agreements (CCAs)
- Renewable obligations, ROCs and FITs
- Building regulations – “Part L2”
- Carbon reduction commitment (CRC EES)
- Enhanced capital allowances (ECAs)
- Landfill tax

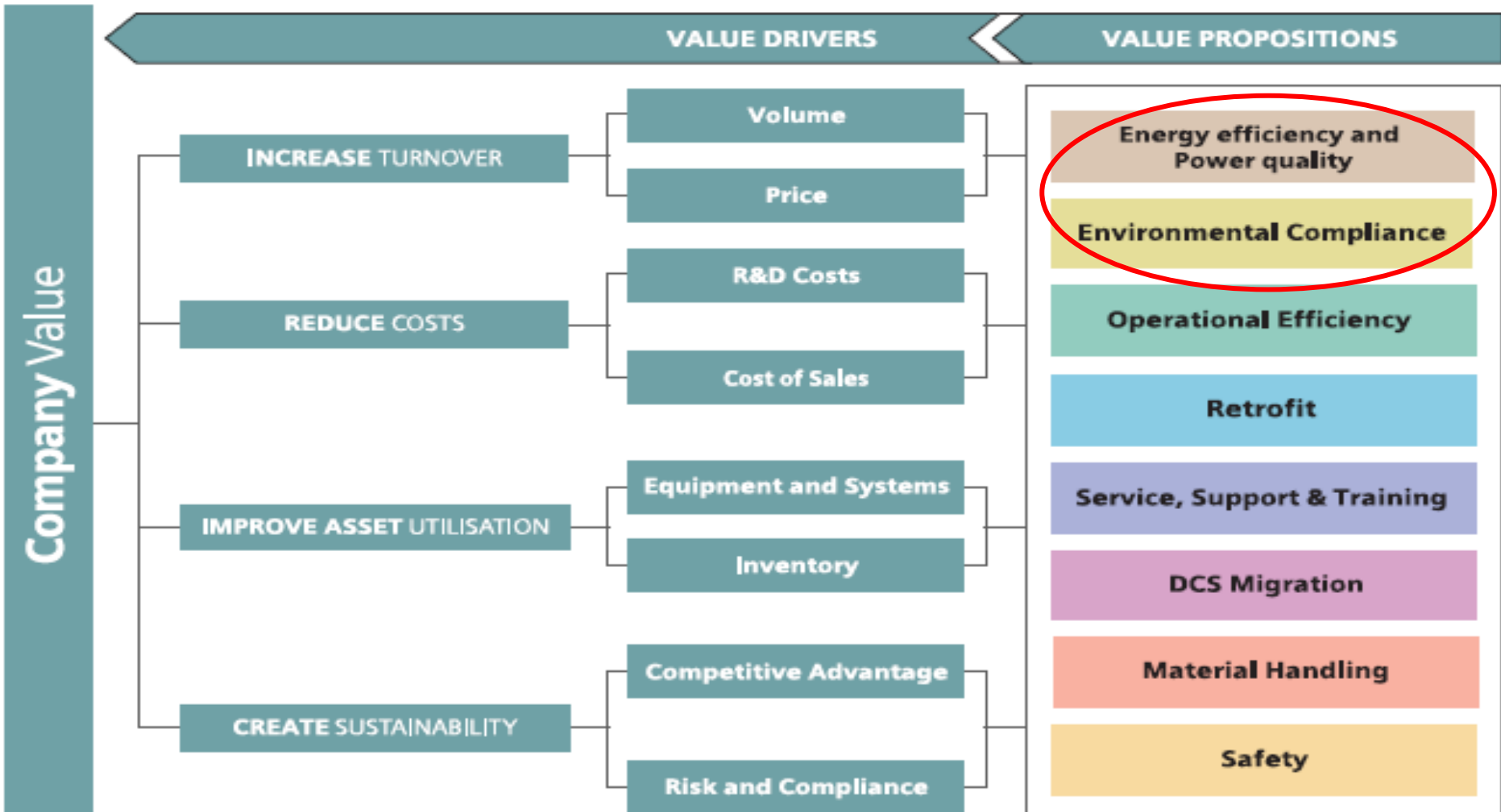
## Pressure On Company Expense

“Energy costs now represent an average of **12.2%** of total cost for UK business”

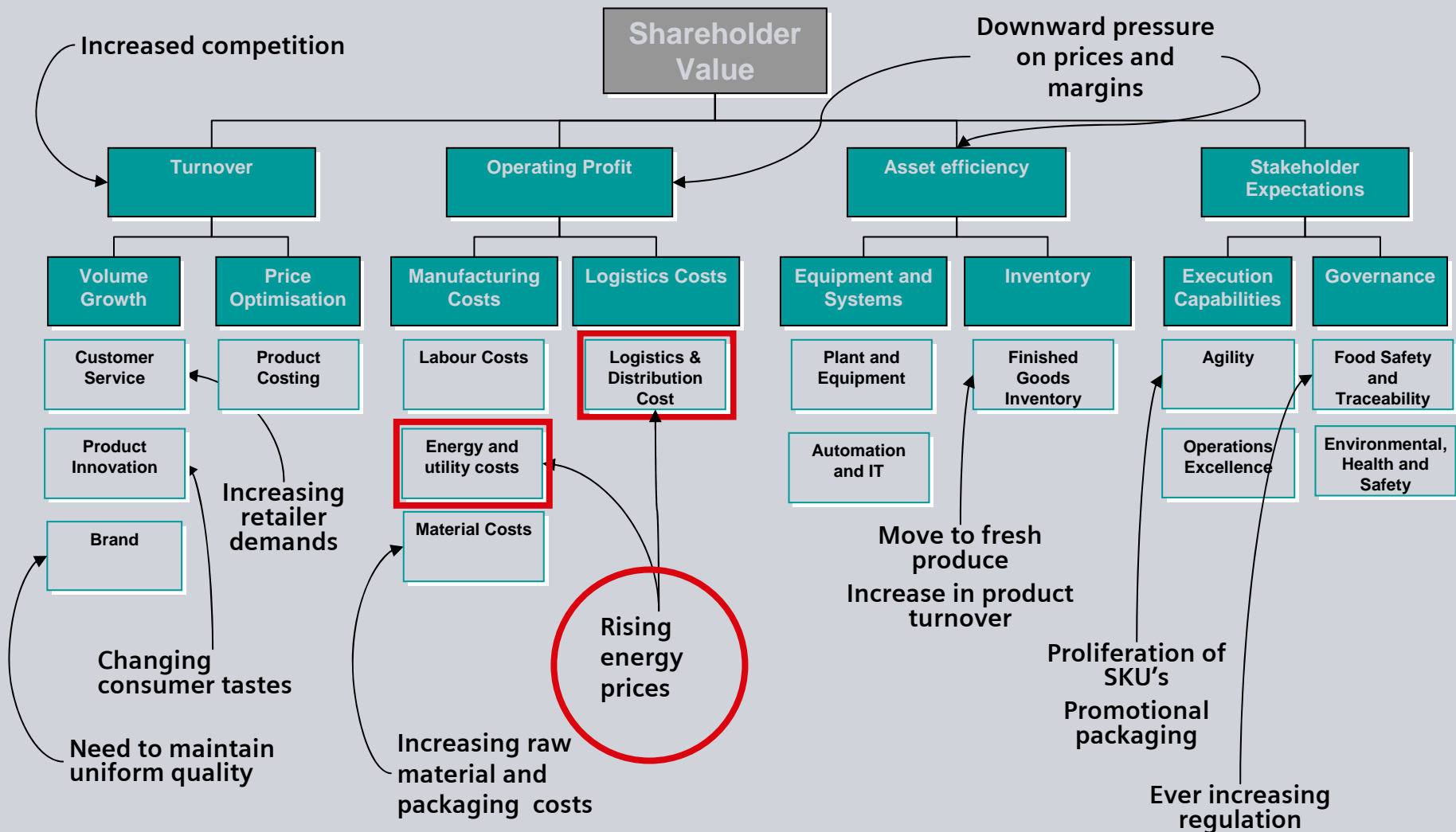
RWE NPower Business Energy Index



## A Value Based Approach



# Example - "Value Framework" For Food & Beverage

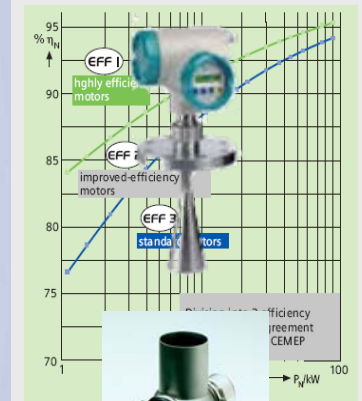
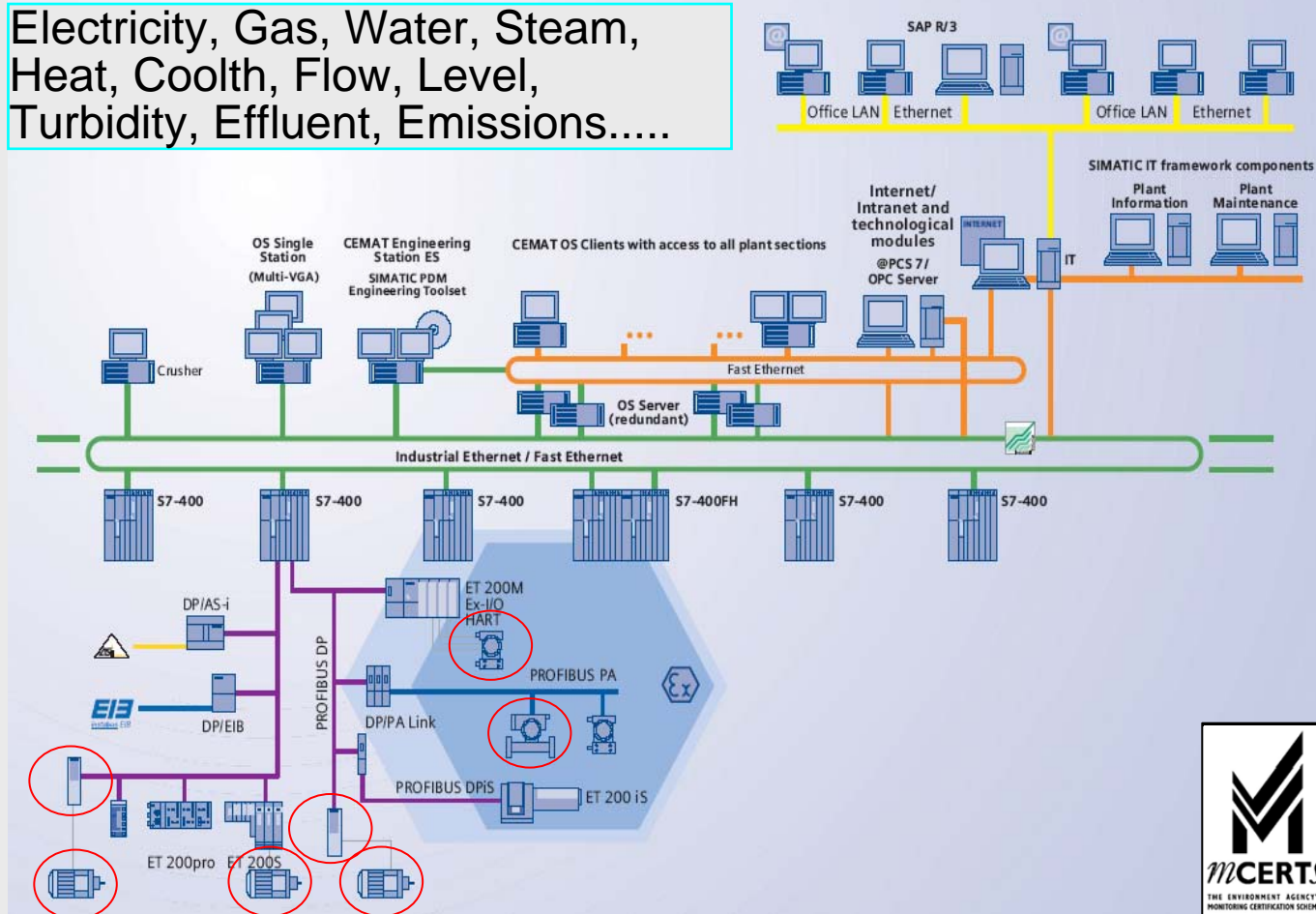


## Industry Sector Energy Solutions

- Complete range of products
  - **Measuring and monitoring** - Metering, intelligent switchgear, instrumentation....
  - **High efficiency products** - e.g. Motors, HVAC, Lighting, Gearboxes....
  - **Management & control** – e.g. Energy Management Systems, automation networks, Intelligent building controls, “smart home” technology.....
  - **Renewables and clean generation**...
- Complete range of services
  - Site Audits (including power quality) – using partners where required
  - Evaluation of specific technology opportunities
  - Comprehensive energy and utility consultancy support
  - **Project financing (through SFS)**
- “Solution” delivery
  - Product supply through normal distribution channels
  - Solution delivery through accredited “system integrator / solution partners”

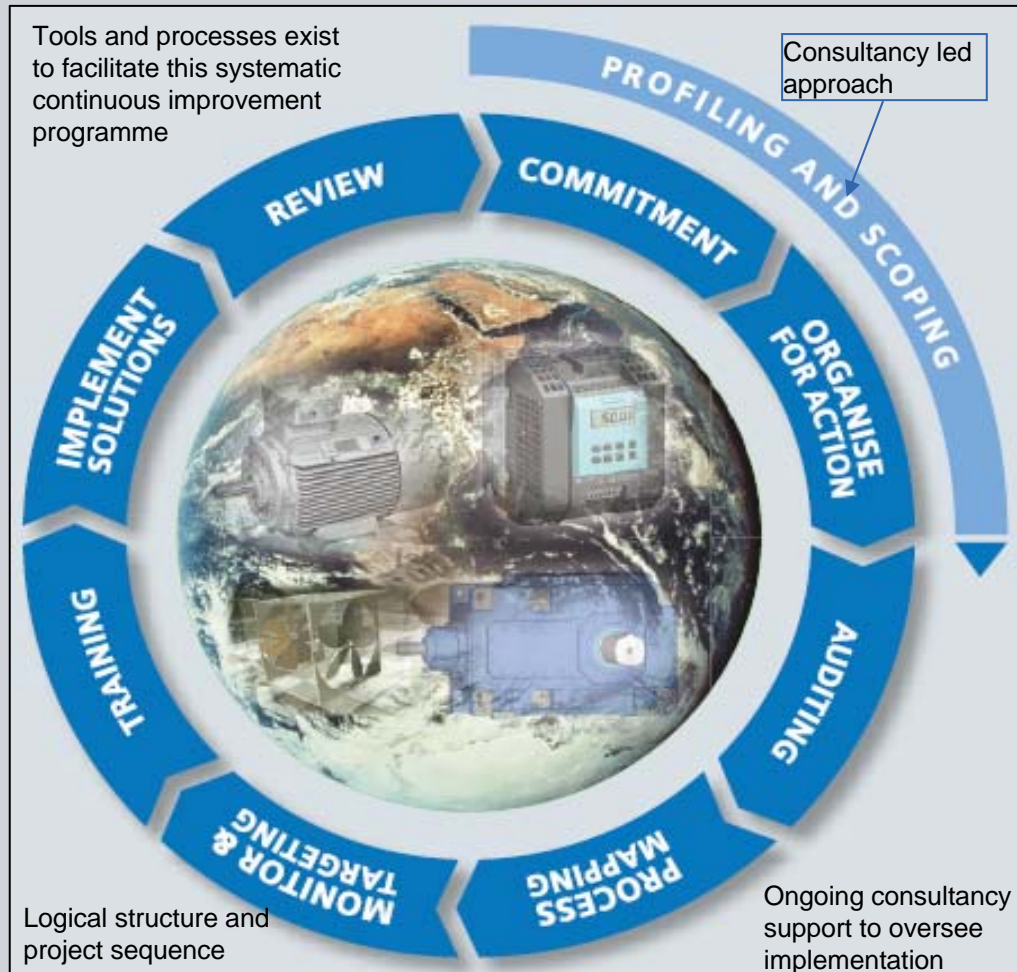
## Total Metering Solutions For Energy & Utilities

Electricity, Gas, Water, Steam, Heat, Coolth, Flow, Level, Turbidity, Effluent, Emissions.....



Complete aM&T solutions

## A Systematic “Best Practice” Approach To Energy Efficiency



- A systematic approach delivers maximum cost and carbon reduction.
- This process forms the basis of a long term continuous improvement programme.
- Simplifies environmental compliance issues
- Aligned with requirements of the recently published EN 16001
- Experience reveals that the systematic approach provides **4x greater** savings than an ‘ad hoc’ approach

## “Top 10” Technologies By “Payback”

	Technology	Return on Investment
1.	<b>AMR / aM&amp;T (+ <u>effective</u> implementation programme)</b>	<b>1 to 3 months?</b>
2.	<b>Low energy lamps (CFL, LED...etc)</b>	<b>1 to 12 months?</b>
3.	<b>Variable speed drives (VSDs)</b>	<b>3 to 12 months?</b>
4.	<b>High Efficiency Electric Motors</b>	<b>3 to 12 months?</b>
5.	<b>CIP Optimisation</b>	<b>3 to 12 months?</b>
6.	<b>Compressed air solutions / elimination</b>	<b>1 to 4 years?</b>
7.	<b>Intelligent lighting controls</b>	<b>1.5 to 4 years?</b>
8.	<b>Power management &amp; control solutions</b>	<b>1.5 to 4 years?</b>
9.	<b>Supply voltage optimisation</b>	<b>1.5 to 4 years?</b>
10.	<b>Efficient heating &amp; cooling technologies</b> <b>(Including boilers, steam systems, refrigeration, tri-gen, air source etc etc)</b>	<b>2 to 7 years?</b>
	<b>More ~???</b>	
	<b>AMR = automatic metering reading (main supplies)</b>	
	<b>aM&amp;T = automatic monitoring and targeting [submetering and energy management software tools]</b>	

### Notes

- i) Excluding employee awareness / change management type programmes
- ii) Excludes mechanical / process type improvements
- iii) Paybacks based on direct energy reduction – extensive associated benefits also accrue

## Other Areas For Consideration

- Commissioning, service and maintenance
- Renewables (especially with “carbon” reduction considerations and incentives with ROCs & FITs)
- Waste minimisation
- Effluent and water treatment
- Energy from waste :
  - Anaerobic digestion
  - Pyrolysis
  - Incineration etc
- Carbon footprinting – PAS2050 etc
- Transportation systems
- More???

## Financing Energy & Carbon Projects

- Grants (e.g. RDA (?), others??)
- Carbon Trust:
  - Advice, information and documentation
  - Surveys and audits – to CM programmes
  - Loans scheme – to £100k
  - Technology incubator
  - Enhanced capital allowances
  - CT Standard
- Salix
- Private finance
- SFS.....

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interest free loans



**Get a 0% loan for energy  
efficiency equipment**

**It will save you money year after year**



Note: CT Presentation will also be available to download

# Support Mechanisms For Energy Efficiency & Low Carbon Solutions