

## Best Practice Energy, Cost & Carbon Reduction

Levering aM&T to facilitate “zero cost” implementation of the top 10 energy saving technologies

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## Agenda

- Introduction
- Best practice approach to energy, cost & carbon reduction
- “Top 10” technology areas
- Financing energy projects – “zero cost” implementation
- Examples
- Summary

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. Paris and Hong Kong
- .....and is more than 40 times greater than our own annual emissions

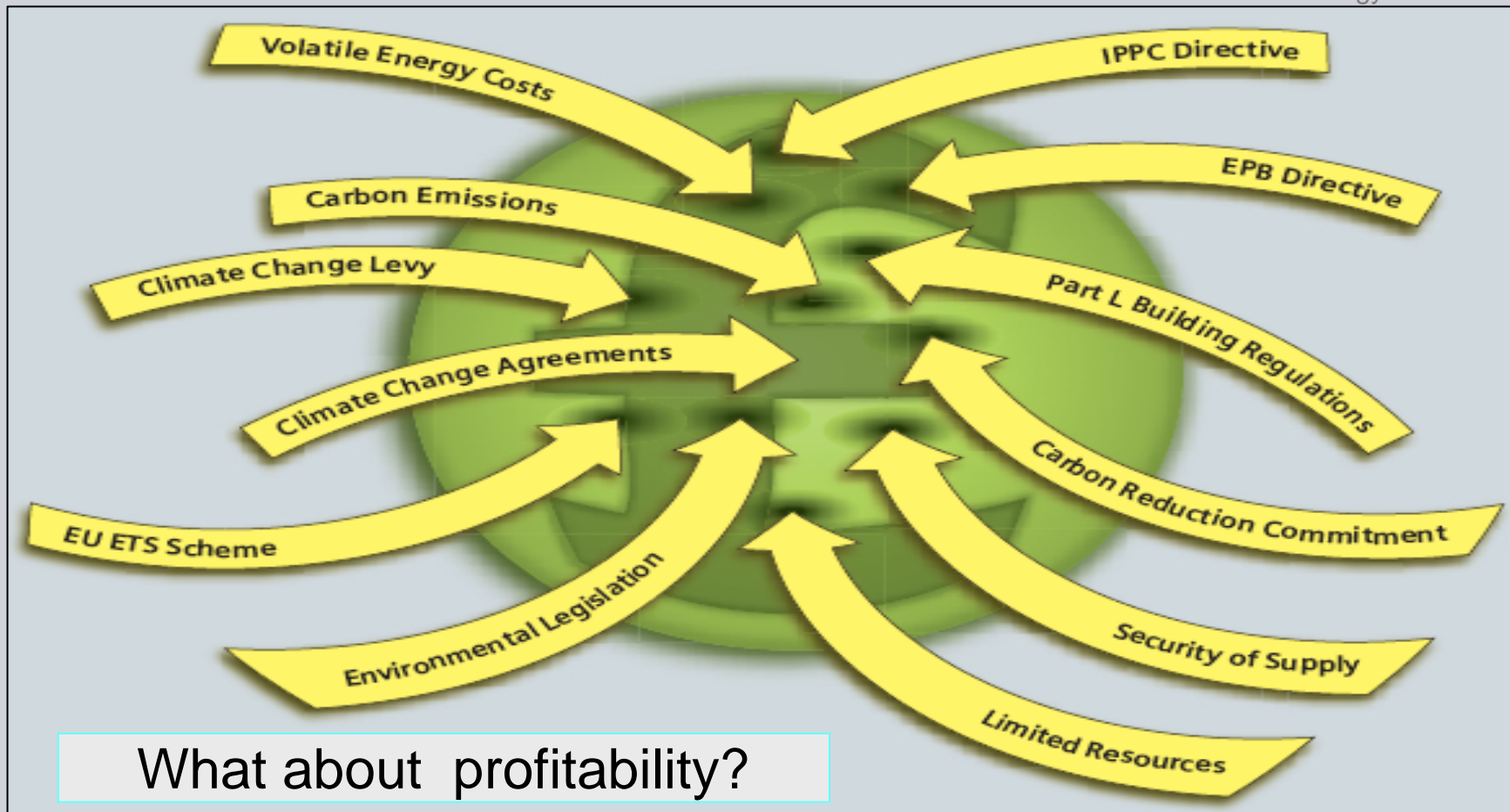


**Siemens' Industry Sector makes the largest contribution to the overall Environmental Portfolio**

## Pressure On Company Expense

“Energy costs now represent an average of c. 12% of total cost for UK business”

RWE NPower Business Energy Index



## Best Practice Utility & Cost Reduction Strategy



- A systematic approach delivers maximum cost reduction.
- This process forms the basis of a long term continuous improvement programme.
- Simplifies environmental compliance issues
- Maximises contribution to “carbon” reduction targets

“Cost Reductions achieved through a systematic approach are typically **4 x greater** than compared to ‘ad hoc’ stand alone measures”

## “Top 10” Technologies By “Payback”?

	Technology	Return on Investment
1.	AMR / aM&T (+ <u>effective</u> implementation programme)	1 to 3 months?
2.	HE Lamps (CFL, LED...etc)	1 to 12 months?
3.	Variable speed drives (VSDs)	3 to 12 months?
4.	High Efficiency Electric Motors	3 to 12 months?
5.	Intelligent lighting controls	1.5 to 4 years?
6.	Power control solutions	1.5 to 4 years?
7.	Supply voltage optimisation	1.5 to 4 years?
8.	Sustainable IT solutions (front/back office)	1.5 to 5 years?
9.	Building controls (BEMS)	2 to 5 years?
10.	Efficient heating & cooling technologies	2 to 5 years?
11.	~???	

### 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

## Financing Energy & Carbon Projects

- Grants?
- Carbon Trust Loans Scheme
- SALIX (public sector)
- ECA scheme
- SFS (Siemens Financial Services)
- Others?

Boost your sales with  
interest free loans



ACT ON  
**C**<sub>2</sub>

CARBON  
TRUST

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

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



## Summary Examples - Illustrative Buildings Facility

- Energy costs reduced by £149k (40%) per year
- Carbon emissions reduced by > 618 tonnes (38%)
- Total costs £327k with payback of 2.2 years
- Financing:
  - Monthly financing costs = £11k
  - Reduction in utility costs = £12k
  - Net opex contribution = £1k / month
  - After 3 years, client enjoys full benefits
- Compliance with regulations (e.g. Part L2)
- Reduction of CRC implications for 2011 onwards



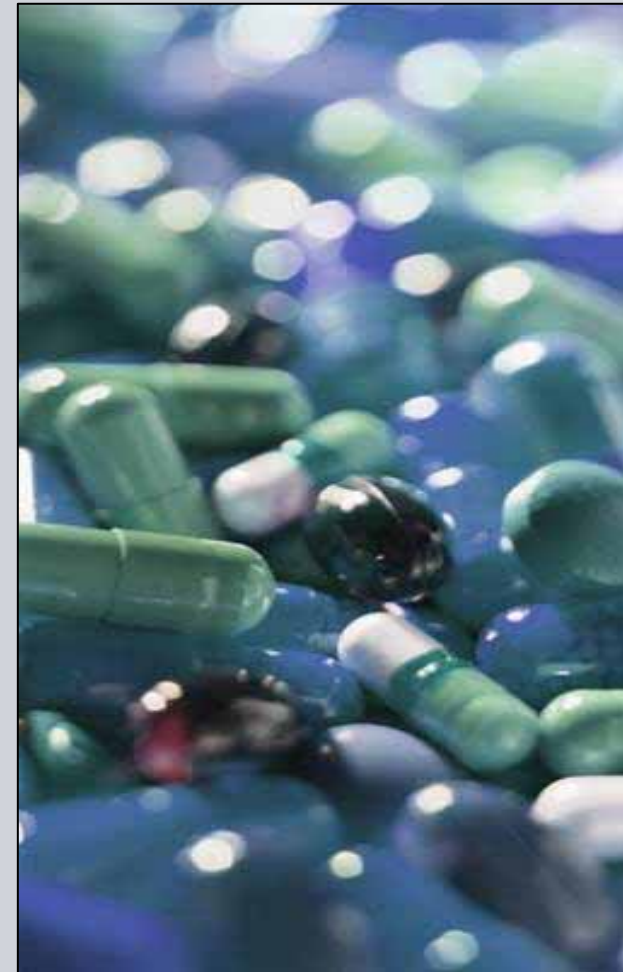
## Summary Examples – Major International Airport

- Energy costs reduced by **£3.2M** per year (19%)
- Carbon emissions reduced by 22, 000 tonnes (18%)
- Total costs of £4.8M with **1.5** year payback
- Financing:
  - Monthly financing costs = £160k
  - Reduction in utility costs = £266k
  - Net opex contribution = **£106k / month!**
  - After 3 years, client enjoys full benefits
- Ensured compliance with building regulations
- Minimised future costs under CRC



## Summary Examples – Illustrative Pharmaceutical Plant

- Energy costs reduced by **£1.5M** (30%) per year
- Carbon emissions reduced by **7, 000** tonnes (29%)
- Projects cost £3.15M with payback in 2.1 years
- Financing:
  - Monthly financing costs = £100k
  - Reduction in utility costs = £125k
  - Net opex contribution = **£25k / month**
  - After 3 years, client enjoys full benefits
- Ensured compliance with regulations
- Minimised future costs under the carbon reduction commitment – CRC

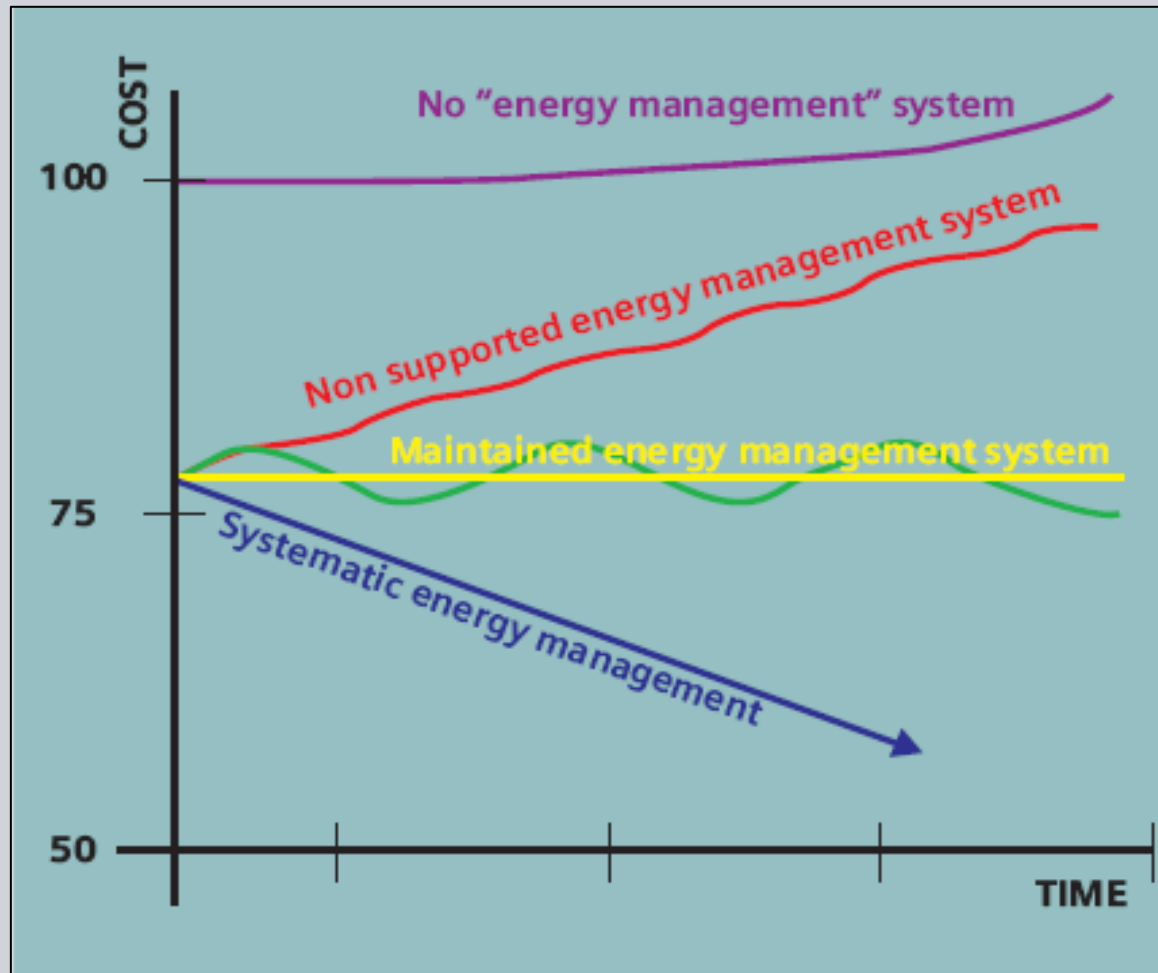


## Summary Examples - Illustrative Brewing Operation

- Energy costs reduced by **£1.3M** (28%) per year
- Carbon emissions reduced by **8, 000** tonnes (29%)
- Projects cost £1.0M with payback in 9 months
- Financing:
  - Monthly financing costs = £35k
  - Reduction in utility costs = £108k
  - Net opex contribution = **£73k / month**
  - After 3 years, client enjoys full benefits
- Ensured compliance with regulations
- Minimised future costs under the carbon reduction commitment – CRC



## Benefits Of A Systematic Cost Reduction Strategy



*"Our experience is that piecemeal measures cannot deliver the energy and cost reductions required by industry and commerce"*

- A systematic energy strategy provides the most successful method of energy, carbon and cost reduction.

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