

Energy Management in the UK

– a Carbon Trust perspective


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Carbon Trust
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Item 4-2

A decorative graphic at the bottom of the slide consists of three thick, wavy, horizontal bands in shades of blue and dark blue, flowing from the left side towards the right.

Contents

- 1. Introduction to the Carbon Trust**
2. Energy management – barriers and drivers
3. Key elements of successful energy management
4. Examples of energy management in practice

The background of the slide is a long-exposure photograph of a multi-lane highway at night. The image shows vibrant, curved light trails from vehicles, with blue and white streaks on the left side of the road and red streaks on the right side, indicating the flow of traffic. The road's lane markings are visible as dashed white lines.

Our mission is to accelerate the move to a low carbon economy

We cut carbon now by

- **Providing specialist advice and finance to help organisations cut carbon**
- **Setting standards for carbon reduction**

We cut potential future carbon emissions by

- **Opening markets for low carbon technologies**
- **Leading industry collaborations to commercialise technologies**
- **Investing in early stage low carbon companies**

Results to date

Since our launch in 2001 the Carbon Trust has:

- Helped our customers to save £1.4 billion
- Helped catalyse £1 billion of third party investment
- Accelerated the commercialisation of new low carbon technologies that will save over 20MtCO₂ a year by 2050
- Supported the development of over 250 new low carbon technology products and companies in the UK

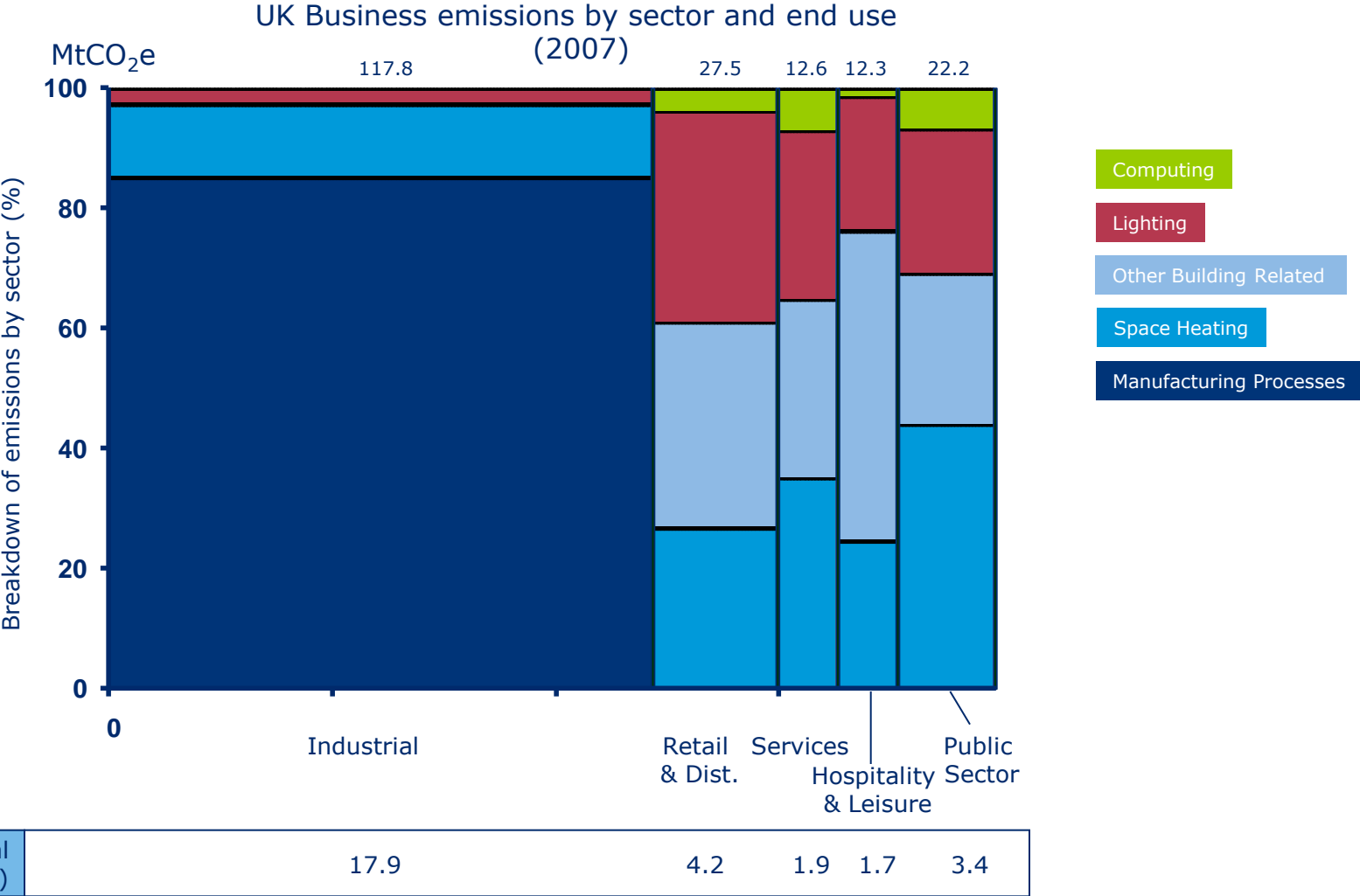
23m

tonnes of carbon we
have helped our
customers save

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Industrial is the largest source of UK business emissions

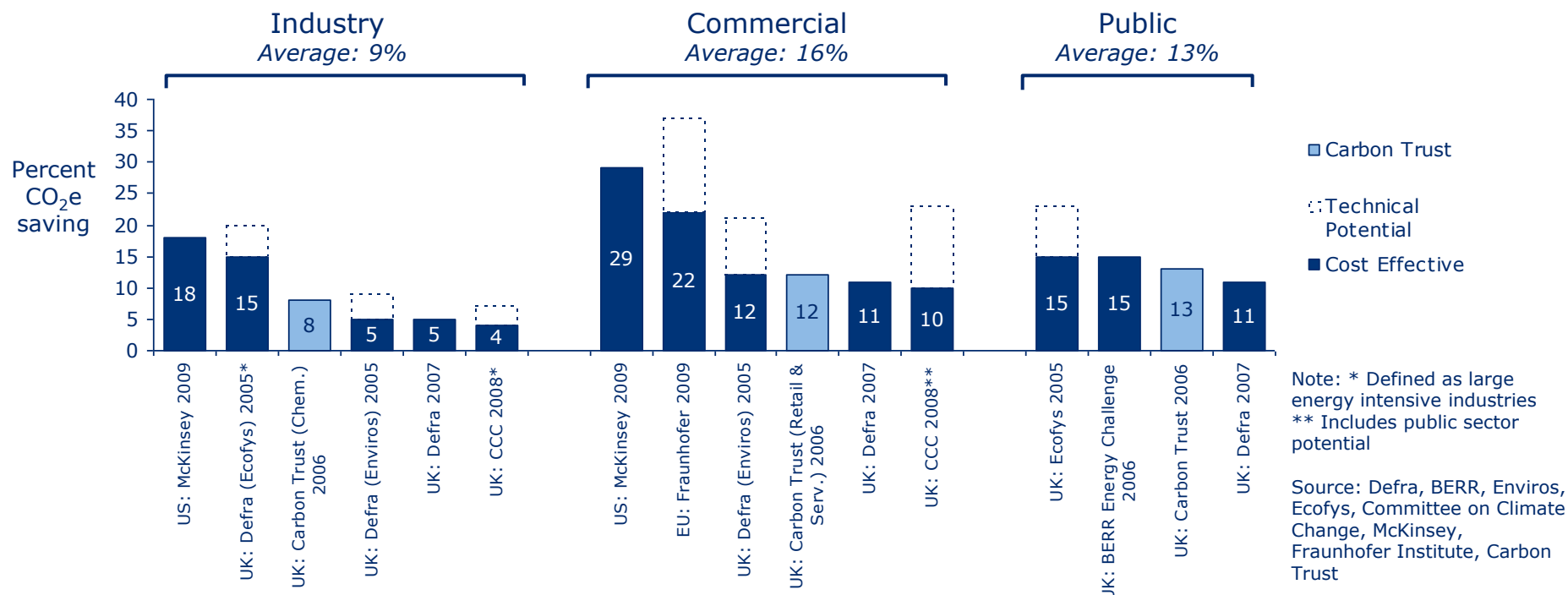


Source: BIS

Understanding the potential savings from energy efficiency

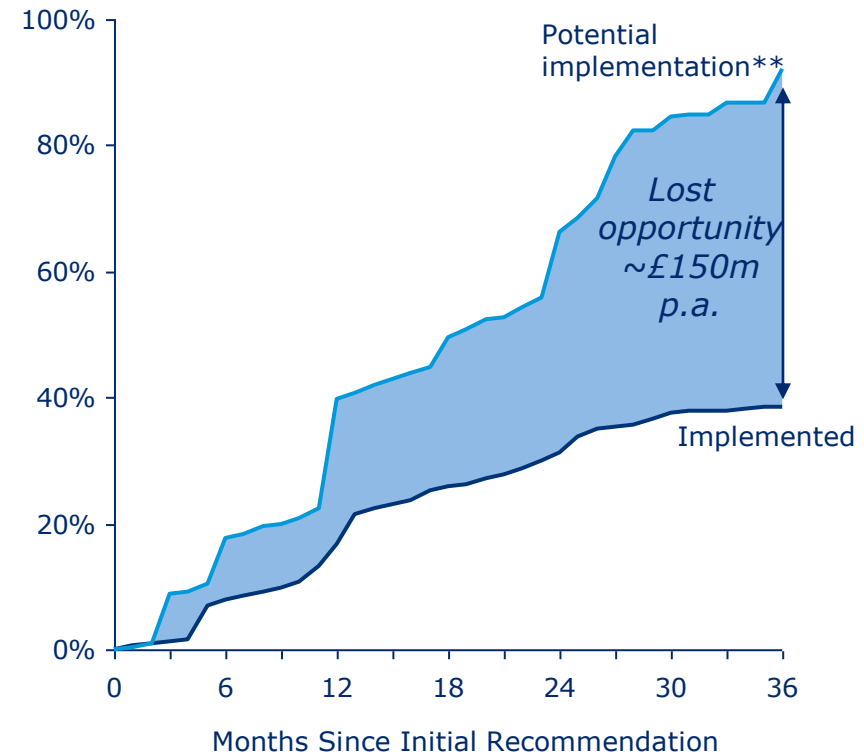
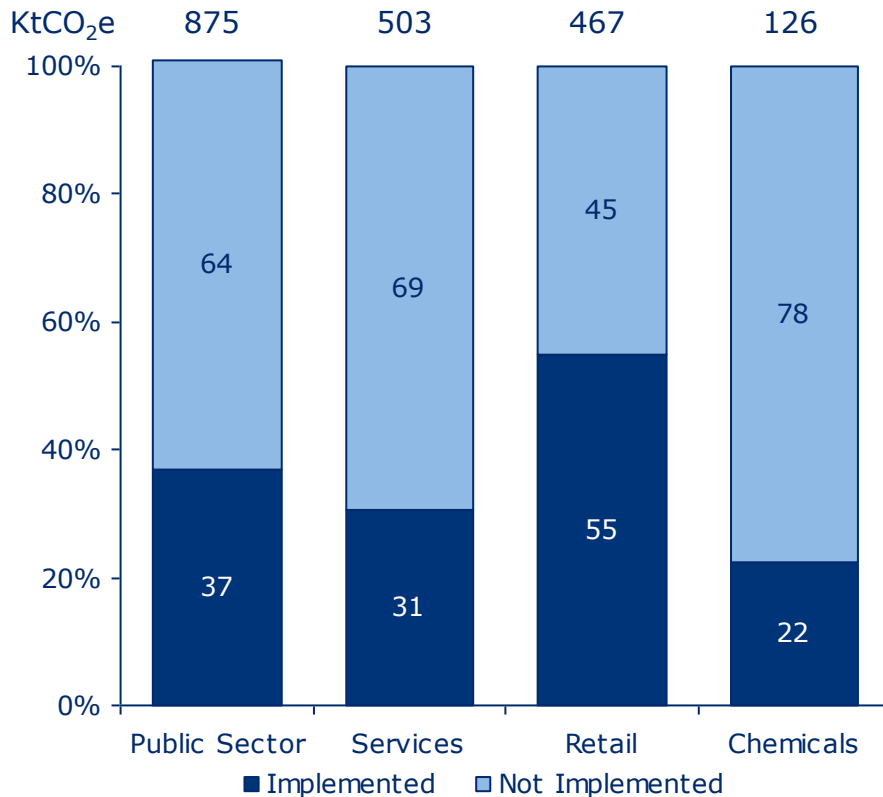
- Up to **14% emissions reduction** from cost-effective measures (15-37 MtCO₂e)
- Potential energy **cost savings of >£3bn**
- **25 to 37 thousand jobs** for every £1 billion in energy efficiency investment

Energy efficiency is a big win-win



But slow uptake means that most potential is untapped

Implementation of Carbon Trust Recommendations by Sector*
(2006/07 – 2009/10)

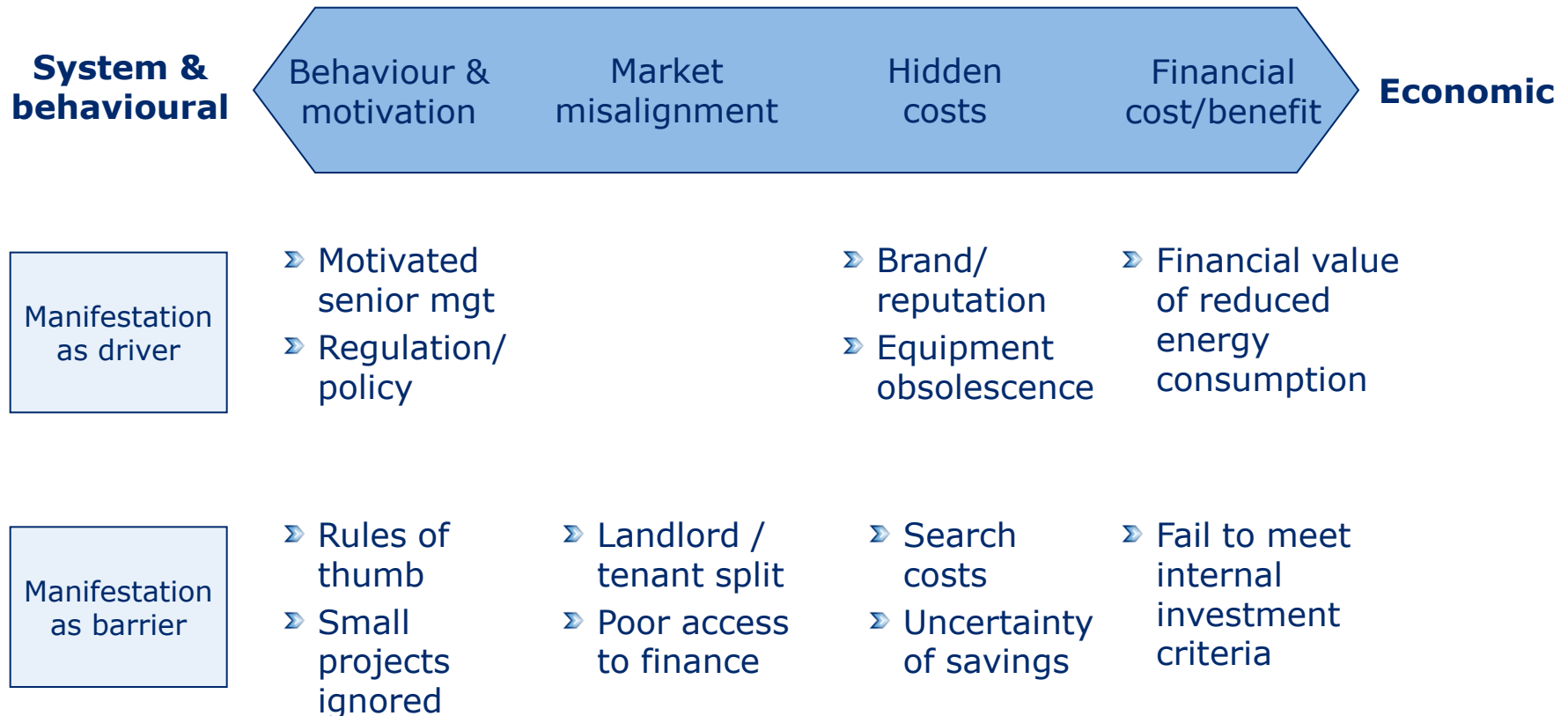


Note: * Calculated as total CO₂e savings achieved compared to recommendations

** Based on timeline proposed by the Carbon Trust

Source: Carbon Trust

Barriers and drivers to implementation of carbon saving measures



Overcoming the barriers



- The Carbon Trust analysed these barriers and came up with ways to overcome them by providing:
 - impartial, authoritative information on how to improve energy efficiency via consultations, guides, case studies, telephone and website;
 - support for energy surveys; including follow up help;
 - interest free, unsecured loans for approved energy efficiency;
 - an independent list of energy efficiency commercially available technologies;
- We publicise success through case studies; and for those organisations who can demonstrate high standards, we award them our Carbon Trust Standard recognition of their carbon reduction achievements.
- We also work with policy makers to inform the development of policy and the design of new instruments – for example the UK Government's Carbon Reduction Commitment.



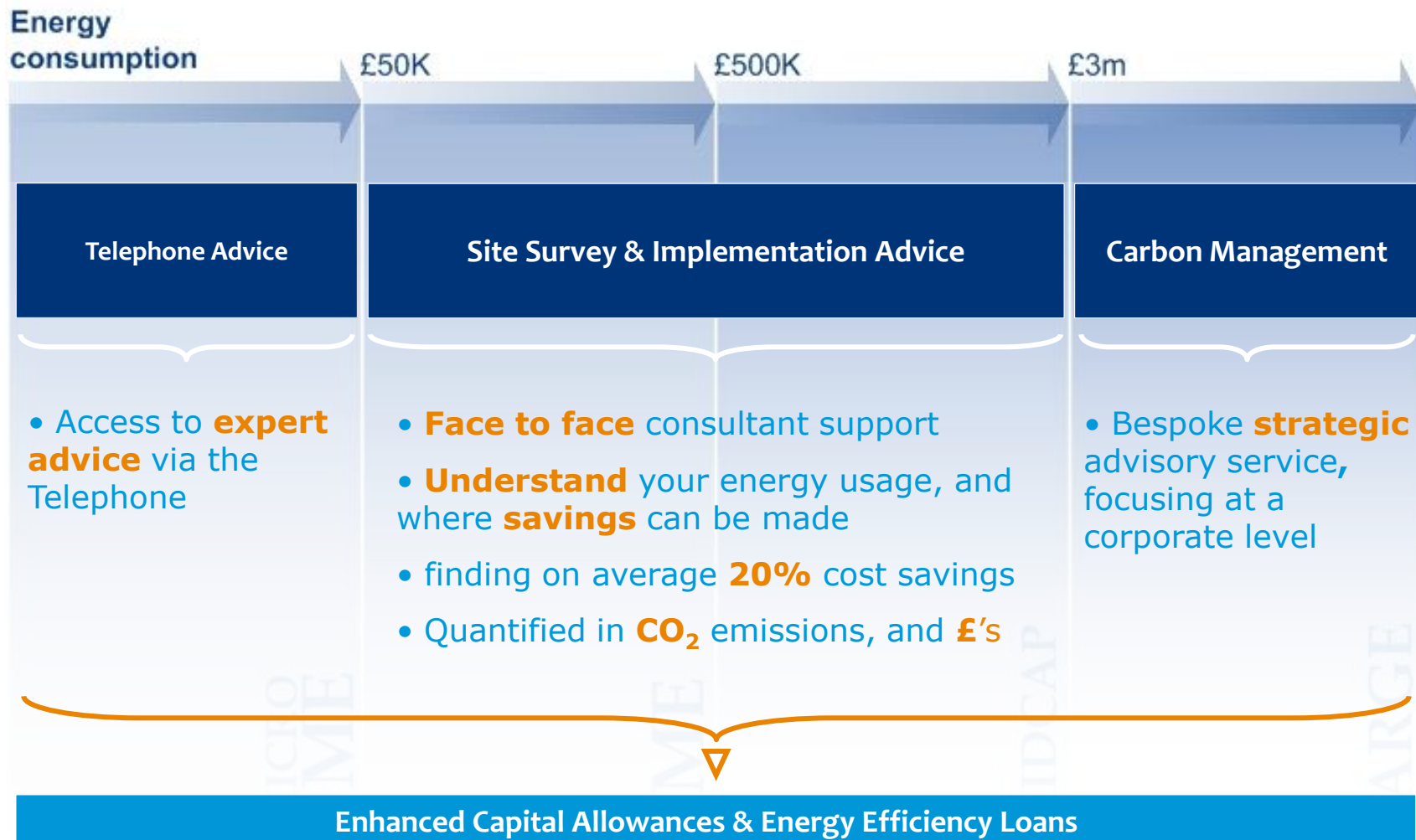
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Key elements of successful energy and carbon management



- Top level support and commitment:
 - the CEO and Board must endorse and support the decision to manage energy and reduce carbon emissions; and ensure the goals are understood throughout the company.
- What you cannot measure, you cannot manage:
 - carry out an energy audit
 - set up a monitoring and targeting system using half-hourly metering technology; sub-meter the main energy using activities;
- Adequate resources:
 - funding (either directly or via loans or via energy services providers);
 - staff;
 - knowledge.
- A systematic approach:
 - make the business case for energy efficiency and low carbon investment;
 - communicate effectively across the organisation;
 - recognise and reward progress;
 - learn through continuing professional development and best practice networks.



Carbon Now offer



A systematic approach to carbon management - the 5 step process



Start with a walk-round survey

- Identify where the energy is used: rank according to consumption and strategic use.
- Is that energy actually needed?
- Evaluate whether energy is being used efficiently
- Evaluate scope for improved controls
- Evaluate renewable and clean energy supplies

Set up monitoring & targeting system

Monitoring

To account for your energy use

Targeting

Assessing, setting & aiming for a particular consumption

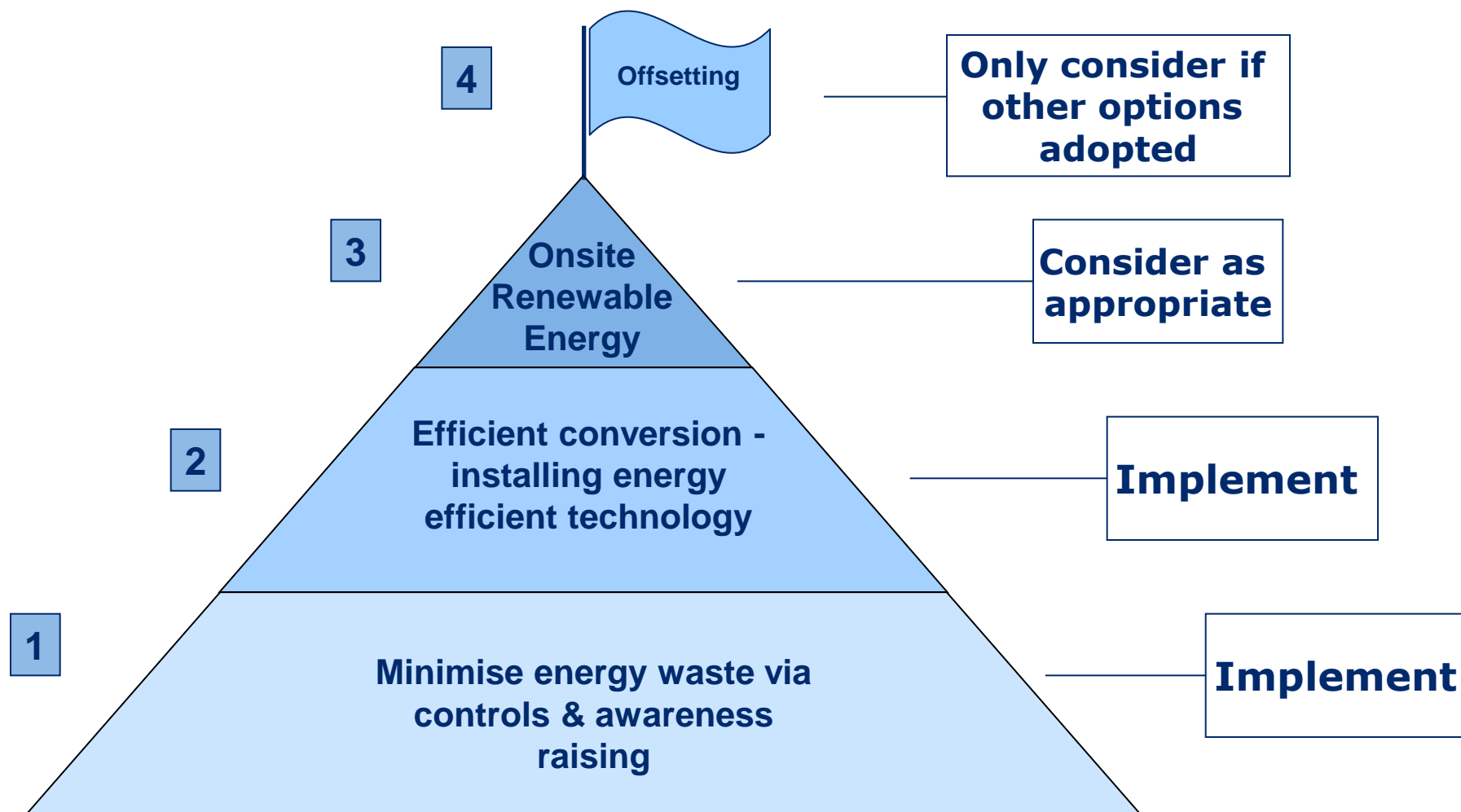
- Help to eliminate waste & reduce energy use
- Provide the information required to make informed decisions
- Improve motivation
- Typical cost savings from a M&T programme are between 5-10%

Assess performance



- Calculate 'Performance Index'
 - kWh/m²/annum
 - kWh/production unit
- Compare with published sector benchmarks
- Poor/Average/Good Performance
- Variance indicates savings potential

Consider the options to reduce emissions



Effective communication



Of what:

- regular information: by site and/or cost centre; energy consumption; influencing variables;
- performance comparisons between sites;
- unusual occurrences; exception reporting and plant failures;
- league tables; ranking of similar entities by variation from target; variation from standard or benchmark; cost, etc;
- success and learning by doing.

To Whom:

- the Board's energy management champion
- senior / Departmental Managers
- supervisors
- operators
- all other employees and contractors

International standards for energy management



- BS EN 16001 – a new European standard for Energy Management – specifies the requirements for an EnMS to enable organisations to develop and implement a policy, identify significant areas of energy consumption and target energy reductions.
- European Standard on energy audits - the Commission (DG TREN) is currently preparing a standardisation mandate for energy audit schemes.
- ISO 50001 – energy management standard will provide organisations and companies with technical and management strategies to increase energy efficiency, reduce costs, and improve environmental performance.

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Sainsbury's

Championing carbon management

- 81,000tCO₂ saved
- 15% reduction in energy costs at target stores
- Critical insight into overall carbon footprint helping to inform strategic planning





Sainsbury's

Championing carbon management

- » Leading supermarket chain
- » 18 million customers a week
- » Over 500 stores nationwide
- » Work with Sainsbury's included:
 - A full carbon review providing insight to drive its strategy
 - Testing new energy efficient technologies
 - Developing a carbon footprint model for milk to aid reduction in suppliers' emissions

"Our work with the Carbon Trust has aided us enormously, helping us to achieve our commitment to the continued reduction in carbon emissions. We have been able to exceed our reduction targets and ensure that we remain a responsible company in minimising our impact on the environment."

Julius Brinkworth

Head of Energy & Environment Sainsbury's

The Lowry Hotel

Reducing carbon emissions without reducing standards

- 363.5tCO₂ saved per year
- £37,498 annual cost savings
- Reducing environmental impact without compromising the 5 star experience



The Lowry Hotel

Reducing carbon emissions without reducing standards

- » Luxury hotel based in Manchester
- » 165 bedrooms and suite
- » 200 staff
- » Survey measures implemented:
 - A building management system
 - Energy efficient lighting
 - Activities to raise staff awareness
- » Awarded Bronze recognition by the Green Business Tourism Scheme, and aims to work its way up to Gold

“The entire team here at the Lowry Hotel has been working hard to reduce our carbon footprint, having set this as one of the key business objectives at the start of the year. We have also been very pleased by how much interest our guests have shown in becoming greener and more environmentally friendly.”

Jason Harding
General Manager, the Lowry Hotel

Maxim Logistics

Saving energy and
improving the work
environment

- Annual carbon savings
114tCO₂
- Expected 41% reduction
in annual energy costs
- Loan amount: £44,000
- Payback: Under 2 years





Maxim Logistics

Saving energy and improving the work environment

- » Storage and distribution
- » 100 employees
- » Based in Northamptonshire

Key survey finding:

- Lighting – accounted for 93% of annual energy spend

Action aided by Energy Efficiency Loan:

- Enabled purchase of Energy saving lighting system
- Provides improved working conditions for staff
- Equipment also qualified for 100% tax break as part of the Enhanced Capital Allowance scheme

“The on-site carbon survey we received from the Carbon Trust highlighted the necessity to monitor energy consumption to establish areas where quick wins could be made.”

Anna Zaka

Environmental Manager, Maxim Logistics Group

TSF Retail Solutions

Small investments can yield big returns

- Loan of £91,500
- Payback in under 3 years
- 235tCO₂ saved annually
- £33,000 annual cost reduction





TSF Retail Solutions

Small investments can yield big returns

- » Shop fitter and equipment provider
- » £25 million annual turnover
- » Based in County Durham

Purchase:

- Five fluorescent strips with energy efficient light fittings
- Steam-driven system with gas heaters and combination boiler
- Overhauled outdated premises and gained serious carbon and cost savings

“In this case the most energy efficient solution was also the most cost effective one. The loan application was straightforward, and the Carbon Trust dealt with any concerns quickly and efficiently.”

Ron Kirk

Finance Manager TSF Retail Solutions

Telefónica O2 UK

Real carbon
reduction savings
builds reputation

- 47,000tCO₂ saved over 3 years
- 18% energy efficiency improvements





Telefónica O2 UK

Real carbon reduction savings builds reputation

- » Leading communications company for consumers and business in the UK
- » Over 20 million customers
- » Stores nationwide
- » Carbon Management services provided to O2 since 2005
- » Driving energy efficiency improvements
- » Directly impacting bottom line
- » Achieved Carbon Trust Standard

"No one can claim you are creating 'environmental spin' when your performance has been independently verified by the Carbon Trust Standard Company."

Ronan Dunne
UK CEO Telefónica O₂ UK

Setting standards:



recognising real carbon reduction

- › Standard approach to organisation carbon footprint measurement
- › Rewards real carbon emission reductions and enables clear communication to customers and stakeholders
- › Early action benefits under the CRC Energy Efficiency Scheme
- › Currently awarded to over 150 organisations



first direct





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Contribution to competitiveness and profit

