The Carbon Challenge Toolkit

Demonstrating the co-operative difference by taking action to reduce carbon emissions

Co-operatives UK
THE UNION OF CO-OPERATIVE ENTERPRISES

Supported by

CARBON TRUST
Making business sense of climate change

Foreword

You will already know that climate change is the greatest environmental challenge facing the world today. The scientific consensus on the issue is unprecedented and the message about the future risks is now getting through to politicians and the general public.

The imperatives for action on climate change are being communicated by many others in the public eye – from David Cameron and Margaret Beckett, from David Attenborough to Al Gore – and I'm sure you don't need convincing of the seriousness of the issues we face, but also of the fact that we can take action.

Co-operators have always been at the forefront of actions for the collective good. Our record in addressing issues through our business practice and through our involvement with the communities we serve is exemplary.

The co-operative movement now has the opportunity to respond to this challenge in a way that again shows us again to be the leaders in responsible business practice and sets an example to others. It also makes very good business sense in terms of staying competitive, developing new ventures and using resources more efficiently.

I therefore urge you to respond to the co-operative carbon challenge.

Dame Pauline Green
Chief Executive

Helping you respond to the Carbon Challenge

With support from the Carbon Trust, Co-operatives[UK] is encouraging its members to respond to the Carbon Challenge by taking action to reduce their carbon emissions.

Carbon reduction can deliver a range of benefits, with improved competitiveness going hand in hand with social and environmental responsibility. To help its members realise the benefits Co-operatives[UK] has developed this guide to carbon reduction - the Carbon Challenge toolkit.

The Carbon Challenge 'toolkit'

This toolkit is designed to help your organisation respond to the Carbon Challenge. It includes:

- Background on the need for action on climate change,
- Practical information making the business case,
- A simple seven step guide to achieving carbon reductions,
- Guidance on how to report on KS&CP Indicator 9,
- Case studies of how co-operatives have realised the benefits.

Supporting guidance, together with a library of weblinks and case studies, is available at the special website www.carbonchallenge.coop

The Seven Steps

Forward looking businesses are increasingly recognising the importance of carbon management. The Carbon Trust has developed and refined a carbon management process in conjunction with 50 leading UK companies.

Based on the Carbon Trust's experience, and guidance from DEFRA, the Carbon Challenge encourages you to follow a seven step process which will help your organisation to understand and manage its carbon emissions.

The Challenge

Make a commitment to reduce your CO_2 emissions 20% or more by 2010

Demonstrating the Co-operative Difference

Throughout their 156 year history co-operatives have sought to improve quality of life and secure a future for communities, creating a virtuous circle that harnesses the benefits of commercial success for 'more-than-just-profit'.

In 2001 the Co-operative Commission recommended that co-operatives re-affirm the 'co-operative difference'. The Key Social & Co-operative Performance Indicators (KS&CPI) have been established as a tool for co-operatives to measure their 'co-operative difference'.

As a defining issue of our times climate change is a key area in which co-operatives should be seen to be taking the lead. Reflecting the importance of climate change KS&CPI Indicator 9 expects all co-operatives to report annually their carbon emissions.

But this is only the first step. The ultimate aim is for co-operatives to demonstrate year on year carbon reductions – acting as a movement to demonstrate business leadership.

The Seven Steps to Carbon Reduction

Step 1
Management-level commitment to action

Acknowledge the importance of the threat of climate change, and the risks it poses, by committing to carbon reductions of 20% or more by 2010.

Step 2
Appoint a 'Carbon Champion'

Appoint a 'Carbon Champion' who will be directly responsible for taking forward your organisation's commitment to carbon reductions.

Step 3
Calculate your carbon emissions

Establish systems to collect data on energy consumption across your organisation, in order to calculate your annual KS&CPI 9 carbon emission figure.

Step 4
Benchmark your performance

Use 'energy consumption benchmarks' to benchmark and make performance comparisons within your organisation and against competitors and 'best practice'

Step 5
Identify and evaluate the opportunities

Identify and evaluate opportunities to make carbon reductions in your organisation, as well as exploring the potential to involve members and other stakeholders.

Step 6
Develop an implementation plan

Based on the potential opportunities for carbon reduction, develop an organisation-wide implementation plan with carbon reduction targets.

Step 7
Monitor and report on implementation

Carry out year-on-year monitoring and reporting of performance against the organisation's carbon reduction target and implementation plan.

Step 1

Management-level commitment to action

Acknowledge the importance of the threat of climate change, and the risks it could pose, by committing to carbon reductions of 20% or more by 2010.

The first step towards carbon reduction is acknowledgement at a management-level of the threat and the need for action.

Climate change caused by greenhouse gas emissions is the greatest environmental challenge facing the world today. If left unchecked the impacts of climate change could be dramatic, destablising global weather systems and increasing desertification, flooding and habitat loss.

Melting of the ice caps is already contributing to rising sea levels and predictions suggest that global temperatures could increase by nearly 6°C. But whilst the UK might welcome warmer temperatures, in the developing world flooding and drought could put millions of people at risk.

The need for CO_2 reductions

The scientific consensus on climate change is now unprecedented and the message is now getting through to politicians. The debate has moved on to what we should do about it, and the focus for action is on reducing greenhouse gas emissions.

CO_2 emissions are responsible for over 80% of the greenhouse effect which is causing climate change. The main source of CO_2 is the burning of fossil fuels such as coal, oil and natural gas.

The UK is a signatory to the 1997 Kyoto Protocol with a commitment to cut CO_2 emissions by 12.5% by 2012. The Government's climate change strategy goes further than this, aiming to cut emissions 20% by 2010.

However, in the longer term much more substantial cuts are needed. The UN's Intergovernmental Panel on Climate Change – the leading global authority – has called for cuts of between 60% and 80% by 2050. The Government's 2003 Energy White Paper adopted 60% as the UK's target, establishing the vision of a 'low carbon economy'.

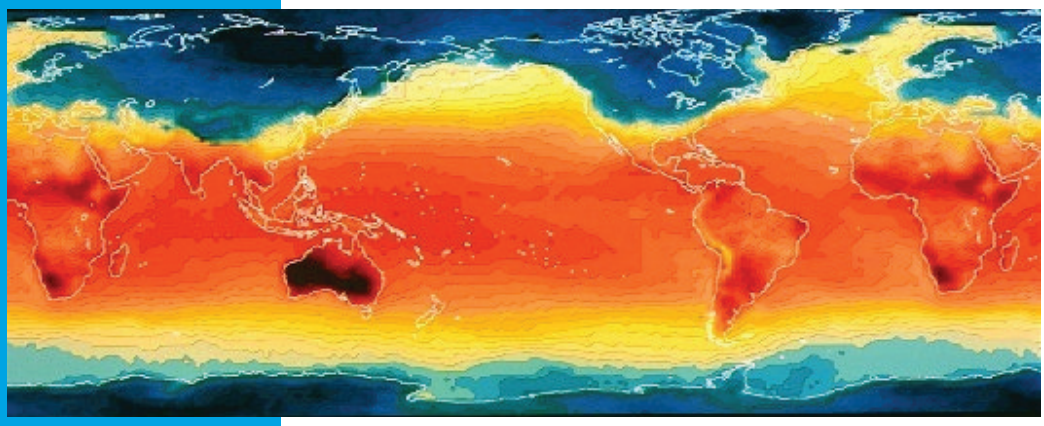
What could it mean for the UK?

The UK's Climate Change Impact Programme has modelled our future climate. This suggests that by 2080 there could be dramatic changes:

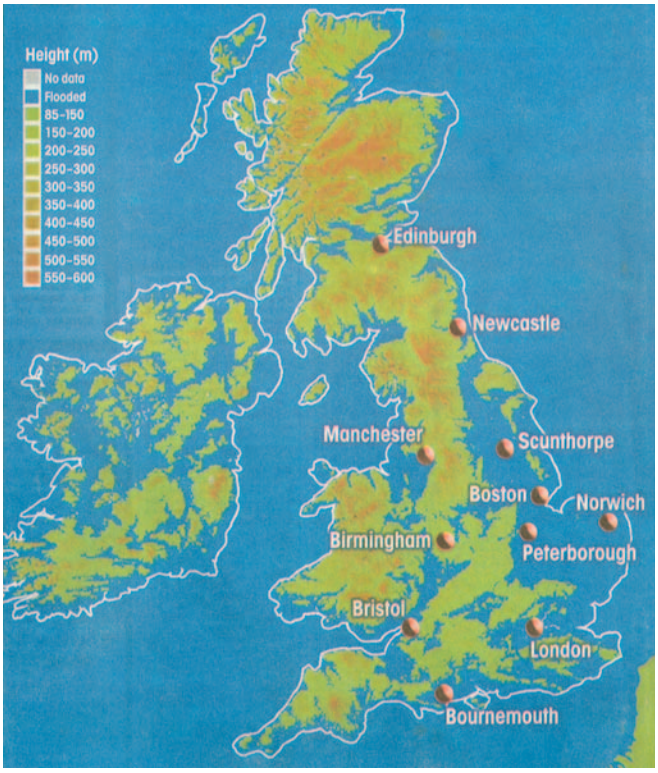
- Rising sea levels - Rise of between 0.3 and 0.7 metres resulting in greater flood risk and increasing salinity in low lying areas such as East Anglia,

"In my view, climate change is the most severe problem we are facing today, more serious even than the threat of terrorism."

Sir David King,
The Government's Chief Scientific Advisor



Satelite map of world surface temperatures (Science Photo Library)



Flood risk scenario 2200 (University College London)

- Higher temperatures - An average increase of between 2 and 3 °C resulting in more heat waves like that experienced in 2003, more frequent water shortages and a greater need for irrigation,

- Reduced rainfall - Up to 20% less annual rain fall resulting in more frequent water shortages and a greater need for irrigation.

The knock-on impacts for businesses and households are already being felt, with increasing insurance premiums for properties in low lying areas, increased need for comfort cooling and concerns about the capacity of refrigeration systems.

Paths to a low carbon future

Achieving significant reductions in carbon emissions will require a fundamental change in the way we use energy. We will all have a role to play in taking action on climate change, and in putting the UK on a path to a low carbon future.

It will require a combination of more efficient use of energy – through better energy management, more efficient technology and behavioural change – and a shift to renewable forms of energy – such as biofuels, wind and solar energy.

Future business risks

The business risks posed by climate change are significant, and provide a compelling business case for carbon reduction.

Minimise the risks by proactively managing your carbon emissions, taking a long term view of how carbon management can create opportunities.

Energy security

The era of cheap oil and natural gas is ending. With dwindling North Sea reserves the UK will increasingly be exposed to the volatile international energy market. Business is already feeling the impact of high gas and oil prices.

Carbon taxation

Environmental taxes to incentivise the 'low carbon' economy are on the increase. The UK already has a Climate Change Levy, which could rise further. In the future businesses will need to buy carbon allowances to cover their emissions.

Competitiveness

In the market for goods and services the need to stay competitive has become more important than ever. With energy likely to represent an increasing overhead, investment in carbon reduction measures will lend competitive advantage.

Corporate Responsibility

With increasing public scrutiny of business ethics, this is now high on the agenda. Carbon reduction is a high profile issue that stakeholders will expect businesses to respond to.

Protecting investments

Increasing insurance liabilities from flooding and extreme weather, and the need to future-proof buildings, retail formats and investments against future energy costs and climate change are becoming major considerations.

Step 2
Appoint a 'Carbon Champion'

Appoint a 'Carbon Champion' who will be directly responsible for taking forward your organisations' commitment to carbon reductions.

Once your co-operative has made a management-level commitment to take action on climate change you will need to appoint a 'Carbon Champion' to take forward your committment.

The Carbon Champion will need a clear remit to co-ordinate carbon reduction initiatives within the organisation, and this role may overlap with that of energy manager. The Carbon Champion's remit will need to cover a range of different activities, including:

- Development of the businesses energy and carbon management policies and systems,
- Year-on-year monitoring and reporting of performance against KS&CP Indicator 9,
- Benchmarking performance both within the organisation and against other busi nesses,
- Identifying and actively exploring a wide range of opportunities within the organisation to reduce carbon emissions,
- Development and roll out of an imple-mentation plan with clear targets and milestones.

To carry out their role the Carbon Champion will need sufficient resourcing and ability to influence spending decisions. This could range from budgets for training to decisions on major investments in buildings or technology.

In order to present coherent proposals for spending approval the champion will also require a clear set of criteria for evaluat-ing the cost and potential benefit of carbon reduction initiatives. These are discussed further under 'Step 6'.

One of the first responsibilities of the Carbon Champion will be to calculate your carbon emissions. Co-operatives[UK] has developed a simple tool for doing this, and this forms part of your annual KS&CPI submissions. Use of this tool is described under 'Step 3'.

Co-operative Insurance Society
Engaging and motivating the workforce

CIS has sought to encourage more sustainable practices in the workplace by a comprehensive programme of education and mentoring. They have piloted an 'Action at Work' programme, establishing a network of champions to take forward energy efficiency measures and raise awareness amongst colleagues.

Further guidance

Additional guidance on the role of energy managers and carbon champions, as well on the development of energy and carbon management policies and systems, can be obtained from the Carbon Challenge. Selected documents can be downloaded from www.carbonchallenge.coop

Step 3

Calculate your carbon emissions

Establish systems to collect data on energy consumption across your organisation, in order to calculate your annual KS&CPI 9 carbon emission figure.

The next step is to calculate your co-operatives carbon emissions. This can be done using a simple spread-sheet calculator which forms part of the KS&CPI reporting package.

The Co-operatives[UK] spreadsheet calculator is designed to calculate emissions from heating and electricity. Below you will find an example based on a hypothetical co-operative society - 'A.Good Society' - along with a few pointers for completing it.

All you need to do is to regularly read electricity and gas meters, and record oil use over a period of time – 12 months is best - and enter the numbers. The rest is done for you.

You will quickly notice that some forms of energy are more carbon intensive. Electricity is inherently inefficient, with most power stations being only around 40% efficient. Electricity-related emissions are therefore double those of natural gas or oil.

Obtaining good quality baseline data is an important first step in carbon management. This can be achieved manually, and for larger organisations with multiple sites it is now cost effective to consider half-hourly metering.

Further guidance

The KS&CPI guidance document 'Demonstrating Co-operative Difference' and the spreadsheet carbon calculator can both be downloaded from www.carbonchallenge.coop

KS&CPI carbon calculator example

3. You can put any number of months in here. A 12 month period will provide the most accurate results.

1. Insert the name of your Society here.

4. Record monthly meter readings, review your bills or ask your landlord.

2. Year or period covered by KS&CPI reporting.

5. Obtain from electricity bills or installed meters.

7. CO_2 calculations will automatically be entered once you fill in the 'grey' column.

6. Regular recording of this data will be necessary.

8. This will automatically update on filling in the form.

9. Notes – insert details of other items you monitor or use eg oil, biomass

Key Social and Co-operative Performance Indicators			Co-operative:	A Good Society
			Period:	Jan 2005 to Dec 2005
				Definitions/Notes
Indicator 9: CARBON DIOXIDE EMISSIONS ARISING FROM OPERATIONS				Net tonnes of CO_2 emissions associated with energy used for all on-site operations over one year
			Box Number	
Period of measurement (months)	12		73	indicate number of months over which energy use measured (see GD 9.4 for notes on sampling)
Amount of energy used/CO_2 produced during that period	Insert energy used:	CO_2 produced (tonnes):		relates to energy use associated with all on-site operations (e.g. offices, manufacturing, processing), but not transport. See GD 9.2
Electricity from the grid (kWh):	21,261,000.00	9,142.23	74	
Electricity from renewables (kWh):			75	
Natural gas (therms):			76	
Natural gas (kWh):	9,028,000.00	1,715.32	77	please insert energy used in either therms OR kWh
Gas/diesel oil (kWh):			78	
Gas/diesel oil (litres):			79	please insert energy used in either kWh OR litres
Total CO_2 emissions over period of measurement:		10,857.55	80	
Net tonnes of CO_2 emissions from energy use over one year:		10,857.55	81	use total in box 73 to estimate emissions for 12 month period
This box will show whether or not you are reporting on this indicator	Reported			

Please enter additional information on calculations and/or alternative meaures being used and any supporting comments in the space below (or attach surplus papers as necessary):

We are currently unclear on how much gas/diesel oil we use and whether any other fuel, including renewables is used. The Facilities Management Team will do an audit of energy use over the next few weeks and submit revised data as appropriate.

Goto next Indicator

Step 4
Benchmark your performance

Use 'energy consumption benchmarks' to benchmark and make performance comparisons within your organisation and against competitors and 'best practice'.

The next step is to benchmark the performance of different parts of your business. Staying competitive requires effective benchmarking of energy use and carbon emissions.

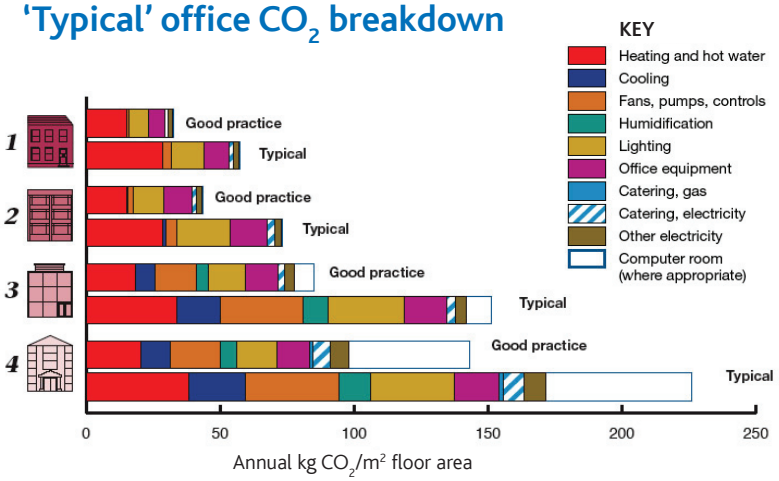
Performance can then be benchmarked against market best practice. Benchmarks can provide a powerful incentive for staff to improve performance and reduce energy use – as demonstrated by United Co-operative Society's experience.

The Carbon Trust publishes Energy Consumption Benchmarks which provide for simple performance comparisons. These are available for different buildings – from schools and offices to shops and factories. Accompanying guides provide more detailed breakdowns of 'typical' energy use and useful guidance on energy management.

'A.Good Co-operative Society'

As an example, we have benchmarked A.Good Society - a hypothetical consumer co-operative with 100,000 members. Its main focus is on retailing through a range of formats. It produces its own dairy products through partnership with a farmers co-operative, and it has a distribution warehouse with cold store.

'Typical' office CO_2 breakdown



Office typologies

1. 'Natural ventilated cellular'
2. 'Naturally ventilated open plan'
3. 'Air conditioned standard'
4. 'Air conditioned prestige'

Nominated representatives at each site managed or owned by the society record electricity and gas readings. They then send the data to the Facilities Manager at Head Office. The gas readings are in a number of different units which are converted to kWh for easy comparison.

Using this data the society can complete its first KS&CPI submission. The society emits a total of 10,858 tonnes of CO_2 emissions. The breakdown of energy use by building type can also be used to benchmark performance expressed as kWh/m^2. Other benchmarks or performance measures can be calculated, including kg CO_2/m^2 or kg CO_2/£ turnover for growing businesses.

A.Good Co-operative Society's energy and carbon emissions breakdown

	Sites	Total floor area	Electricity use			Natural gas use			Total CO_2 (Kg)	Specification
Offices		(sq m)	kWh	kWh/m²	CO_2 (kg)	kWh	kWh/m²	CO_2 (kg)		
Head office	1	2,500	245,000	98	105,350	205,000	82	38,950	144,300	Air conditioned standard
Sub-office	3	1,500	114,000	76	49,020	202,500	135	38,475	87,495	Naturally ventilated open plan
Retailing										
Supermarket format	10	10,000	11,200,000	1120	4,816,000	3,100,000	310	589,000	5,405,000	Gas heating
Small food format	50	15,000	8,200,000	547	3,526,000	1,800,000	120	342,000	3,868,000	Gas heating
Industrial										
Distribution	2	10,000	630,000	63	67,080	960,000	96	182,400	1,590,000	Gas heated with cold storage
Dairy	1	2,500	872,000	350	374,960	2,760,500	1104	524,495	899,455	

United Co-op Society

Benchmarking to stay competitive

United Co-operative Society benchmarked the energy use of their retail stores to the sectoral average, and discovered they were using 10% more energy than the market average.

As a result they initiated a programme of awareness raising and incentives amongst staff and investment in best practice technology. Over the last 5 years they have reduced energy use 20%, saving £13.5 million and over 7,000 tonnes of carbon.

The Society has won a number of national awards recognising its good practice. With energy price rises becoming a business risk energy management will enable their stores to stay competitive.

Benchmarking A.Good Society shows that its retail stores underperform by 10-15% compared to a 'typical' store, with significant differences in performance between stores. However, its offices perform well, 10-20% better than 'typical' offices - because of its modern office buildings.

Many different factors can influence performance between similar sites, from management practices and staff awareness to the age and specification of equipment and buildings.

Competitor benchmarking

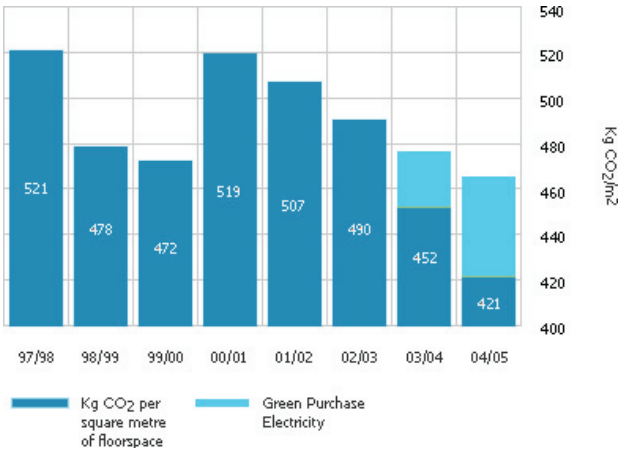
Sainsburys have established a carbon reduction strategy, with targets having been established to reduce emissions 15% on a 1997 baseline by 2008. Performance against this target for different parts of the business are reported annually.

The strategy has included awareness raising , upgrading and investment to improve the performance of its stores, low carbon heat and power generation, and green electricity purchasing.

The company's 2005 Annual Report gives a performance of 421 kg CO_2/m^2 for its stores, down from 521 kg CO_2/m^2 in 1997. Energy efficiency has saved £8m per annum since 1997.

A.Good Society's retail CO_2 emissions/m^2 are 20% lower than competitor Sainsburys because it has smaller stores with less carbon intensive electrical loads. This highlights the importance of comparing like with like, and understanding the factors that influence performance.

Sainsbury's annual CO_2 emissions



Further guidance

Further benchmarking examples, together with the Carbon Trust's energy consumption benchmarks and ECON or equivalent guides, can be downloaded from www.carbonchallenge.coop

Step 5
Identify and evaluate the opportunities

Identify and evaluate opportunities to make carbon reductions in your organisation, as well as exploring the potential to involve members and other stakeholders.

Once your have calculated your organisation's carbon emissions, and broken them down by activity and building type, opportunities to make carbon reductions can be identified.

We have highlighted five key areas of opportunity, in suggested order of priority (see over the page). The emphasis should firstly be on reducing energy use - opportunities 1-4 - followed by consideration of low carbon energy.

Scoping the opportunities

A scoping exercise both internally and externally should be carried out to enable opportunities to be identified. Internal scoping should involve energy, environmental and building managers, as well as employees and building occupiers. Techniques could include the Carbon Trust's 'energy walk-around'. As a starting point this enables wasteful practices to be identified.

Experience suggests that energy management and achievement of a culture change in energy use are a pre-requisite for further action to reduce energy use. They are relatively low cost, and will help to build confidence in the potential value of further action.

A range of guidance documents are available through the Carbon Challenge which can help identify technical options for different building types and commercial activities. These highlight measures that can be taken to improve the efficiency of technology and buildings. Good energy management will enable the effectiveness of measures to be monitored.

External stakeholders should also be engaged – including consumer and producer members, business partners and local co-operatives – to explore the wider potential for low carbon energy projects, as highlighted by Co-operatives[UK] report 'Energy: the future generation'.

Low carbon energy

Low carbon energy generation projects can create a range of benefits, including the potential for new co-operative ventures, but can involve greater risk and complexity. Large scale wind power, for example, is currently an attractive investment opportunity but obtaining planning requires risk capital.

Building integrated technologies are potentially easier to deliver. These could range from low carbon generation - including gas-fired CHP and biomass fired heating - to on-site renewa-

Southern Co-operatives
Carbon reduction opportunities

A Carbon Trust scoping exercise identified significant energy reduction opportunities. These ranged from good housekeeping and better management of store refrigeration and bakeries (at nil to minimal capital cost with short paybacks), to major investment in high frequency lighting and fridge night blinds (up to a quarter £m per measure with short to medium term paybacks). Implementation of all the measures would reduce their carbon emissions nearly 2,500 tonnes.

bles - such as solar photovoltaic modules, solar thermal collectors and geothermal heat pumps. Grants are available towards capital costs.

Switching to 'green' electricity can represent a short term low carbon energy supply option. It should not, however, be a substitute for measures to reduce energy use. Care should also be taken in the selection of a supplier.

Purchasing power should be used to support investment in new and genuinely renewable energy capacity, as demonstrated by Co-operative Financial Services contract with Ecotricity, which supports the construction of a new wind farm.

Further guidance

Guidance documents that can be downloaded from www.carbonchallenge.coop include:

- Carbon Trust 'ECON' guides for different building types,
- Co-operatives[UK] report 'Energy: the future generation',
- DTI's Low Carbon Building Initiative funding programme guide.

Midcounties Co-op Society

Investing in renewable energy

Midcounties Co-operative Society has invested £80,000 in Westmill wind farm co-operative, supporting a major new low carbon co-operative venture in their trading area, and providing them with a healthy 12% rate of return over 25 years. The 5 MW wind farm will save 10,000 tonnes of CO_2 a year.

The five key carbon reduction opportunities

1. Better energy management

Establishing systems to enable better monitoring and management of energy use, with a focus on high quality data collection. This can facilitate performance comparisons between different sites, and enable to impact of measures to be monitored over time.

2. Achieving a culture change

Engaging with and motivating employees to become aware of the need for carbon reductions and to reduce wasteful practices. Training and awareness raising can help to ensure that energy management is the responsibility of every employee.

3. Efficient technology

Replacing (or upgrading) inefficient technology with more modern technology that delivers improved performance based on recognised energy rating schemes. Dependant on replacement cycle and timescales for planned investment. It is important to keep track of advances in technology and to consider whole life costs.

4. Efficient buildings

Improving the energy efficiency of buildings by investing in thermal efficiency and reducing the need for mechanical HVAC through passive design. Older buildings will have the greater opportunities for improvement. It can also create opportunities to improve workplace comfort. It is important to consider whole life costs.

5. Low carbon energy

Investing in low carbon generation technology – such as SEDBUK A-rated boilers or Combined Heat and Power (CHP) – and/or renewable energy sources – such as wind, solar and biofuels. Opportunities could include self-supply from building integrated technologies, self-supply from an adjacent site, or participation in a community scale scheme.

Step 6
Develop an implementation plan

Based on the potential opportunities for carbon reduction, develop an organisation-wide implementation plan with carbon reduction targets.

Step 7
Monitor and report on implementation

Carry out year-on-year monitoring and reporting of performance against the organisation's carbon reduction target and implementation plan.

Once opportunities for carbon reduction have been identified, an organisation-wide implementation plan should be developed, seek to deliver carbon reductions against headline targets and milestones.

As a starting point Co-operatives[UK] is encouraging its members to adopt a headline target to reduce their emissions 20% by 2010. The plan should seek to implement a range of opportunities – covering the five themes highlighted. Management-level commitment to the plan will be required. It is important that criteria are agreed to evaluate opportunities. We would suggest that the criteria should include:

- Emissions savings: What emissions savings could it deliver?
- Cost: What are the investment requirements?
- Business benefits: What business benefits could it deliver?
- Technical feasibility: Is based on tried and tested technology?
- New ventures: Is there potential for new ventures and mutual trading?
- Timescale: What is the lead-time for implementation?

Sufficient resourcing should be assigned to support implementation of the plan and associated opportunities.

Year-on-year monitoring of implementation should then take place. Progress should be reported to the board and to Co-operatives[UK] through your organisation's KS&CPI submission.

Unicorn Grocery
Going for green

The Manchester-based worker co-operative grocery now runs on 100% renewable energy. It has invested in a wood fired boiler, making use of waste wooden pallets, and solar hot water collectors. Its electricity is supplied by Good Energy – an independent renewable electricity supplier. Energy efficiency is part of their approach. Efficient lighting is used throughout and they are exploring a green roof as natural insulation.

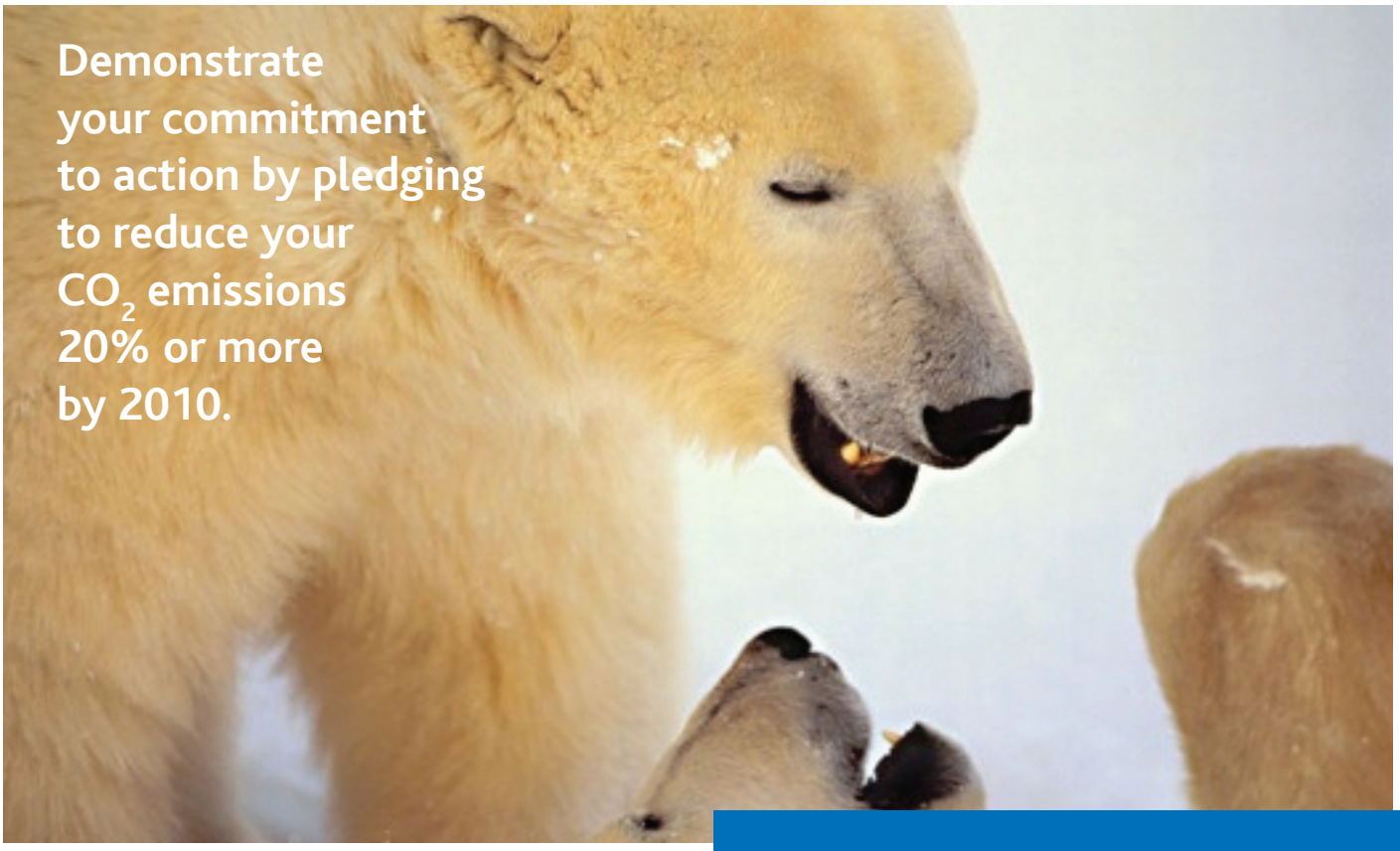
Further guidance

Best practice guidance can be obtained from the Carbon Trust www.carbontrust.co.uk. Selected documents can be downloaded from www.carbonchallenge.coop

Evaluating key carbon reduction opportunities

Opportunity	Example Measures	CO_2 savings	Capital cost	Business benefits	Project timescale
1. Better energy management	• Smart/remote metering in each store • Building Energy Management systems	10-20%	Low or no capital cost	• Basis for carbon reduction strategy • Effective management of energy costs • Enables benchmarking of performance	1-2 yrs to establish systems
2. Achieving culture change	• Staff training programme • Incentive scheme to generate ideas, encourage action and reduce waste	up to 10%	Low or no capital cost	• Engagement and motivation of workforce • Increased productivity and 'buy-in' • Reduces cost of making carbon savings	Initial programme 2-3 years
3. Efficient technology	• Compact fluorescent, metal halide lighting • Low energy refrigeration and air conditioning • Energy Star computers and VDUs	10-30%	Short to medium term investment (1-5 years)	• Reduced operating costs • Reduced exposure to business risks • Improved customer service	Dependant on replacement cycle for equipment
4. Efficient buildings	• Fabric improvements eg. insulation, low-e glazing • Daylight and occupant responsive lighting • Solar control eg. brise soleil • Heating systems eg. A-rated boilers, thermostatic controls	30-40%	Medium term investment (5 years+)	• Reduced operating costs • Improved working conditions • Increased lifespan for property • Future-proofing against climate change	1-3 yrs depending on scale of works
5. Low carbon energy	• Efficient heat/power generation eg. CHP • Building integrated renewable energy eg. biomass, solar • On-site or community-scale renewable energy eg. wind, biomass	20-100%	Medium to long-term investment (5,10,15 years+)	• Reduced exposure to fossil fuel prices • ROCs income • Exempt from Climate Change Levy • Attractive and stable returns • New ventures and mutual trading	1-2 yr building integrated eg. small CHP or biomass heating, solar thermal 2-3 yrs+ large CHP/biomass heating, merchant wind

Making a carbon reduction commitment



Art Wolfe (Science Photo Library)

To pledge a commitment please write confirming your CO_2 target and management sign-off. We also welcome updates from all our members on action they are taking.

Practical support

Carbon Challenge provides practical support for Co-operatives UK's members:

- Toolkit: A practical guide setting out the seven key steps towards carbon reductions,
- Website: www.carbonchallenge.coop provides a range of guidance material
- Seminars: Introducing members to the Carbon Challenge toolkit and the seven steps
- Pilots: Up to 10 co-ops will benefit from free strategic consultancy advice

Contact us

For more information about the Carbon Challenge and for advice and support, please visit:

www.carbonchallenge.coop

For all other enquiress please contact:

Helen Seymour
The Co-operative Carbon Challenge
Co-operatives[UK]
Holyoake House
Hanover Street
Manchester
M60 OAS

Tel. (0161) 246 2921
Fax (0161) 831 7684
Email helen.seymour@cooperatives-uk.coop

Co-operatives[UK]
THE UNION OF CO-OPERATIVE ENTERPRISES

Supported by

CARBON TRUST
Making business sense of climate change