Low Carbon Champions Evaluation Project

Final Report

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Contents

EXECUTIVE SUMMARY

THE LOW CARBON CHAMPIONS PROGRAMME

The Low Carbon Champions programme worked with 85 small and medium sized enterprises (SMEs) across Suffolk between 2010 and 2013, supporting them to increase carbon efficiency in their organisations. The programme, delivered by the Green Light Trust, worked with designated ‘champions’ within each organisation to support the development of policies, identification and implementation of carbon reduction actions – both in terms of behaviour change and infrastructure - and enhance understanding of how to continue this work beyond the programme. A blueprint was developed to support the dissemination of the work and an independent evaluation was carried out by Essex University.

The programme was well valued by participants and effective in using different incentives to attract a range of organisations to become and remain involved. Champions particularly valued the business oriented approach and the training mix - which included both building knowledge and mentoring to support specific changes within organisations.

BENEFITS OF THE LOW CARBON CHAMPIONS PROGRAMME

The programme has achieved significant replicable outcomes which will enable other SMEs to deliver similar benefits:

Carbon Reduction

It achieved a total carbon reduction of 1665t per year, with organisations saving an average of 30.2t, i.e.19% of their baseline carbon footprint through an equal mixture of infrastructural and behavioural changes.

In addition 775t per year of carbon offset were made as a result of the programme, meaning a total of just under 2,500t were saved or offset annually.

Business benefits

Organisations noted other business benefits in terms of creating a unique selling point and enhancing their brand, attracting customers and building networks.

Some businesses adopted a completely new perspective on how to run their business. For these businesses decisions are now influenced not solely by short term economic considerations but also by an understanding of sustainability issues, and a longer term consideration of their impacts.

Increase in environmental management processes

Organisations involved in the programme significantly improved environmental management processes and monitoring as a result of their involvement with the programme. By the end of the programme 79% had good policies and procedures increasing from 26% at the beginning.

In addition around half of the LCC organisations were monitoring energy use by the end, rising from very few doing so at the beginning.

Increase in individual skills and confidence to make change

The champions themselves gained in knowledge about environmental issues, skills in terms of environmental management, monitoring and influencing change. Their confidence in being able to put their knowledge into effect in their organisations also increased.

Increase in environmental concern

Half of the organisations increased their emotional commitment to the environment and to environmental change, half retained the same level of commitment. This was due to two reasons:

- 40% of organisations joined the programme already very committed to environmental change in their business practice and
- The 'green agenda' was not promoted as an end in itself, and was mixed in with messages about the potential for financial savings, business promotion and reputation, and ability to gain financial support for infrastructural changes.

The value of this approach is clear in the increased awareness of the business benefits of being green among the champions and their wider organisations.

Promotion to a wider network of businesses

LCC organisations promoted the value of and skills to effect carbon reduction to a wider business and local community through ethical purchasing, awareness raising and specific actions to support local environmental behaviour change.

REASONS FOR SUCCESS

Combined approach of Carbon Audit plus Mentoring and Grant

The evaluation has shown the programme to be effective because it offered a combination of different elements that fitted together well. The carbon audit gave information about the baseline carbon footprint and suggested actions to reduce it. Mentoring and training built on this to enable companies to develop business systems and time bound action plans which will ensure that developments are embedded and sustained. Mentoring also supported champions in influencing both colleagues and management. The availability of the grant acted both to attract organisations to take part and provided some financial support to make the changes suggested in the audit. The Suffolk Carbon Charter assessment acted both as an incentive to act but also a useful tool to track progress and set standards.

Comparison with a control group who only received a carbon audit and responsive follow up support shows the value of the (additional) mentoring and training in developing policies for environmental management, as the LCC showed higher percentage carbon reduction (22% compared with 14% for audit only) as well as higher proportions with good environmental management processes (96% compared with 25%).

Specific style, character and skills of the GLT and the LCC delivery team

A major reason for the success of the programme was the approach taken by the LCC team. Organisations valued their personal commitment to environmental issues, but also their openness to others not feeling the same The team's focus on ensuring that actions made business sense, as well as environmental sense, meant that LCC organisations became more aware of the potential of carbon reduction to both save money and also raise the profile of the business.

Having experienced and respected business development, environmental management and carbon reduction experts on the team was essential in supporting effectively and securing senior support.

Practical and individually tailored approach

The focus given to taking actions and producing concrete outcomes, from the first day of the training, alongside the provision of a range of tools, ideas and examples meant that champions felt the value of their time input to the programme from the start. This not only increased retention but also left them with useful tools and action plans they could put into practice and reuse beyond the life of the programme.

RECOMMENDATIONS

The Low Carbon Champions Programme is a unique and effective solution to a pressing global issue. It should be supported to continue and develop to reach further businesses. It showed short-term outcomes in terms of carbon reduction (as a result of actions taken and behaviour change) and immediate business benefits. The changes to environmental processes and increased commitment to carbon reduction within the organisations involved indicate a likelihood of sustained and increased action and change among participating organisations.

Section One: Introduction and Background to the Programme

1. THE LOW CARBON CHAMPIONS PROGRAMME AND EVALUATION

1.1. ABOUT THE LOW CARBON CHAMPIONS PROGRAMME

The Low Carbon Champions (LCC) project ran from Jun 2010 to Jan 2013 and aimed to develop the in-house capability of businesses to reduce their carbon emissions through developing Low Carbon Champions within the business who were helped to:

- assess their organisation's carbon emissions
- run carbon efficiency projects
- evaluate their success and investigate further efficiencies

The programme comprised a three day training and mentoring programme, the provision of a carbon audit carried out by Suffolk Climate Change Partnership; and encouragement to apply for the Suffolk ANSWER Charter Mark for Carbon Efficiency. Organisations taking part were also eligible to apply for a grant for a carbon efficiency related project.

85 SMEs and social enterprises from across Suffolk enrolled on the programme including organisations from most sectors of the economy.

The whole programme was overseen by a Steering Group comprising officers from Suffolk County Council, Suffolk Chamber of Commerce and Suffolk Climate Change Partnership, this group was also responsible for commissioning and overseeing the evaluation.

1.2. ABOUT THE EVALUATION

The evaluation of the Low Carbon Champions project was carried out by Essex Business School (EBS) at the University of Essex. It ran from Sept 2011, and will continue beyond the end of the LCC programme itself (reporting in March 2013) as academic analysis and dissemination will continue. The evaluation started later than the programme itself, as EBS took the work over when the previous evaluation team was forced to withdraw due to issues unrelated to the project.

1.2.1 Aims and limitations

Aims

The aim of the evaluation was to assess the extent to which the project met its aims, and specifically to identify factors that enhanced or detracted from its success. The design of the evaluation also considered the outcomes and emphasis of the main stakeholders on the project listed below, insofar as they affect evaluation design:

European Regional Development Fund (ERDF)

- Improving resource efficiency

- Creating positive management practices to enhance carbon reduction

Suffolk County Council and Suffolk Climate Change Partnership

- As above but also creating and supporting a network of SMEs carrying out good practice in carbon reduction

Carbon Trust

- Understand the relative value of the specific approach taken by LCC (combining carbon audit, mentoring champions and grants) compared with less time intensive approaches

Green Light Trust

- Assess whether the project met its aims, but also to identify the particular factor that worked in attracting SMEs to get involved.

In addition, for all of these, there was the need to support the LCC programme to create a simple tool-kit and blueprint that showed how best to develop the project to make it work for all stakeholders including SMEs. This will allow the project to be rolled-out into the rest of the region.

Limitations

This piece of work, like any evaluation has its limitations and the report must be read in this light.

- It is evaluation which by design focuses more on what is expected to happen, than discovering unexpected outcomes. Although we have endeavoured to note additional outcomes, the lens through which everything is considered will inevitably limit this.
- There are inherent tensions between research and output delivery for projects of this type. In order to fully understand the sustainability of such programmes which work with organisations over a long period of time, it is necessary to be able to track experiences for several years. This is a particular problem for the later cohorts for many of whom not enough time has passed to make a reasonable assessment of initial actions taken, never mind sustainability for any length of time. Grant applications and spend have particularly clustered towards the end of the programme meaning that data analysis has had to be clustered but also indicating the potential for higher carbon reduction figures were organisations to be asked in 6 months time. We have attempted to overcome this in two ways:
    - Focus on the experiences and feedback from the earlier cohorts where more time has elapsed.
    - Look at measures of sustainability as identified in other models, specifically levels of engagement and buy-in from staff and management.

Ideally however evaluation (carbon re-audit and sample telephone interviews) should be repeated in 12-18 months, to enable assessment of both full effects and sustainability

Data constraints

Delayed start to EBS involvement

Originally evaluation was designed to start at an early stage of the project which would allow for a more longitudinal data collection and theory testing and also allow observation at all cohort training sessions. As EBS was appointed one year into delivery of the project, earlier cohorts had finished training by the time EBS came on board thus affecting access to the full range of data. Nevertheless these cohorts have been fully contacted and included in the evaluation.

Monitoring and measurement limitations

LCC organisations were asked and encouraged to monitor their carbon reduction, particularly through the provision of high quality baseline data via the Groundwork Carbon Audits and the development of a bespoke online Carbon Log. However the carbon log in particular was not fully used, and organisations tended to do monitoring only on the areas they found most interesting, and often only to provide evidence to gain the Suffolk Carbon Charters. This is understandable on the part of organisations with other pressures but it did mean that accurate carbon reduction data collection was not available. This issue has been largely overcome through remedial data collection via a 're-audit' but it needed to be completed relatively late in the programme leading to delays in analysis. In addition it raises concerns about the sustainability of LCC organisations' monitoring activity.

1.2.2 Methodology

A mixed method approach was adopted for this study using:

- analysis of secondary data (documents from LCC, LCC customers, data from LCC customers, data from associated programmes)
- collection of primary quantitative data (self-assessments from LCC customers, online questionnaires, data on carbon reduction)
- collection of primary qualitative data (interviews with LCC customers and LCC team, observations of LCC customers and LCC team, online questionnaires)
- consideration of the wider literature and programme environment (online literature review)

Analysis was carried out using the most appropriate tools for the data. Quantitative data analysis was carried out using the SPSS v19 data package, content analysis and basic discourse analysis was carried out on the qualitative data.
Data collection settings and sources are listed below, overall the evaluation team had direct contact (did primary data collection) with 66 of the 85 champion organisations (including multiple contacts with multiple champions in some cases). A list of data collection methods and participants is available in Appendix 1

1.2.3 The Research Team

The evaluation was carried out by Essex Business School at the University of Essex, Essex Business School has an international reputation for cutting edge research in Accounting, Finance, Management and Entrepreneurship, addressing important issues and problems faced by commercial businesses, public sector bodies and not-for-profit organisations.

The research was designed and led by Ruth Melville an EBS graduate researcher and freelance consultant researcher, with over 15 years of experience in research and evaluation, evaluation management and evaluation framework design in the voluntary and statutory sectors. The research was supported by: Professor Steffen Böhm (academic lead and advisor), his academic expertise is in the social, ethical and environmental consequences of business and management. He has recently written on issues such as the sustainability of business, green and ethical management and marketing and the social and environmental impacts of carbon markets. Marit Böker (research assistant), a postgraduate student in Political Theory at the University of Essex researching contemporary democratic theory in relation to sustainability. She holds a Masters degree in Environmental Governance from the University of Essex.

2. THE CONTEXT OF THE LOW CARBON CHAMPIONS PROGRAMME

The UK has been leading international efforts to reduce global greenhouse gas emissions. It has signed up to international climate change treaties, such as the Kyoto Protocol, and it has been one of the few countries in the world that have passed a Climate Change Act (2008), setting out a tough challenge for the UK to lower its carbon emissions by at least 80% by 2050 (compared to the baseline of 1990). The UK is currently outperforming many OECD countries in terms of reaching its Kyoto targets for reducing carbon emissions, although a large proportion of this success can be attributed to the switch from coal to gas in the early 1990s, changes of economic policies that have led to the closing of heavy industrial plants, as well as the recent severe economic recession. That is, explicit climate change policies have been relatively slowly introduced, manifested by the fact that the energy sector is still overwhelmingly dominated by fossil fuel usage and the share of renewables is lacking behind other OECD countries.

National UK climate change policies have so far mainly focused on providing incentives for large firms to decarbonise their production. Less emphasis has been on small and medium-sized enterprises (SMEs), which nevertheless account for a big proportion of overall business activity, employment and hence carbon emissions. So far SMEs have largely been encouraged to reduce their carbon emissions and reduce their wider environmental impact voluntarily. Rather than introducing tough climate change targets that SMEs would have to meet, the UK Government’s approach has been largely a discursive one, encouraging enterprises to engage in programmes of ‘resource efficiency’, unlocking often enormous potential to reduce their cost bases.

More recently, however, some local governments have started to formulate more ambitious policy goals geared towards the ‘greening’ and ‘decarbonisation’ of the economy and particularly the SME sector. The New Anglia Local Enterprise Partnership (LEP) for Suffolk and Norfolk, for example, has recently published a Green Economy Pathfinder Manifesto setting ambitious goals for establishing a green economy in the region, which comprises 60,000 enterprises, mainly SMEs.

Given the recent emphasis on the 'green economy' and 'green growth', and given the national importance of the SME sector, it is somewhat surprising that not more efforts have been undertaken to work specifically with SMEs to 'green' and 'decarbonise' their business operations. Our extensive 'grey literature' search[1] has revealed that there are no UK-based schemes that are comparable to the LCC project. The only relevant projects that might be seen as vaguely comparable are the following:

- The Mayday Network (www.maydaynetwork.com). This is largely a non-competitive network website, focused on companies from micro size (≤ 10 employees) to large (≥ 500). Network members are invited to post 'journey stories' on the website, resulting in a multitude of case studies, all reporting progress being made in reducing carbon footprint, but with various rates of success. The value of these 'stories' is limited, as there is a lack of consistent evaluation and cross-case data analysis.
- South East Business Carbon Hub (https://southeastbusiness.carbon-hub.com). Project date: 2007-2013. Free online service offering assistance to South East SMEs to measure and reduce their carbon footprint. Criteria: ≤ 250 employees, turnover ≤ £30 million, or balance sheet ≤ £42 million, ≤ 25% controlled by non-SME firms. The South East Business Carbon Hub is part funded by the South East ERDF Competitiveness Programme 2007-13.
- Low Carbon KEEP Programme: (http://www.anglia.ac.uk/ruskin/en/home/microsites/low_carbon_keep.html). Funding scheme for projects 4-18 months in length. Participating companies or organisations work closely with a university and employ the services of a university-affiliated graduate for the duration of the project. The graduate spends 100% of their time at the business but is an employee of the university. Available to micro organizations, SMEs ≤ 250 employees, public sector, not-for-profit organisations and charities. As the project has only started recently, its impact is difficult to assess at the moment.

While the above projects all have some focus on reducing carbon emissions of SMEs, none of them use the 'champion' approach taken by the LCC programme. We conducted a large number of searches[2], which didn't find any material that is directly applicable to Suffolk LCC. This hence highlights the unique approach of the scheme, as no other has specifically taken a 'champion' approach.

3. ABOUT THE PARTICIPANTS

3.1. LCC ORGANISATIONS

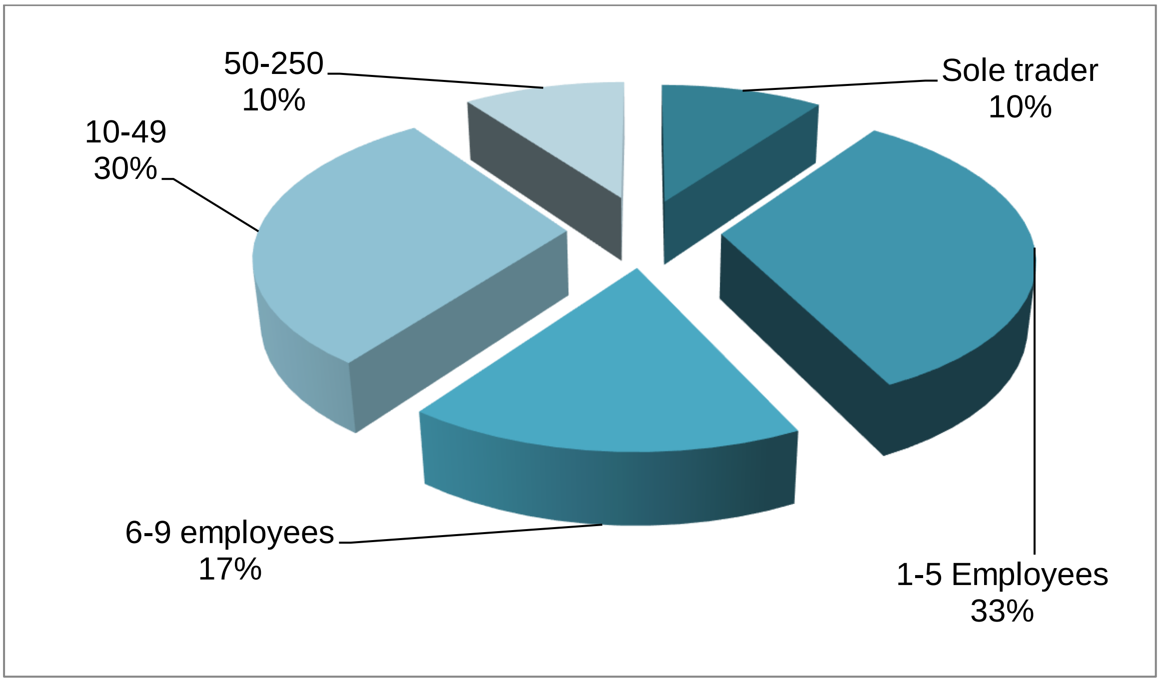
LCC organisations were spread widely by district, sector and size (within Suffolk SMEs).

[1] We are grateful to Will Lewis for his work on this. See Appendix 2 for further details
[2] See Appendix 2 for further details including list of searches used

By definition all were small to medium enterprises[3] with under 250 employees (and turnover under €50m), 15 (18%) were registered as Social Enterprises. Around two thirds were in the service sector (including arts and tourism, education and health), a quarter in the professional and support services and the rest in manufacturing/production. Around half self defined as being at a mature stage in the business, with one third in a growth stage, 16% self-defined as start ups.

As can be seen below, the 'micro-business' – under 10 employees – was by far the biggest group including a lot of very small businesses (44% had 5 or less employees). There were relatively few medium sized enterprises (50-250 employees).

Figure 1: LCC organisations by number of employees



For further analysis of the types of businesses see Appendix 3 below

3.2. LCC CHAMPIONS

Organisations nominated two types of roles with respect to the LCC programme: sponsors and champions. Sponsors were high level managers of the organisation (apart from in particularly large organisation this was usually the managing director/chair/chief executive, in some it was the lead for resources/estates etc). Sponsors took responsibility within the programme to sign off work and to ensure the champions were supported in their efforts towards organisational change. Sponsors tended to have at least one meeting with the GLT team but were encouraged to do more if they wanted. They were asked to nominate at least one member of staff as the LCC champion, and support them to have the time to do their work, as well as access to policy and strategy levels.

[3] The EU definition of SME refers both to number of employees AND business turnover see: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm however as turnover was not routinely collected for the LCC project we have used employee number alone, as a proxy.

The selection of champions was discussed between the GLT LCC programme manager, and the sponsor and it was seen as vital that the right person was selected in terms of their role in the organisation and their personal characteristics. Some organisations used this as an opportunity to encourage the professional development of a key individual but in most cases the selection was made based on either the job title of the champion, or their personal stance and commitment (or both). The GLT team emphasised that getting someone in the appropriate role was far more important than getting someone who was already committed to sustainability.

Several of the LCC organisations nominated more than one champion (24% had two, 4% had three and one organisation sent five), and in over 75% of cases[4] the champion was also the sponsor, so the roles weren't always clearly delineated.

Ascertaining what the 'correct' champion would be was very dependent on the organisation's style and composition. For example, for many it was a relatively senior officer – eg lead for resources/deputy manager/manager – but for others there was an emphasis on the person with best contact with everyone in the company. In at least two cases the champion was a relatively junior member of staff but part of the on the ground workforce, and the sponsor worked with them to ensure that the low carbon message was spread to the 'shop floor', and that the realities of operationalising changes on the 'shop floor' was passed back to management.

The key issue in terms of making the champion role work was the influence of the champions. When asked about their influence in their organisation it was found that in general they were very influential people, whether or not they were senior (86% had a moderate to very high level of influence- see table 1below).

We calculated 'scores' below, based on the following questions[5] asked of champions about their role in their organisation:

A. I can strongly influence decisions about the direction and operation of the company
B. The MD of the company is very supportive of my LCC work
C. I have regular contact with most people in the company
D. I have an easy way to communicate with most people in the company

Table 1: Influence Levels of Champions (self-assessed)

Score (A+B+C+D)	Frequency	Interpretation	Proportion of champions in each group
-6	1	Little or no influence	3%
2	2	Some influence	11%

[4] The figure is particularly high as there were a lot of very small companies and sole traders where clearly the only appropriate person for the roles was the same person.
[5] With score based on the sum of the ranking of questions with strongly disagree = -2, disagree = -1, neither = 0, agree = 1, strongly agree = 2. For full record of answers see Appendix 3 below

3	2		
4	4	Moderate to high influence	43%
5	4		
6	6		
7	2		
8	16	Very high level of influence	43%
Mean score	**5.9**	**<moderate to high level of influence**	

3.3. RETENTION RATES

For a project which required organisations to give 3 full days of staff time, plus additional time to take actions and management or board time to agree strategies, the LCC had a reasonable retention rate.

Of the 86 organisations that fully enrolled on the process (ie were recruited and had at least one of audit, training days or one to one visits), 67 (80%) either finished or were still actively taking part by the time the project ended.

Of the 17 who left, 9 only had an audit and then left (so have been excluded from calculations about the impact of the full programme), the other 8 left during or after the training period, reasons for leaving were failure of the company, lack of interest or time and due to the champion leaving the organisation.

For the purposes of the evaluation, where possible data from organisations which left the programme after training has been included to give a full view of the results of this intervention.

4. WHAT WOULD ‘WORKING’ LOOK LIKE?

4.1. AIMS OF THE PROJECT FOR STEERING GROUP AND OTHER FUNDING STAKEHOLDERS

The business case for the LCC states the Low Carbon Champions project (LCC) intends to develop the in-house capability of businesses to reduce their carbon emissions, pointing out that “The Carbon Trust calculates that businesses waste 26% of all energy and with small scale adjustments and better energy efficiency businesses could achieve a 15% reduction in energy waste. The Low Carbon Champion project will target the beneficiary organisations with achieving these reduction rates during the project's lifespan."[6] That is focussing on carbon reduction from efficiency measures as a target. However it also fitted within Suffolk's Community strategy (Transforming Suffolk 2008-2028), which takes a wider view on sustainability, and the project aimed to support two of the priorities in Transforming Suffolk: 'The Greenest County' and 'A Prosperous and Vibrant Economy'.

The project is also clearly identified throughout aims and funding agreements as a pilot or demonstration project, with the business case stating the end goal as being "the development of a model (a blue print of success), and its dissemination, that can guide further projects throughout the region."[7]

Interviews and observation data from the steering group identified a further aim of creating a group of 'champion' businesses who would disseminate the message in appropriate language to their peer groups across their sectors, both within the county and beyond.

In conclusion, for the funders and steering group, the aims of the project were to promote business change to ensure carbon efficiency, within a growth economy, and to create a blueprint and set of advocates to champion this further into the business community.

4.2. AIMS OF THE PROJECT FOR THE GREEN LIGHT TRUST

In addition to the aims above, the GLT and specifically their business and development team had through experience developed a model of business focussed mentoring which aimed for sustained business change. They felt that while audits and other short term (and cheaper) intervention can lead to businesses taking immediate carbon reduction measures, these are often not sustained. In order for there to be a change in the way the business considers its sustainability there needs to be more in-depth work and in particular support given to embedding environmental management systems and monitoring, and in helping businesses recognise the wider business benefits of carbon reduction and sustainability.

There was also a potential for the GLT as an organisation to offer further programmes in the county and beyond, if it proved successful, which is both a commercial outcome and (for a not-for-profit organisation) an ethical one as more effective and efficient use of businesses' time and public funding.

4.3. AIMS OF THE PROJECT FOR CHAMPION ORGANISATIONS

Sponsors and/or champions were asked their motivations and aspirations for taking part in LCC when they signed up, these have been categorised (they gave a discursive answer) to discover the main aims, all but three had multiple aims, but as shown in table 2 below, the main areas were around saving money (often expressed as bluntly as that) and being green (expressed as "be greener", "Do the right thing", or situating joining the programme within a broader ethical and sustainability stance).

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[6] From Low Carbon Champions Business Case, for ERDF Competitiveness Operational Programme 2007 – 2013,
[7] From Low Carbon Champions Business Case, for ERDF Competitiveness Operational Programme 2007 – 2013,

Other areas mentioned frequently included looking for ideas and information (e.g.”specialist advice on energy”, “Learn more about what to do and how to do it”, “get better understanding of opportunities to be more sustainable” etc), and communicating with and influencing others, including staff, customers and the wider sector. The issue of competitiveness was also raised (e.g. “improve procurement as supplier”, “Increase market share by attracting green market/customer” as well as mention of use within their brand and having a USP). Accreditation was mentioned by a fifth of people, and there was some mention of planning or developing specific strategies for carbon reduction or monitoring. 15% mentioned specific physical improvements, clearly referencing the fact that a grant was available.

Table 2: Aims of LCC for participating organisations

Category	Mentioned by
Saving money	67%
Be Greener	63%
Ideas/Information/Support	36%
Communication and influencing others	33%
Competitiveness and attracting customers	24%
Accreditation	22%
Planning	15%
Improving physical infrastructure	15%

Section Two: Did it work? Outcomes of the Programme

5. CARBON REDUCTION OUTCOMES

5.1. INTRODUCTION

Carbon reduction[8] is a central aim of the Low Carbon Champions programme and any emotional or process change is only as useful as its outcomes in effecting practical carbon reduction.

In terms of carbon reduction, we decided to focus on distance travelled: the reduction (percentage and absolute) achieved during and after LCC involvement. Thus we did not include actions taken prior to involvement with the LCC or the potential of a champion to reduce carbon (e.g. an already very 'green' home-worker might be unable to actually do much to reduce carbon emissions, in our measures this would lead to a low 'score').

The focus is on carbon reduction, fitting with the programme and funder priorities, but we have taken into account in discussion other environmental benefits with the view that for organisations, making any change in terms of environmental protection and management is likely to make them more open to making further changes.

There are a number of provisos to this: the ability to measure and thus justify the level given; the way in which longer term projects are accounted for; and the lack of ability to disaggregate impacts of other projects and factors. On the whole however, with the need for a realistic measure of carbon footprint reduction, this was proposed as the best definition.

Rankings for carbon reduction:

0. Not chosen to or been able to take any actions
1. Minor actions, likely to be 1-4% carbon footprint reduction (CFR)
2. Actions estimated as leading to a 5-9% CFR
3. Actions estimated as leading to a 10-14% CFR
4. Actions estimated as leading to a 15-19% CFR
5. Actions estimated as leading to an over 20% CFR

5.1.1 The Dataset

In terms of understanding the impacts of the programme, in particular carbon reduction, but also business benefits and environmental management, we reduced the cohort of organisations to be considered. While 85 enrolled on the programme, as explained in 3.3 above, 9 left without receiving more than an audit – thus not useful in considering the

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[8] For the purposes of this report the focus for 'carbon reduction' is reducing greenhouse gas emissions (as per EU targets – see: http://ec.europa.eu/clima/policies/brief/eu/index_en.htm) but we also take into account the development and use of renewable energy and carbon offsetting (clearly noting when these are or are not included). Wider actions that are likely to enhance environmental sustainability but which can't be directly linked to carbon equivalence due to lack of measurement etc are mentioned discursively but not included in the calculations.

additional value of the 'audit-plus approach of audit, training, mentoring, grant and charter opportunity. We have also excluded Green Light Trust itself (one of the LCC organisations) as we lacked any ability to disaggregate the impact of the LCC programme as a recipient versus deliverer.

Thus we start with a sampling frame of 75 organisations. In terms of carbon reduction, we needed to have data on the organisations included. So we were forced to exclude 20 organisations in the following categories:

- No audit or other source of baseline data
- Unable or unwilling to respond to requests to provide data (see methodology below)
- Had audit with no quantified targets for reduction
- Were removed in order to remove bias in the final dataset.

Finally a total of 55 organisations have been included in the carbon reduction calculations

For all organisations that left the programme, we have assumed a zero carbon reduction, having first checked there was no evidence of carbon reduction at an interim point.

We were concerned that overall figures might under-represent due to exclusion of a large reducer due simply to lack of availability. Analysis of their contribution to baseline total carbon footprint showed this not to be a concern(see Appendix 4 below for more details)

5.1.2 The Method

The research team had originally understood that LCC organisations were recording their carbon reduction (by means of the carbon log) over the course of their involvement. Thus we had hoped to be able to use actual carbon reduction data for this analysis. This recording was not carried out in more than a minority of cases, with only 3 or 5 organisations recording data over more than one year (thus giving a baseline and follow up). In addition it was noted that the time period of the work – 2008 (for earliest baselines) to 2012 was a particularly unusual period including extremes of temperature and an economic downturn, thus meaning that any treatment of figures would have had difficulty disaggregating external factors which would completely overwhelm any behaviour or carbon reduction action changes.

Following discussion with the GLT and analysis of the data available it was agreed between EBS and the Steering Group that instead the carbon audit – received by the majority of LCC organisations and in most cases offering a clear set of actions and Carbon Trust accredited potential carbon reduction should be used. Thus all organisations were contacted in summer and again in late 2012 and asked specifically about actions taken against the carbon audit. Data was also taken from other externally verified sources particularly returns on grants and applications for the Suffolk Carbon Charter.

This 're-audit' audit was carried out initially by GLT (summer 2012) but for the later audit EBS carried it out ourselves and made a judgement on whether the action taken constituted action on the point or a fraction thereof (or didn't count). Both percentage of actions taken and assumed carbon reduction are used in the analysis below.

5.1.3 Behaviour change versus tangible actions

Carbon audits suggest a mixture of physical investment actions - henceforth ‘tangible actions’ - (e.g. changing light bulbs, replacing a boiler, putting in pV energy cells) and behavioural changes among staff and management. In order to take into account the inherently less accurate nature of calculations on carbon reduction relating to behaviour change estimates we have reported these separately as well as within the total. This is also true of carbon off-setting.

The following actions have been categorised as ‘behaviour change’:

- Staff or customer awareness raising campaigns etc
- Good housekeeping
- Car-share, bike use and other related schemes
- Driver training and fuel awareness (unless documented evidence of mileage reduction)
- Monitoring and measurement

5.2. TOTAL AND PERCENTAGE CARBON REDUCTION

The total baseline carbon footprint of the LCC organisations was just under 12,860 tonnes, as a result of actions taken (including behavioural and concrete actions), this dropped by 1664.6 tonnes or 13% of the total.

There were an additional 775 tonnes of annual offsetting put in place as a result of the LCC programme, including this the baseline carbon footprint would be reduced by 19%.

The mean reduction made (per organisation) was 30.3t or 19% (44.4t or 45% including offsetting), with a range of 0 to 776.5t (this largest figure does not include offsetting).

The reduction arose from concrete and behavioural actions in roughly equal proportions (about 6% of the total drop was from each), however more organisations took actions around behaviour change (47 out of the 50 who took any action, compared to 38 taking concrete actions). This reflects the LCC approach of suggesting working on behaviour change (usually the most cost effective activity) as a first step, which in most cases is followed by concrete actions.

Table 3: Carbon Reduction Figures

	Reductions arising from concrete actions	**Reductions arising from** behaviour change	Total Reductions **(concrete actions and behaviour change)**	Offsetting	Total reductions plus offsetting
Total Carbon Reduction (tonnes)	778.4t	738.4t	1164.6t	775	2457.3t
Total as % of total baseline	6.1%	5.7%	12.9%	6%	19.1%
Average reduction (tonnes)	14.3t	14.8t	30.3t	193.8t	44.4t
Average % reduction (per organisation)	**12.9%**	**6.2%**	**18.8%**	**361%**	**44.7%**
Median Reduction	1t	1.3t	4t	155t	4.1t
Standard deviation	42.7	72.3	106.8		2439.6
Number of organisations who have taken this sort of action	38	47	50	4	50

We were also interested in how the reductions were shared across the whole group so the group was split into 6 categories:

Table 4: Percentage Carbon Reduction

Group (ranking)	% carbon reduction	Number of organisations	Percentage in each group
0	Zero	4 non-completers+1completer	9%
1	1-4	5	9%
2	5-9	10	18%
3	10-14	8	15%
4	15-19	10	18%
5	20+	17	31%

The categories were drawn up to an external measure – i.e. a reduction of over 20% is an exceptional achievement and so we felt it should be included in the top category. However given the number of organisations in this category for information we have subdivided these further:[9]

[9] Please note that although these are extremely high figures they have been checked and within the measurement system and calculations used are likely to be accurate.

Table 5: Carbon reduction frequencies of over 20%

20-25%	7	
25-50%	3	
50-75%	4	(including offset in one case)
75-100%	3	
Over 100%	3	(including offset in all cases)

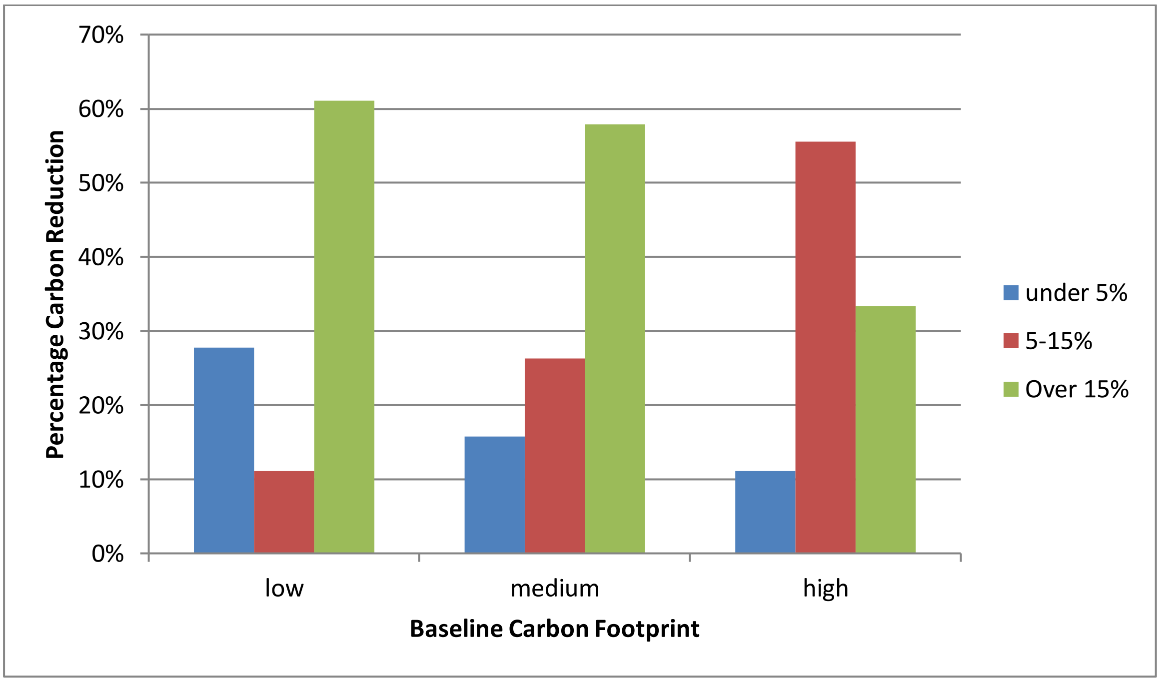
5.3. ANALYSIS BY GROUP

5.3.1 By Baseline Organisational Carbon Footprint

We wanted to understand the differences between larger and smaller SMEs in terms of percentage carbon reduction. There are a number of ways of ranking SMEs in terms of size, so we have looked at the difference in reduction percentages in terms of initial carbon footprint and size of business (by employee numbers[10]) which seemed the most relevant in this case.

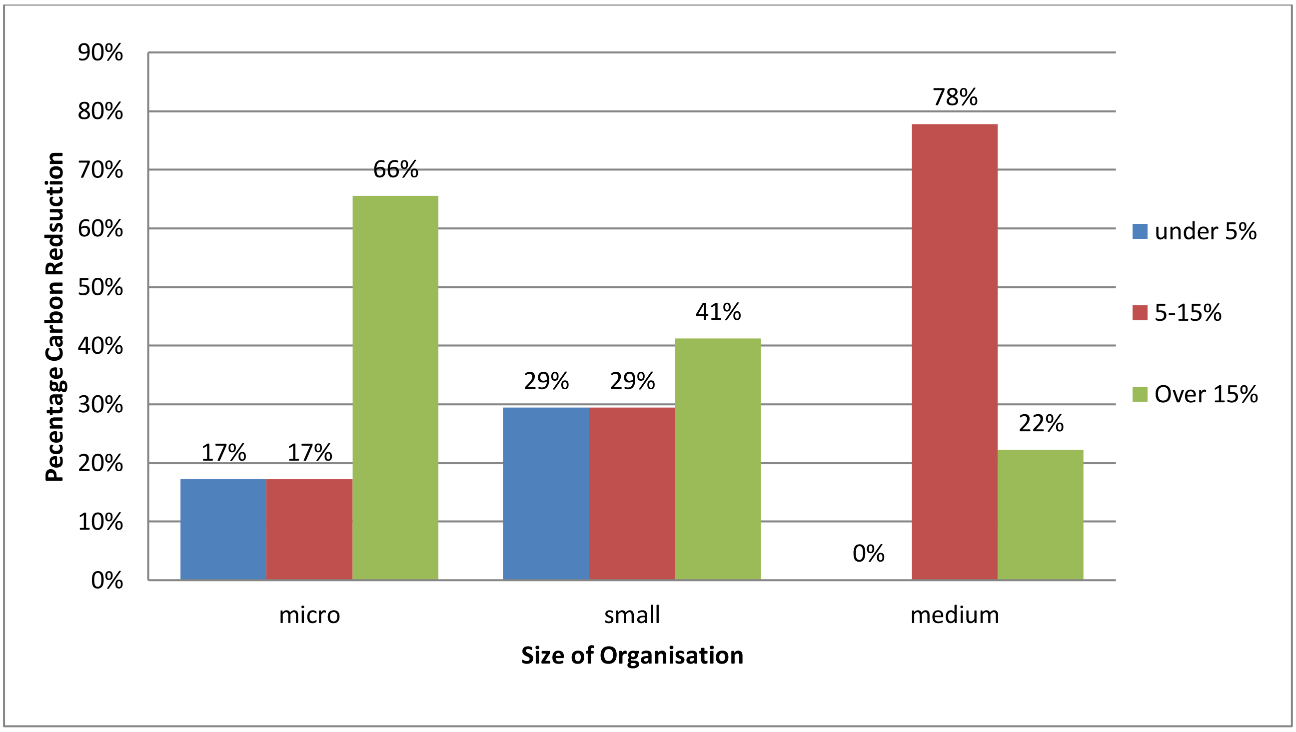
Using cross tabulations (see Figures 2 & 3 below) we can see that the organisations that reduce the most, are spread across the different sizes of initial carbon footprint and employee number. In fact the larger organisations are those least likely to have reductions of under 5%. Likewise, organisations with large carbon footprints are shown to be able to attain a high percentage reduction as well as those with low carbon footprints.

Figure 2: Carbon Reduction by Baseline Carbon Footprint



[10] Micro under 10, small = under 50, medium under 250.

Figure 3: Carbon Reduction by Size of Organisation



Further analysis shows that there is no statistical association between size of carbon footprint and whether a small or large carbon reduction was achieved by the LCC programme, however there is a statistically significant association between number of employees and size of carbon reduction: reductions of over 15% are more likely in the micro and small organisations and slightly less likely in the medium sized organisations.[11]

5.3.2 By type of organisation and sector

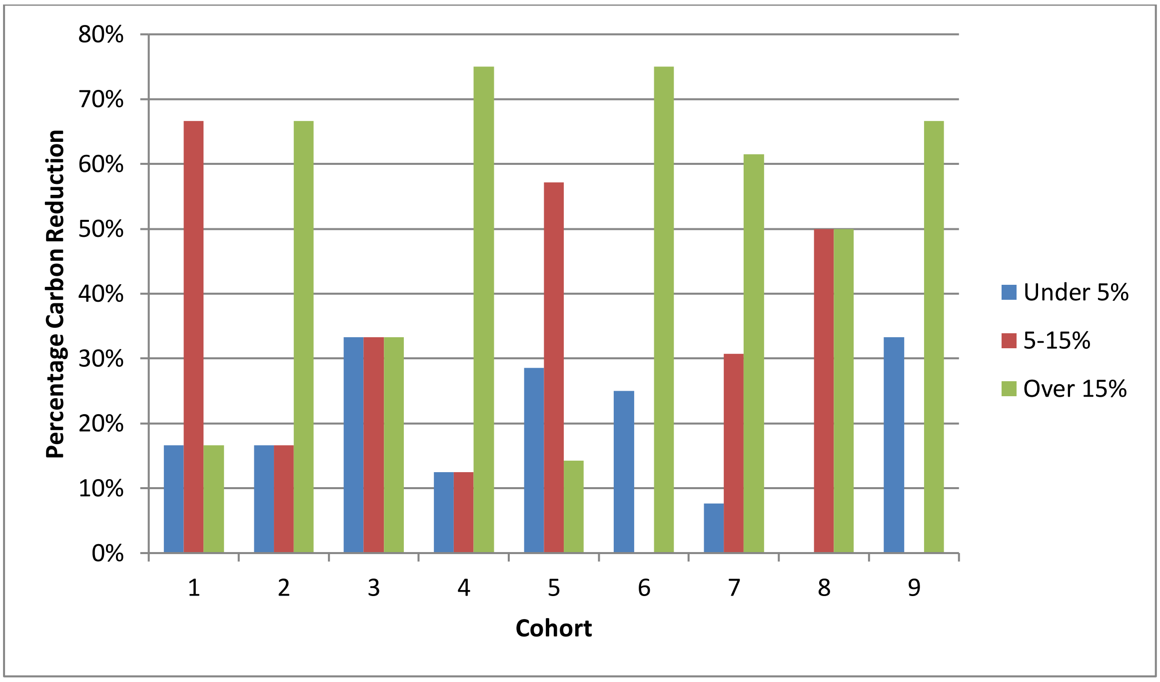
Analysis of the association between whether an organisation was profit-making (SME) or not-for-profit (Social Enterprise – SE) showed there was no significant change in carbon reduction between these two groups.
There was also no significant association between the sector the organisation was in (limited to manufacturing/production/agriculture, vs service and tourism, vs office based) and the reduction in carbon achieved. Data on all of these is in Appendix 5.

5.3.3 By Cohort

Analysis by Cohort (see Figures 4 below) shows that there isn't any strong association between which cohort an organisation is in and percentage carbon reduction (apart from in the drop out group by definition), as in all cohorts there are organisations spread over all the levels of reduction. In fact Chi Sq analysis of C1-4 v C5-8 show no association between which cohort an organisation is in and the level of carbon reduction attained.[12]

[11] Anaylsis comparing CR of over and under 15% was carried out in order to give enough data to fill cells and enable Chi Squ to be used. For CF v CR, Chi Sq = 3.345, df=2, p=0.188, for number of employees: Chi Sq = 6.084, df=2, p=0.048.
[12] Chi Sq test of association, Chi Sq=0.17, df=2

Figure 4: Carbon Reduction by Cohort



6. OTHER BUSINESS OUTCOMES

The LCC programme was funded with a focus on carbon reduction, but all involved recognised that in order to achieve more sustainable outcomes there was a need to take a wider focus, emphasising sustainability and also the potential business benefits of a more environmentally focussed business.

6.1. BESPOKE ACTION PLAN

Thus during the training sessions organisations were supported to look at their carbon audit and its included action plan, but also to develop their own action plan that took into account the realities of their own business. These both included knowledge that the champions had about the realities of their organisation (political, financial and infrastructural) and the market in which they operated, and also could include specific dates and people to involve. In this way a champions were supported to create a bespoke and intelligent plan that would be more likely to gain support among senior management and boards.

Examples of this included companies that chose to replace a boiler with a more efficient model (despite it being a ‘low priority with long payback’ in the audit) because they knew it would need replacing soon and took the opportunity to replace it with a much more efficient option, thus saving more carbon (and money) in the longer term than the audit recommended actions.

6.2. CUSTOMER FOCUS

Other organisations focussed on what their customers would like – bearing in mind the 'hearts and minds' aspects of building the business – and thus gained both business and environmental benefits as customers were subtly shown easy ways to change their own carbon efficiency, as well as liking the green credentials. Examples of this included specifically promoting behaviour change (e.g. signs about switching lights off or reusing towels), even where there would be relatively little saving to be made, as this helped the 'green credentials' of the organisation.

6.3. A USP

Several organisations felt that the 'green' angle would make a unique selling point for their organisation, and that had prompted them to get involved in the first place. In an increasingly tight market, any angle to set you apart was seen as a positive. Many organisations valued the session on 'green marketing' which promoted the use of social media and other low carbon marketing ideas which are also usually far cheaper than paper based mail outs. The ability to badge letterheads and website with the Suffolk Low Carbon Charter was also valuable in this.

6.4. NETWORKING

Several champions mentioned the value of the new networks formed as a result of the LCC programme, both in terms of the LCC cohorts themselves and other green groupings they had joined as a result. They benefitted from ideas and a sense of shared endeavour – valuable to small businesses, as well as contacts and business opportunities.

6.5. SAVING MONEY

Reducing carbon also involves saving money as it involves spending less on fuel and electricity. We have not calculated exact financial savings arising from the carbon reduction but from estimates made in the carbon audits, a saving of 1664.6t of CO2 would equate to a cost saving of around £280,000 per year.[13] This would initially cost organisations as they had to invest in capital costs to increase efficiency, but in many cases this offered payback in a relatively short time and more than one organisation mentioned having achieved payback already, under two years from installation/adaptation.

7. CHANGES MADE IN BUSINESS PROCESSES

This area is seen as a top priority by the programme, in particular by Green Light Trust arising from their experience in supporting carbon reduction among businesses. They realised that these systems are essential in ensuring sustainability of any changes in carbon footprint of the business, allowing for change to continue beyond the employment or

[13] Calculated from the total potential savings in CO2 and in £ and reduced to match 'actual' CO2 saving.

enthusiasm of an individual or the implementation of time-bound improvement work. Instead every business decision considers carbon implications (alongside business factors and not necessarily doing more than considering) and carbon reduction is embedded in everyday business practice.

The evaluation of the programme in this element uses a mixture of data and approaches. We initially discuss changes qualitatively, through use of self-defined measures and discussions with champions. We then develop a scoring system used both to give a quantified assessment of distance travelled as a result of the programme, and thus efficacy.

7.1. QUALITATIVE ASSESSMENTS OF BUSINESS PROCESSES

7.1.1 The Experience of Sponsors and Champions

"Free of charge and lots of benefits"

All participating businesses found that the LCC programme was extremely useful for the business. However, it is worth noting that this is for different reasons. Some businesses concluded that the programme had been a very "good deal" for them, as it was free of charge and included lots of benefits for them. They took from the programme what they knew they wanted or needed anyway, but the extent to which the programme had any effect beyond this direct utility is doubtful:

So, like I'm saying with the LCC, they didn't make us do everything. The result wasn't because of them. It was because we had to do it anyway, but they helped us in the process. (Interviewee 8)

I wouldn't say… It hasn't totally changed us, but it's definitely been a very useful tool. There were [LCC staff] …; they are the guys that we were able to just phone up and say, can you help us with this, or whilst they were here we would be able to ask them. (Interviewee 8)

"New perspective on how to run the business"

On the other end of the spectrum were those businesses that adopted a completely new perspective on how to run their business. They might have had more specific aims or more humble ambitions in mind when starting the programme, but they now have the green dimension in mind for whatever decision they take. In other words, for these businesses, the outcome of the programme went beyond the cost savings through new policies or new installations etc, and changed the internal culture and management. For these businesses, decisions are now influenced not solely by economic aspects but also a new green awareness. It is this second category of businesses which promises a wider impact in terms of environmentally beneficial outcomes.

I would hope that if we have any new ventures, they would probably be approached with … the things we've learned in this course, they would be more at the forefront, and more embedded in what we do as a company. (Interviewee 12)

Environmental Management and Policies

All champions were supported to write an environmental policy, an action plan, and to take steps to get this embedded in their company (whether that involved top level sign-off or publicising to staff).

At the end of the mentoring training sessions, this was the most remarked upon learning outcome. All felt they had greatly progressed in their attempt to 'champion' carbon reduction in their companies through the development and getting approval for their carbon/environmental policy and action plan.

In particular those champions who already had a reasonable level of interest and knowledge in environmental issues, universally commented upon the value of having clear plans and targets. This was echoed by one champion (in the survey) who 6 months after the programme felt she had a clear, systematic work plan that enabled her to prioritise and continually work through carbon reduction actions.

Behaviour Change

Generally all champions reported positive behaviour change among staff, although 2 did note initial reluctance that needed to be overcome. Staff had taken part in office recycling schemes, helped with monitoring, and technical leads with specific roles had helped (e.g. Operations and IT managers). No one reported major problems with getting other members of staff on board (although bear in mind that the majority of respondents were senior within their company). Larger companies had included information on policies and action plans within their staff information, training etc.

Looking forward, champions mentioned plans to look at reducing carbon through greener purchasing, considering creative use of resources such as roof space, reuse of packaging, and planting and other schemes. From the way they answered, it is clear that for many champions thinking about opportunities to reduce carbon have become an unremarked upon part of their business development strategy. Only a few of the replies indicated no plans for further work.

7.1.2 Suffolk Carbon Charters

Suffolk Carbon Charters are awarded to SMEs in Suffolk who have shown they are working to reduce carbon emissions. It aims to act as a quality mark for "potential customers looking for a reliable measure that can reassure them they're not damaging the planet with their purchases". The Suffolk Carbon Charter allows Suffolk's small businesses to communicate their environmental commitment with a clearly recognisable brand."[14] It is assessed at Bronze, Silver and Gold levels with cumulative scoring:

"Bronze - the business takes its carbon impact seriously
Silver - the business has significantly reduced its carbon emissions [≥10%]
Gold - the business is an exemplar of low carbon management"[15]

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[14] From Charter website: http://www.greensuffolk.org/charter
[15] From charter website: http://www.greensuffolk.org/charter/the-suffolk-carbon-charter-a-quick-q-and-a/

As explained in Section 6 below there is a strong link between Charter level and our scoring (apart from separating out the requirement to monitor from actually achieving carbon reduction). However there is an additional value to be gained from an organisation gaining a Charter and the LCC programme specifically funded Charter assessments for up to 50 of its alumni as part of the commitment to both include them in the wider Suffolk green business community, and also to give them a tangible outcome to be used for promotion.

4 organisations entered the programme with a bronze, 2 with a silver and 2 with gold.

Of these, 2 upgraded through the programme (one from silver to gold, one from bronze to gold) and another is pending. These two have been included as 'achievements' of the programme, the initial 8 Charters have been excluded as pre-dating the programme but of course affect the ability of the programme to get additional Bronze Charters.

Table 6: Charters achieved through the LCC programme

Bronze	23
Silver	12
Gold	10
Application pending	5

7.1.3 Sustainability – the reliance on the champion

One of the main sustainability issues with programmes which work with a specific individual is the concern that they become essential for the ongoing delivery of the work beyond the programme end and with staff turnover this becomes an issue. In the case of the LCC this went both ways, two of the champions enrolled on the programme came from a direct experience of acting as a promoter of carbon reduction in another firm, and thus were taking a carbon reduction role in their new organisation. This leads to a potential roll out of good practice, but greater sustainability would come from the champion leaving behind an organisation able and willing to carry on the work.

Initial evidence of this being a problem lies in the fact that two organisations dropped out of the programme due to champions moving on, however there were more cases where a champion left and was replaced successfully.

Champions were asked to assess how essential they were in the continuation of the work. Interestingly one was proved right in that he left after completing the questionnaire and there has been no progress made at all since.

Of the 28 responses (sole traders excluded as inappropriate), half felt things would continue more or less, and half felt they wouldn't: there were 8 who said it would make no difference, 6 who said it would slow things down but everything would happen still, 10 felt something would happen and 4 felt it would completely stop as it was pushed by them alone.

We also asked about the environment in which the changes had taken place - to what extent they had been the sole driver. Most people disagreed (23%) or strongly disagreed (56%) with the statement that "there was no support and I had to push everything through against resistance" , with only 2 people agreeing. This undoubtedly links to the selection of champions and sponsors in the initial stages of recruitment, when meetings were held not only with the champion but also with a senior member of staff who would act as sponsor.

7.2. DISTANCE TRAVELLED IN BUSINESS PROCESSES

7.2.1 Definition and method

The measure (score) takes into account the policies agreed, the level of buy-in and support at the top level of the company, the regularity of review and monitoring and the systems and procedures in place to be able to ensure that carbon reduction activity is likely to become an integral part of everyday business operation. As business behaviour is complex and size, sector and business style dependent, this measure is by necessity complex taking into account different factors that would be of differing levels of importance for different types and size of organization.

In terms of scoring and evaluation, this area is assessed in terms of distance travelled – a previously well performing company on the areas above would be likely to score very poorly on distance travelled in this measure as they would have very little they could change. We have, however given the baseline score to give an idea of the group with which the programme was working which does explain the relatively low distance travelled in many cases. Qualitative assessment will also take into account changes in understanding of the wider value of carbon reduction and the extent to which the champions feel they are essential for ensuring the work carries on happening.

Following discussions with the LCC team, we decided to use the criteria below, requiring a qualitative assessment of evidence from a number of sources. Further information on selection and categorisation can be found in Appendix 6

1. Done nothing
2. Written policy and action plan - token effort or not very well informed, champion not confident of success
3. Written policy and action plan - having a go, plans for further work, champion confident of success
4. Done good documents, got processes in place, monitoring regularly
5. Done really good policy, action plan, purchasing policy, broadened thinking to CR/Sustainability, monitoring

7.3. DISTANCE TRAVELLED

Most businesses entered the programme with little or no monitoring, action planning, and almost none had carbon or other environmental policies. 67% had no policies, action plans or systematic monitoring. By the end only 13% were in this category (and these were non-completers) as all LCC champions are supported to write and get sign-off on environmental policies and action plans as part of the process. Organisations were encouraged to start systematic monitoring of energy use (initially fuel bills and mileage or other processes as appropriate to the organisation), those that did this in a reasonably systematic way have scored 4 or above on the 'end' score, those who did additional things (which might include offset policies, pro-active purchasing and customer engagement policies etc) as well as monitoring scored 5. At the start of the programme only 1 company was in the top category (where it will have stayed, there was no evidence of organisations doing less than previously), by the end there were 18 more, so one quarter of the entire group reached the top level in terms of business processes to support environmental management.

Comparing averages (means) shows an increase from 1.7 at start, to 3.5 at end, and an average change of 1.8.

The median start was 1(no policies or processes), end was 4 (good processes), with a median change of 2.

Table 7: Business Processes - Levels before and after

	At start		At end	
	number	**(%)**	**number**	**(%)**
Done nothing	54	66.7	10	13.0
Token effort / not informed	6	7.4	6	7.8
Written policy and action plan	14	17.3	16	20.8
Good documents, processes in place	6	7.4	26	33.8
Really good policy, etc broadened thinking	1	1.2	19	24.7
Total:	81		77	

The actual change in score is also interesting as (as can be seen above) a lot of organisations (about a quarter) started the champions process with some processes in place (this would include for example the seven organisations which came to the LCC programme having already been awarded at least a Bronze Suffolk Carbon Charter (see Section 7.1.2 above for more information on this).

Table 8 below shows the range of changes in score (distance travelled), showing that while over two thirds of businesses made no or small changes – 0,1,2, there were larger changes in one third of cases.

As can be seen in Table 7 above, this is linked partly to drop outs, but also to the number of organisations who were recruited to the programme having already carried out considerable work.

Table 8: Distance travelled in Business Processes

	Number of organisations	**Percent**	**Cumulative Percent**
0 – no change	18	22.8	22.8
1 – increase of one rank	9	11.4	34.2
2 –increase of two ranks	27	34.2	68.4
3 – increase of three ranks	20	25.3	93.7
4 – increase of four ranks	5	6.3	100.0
Total	79	100.0	

In order to understand this pattern of change, it is useful to be able to visualise organisations and how their processes have changed, Figure 5 below shows the start and end point of organisations in terms of their processes.

Each cell represents a type of distance travelled, the number in it the number of organisations in this category. The further to the right they are, the better their processes at the start. The higher up the table, the better at the end.

The greatest change is experienced by the five in the top left corner – which started with nothing in place and finished with extremely good processes. Those on the diagonal didn't change at all (started and ending either with good, bad or moderate processes)

Figure 5 below shows the shape of the change, showing that 19 (about 25%) of organisations did move from a start point of 1 (i.e. nothing in place at all) to an end point of 4 (implying policies, action plans and monitoring).

Figure 5: Organisations' change in business processes

Business Processes at End						
	5	5	1	9	3	1
	4	19	3	2	2	0
	3	13	0	3	0	0
	2	4	2	0	0	0
	1	10	0	0	0	0
		1	**2**	**3**	**4**	**5**
		Business Processes at Start				

Key:

1. Done nothing
2. Written policy and action plan - token effort or not very well informed, champion not confident of success
3. Written policy and action plan - having a go, plans for further work, champion confident of success
4. Done good documents, got processes in place, monitoring regularly
5. Done really good policy, action plan, purchasing policy, broadened thinking to CR/Sustainability, monitoring

Green area (above and to the left of the diagonal) shows improvement in business processes with businesses finishing with good processes in the top row. The greatest distance travelled is for those in the top right hand corner

Business Processes at End						
	5	5	1	9	3	1
	4	19	3	2	2	0
	3	13	0	3	0	0
	2	4	2	0	0	0
	1	10	0	0	0	0
		1	2	3	4	5
		Business Processes at Start				

Yellow area (on the diagonal) shows no change – 18 organisations in this group.

Red area (to the right and below the diagonal shows) a decrease in good practice (no LCC here)

8. CHANGES IN CHAMPIONS' CONFIDENCE AND ABILITY

8.1. CHAMPIONS' ABILITY TO EFFECT CHANGE

This comes from a mixture of understanding the issues and confidence in ability to influence, implement and monitor, ensuring the sustainability of the programme beyond the training and mentoring period.

A questionnaire was carried out by GLT during the mentoring/training sessions, in which champions were asked to self assess their understanding and skills on a range of criteria. They were then asked to assess themselves on the same criteria at the final session, and offered the chance to re-define their baseline - since often with increasing knowledge comes increasing realisation of how little we knew before. All scoring was done in confidence but champions were free to share and discuss. They were able to see their initial scores when completing the final ones.[16]

In addition to the composite data below, these scores have been used to give an 'individual distance travelled' score for each customer case. Individuals scored themselves from 1-10 on 15 questions, giving a maximum potential score of 150.

The average change in score was around 40 (mean=40, median = 37) i.e. rising from people on average scoring 5 out of 10 for questions to scoring 8 out of ten.

Table 9: Change in confidence score

	Baseline Total (out of 150) | Average (out of 10)	Revised Baseline	Final	Distance travelled (final to revised baseline)
Mean	78 | 5.2	80 | 5.3	123 | 8.2	40 |2.6
Median	79	83	125	37
Range	15-130	24-137	1 (96)-150	-42 - 121

It was also interesting how people re-scored themselves between the first session and last, this score changed considerably for some people – e.g. a drop of nearly 100 in one case, a rise of 70 in another.We have used these scores to give 5 categories:

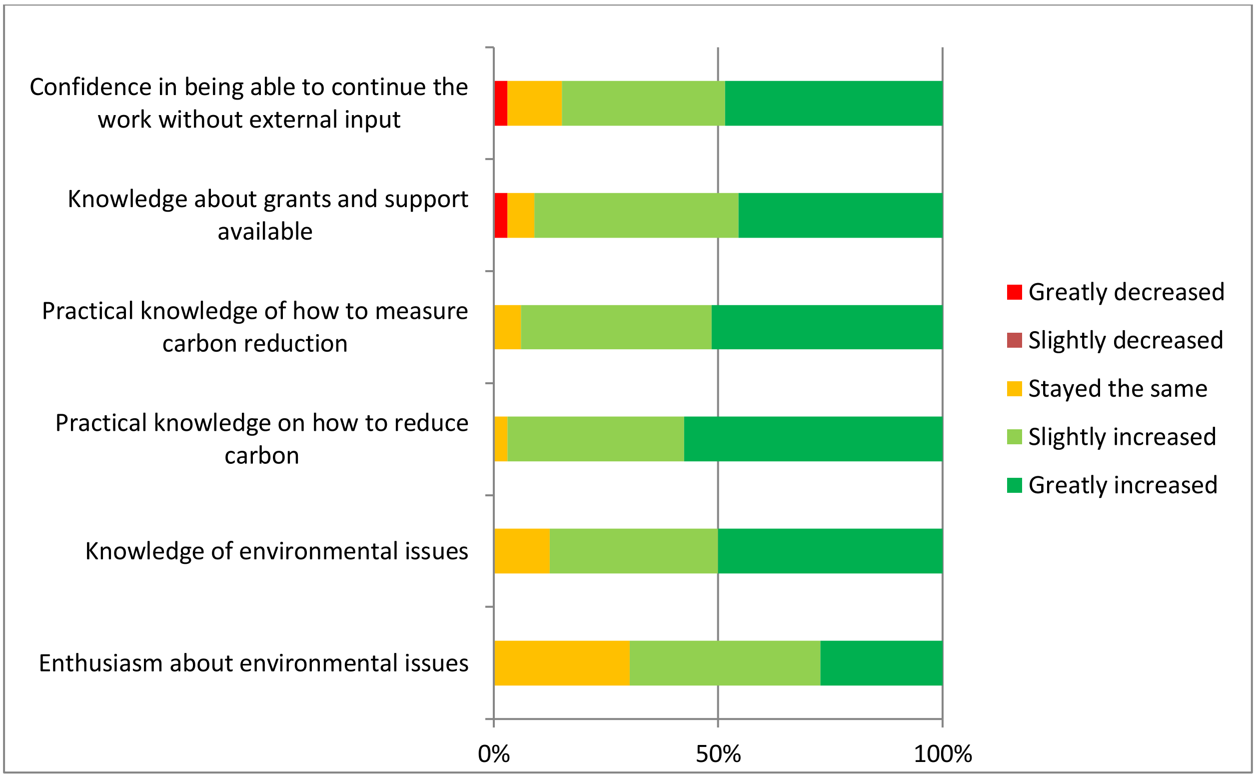
Table 10: Distance travelled in champions' confidence

Score	Definition	Number in this group
1	Scored less than zero: i.e. their confidence and knowledge went down OR they dropped out	14
2	Scored in the bottom quartile of the remainder i.e. between 1 and 30	18
3	Scored in the second quartile – between 31 and 41	14
4	Scored in the third quartile – between 42 and 63	16
5	Scored in the top quartile – between 64 and 121	15

[16] Within the assessment a judgement has been made in cases where there is data from more than one champion from any particular company. All the data below is by company, not champion, in many cases only one champion completed the questionnaire, in a few cases champions clearly conferred and gave exactly the same answers. For cases where there was a difference in score between champions in one company where there was one champion far more active than others (one or two cases) their score was used. Otherwise the mean score across all champions was used.

In the questionnaire they were asked in reflecting back to consider how they had changed personally as a result of the process of being an LCC champion. As can be seen from the chart (Figure 6) below, there was an extremely positive sense from champions about the experience for them. The green areas of the bars are positive change, slight or great. Well over half the champions felt they had experienced positive change in all areas.

Figure 6: How have these area changed for you as a result of LCC?



8.2. CHAMPIONS' LEARNING OUTCOMES

The participants' view on what the programme meant for the champions who went along to the training mainly emphasised the learning experience. Participants found the training days extremely useful and worthwhile. Again, the decisive reasons here were that the training was very hands-on, practical, and non-judgemental.

Moreover, an important aspect for several champions was that part of the content of the course was new and indeed eye-opening for them. There were several champions who were sent on to the course by their bosses, but had not much prior interest in environmental issues themselves; for these, the new things they learnt on the course were often what made them embrace the whole programme.

When I first went, I was a bit apprehensive and I thought, oh God, what am I going to learn, but at the end of it I found it quite useful. Actually, to begin with, when I thought I was going to go there, I thought they were going to try and get us to have a wind turbine and plant trees and all of that. But, no, it was helpful *and the people there were really nice, really friendly, helped you whenever you needed it ... It wasn't intense or anything like that, and they made it fun.* (Interviewee 9)

"the networking opportunities and the contacts made "

In addition to the actual learning from the training, the LCC programme was useful for the champions as a way of networking with other businesses. For this, the decisive factors seem to have been the small group size as well as the interactive setup of the sessions.

I think the group size was nice. It wasn't too big and it was quite informal, you got a chance to meet people. *(Champion, Interviews)*

The education it provided to me, as an individual and as the champion on the seminars and, as I mentioned, the networking opportunities and the contacts made, some of which I'm still working with. *(Interviewee 1)*

"it's taken away the worry that we're doing it wrong"

For several participants, it was important not only to learn about new issues or options, but also simply to be reassured that they were on the right track. This was an extremely important factor as it seems to have been what opened the entrance door to the companies pursuing the green agenda.

I was worried it might be a lot more complicated than it was. It sounded so simple and easy; 'come along and we'll train you and there's funding available', and I thought, oh, maybe the pot won't be quite as big, maybe the red tape and the paperwork is going to be so complicated... I was worried about the jargon ... but they explained all that as they were going along. I was worried I'd be in with people who already knew a lot more than me and were from the really big companies and I'd be this little tiny person from just a local ... company who knew nothing. And it really wasn't like that, we had people from quite big companies right down to one man bands, and they just made you feel so welcome and included, everyone's point of view was valued. I think they were very active in making it that way, no one was treated any differently, regardless of what company you came from. ... It was just so friendly, and you felt quite secure and supported, it didn't feel silly saying something that you weren't sure about, and it was very encouraging, very nurturing I think. *(Interviewee 10)*

I think without the Low Carbon Champions' support and without all the mentoring, and all the literature that they've provided, I don't think we'd be as confident in saying what we're saying. But now they've given us the tools to be able to be proud of what we do and be able to shout about it. (Interviewee 3)

I really can't emphasise enough how it's taken away the worry that we're doing it wrong… that we might make a wrong choice. (Interviewee 5)

9. CHANGES IN ENVIRONMENTAL COMMITMENT

9.1. INTRODUCTION AND METHOD

Actually believing that carbon reduction is desirable in and of itself, and also that it can have wider business benefits are the most likely factors for the long term sustainability of any carbon reduction activity in a company. This also indicates the potential of champion companies to act as ‘champions for carbon reduction’ to the wider business community, indicating a huge potential for carbon reduction in the county in the longer term. This area covers the changes in environmental awareness and commitment of both the champion, but more importantly the company, it will take into account awareness of the wider benefits of carbon reduction activity, the way in which the company promotes to staff and beyond the company. It looks at:

- Scores on green change
- Realisation of wider business benefits – not a hair shirt
- Personal journeys - Green conversion and the experience of prior greenies

Data for this score came from all the data collection routes, and was to a large extent qualitative so there was a need for an independent final decision on scoring from EBS. However, we drew heavily on both the self scoring of champions and on the views of the LCC team and developed levels for this area agreed by the LCC Steering Group:

1. Done nothing, not really sure what they'll get out of it - mainly after grant or charter
2. Interested but not committed/active
3. Motivated and interested - if fits in with other stuff
4. Motivated, interested, engaged and making things happen
5. Motivated, interested, engaged, investing time, making things happen and spreading the word

Due to the definition of the Suffolk Carbon Charter we were able to use the assigning of a Gold Charter as giving a rank of 5.

In terms of being able to assess distance travelled, because there were so many champions who remained at the same rank – see below, Table 11 we felt it would be illustrative to create a more complex system of scoring, taking into account the initial emotional engagement of the champion. Thus we used both the change in rank, and the starting rank to get a new set of 5 scores:

1. No change started at 1 or 2,
2. No change started at 3 or 4,
3. No change started at 5
4. Change of 1 to 2
5. Change of 3 or 4

9.2. EMOTIONAL CHANGE ('GREENNESS') SCORES

Around one fifth of LCC organisations entered the programme with no interest and in the assessment of the programme manager, mainly after the grant. This assessment applies to the organisations, there were a lot of champions with low interest in addition to these who had been sent by the organisation rather than choosing to go or interested. At the end, the number in this category had dropped to 5 (6.5%) and there were another 5 in category 2, of these 8 were drop outs.

There was an increase in all other ranks, with a rise of 10% in rank 4 and 14% in rank 5. However as Table 11 below shows, well over half the organisations didn't change rank at all but remained at the one where they started.

Table 11: Emotional Change - rankings

	Rank at start (%)	Rank at end (%)	Change in rank%	
			0	52.6
1. Done nothing	18.2	6.5	1	25.6
2. Interested but not committed/active	20.8	6.5	2	17.9
3. Motivated and interested - if fits in with other stuff	22.1	23.4	3	1.3
4. Motivated, interested, engaged and making things happen	26.0	36.4	4	2.6
5. Motivated, interested, engaged, investing time, making things happen and spreading the word	13.0	27.3		

The reason for this can be seen in Figure 7 below[17], most organisations started relatively green, then travelled a relatively small distance over the course of the programme. This is shown by the number of organisations on the diagonal and towards the top right hand corner. As nearly half the organisations started with a rank of 4 or 5, they tended not to change very much.

Figure 7: Emotional Change - distance travelled

'Greenness' at End	1	2	3	4	5
5	2	0	1	8	10
4	1	9	6	12	0
3	4	4	10	0	0
2	2	3	0	0	0
1	5	0	0	0	0
	'Greenness' at Start				

[17] The colour scheme and layout on this table are as for the Business processes tables – fig 5 – above and the same explanations apply.

This realisation led us to develop a more complex scoring system to be used in the multivariate analysis in considering factors for success, as shown in table 12, the largest group are those with an increase of one or two ranks (this group can also be seen just above the diagonal on Figure 7 above), and there is also a cluster who started and ended with a moderate level of commitment and interest.

Table 12: Scores on Emotional Change

	Frequency	Percent
1. No change started at low level of interest/commitment	9	11.5
2. No change started with a moderate level of interest/commitment	22	28.2
3. No change started at high level of interest/commitment	10	12.8
4. Change of 1 to 2 ranks	34	43.6
5. Change of 3 or 4 ranks	3	3.8
Total	78	100.0

9.3. PERSONAL JOURNEYS - GREEN CONVERSION AND THE EXPERIENCE OF PRIOR GREENIES

The level of embedding of a 'green ethos' into the business as a whole varied among the participating businesses, with lots falling in between the two extremes described above.

At one end of the scale of little effect on the environmental attitude of the business are two types (Groups with scores 1-3 on the 'emotional distance travelled' scale above):

- Some businesses had some specific benefit in mind, which they wanted to gain from the programme, and the effect of the programme did not often go much beyond that.
- Other businesses were already very open to learning about the green business case, whatever form this might take for their particular business and in these cases it would be hard to claim there was attitude change arising from the programme.

At the other end of the scale were businesses that didn't initially have a green agenda in engaging, but through the programme underwent significant change in attitudes to carbon reduction. It is as a result of the way the programme was set up and run, that businesses which might have otherwise not taken part in such programmes have become involved, and have been left with sustainable legacies in the form of more confident and able staff keen to act as champions into the future.

From [the MD's] point of view, if he doesn't get the money, then the programme wouldn't have delivered for him. If he doesn't get the funding, or he only gets partial funding, then he won't see it as a success. I see it still as a success because of the amount I've learnt that I didn't know before, and it's motivated me to carry on, and I've actually seen areas where can probably do more. ......

Interviewer*: So, you don't see your role as a champion finishing with a programme?*

Interviewee: *Oh no, no, I see this as the start. It's really encouraged me and made me realise that we are on the right track, but we are only at the very start of it. (Interviewee 10)*

What is interesting to note with regard to the distinction between green and non-green businesses is that both groups found the programme extremely useful. There is no difference in judgement between these groups, even though it could have been expected that the already green businesses would have needed less help, whereas the more straightforwardly business orientated businesses may have been put off by too strong a green presumption. It seems that for the already green businesses, the useful element was to get structured, professional help as well as the grant, whereas the less green businesses all strongly appreciated that the training was given from a business point of view rather than from a "preachy", judgemental green point of view.

9.3.1 Realisation of the wider business benefits of carbon reduction

Another part of ensuring that carbon reduction is a sustainable part of the organisation beyond a short term programme is ensure the wider benefits to the business are understood.

As one champion put it:

"My experience with GLT has shown me that there is potential to save money - it doesn't always have to cost more to be green !" (Champion, Questionnaire)

This message was at the forefront of the approach taken by the LCC team within the programme design and from the first meeting into the training sessions. One of the outcomes of this was that some champions came for almost entirely environmental reasons, but left being more aware of the wider business outcomes.

In the questionnaires, (completed by 38 champions), people were asked how much of a motivation various aspects were for them, both at the present time and looking back to when they first became involved. As can be seen in Table 13 below there was an increase in the importance placed on saving money and on reputation (comparison of scores is the easiest way of considering this), showing champions both understood the value of carbon reduction in terms of cost saving and reputation, and particularly in terms of environmental compliance which showed the largest increase, but also felt able to state this in response to a questionnaire closely associated with the programme. (NB - Saving the environment also increased as a motivation factor).

Table 13: How much of a motivation were factors - at first and at time of questionnaire

Area	To save money		To improve our reputation		To comply with environmental legislation		To contribute to the CSR of our business		To save the environment	
	At first	At present	At first	At present	At first	At present	At first	At present	At first	At present
1	2	1	1	0	6	5	3	3	1	1
2	2	2	1	0	7	4	4	1	3	1
3	9	6	5	4	8	7	7	6	5	3
4	8	10	16	18	4	7	8	8	12	14
5	11	13	9	10	6	8	10	12	11	13
'Score'	**120**	**128**	**127**	**134**	**90**	**102**	**114**	**115**	**125**	**133**
Change in score	+8		+7		+12		+1		+8	

Examples of business benefits

During online questionnaires and interviews, organisations were asked about the wider business benefits of LCC involvement (beyond the environmental ethos and direct financial savings).

Most people immediately listed one or two outcomes, mainly in the area of reputation and specifically the credibility of the Charter award. The logo for this was used on websites, in contact with customers and on tender documents. One organisation felt it helped their customers to improve their own environmental status. Several people felt it would make a difference in winning new clients, particularly to be able to penetrate new areas (for example in working with companies with strong CSR policies). One organisation had already had outcomes:

"One or two organizations specifically make use of our services as a result of our LCC work." (Champion, Questionnaire)

People also mentioned the value of the programme in networking and creating new contacts, both for business generation – which was greatly encouraged by the LCC team, and also in creating a network of people facing the same issues.

There was also mention of the value of the ideas, information and further contacts offered by the LCC team and GLT generally for example in signposting grants, consultants and companies who could support future green development initiatives. This was particularly important for the larger companies for whom the £3,000 grant wasn't really enough to make major changes.

10. OUTCOMES REACHING BEYOND LCC ORGANISATIONS

With any small and targeted programme, there is a value in knowing that the work undertaken with the few participants will spread beyond that immediate group. This was part of the aims of the programme in the creation of a good practice group, but such a group would only really be able to effect change if they were able and prepared to engage with others. The Gold Level of the Suffolk Carbon Charter requires that promotion to others, so the twelve champions with this award would be doing promotion, however many other champions were promoting their work (but didn't have the level of carbon reduction necessary for the level).

When champions were asked in the questionnaire whether they'd promoted environmental awareness or carbon reduction beyond their organisations, of the 40 people responding to the questionnaire, 27 gave examples which included:

- Inclusion in websites, facebook, promotional material and newsletters – mentioned by most respondents
- Discussion and awareness raising with contacts and networks was mentioned by many - one of these had told several of their contacts about the LCC programme and recruited some
- A few mentioned public facing work, e.g. press statements, and work with parish councils e.g. one organisation was lobbying the parish council to look into solar powered street lights. Another had installed a glass recycling unit for the community on their car park
- Most people mentioned putting pressure on suppliers through purchasing policies:

"One supplier did not have in place an environment policy - we asked it to do something about this because we needed assurances from them ... (Champion Questionnaire)

- Many mentioned discussion and direct awareness raising with customers, which one champion had found difficult:,

" Customers (particularly larger organisations) appear lacking in enthusiasm or to make changes - i.e. accept paperless delivery acknowledgement and invoicing" (Champion Questionnaire)

But all others reported as being successful

"One client needed to cut fuel use among staff driving and claiming mileage. We advised him to obtain a Travel Plan "(Champion Questionnaire)

"Yes we have when we used cardboard we stamp every reused box and encourage customers and business we deal with to also recycle." (Champion Questionnaire)

A small HR company had used her role to reduce carbon well beyond her company through advising clients on the HR outcomes of environmental action:

"In my role as an HR consultant, I now feel able to raise the topic of environmental practices with my clients... I promote green issues but only sell from an employee engagement point of view – I would add 'green' into the areas she suggests - happy employees reduce sickness/ staff turnover. I recommend

community involvement, being ethical generally. getting recycling bins, getting them involved. Tell them about Suffolk carbon charter etc." (Champion Questionnaire)

A least some of these organisations might have been promoting before their time, but for many this would be something new, particularly resulting from an increase in their confidence that they were doing things well. One (already active) champion summed it up with: "*Yes, was already an important factor before, but more so now after LCC work."* (Champion Questionnaire)

Section 3 Lessons learnt

11. THE EXPERIENCES OF CHAMPIONS AND SPONSORS

However positive the outcomes of a project in effecting carbon reduction, this will not come about without buy-in and support from participants in terms of being willing to stay the course and make the changes. For this reason how champions viewed the project and in particular its elements are important. In addition this feedback can help ascertain the benefits of various elements of the project.

11.1. THE LOW CARBON CHAMPIONS PROJECT TEAM AND THE GREEN LIGHT TRUST

One of the most important factors in making the LCC programme successful was the characteristics of both the Green Light Trust and the LCC team members themselves. It was highlighted by many interviewees that the way the LCC team related to and approached the businesses was crucial. The team came across as extremely approachable, hands on, helpful, and authentic. Several participants highlighted that part of the reason that they enjoyed the programme and took forward the recommendations given to them was that they were not "preached" high green ideals but rather advised in a way that was right for the particular business.

Moreover, there was a clear value placed in the ethos of the Green Light Trust. The fact it was local, environmentally focussed and not-for-profit was felt by some to be vital in understanding each business's own perspective and helping them with whatever *they* really wanted to do, rather than imposing an external agenda.

We did, a couple of years ago, have somebody come round and look at everything for us to try and make things greener, reduce our utility costs and reduce our carbon footprint. And then… they were a private business, and we were never entirely sure about the benefits. It was going to be costly. We didn't really know… We weren't confident that they knew what they were doing. And that's one of the things that we have a lot of confidence in in the green light trust. We know that that is… I think because they are a publicly funded organisation, we know that they are actually telling us things that… educating us, giving us choices, … they are not steering us one way or another from a business point of view. … We knew that we were getting objective advice from people who knew what the options were and who wanted to help us improve our carbon footprint and do the right thing. (Interviewee 9).

The team itself received praise from every research participant and there were literally no negative views given. In addition, different champions commented on receiving help from the different team members (each took a slightly different role focussing on: business development and mentoring; carbon reduction expertise, environmental management development and mentoring; and information support and monitoring advice) showing that champions had a clear understanding of the roles and skills of the team.

They were very approachable, so we could ask them about something and they would come back to us with an answer. (…) To have somebody there you could just ask and was good that experience was very useful. (Interviewee 8)

It is very clear that both the level of expertise (in carbon management, environmental knowledge, business development and mentoring) and the ability to inspire trust and confidence are essential for the relatively high completion rates, the levels of carbon reduction activities undertaken and the compliance with ongoing monitoring and evaluation.

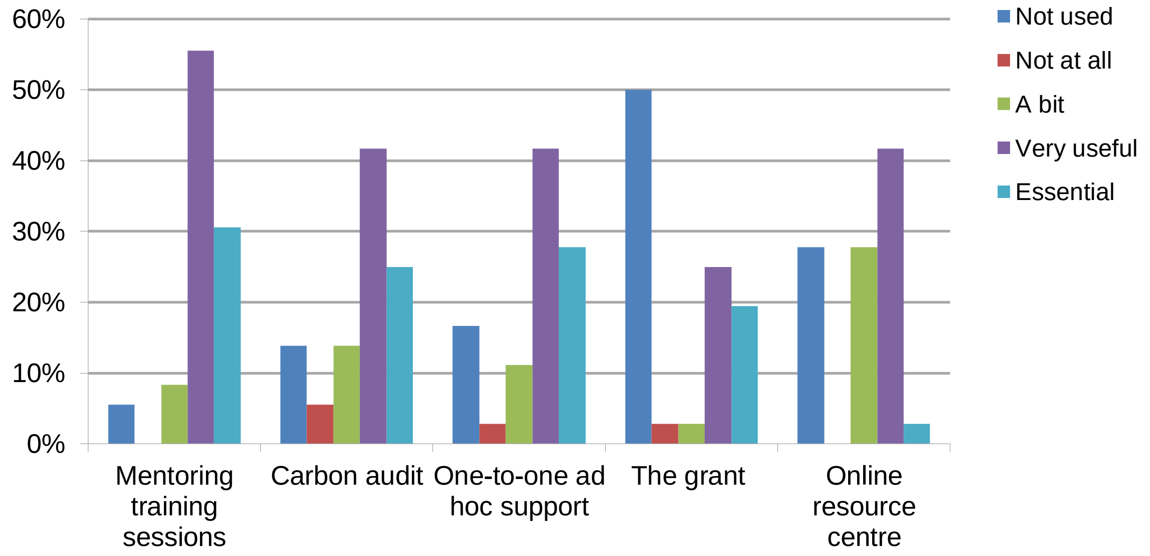
11.2. ASPECTS OF THE PROGRAMME

Respondents to the survey were asked about how useful they found the various components of the LCC programme, as Figure 8 below shows, most found it very useful or essential, only 4 people found any aspect 'not at all useful'. Sections 11.3-11.7 analyse responses from a number of sources[18] to explore each element further.

Overall it is clear that each aspect of the programme was valued, with some placing greater emphasis on the grant (financial support), others on the charter (accreditation and reputation), while others particularly valued the tools and techniques developed during the training and mentoring and the practical approach to making changes in their organisation. No one really felt it would be better to leave any aspect out, and it seems that it was precisely this combination of elements, and the skills and approach to tailor it to the needs of each organisation that made it work.

Figure 8: Relative Use of Various Components of LCC programme

11.3. MENTORING AND TRAINING



There was a generally positive feeling about all the components with the mentoring in particular (both the full day 'training/mentoring' sessions and the one-to-one responsive support) being very useful or essential for most people who replied. This fits with qualitative feedback from focus groups where the interpersonal skills of the key LCC staff were

[18] Data for this section comes from the following primary sources: online questionnaire, interviews, observation.

particularly praised and people had a sense that they could ask for any help they needed. Several people also commented that they hadn't used the support as much as they might have done but they'd always known there was someone to call if they needed it. Although there was one person who didn't feel this had been useful, in fact anecdotally his company had used the one-to-one support extensively so the question may have been misunderstood.

Through interviews and focus groups, it is clear that the three day sessions are the core of the programme and are valued by all participants. Very few people were able to make any suggestions for improvements and most felt the balance of delivery and one-to-one support was excellent.[19]

Data from in-depth interviews and from observation shows the value of these sessions comes from their combination of 'training' – imparting knowledge – and 'mentoring' – tailored support to organisations to take their own actions. In order to allow replication of the successes of this approach it is suggested that the relative value of these two elements are discussed separately in reflection on the programme so that casual readers of reports are not confused into disregarding the full breadth of the LCC offer.

11.3.1 Training

The training days were perceived as very useful to all participants. Positive points included that the training was very hands-on and practical; that some of the talks were eye-opening; that the training was useful from a business perspective; that the programme was varied and interactive; and that it included a tour of the Green Light Trust's (GLT's) buildings and garden, giving people confidence that the GLT were themselves putting into practice everything they promoted.

Yes, it was really organised … They did loads of different things, like group exercises or pen to paper, quickly note down what you think you could do to change this. They made it interesting. (Champion Interview)

Several commented that they had feared the approach might be 'too preachy' but there was complete consensus that it wasn't, was very business focussed, but nevertheless raised some more complicated issues.

The only issue that was raised was in terms of the amount of time that the course took. A few champions and sponsors, both in interviews and observations, suggested that the content could have been delivered in fewer days (e.g. two rather than three), particularly as the third day finished early for some cohorts, meaning fewer days away from the office. However it should be noted that this was only mentioned by a minority of people interviewed and wasn't seen as a major issue.

Many champions verbally expressed a greater environmental commitment at the end – something they'd mostly not expected and certainly hadn't sought out. Delivery, venue, catering and support were all praised.

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[19] It must be noted here, and was mentioned by several champions, that they had no means of comparison, and from observation there were different experiences between most cohorts and the one where only 2 of the LCC programme team were able to attend.

11.3.2 Mentoring

This was less easy to discuss as it was neatly embedded into the day-long delivery through one-to-ones, small group work and staff being generally both available and pro-active in supporting needs. All felt able to ask for support outside the days (although few had taken this up in between sessions one person did and had gained massively from it). From observation this seamless and low-key style was probably crucial to offering support in a non-patronising way and is totally essential to the programme's success in overcoming certain barriers (in particular ensuring senior officer buy-in and setting effective action plans) before champions recognised them as even existing. This role, and having sufficient and appropriately skilled personnel to carry it out, are integral to the programme.

In particular the use of the day-long sessions to carry out action planning, writing draft policies etc was felt to be useful, with dual champions from a single company particularly welcoming the time to sit down together and work on actions away from the pressures of the office. Likewise the delay between the three sessions (held approximately one month apart) was felt to work in allowing time to take actions and make progress, while not being long enough to lose momentum.

There were a couple of suggestions that with pre planning might be able to be done – e.g. seeing the carbon audit and working with colleagues on which areas to focus on. Which might be an approach to take in future programmes, particularly if coincided with reducing the number of training days as per above.

Overall, from both the survey and observation, it is clear that this tailored, business oriented support is the core of the programme and is the reason for the programme retaining so many companies in an area that isn't core business for most of them through a relatively long process in a time of austerity for businesses.

11.4. CARBON AUDIT

The audit was perceived as very useful. It has been mentioned that what was essential for this was that it outlined *realistic* recommendations, and that it was part of a larger package. For some businesses, it was their first audit and thus the first time they learned how to keep a record of their emissions. Also, the fact that the whole programme started off with the audit meant that, again, the participants had the impression that their individual situation was being respected. Five (13%) of respondents had already had a carbon audit and this didn't seem to affect the value they felt they gained from the programme as a whole. Of the others, there isn't a clear pattern as to who found it useful (including opposite responses coming from one champion and sponsor within one firm) but one of those who found it 'not at all useful' was a one-person operation, and another sole trader who said it was 'useful' had found it more useful as a reassurance than an actual prompt to action (as there were very few carbon reduction actions identified).

One sponsor interviewed was concerned that it was over cumbersome for any but medium to large companies. From observations at the mentoring days, it would appear that people found carbon audits an ideal, easy way to identify carbon savings they could make, and an easy way to justify these to management, apart from sole traders, no one was observed as feeling that they could manage without recourse to the audits.

11.5. ONLINE RESOURCE CENTRE AND CARBON LOG TOOL

The online resource centre had not been used by most people. Ten (28%) hadn't used either the resource centre or carbon log but several more had just looked at the carbon log) for those that had actually looked into the wider resource centre it was felt to be very useful, with one person saying that it was partly the reassurance of knowing it was there if needed – even if she rarely used it.

The carbon log tool had been more widely looked at but several people commented that they had had technical issues, or felt it wasn't useful for them, or were using another methods. Others felt they hadn't got round to it. Very few companies consistently completed the log and continued to use the online version for a long time after the completion of their assessment despite it being a well designed and useful resource. This may relate to low monitoring levels, as under half (43%) of the LCC cohort monitor at all.

Clearly both the carbon log and the wider resource centre are a valuable component of the programme that offers a real potential for supporting sustainable change for SMEs. They are under-used and greater effort should be put into promoting them and supporting their use (although we should bear in mind that there was extremely positive feedback about the help given when technical support was requested so it might be that there is a need for a very proactive approach).

11.6. NETWORKING AND USER GROUPS

A linked in group has been set up by the LCC team which has just under 30 champions (out of around 70 possible) as members (all are invited to join but not all want to have LinkedIn accounts). There are relatively few postings from champions although some effort is made by the team to use it as an information sharing location. More support could be given to develop it as a peer-support and networking location (as networking and peer-support and learning were a driver for several of the champions to get involved).

It isn't clear that there are other opportunities for peer-support, linking and networking arising directly from the LCC programme. However several champions have linked into the other carbon reduction and sustainability programmes supported by Suffolk County Council and Chamber of Commerce and see these as linked to LCC and extremely useful and supportive.

11.7. GRANT

Of those who responded to the full survey, around half (22 of 36) had applied for a grant. All of these felt the grant was 'very useful' or 'essential'. However there was initially a poor take up of grants so questions were asked to ascertain reasons for this. Reasons given for low take up were:

Lack of a suitable/eligible project

Not having a suitable project to apply for or only having projects which wouldn't qualify for the grant

Feeling the amount available wasn't worth the time input needed:

"We appraised the CBA of staff time for application of grant and status and figured that the small gains we would make could not be justified on their cost." (Champion, questionnaire)

"I found the process of applying for the grant extremely tedious. (…) The trouble has been that what the grant achieved was about £300, but I probably put more like £1500 of my time into it to get it." (Interviewee 4)

In addition, there were comments about how difficult it was to fill in, in response to questions about the value of the support from the LCC team.):

"phone line support was essential in claiming for the grant as the application was quite a complicated process" (Champion, questionnaire),

'Too big or too small'

For some there was a 'too big or too small' issue: the spend needed was either very cheap (e.g. new printer that cost around £100 so not worth applying for) or too expensive so that the grant would cover considerably less than half the cost and it would be hard to find the remaining capital upfront, even if in the longer term it would be repayed in savings over time.

In terms of the former group, there would be no benefit to seeking to make smaller sums easily accessible if champions are willing to fund these costs themselves, in terms of the latter group, the committee might consider offering larger amounts (still with 50% match required) if funding was permitted towards the end, although it isn't clear that champions would be able to find this match, so this doesn't seem a priority.

Mainly a carrot

While on entering the programme, champions placed great importance on the opportunity to apply for the grant, by the end of day 3 of the mentoring training, views had changed: the grant was something that people were planning to access if they could, but they didn't see it as a vital area and were deciding if the energy input needed to apply was worth it. In this way, the grant is usefully seen as a 'carrot' for recruitment, rather than a prerequisite for actions to be taken by the end.

I think you do need some kind of enticement for the organisation to take part and I think that that can be… probably at the moment it does need to be financial of some kind. (Interviewee 6)

I know not everything is free in life, but it was handy and that's what made us go and try it out, to be honest. (Interviewee 9)

12. CALCULATING THE VALUE OF THE ADDITIONAL INPUT - COMPARISON WITH 'CONTROL GROUP'

A comparison was carried out with a group of organisations that had received the same Groundwork Audit, but no further support apart from a poorly used telephone follow up option (henceforth 'audit only'). In order to make the comparison most accurate we only used Cohorts 1-4 of the LCC as the time that the intervention with this group ended (i.e. end of training) matched the time when intervention with the control group ended (i.e. delivery of audit).

Organisations were telephoned and asked which of the Groundwork Audit-recommended actions they had undertaken, as well as whether they had undertaken further actions. They were also asked if the organisation had an environmental, green or carbon policy and whether they had other policies or promoted environmental issues/carbon reduction in any other way.

In order to compare appropriately, we have excluded all the non-completing organisations' figures, as the audit only group only includes organisations which were able and prepared to supply the information: i.e. still trading and willing to engage in follow up research, which will lead to a positive bias. In addition it is worth noting that the audit only group had a far lower mean carbon footprint (59t compared with 347t in the LCC cohort).

Table 14 below compares the audit only cohort (43 SMEs) and the LCC cohorts 1-4 for which there is data (26 SMEs) and considers the proportion of actions which were fully or nearly fully completed, or where equivalent action was taken, and the percentage of carbon reduction that would arise from these.

There is a much higher average percentage reduction per organisation in the LCC group – probably the most useful comparison measure (22% for LCC v 14% for audit only) In addition although 40% of actions were taken by the audit only group, the LCC seems to ensure action in all organisations with only 1 (4%) taking no actions from the audit, while 9 (21%) of the audit only group did nothing.

Table 14: Carbon Reduction comparison between LCC and audit only group

	Proportion of actions taken (mean)	Proportion taking NO actions	Percentage carbon reduction on overall footprint	Average carbon reduction (tonnes)	Average percentage reduction (per organization)
Low Carbon Champions	3 out of 5 (60%)	1 out of 26 (4%)	13.5%	46.8	**22%**
Audit only	2 out of 5 (40%)	9 out of 43 (21%)	10.9%	8.4	**14%**

In addition, other actions were undertaken by many organisations – calculations of the amount is not possible due to lack of a referencing frame. LCC organizations were far more likely to take additional actions, including those with higher potential carbon saving than audit-only organizations.

In terms of sustainability, we also wanted to take into account improvements in business processes to support and embed carbon reduction actions. Thus we compared the proportions of the two groups who claimed to have a carbon reduction policy and action plan or equivalent. All of the LCC cohort had both, whereas only 25% of the audit-only group had both a carbon reduction policy and an action plan (or equivalent). The percentages recording energy usage were similar – the LCC group slightly higher – but it must be emphasised that the level of audit involved in the LCC group was much higher (evidence was required to include them) whereas for the audit only group it was purely completed on self-reported evidence in response to a phone call.

Table 15: Proportion of organizations with procedures and monitoring

	Proportion with Carbon Reduction Policy or equivalent	Percentage recording energy
Low Carbon Champions	25 out of 26 (96%)	66%
Audit only	11 out of 44 (25%)	56%

Overall, it is clear that the LCC approach leads to a higher level of environmental management and policy development. It also seems to lead to a slightly higher percentage of carbon reduction per organisation, as well as a higher overall reduction.

13. VIEWS ON SUCCESS – SPONSORS AND CHAMPIONS

Sponsors and champions were asked for their views on why the programme worked, both in interviews and questionnaires. Overall it was clear that for the majority of participating businesses, what made the LCC programme successful was that it **provided guidance** and made the greening of the business **look less daunting**.

Whether the interviewee particularly valued the financial help, mentoring or measurement tools, the achievement of the programme as a whole is that it was inviting in that it helped businesses of different kinds overcome the first hurdle on their own process of greening the business.

I think it was basically giving us a very clear list of work that we should embark upon and making it clear what the, as you say, what the low hanging fruit is and what were the more challenging ones down the road, but articulate and very clearly what the potential outcomes could be from that. (Interviewee 1)

*We probably would have come down to [saving energy], but [the programme] just focused it a lot. [...] We are just overburdened with things we have to do, so there are all these good ideas, but actually doing them is really hard. [...] The programme was really good, there was a tight deadline to it because the grants are finishing, so there was a tight deadline to what we had to do, and a timeframe to get it done. (*Interviewee 11)

The decisive factors in this for participants was the sense that the programme was always focussed on each organisation's own idea of how they could become greener; that the team was perceived by the participants is fully supportive and non-judgemental, that it picked them up from where they were; and that it included such a varied and multifaceted training and overall range of offers that it was useful for a variety of different kinds of businesses.

I thought they were good. [LCC team member], clearly he knows exactly what he's talking about, but they are not trying to hard-sell anything, they are just explaining the facts to you about this is how it is, this is how it can help you. But the other thing that I thought was good is, you know, it's not people walking about in Jesus sandals, he knows it's a business and the main reason a lot of people are there is that they're trying to cut their costs and cut their overheads. They clearly had a very good understanding of what they were talking about. (Interviewee 11)

I think they had a good, realistic approach. We didn't get lectured, we were just made aware of things, and we were given loads of different options. They wanted to hear what we thought about each thing when it was brought up. I don't think we were made to feel bad for what we were currently doing, it was just about offering us some advice to say what we would be doing next. (Interviewee 12)

The programme can thus be the first step, after which everything gets easier.

The Green Light Trust is a small local organisation, which put so much emphasis on direct communication, and understanding the particular business. This is really what made the difference to many of the participants.

[The programme] has been a lot simpler than I expected, and the help and support has been really good. I couldn't make the last mentoring session, and [an LCC team member] actually came out to see me last week. She actually looked through my whole application with me, and went through the last of the mentoring sessions, and everything I needed to know from that, and went through all the paperwork with me. So she came round and spent a good couple of hours with just me, and that really helped. (Interviewee 10)

In the questionnaires, considering specific factors that added to the success from within the organisations, responses included:

Because it included financial and other business benefits (12 out of 30 responses), these ranged from the directly financial, e.g.:

"LCC course opened eyes of Chief Exec to the possibilities of what could be done to save £ at the same time as saving energy." (Champion Questionnaire)

"The fact that we actually save money is the driving factor for the MD of our business and what led to him agreeing to all the actions taken." (Champion Questionnaire)

Three people simply said 'financial', 'money saving' and "Having a sound financial reason for the changes" (Champion Questionnaire)

To more reputational factors:

" It was always about finding and understanding ways that our company might 'stand out' from the crowd more" (Champion Questionnaire)

Several people felt the grant had enabled the start of projects that they might have had in mind but weren't able to start:

"We were already committed to introducing LED technology into our lighting stock, however the grant process has enabled us to start sooner." (Champion Questionnaire)

Six champions mentioned their increased knowledge as a reason for success, e.g.:

A cohesive and better general understanding about carbon in our organisation.

Six mentioned the commitment of management as a factor, a couple of people specifically mentioned the support of other staff.

Being on a time-limited programme, with targets and deadlines was mentioned by eight people:

Being involved with the Low Carbon Champions programmes gave us targets and deadlines and the motivation to make things happen (Champion Questionnaire)

And the existence and support of a network of peers (from the LCC programme) was mentioned by two as a further motivation factor.

The carbon audit, tools, training days and the way they were set up with realistic targets was felt by five people to be a major factor:

" The learning tools the mentoring sessions gave us, such as breaking the carbon policy in to a simple structure and the timeline to set dates and targets made it easier to follow" (Champion Questionnaire)

And the approach and support from the LCC programme team were specifically mentioned by three.

13.1. IDENTIFIED BARRIERS TO CHANGE

Other people's attitudes were the most regularly mentioned barrier, whether of clients who were resistant to changes such as delivering quotes electronically rather than printed out, or more significantly of managers unwilling to take risks in spending in the short term to gain in the long-term (which is a requirement for most energy reduction measures).

Time was mentioned by many, even those who didn't really think it was a barrier felt the forms needed for grants, and the need to switch suppliers and processes took time. Others mentioned time as a major factor in either stopping action or usually delaying it, also the need to invest time in the LCC programme itself – without a clear output in a business sense initially had nearly proved a barrier:

"The amount of time it took attending the training, filling out forms and grant applications although it was all worth it in the end. Without the grant as a carrot the MD would never have allowed that much time to have been used for this work."

For several people the financial realities have been a barrier they didn't have a way of overcoming:

demanding reductive practises puts the organisation at a disadvantage in the competitive marketplace unless everyone else has to do the same (Champion Questionnaire)

our customers are mostly concerned with price over efficiency or latest technology. (Champion Questionnaire)

14. CONCLUSIONS AND RECOMMENDATIONS

14.1. CONCLUSIONS

The Low Carbon Champions Programme is a unique and effective solution to a pressing global issue. It should be supported to continue and develop to reach further businesses. It showed short-term outcomes in terms of carbon reduction (as a result of actions taken) and it is likely there will be longer term outcomes through changes to business processes and increased commitment to carbon reduction within the organisations involved.

14.1.1 The programme itself

The LCC programme was well valued and largely effective, it successfully used different incentives to attract a range of organisations to get involved and maintained a relatively high completion rate. All aspects of the programme were valued by the champions themselves, in particular the business-oriented approach, the mixture of training – building knowledge, and mentoring – supporting specific changes in organisations. As well as the processes, tools and information shared. The carbon audit and the opportunity to apply for a Suffolk Carbon Charter were both welcomed.

14.1.2 Outcomes

Carbon Reduction

Low Carbon Champions saved an average of 30.2t of CO2 per year, 19% of their baseline carbon footprint through a mixture of infrastructural changes and behavioural changes. Across the programme this meant an annual total carbon reduction of over 1665t or about 12.9% of the total baseline carbon footprint of all the LCC organisations.

In addition 775t per year of carbon offset were made as a result of the programme, meaning a total of just under 2,500t were saved or offset annually, 19% of the total footprint.

Other business outcomes

LCC organisations reported a range of other business benefits arising from involvement, not simply saving money (although that was seen as important), but also in terms of raising profile, customer and staff relations, and enhancing their brand in a competitive market.

Increase in environmental management processes

There was a significant increase in the levels of environmental management processes and monitoring amongst Low Carbon Champion organisations due to their involvement with the programme, with the percentage with good policies and procedures increasing from 26% at the beginning to 79% at the end. In addition around half of the LCC organisations were monitoring energy use by the end, rising from very few doing so at the beginning.

Increase in individual skills and confidence to make change

The champions themselves gained in knowledge about environmental issues, skills in terms of environmental management, monitoring and influencing for change, and in confidence in being able to put their knowledge into effect in their organisations.

Increase in environmental concern

The organisations involved did change in their levels of emotional commitment to the environment and to environmental change, this wasn't as marked as in other areas for two reasons:

One was that a lot of organisations joined the programme already very committed to environmental change, with 40% very committed or extremely committed to taking environmental issues into account in their business practice.

The other was that for businesses joining the programme with lower levels of environmental interest and commitment, the 'green agenda' was not promoted as an end in itself, and was mixed in with messages about the potential for financial savings, business promotion and reputation, and ability to gain financial support for infrastructural changes.

The value of this approach is clear in the increased awareness of the business benefits of being green among the champions and their wider organisations.

Specific Linked outcomes

19 Bronze, 13 Silver and 10 Gold Suffolk Carbon Charters were rewarded to LCC organisations through their involvement in the programme.

Promotion to a wider network of businesses

LCC organisations promoted the value of and skills to effect carbon reduction to a wider business and local community through ethical purchasing, awareness raising and specific actions to support local environmental behaviour change.

14.1.3 Reasons for success

Combined approach of Carbon Audit plus Mentoring and Grant

The combination of the different elements of the programme, offering not simply a carbon audit – to give knowledge of the baseline carbon footprint and suggested actions to reduce it – but also the training and mentoring - to develop business systems and time-bound action plans, and to support the champions in influencing both colleagues and management – the grant to attract organisations to join the programme and offer financial support in making changes, and the charter assessment which acted as an incentive to take action but also as a useful tool to track progress and set standards.

Comparison with the control group who only received a carbon audit and responsive follow up support shows the value of the (additional) mentoring and training in developing policies for environmental management, and both the mentoring and the grant in effecting carbon reduction.

Data from champions and sponsors also corroborates this with different organisations being attracted by different aspects but all elements been valued and seen as important.

Specific style, character and skills of the GLT and the LCC delivery team

The approach taken by the LCC team itself was undoubtedly one of the main reasons for success. Organisations valued their personal commitment to environmental issues, but also their openness to others not feeling the same. The focus on ensuring that actions made business sense, as well as environmental sense, meant that LCC organisations became more aware of the potential for reducing carbon to save money and also raise the profile of the business. In addition, it proved a very useful aid to environmentally aware champions in convincing senior management of the value of investing in carbon reduction. Having experienced and respected business development, environmental management and carbon reduction experts on the team was essential in supporting effectively and securing senior support.

Practical and individually tailored approach

The focus given to taking actions and producing concrete outcomes, from the first day of the training, alongside the provision of a range of tools, ideas and examples meant that champions felt the value of their time input to the programme from the start. This not only increased retention but also left them with useful tools and action plans they could put into practice and reuse beyond the life of the programme.

Programme designed to involve senior management

The programme was set up effectively to ensure that there was buy-in from higher levels of the organisation via the sponsor role which undoubtedly made a difference in terms of levels of support received by champions. This was done through the encouragement to senior staff to become champions themselves and through the requirement of buy-in at a senior level from initial meeting onwards.

Self-selecting group

The group of organisations who enrolled on the LCC programme were by definition interested in carbon reduction in some way. They had already committed time to have an initial meeting and to attend three days of training showing the value placed. While not being a criticism of the programme, this is likely to be a large factor in the success achieved. This would be true of the audit only group as well.

14.2. RECOMMENDATIONS

14.2.1 Overall

- Continue the programme in some way, making changes as below, to reach more organisations within and beyond Suffolk.

14.2.2 Changes to the programme approach

- Look at training and mentoring structure to see whether a different layout might work better, in particular consider doing preliminary one-to –one work with each organisation before day one, potentially allowing shorter or fewer training days.
- Embed more formal follow up – more than just the carbon charter visit. Make this an official part of the programme.
- Require carbon measurement and monitoring – not simply in order to be able to measure the impact of the programme, but to develop a culture of monitoring and review which will enhance sustainability. This needs to be linked to a useable energy/carbon monitoring tool.
- In any development or roll-out of the programme ensure that the core delivery team have both expertise in their areas and the ability to work with businesses to secure change at a senior level.

14.2.3 Evaluation follow up

- This evaluation has only been able to report on short-term changes in carbon emissions and behaviour of organisations involved, and look at the potential for sustainability through a number of measures. A repeat of the evaluation, ideally in the form of a re-audit of carbon reduction actions and a telephone interview with a sample of champions, should be carried out in early to mid 2014 to assess the sustainability of the processes and emotional change set in motion.

15. APPENDICES

15.1. APPENDIX 1: FURTHER INFORMATION ON RESEARCH PARTICIPANTS

Data Level	Method of Collection	Number of Participants	Sessions/Occasions
Primary Data	Focus group	6	2 - Repeated with same cohort
	Interviews formal, prearranged • Champions/Sponsors • LCC project team/steering group	20 • 16 • 4	n/a
	Observation (includes informal, semi structured interviews where relevant, and observation/discussion over use of 'voting' exercise)	Approx 50	10 with champions Also attendance at steering group.
	Online surveys (with some telephone interviews to support completion) Champions LCC project team Non-involved businesses via Chamber of Commerce	 39 (completed) 3 14	 Twice Once Once
	Paper surveys	22	4 (end of each cohort training session, supported by LCC team)
	Telephone survey to collect Carbon Reduction measures data	46	n/a
Secondary Data	LCC Customer Database		
	Initial meeting notes		
	Charter assessments		
	Carbon Logs		
	Champion 'distance travelled' questionnaire		
	Data from Suffolk Climate Change Partnership (SCCP) on carbon reduction		Collected by SCCP following template developed by EBS.

15.2. APPENDIX 2: FURTHER INFORMATION ON GREY LITERATURE REVIEW

A 'grey literature' review involves searching for published work on similar schemes or themes when you include non-academic sources such as reports or webpages. We felt it was important to look at other similar programmes, partly for comparison and partly to build on their findings. In fact we didn't find any useable data and very little in the way of findings or learning points. This emphasises the importance not just of creating a blueprint with the LCC programme but also disseminating it regionally and nationally.

To check for similar programmes we did a number of searches on google and on a group of academic databases. We then looked through the results to sort out any ones that actually represented similar programmes or research. In most cases LCC itself appeared – showing that it is well linked on google. Below are the search terms used:

- Low Carbon SME
- SME low carbon monitor
- Low carbon internal monitor business
- SME low carbon internal champion, a couple of papers allude to Jenkins (2009) discussion on champions, but are not related to businesses (despite SME keyword)
- Low carbon internal champion business
- Low carbon initiative business
- Low carbon agent SME
- Low carbon agent business
- Carbon reduction internal business
- Carbon reduction internal organization
- Carbon reduction project SME
- Carbon reduction project business
- Green scheme SME
- Green scheme business
- Green scheme business management
- Green scheme SME management
- Green scheme organization management
- Green management strategy SME
- Green champion business
- Internal green journey SME
- Internal green journey business

15.3. APPENDIX 3 – FULL DETAILS OF BUSINESS AND CHAMPION TYPES.

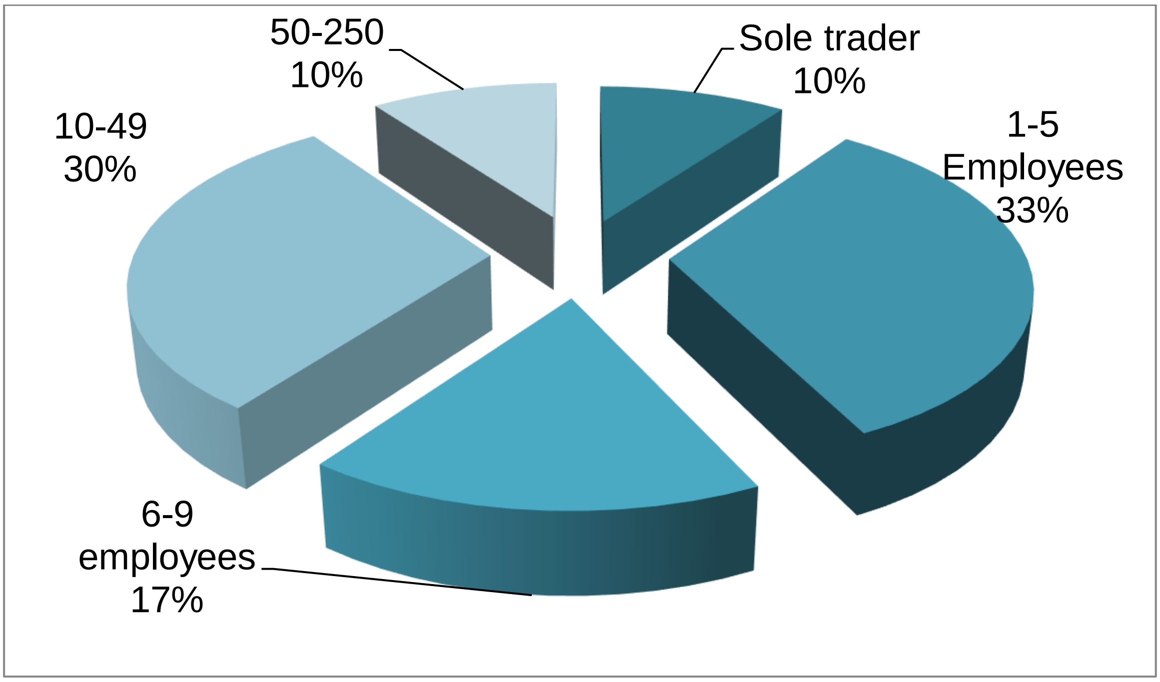
Business Size

The champions organisations were grouped by number of employees (where known, asked at initial interview) into 5 groups:

Size	Number (C1-5)	%	Explanation of choice of grouping
Sole trader	7	10	These are clearly different in many ways from organisations with employees
1-5 Employees	23	32	Although the traditional definition of 'micro-enterprise' is 1-9 employees, recent discussion on the huge role of the micro-enterprise sector suggests a difference in experience for smaller businesses than 'larger micro-enterprises'

6-9 employees	12	17	See above
10-49	21	29	Small businesses
50-250	7	13	Medium businesses

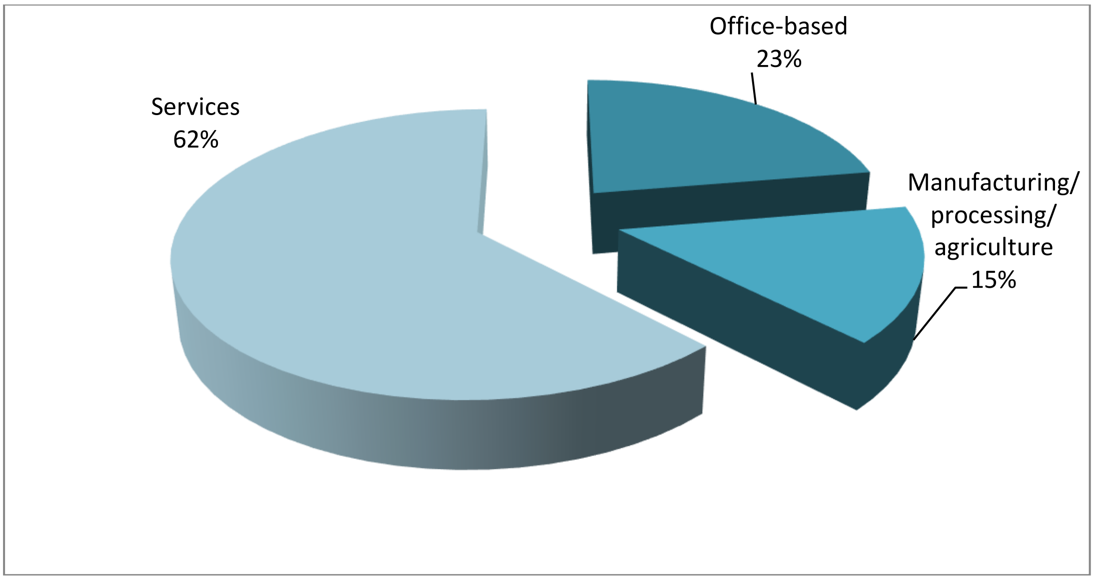
Figure 9: LCC Organisation by number of employees



Business Sector

In order to get a useable sector grouping we divided businesses into professional and technical services (office based high skill firms), manufacturing/processing/agricultural, and service firms (including education, health and tourism, as well as retail to customer and other direct services).

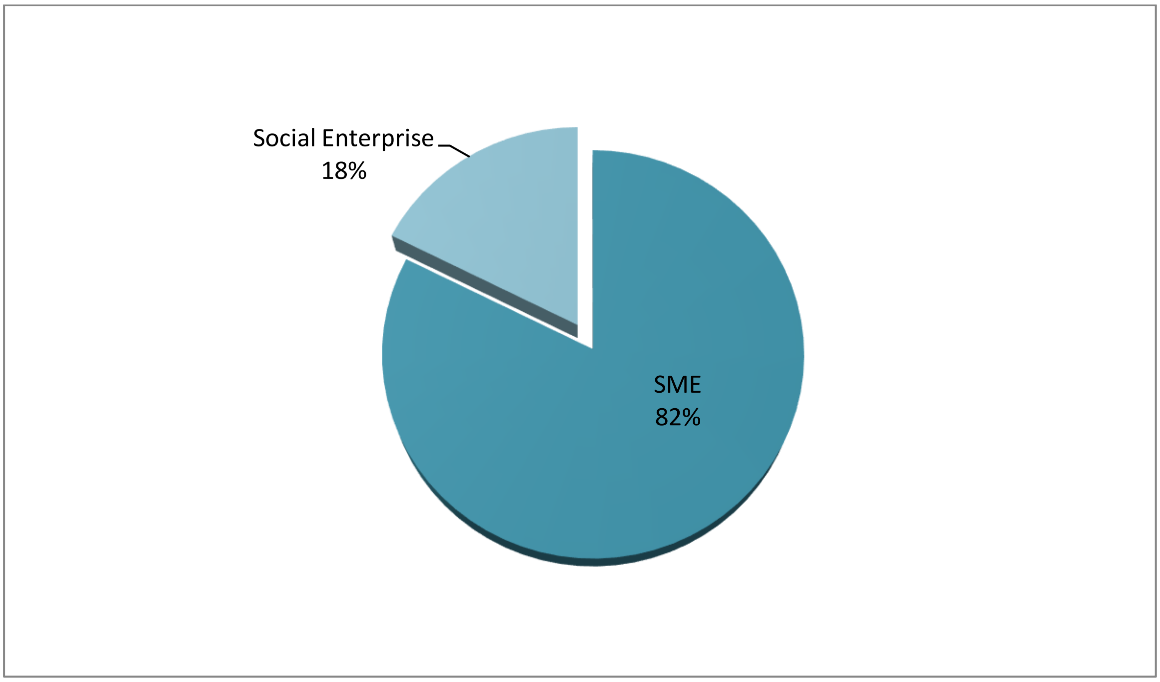
This shows there was a strong emphasis on service-based organisations, which reflects the particularly high take up among the tourism, education and alternative health sectors.



Type of business

Most LCC companies were for profit SMEs but there is a significant minority (15 out of 85) which are not for profit social enterprises.

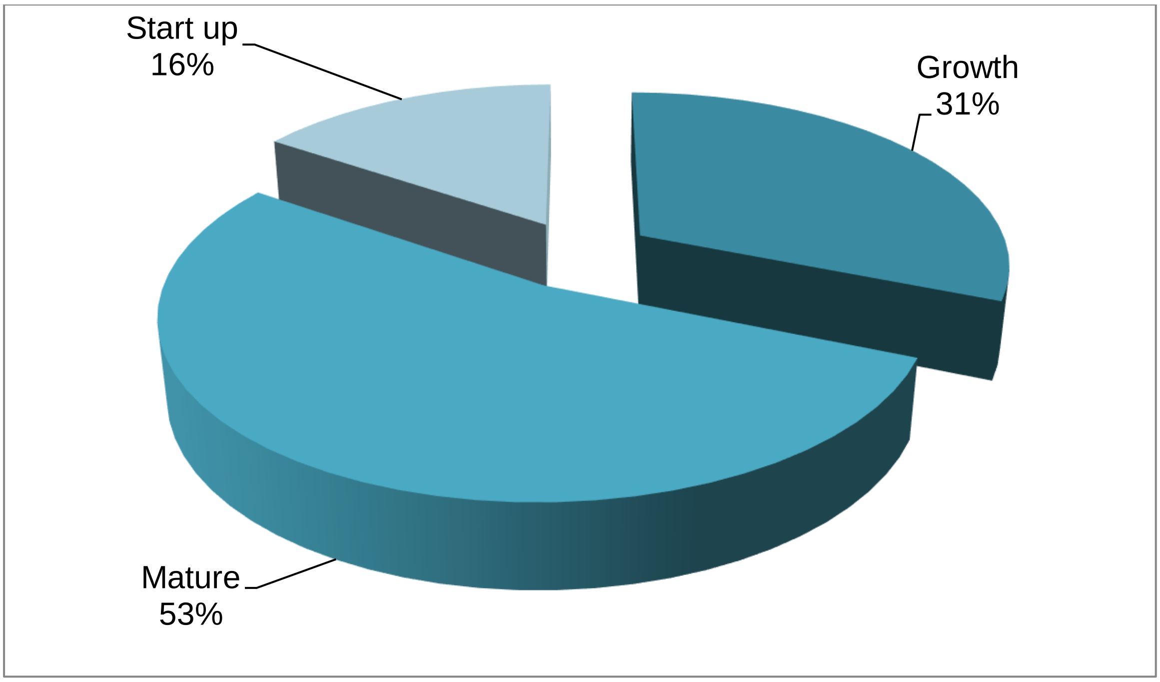
Figure 10: Profit status of businesses



Stage of business (self-defined)

LCC organisations were also assessed (at initial interview) as to what stage of growth the business was at, as can be seen below, the majority were in a 'mature' stage, allowing them time to embark on other projects

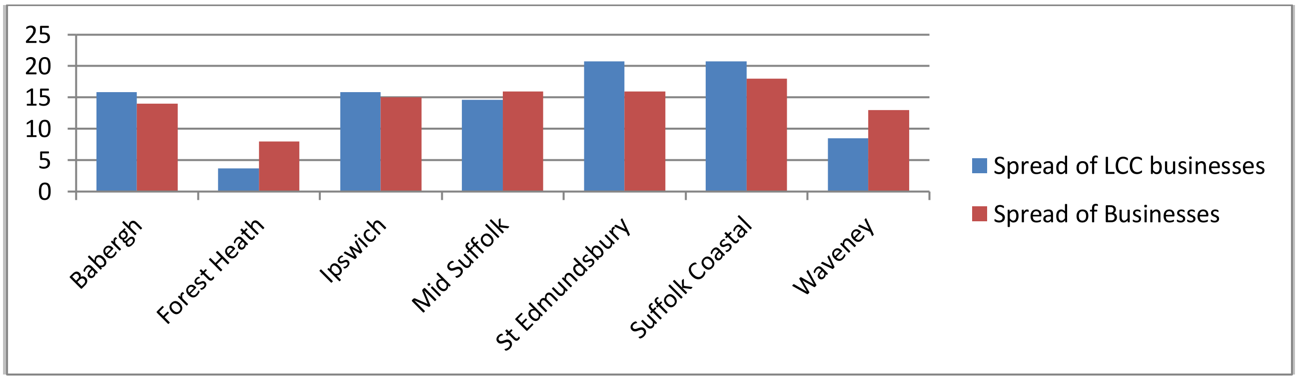
Figure 11: Stage of Business



Location of Business

As can be seen below, LCC businesses were distributed across the county, despite the programme being largely reactive in recruitment. This testifies to the thoroughness of the spread of promotional materials.

Figure 12: Distribution of Suffolk businesses (%)



Champions Self –defined influence

	I can strongly influence decisions about the direction and operation of the company (A)	The MD of the company is very supportive of my LCC work (B)	I have regular contact with most people in the company (C)	I have an easy way to communicate with most people in the company (D)	Increasing Influence ------→
Strongly disagree	2.7	0	2.7	2.7	
Disagree	5.4	0	0	0	
Neither	13.5	10.8	2.7	10.8	

agree nor disagree					
Agree	24.3	18.9	24.3	18.9	
Strongly Agree	54.1	70.3	70.3	67.6	

From these tables it can be seen that the champions responding to the survey mostly have strong influence and connections within their company.

15.4. APPENDIX 4 – NOTES ON CARBON REDUCTION CALCULATIONS

For carbon reduction calculations – where we really want to see the impact of the audit plus approach, we need to exclude any organisations that only had an audit – ie left after that.

The total of 85 includes 9 who dropped out following the audit. These will be excluded from any carbon reduction calculations. In addition to these 9, there were another 8 who left the programme after training. These have been included.

Following this, in order to be most balanced we also excluded approx 24% of these (ie 2) to match with the 24% of cases who did complete where no data was available (we selected the two with the median initial carbon footprints).

Finally there were 52 cases with data available, 4 non-completers which were included as zero reduction. So a total of 56 cases for the carbon reduction analysis

Ended up with 56 'valid' for CR.

15.5. APPENDIX 5 FURTHER CARBON REDUCTION DATA

Full data behind charts above are given here for information

Table 16: Carbon Reduction by Size of Business

CR score - low medium high * Size of Business Crosstabulation

			Size of Business			
			micro	small	medium	Total
CR score - low medium high	Under 5%	Count	5	5	0	10
		% within Size of Business	17.2%	29.4%	.0%	18.2%
	5-15%	Count	5	5	7	17
		% within Size of Business	17.2%	29.4%	77.8%	30.9%
	Over 15%	Count	19	7	2	28
		% within Size of Business	65.5%	41.2%	22.2%	50.9%
Total		Count	29	17	9	55
		% within Size of Business	100.0%	100.0%	100.0%	100.0%

Table 17: Carbon reduction Score by Initial Carbon Footprint

CR score - low medium high * Footprint Groups Crosstabulation

			Footprint Groups			
			Under 18t	18-73t	Over 73t	Total
CR score - low medium high	Under 5%	Count	5	3	2	10
		% within Footprint Groups	27.8%	15.8%	11.1%	18.2%
	5-15%	Count	2	5	10	17
		% within Footprint Groups	11.1%	26.3%	55.6%	30.9%

	Over 15%	Count	11	11	6	28
		% within Footprint Groups	61.1%	57.9%	33.3%	50.9%
Total		Count	18	19	18	55
		% within Footprint Groups	100.0%	100.0%	100.0%	100.0%

Table 18: Carbon Reduction score by Cohort

CR score - low medium high * Cohort Crosstabulation

			Cohort									Total
			1	2	3	4	5	6	7	8	9	
CR score - low medium high	Under 5%	Count	1	1	2	1	2	1	1	0	1	10
		% within Cohort	16.7%	16.7%	33.3%	12.5%	28.6%	25.0%	7.7%	.0%	33.3%	18.2%
	5-15%	Count	4	1	2	1	4	0	4	1	0	17
		% within Cohort	66.7%	16.7%	33.3%	12.5%	57.1%	.0%	30.8%	50.0%	.0%	30.9%
	Over 15%	Count	1	4	2	6	1	3	8	1	2	28
		% within Cohort	16.7%	66.7%	33.3%	75.0%	14.3%	75.0%	61.5%	50.0%	66.7%	50.9%
Total		Count	6	6	6	8	7	4	13	2	3	55
		% within Cohort	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Comparison of carbon reduction by whether the organisation is profit-making (SME v Social Enterprise) shows no real difference in the proportion of organisations achieving each level of carbon reduction, similarly there is no significant difference in terms of sector.

Table 19: Comparison of Carbon Reduction by whether Social Enterprise or SME

Crosstab

			CR score - low medium high			Total
			Under 5%	5-15%	Over 15%	
Type of organisation	SE	Count	2	3	3	8
		% within CR score - low medium high	20.0%	17.6%	10.7%	14.5%
	SME	Count	8	14	25	47
		% within CR score - low medium high	80.0%	82.4%	89.3%	85.5%
Total		Count	10	17	28	55
		% within CR score - low medium high	100.0%	100.0%	100.0%	100.0%

Table 20: Comparison of Carbon Reduction by sector

Crosstab

			CR score - low medium high			Total
			Under 5%	5-15%	Over 15%	
sector code	manuf	Count	2	4	6	12
		% within CR score - low medium high	20.0%	23.5%	21.4%	21.8%
	office	Count	3	3	4	10
		% within CR score - low medium high	30.0%	17.6%	14.3%	18.2%
	service	Count	5	10	18	33
		% within CR score - low medium high	50.0%	58.8%	64.3%	60.0%
Total		Count	10	17	28	55
		% within CR score - low medium high	100.0%	100.0%	100.0%	100.0%

15.6. APPENDIX 6 – NOTES ON BUSINESS PROCESSES DISTANCE TRAVELLED

Calculations on business processes are done as follows:

Score 1-3 on policies (action plan with dates and people, carbon/environmental policy, commitment to revisit/monitor): 1 = nothing, 2 = some but limited (either not signed by management or limited in scope – e.g. no action plan), 3 = fully completed and signed. Effectively gaining a Bronze Carbon Charter would require level 3 and we simply gave a 3 for all Bronze, Silver and Gold awarded businesses after checking a sample for consistency.

Score 0 to 1 on monitoring and measurement: in practice this was either done or not, some did a lot more than others so there is variation in terms of how much – from full completion of carbon logs with all areas, fuel/mileage logs, energy logs to simply covering one area where carbon emissions were highest or most action had been deemed possible in the audit. As stated elsewhere, carbon logs were very erratically used and not useful for external monitoring/evaluation, but might have been useful for internal (e.g. where month on month recording allows an immediate feedback to staff).

Gaining a Silver Charter would require monitoring, so organisations with a Silver (or Gold) Charter were given a one in this. In addition those organisations which monitored but couldn’t prove a 10% reduction in energy were also given a 1 as this score is about processes, not outcomes.

Score 0 to 1 on ‘extra’ – this was added to allow differentiation between the basic completion of policies and monitoring and doing something extra which implied an embedding of a carbon reduction agenda in the company. Large investments made with an environmental focus, the planting of trees for offset and in most cases installation of considerable pV where a purely financial aim wasn't in place. In addition, the promotion of carbon reduction beyond the staff and management – e.g. to customers and suppliers, or education work gave a 1 here. There is the potential for an organisation to score a 1 here without scoring 1 in monitoring but in practice we didn't find any cases – this shows the veracity of the hierarchical approach taken to this both by Suffolk Carbon Charters (this group would include Gold Charter awardees) and ourselves.

15.7. APPENDIX 7 FURTHER INFORMATION ON COMPARISON BETWEEN AUDIT ONLY AND AUDIT PLUS GROUPS

Figure 13: Analysis of Means Tables and ANOVA calculations

Report

Percentage CO2 reduction

group	Mean	N	Std. Deviation	Std. Error of Mean
Audit plus	22.06	24	.24.540	5.009
2	13.61	46	13.464	1.985
Total	16.51	70	18.311	2.189

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
percent * group	Between Groups	(Combined)	.113	1	.113	3.478	.067
	Within Groups		2.201	68	.032		
	Total		2.313	69			

16. TABLE OF TABLES AND FIGURES