



Cycle to Work Alliance

Behavioural Impact Analysis

February 2011



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1. Foreword



There are so many positives to cycling that I hardly know where to begin this foreword. Should I concentrate on the opportunity for carbon reductions, the personal health benefits, or the beneficial consequences for business through reduced road congestion? Or any one of the many reasons why it makes sense to encourage cycling?

The Coalition Government is strongly in favour of cycling. This is expressly flagged up in the Coalition Agreement. It is promoted in the recent Public Health White Paper *'Healthy Lives, Healthy People'* and of course features prominently in our new local transport White Paper, *'Creating Growth, Cutting Carbon'*.

It is why we have guaranteed to fund cycle training for children through the Bikeability scheme for the rest of this Parliament, and we have made it clear to local authorities in the guidance for our new £560 m Local Sustainable Transport Fund that bids for cycling schemes are welcome.

There is much to be gained from increased participation in cycling and the figures speak for themselves. Specialist economic consultancy SQW has shown that a 20 per cent increase in cycling in 2012 would release a cumulative saving of £500 m by 2015. A rise of 50 per cent on current rates would unlock more than £1.3 bn, derived from savings in congestion, pollution and healthcare.

At the same time, switching from four wheels to two for the school run or the commute would dramatically reduce carbon emissions. If all the commuters in England with a journey of under five miles went by bike rather than car or bus, they save a collective 44,000 tonnes of CO₂, the equivalent emissions produced by heating nearly 17,000 houses. And that would just be in the first week.

However, the benefits of cycling run much deeper than balance sheets or carbon footprints. It's a crucial life skill as well as offering easy, exhilarating exercise. I would therefore like to thank the Alliance for their support of the Cycle to Work scheme and congratulate them on the positive impact their businesses and services have had in generating awareness and raising cycling levels.

This report provides key evidence of the potential benefits of Cycle to Work Schemes. My Department welcomes its publication.



Norman Baker MP, Minister for Cycling,

2. Introduction

The Cycle to Work Alliance has conducted this research project to gain a better understanding of the health and environmental benefits of the cycle to work scheme and the motivations that have driven demand from the users of the scheme, and the employers who offer it.

The questions focused on issues regarding CO₂ emissions and health; the analysis of the data looks at the role the scheme plays in improving employee engagement, encouraging healthier lives and in helping the UK meeting its CO₂ emissions reduction targets.

The commentary and views expressed in this Behavioural Impact Analysis (except where specific quotations are given) are the Cycle to Work Alliance's own.

3. Methodology

The Cycle to Work Alliance surveyed users and employers who run their scheme with one of the four largest providers of the cycle to work scheme: Cyclescheme, Cycle Solutions, Evans Cycles and Halfords. The survey was conducted between 1st November 2010 and 1st December 2010, by a self-completion online questionnaire. 44,599 employees and 1,233 employers completed the survey. This sample represents 17.2% of the current users of the scheme, and 8.2% of the employers who offer it.

The survey was conducted in line with the Market Research Society Guidelines.

4. About the cycle to work scheme

The cycle to work initiative is a tax-efficient, and on the whole, salary-sacrificed employee benefit that provides a way of encouraging more adults to take up cycling.

Introduced in the 1999 Finance Act, the scheme encourages employers to loan bicycles and cycling safety equipment to employees as a tax-exempt benefit for the purpose of cycling to work. Under the scheme, employers buy cycling equipment from suppliers approved by their scheme administrator, and hire it to their employees. At the end of the loan period, the employer may choose to give the employee the option to purchase the equipment.

The scheme is a vital way in which the benefits of cycling can be promoted. The savings that individuals make through the cycle to work scheme improves the affordability of, and access to, cycling. Employees who participant in schemes run by Alliance members, on average, save up to 40% of the total cost of a new bike.

To date over 400,000 people have taken advantage of the scheme, which involves over 2,220 bike retailers and 15,000 employers. The cycle to work scheme is extremely popular among employers, being the second most popular salary sacrifice based employee benefit, with 82% of employers who offer salary sacrifice schemes making it available to their staff.¹

¹ Employee Benefits/Towers Watson Flexible Benefits Research 2010

5. About the Cycle to Work Alliance

The Cycle to Work Alliance is a group of the leading providers of the cycle to work scheme, including Cyclescheme, Cycle Solutions, Evans Cycles and Halfords.

The members of the Alliance work together to highlight the benefits, to both public health and the environment, that the cycle to work scheme provides. With environmental and public health issues increasingly important, the Alliance believes that cycling offers a way of tackling a variety of problems, ranging from rising obesity levels to the need to cut carbon emissions.

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6. Headline Findings

1. The cycle to work scheme is recognised as an important way to reduce carbon emissions, current users of the scheme save **133,442 tonnes of CO₂** per year.² This is the equivalent of:
 - The total annual CO₂ emissions of 24,000 homes or a city larger than Hereford;³
 - 76 full Boeing 747s flying around the world - more than the combined fleet of British Airways and Virgin Atlantic's Boeing 747s.⁴
2. There is a direct health benefit from the scheme, with 87% of participants noticing their health improving, and 84% of users rating the scheme as an important and easy way to keep fit.
3. The scheme plays an important role in helping new cyclists get started. The research found that 61% of people did not cycle to work before they signed up to the scheme and 70% classed themselves as either novice or occasional cyclists.
4. The scheme drives trade to the cycling industry, with 76% of participants stating they would not have bought their bicycle if it had not been offered it through the cycle to work scheme.
5. The financial benefits provided by the scheme are central to its success in delivering behavioural change, with 73% of respondents declaring that the savings they were offered through the scheme were the most important factor in their decision to take part.
6. The scheme is a powerful employee engagement tool, with 98% of respondents said they would encourage other colleagues to take part in the cycle to work scheme.

² See Appendix A

³ See Appendix B

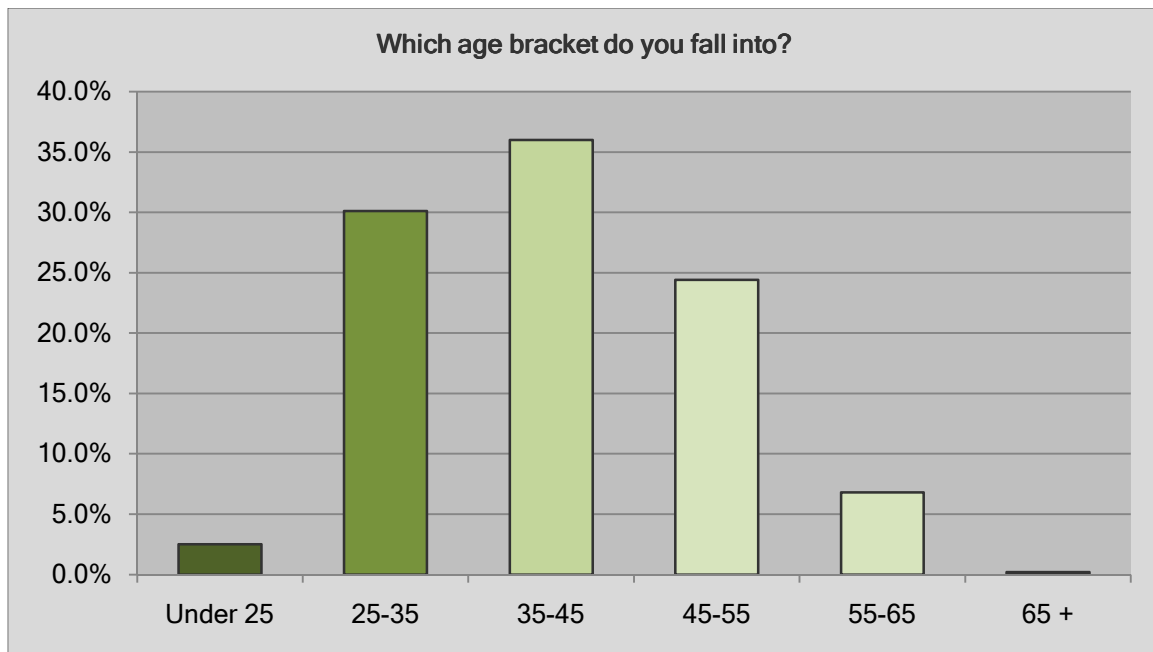
⁴ See Appendix C

7. Data Analysis: Employees

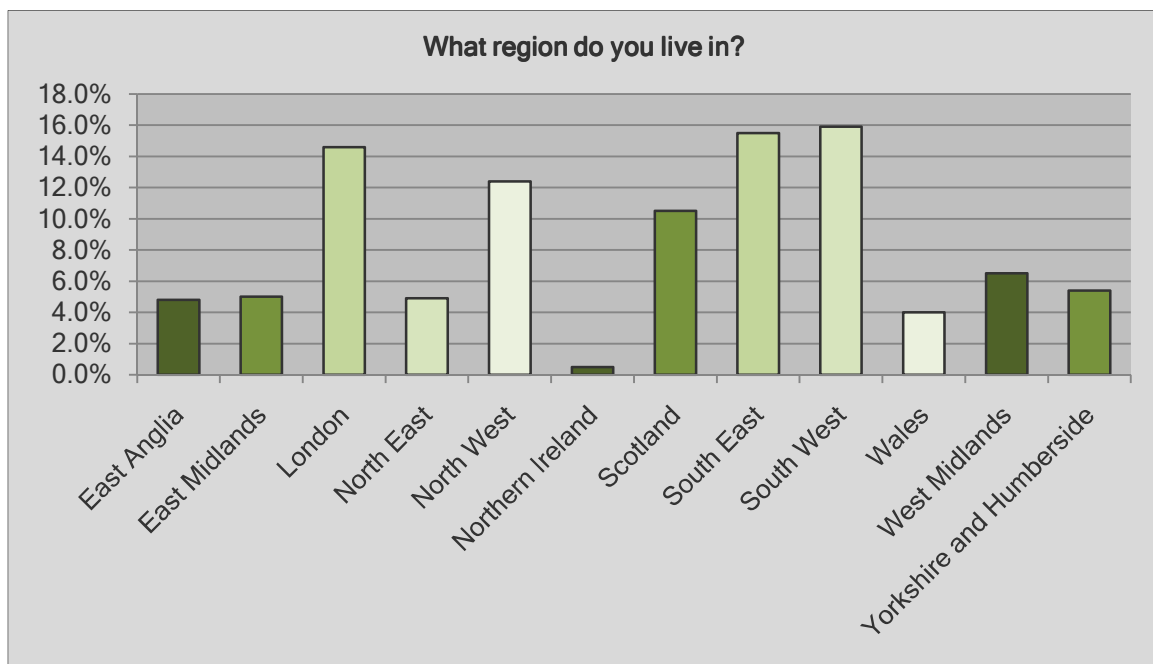
Number of employees who took part in the survey: 44,599

7.1. Profile of users of the scheme

- The behavioural insight analysis found that 70% of users of the cycle to work scheme classified themselves as novice or occasional cyclists;
- The majority (73%) participants are men;
- And that 36% of users are aged between 35 and 45.

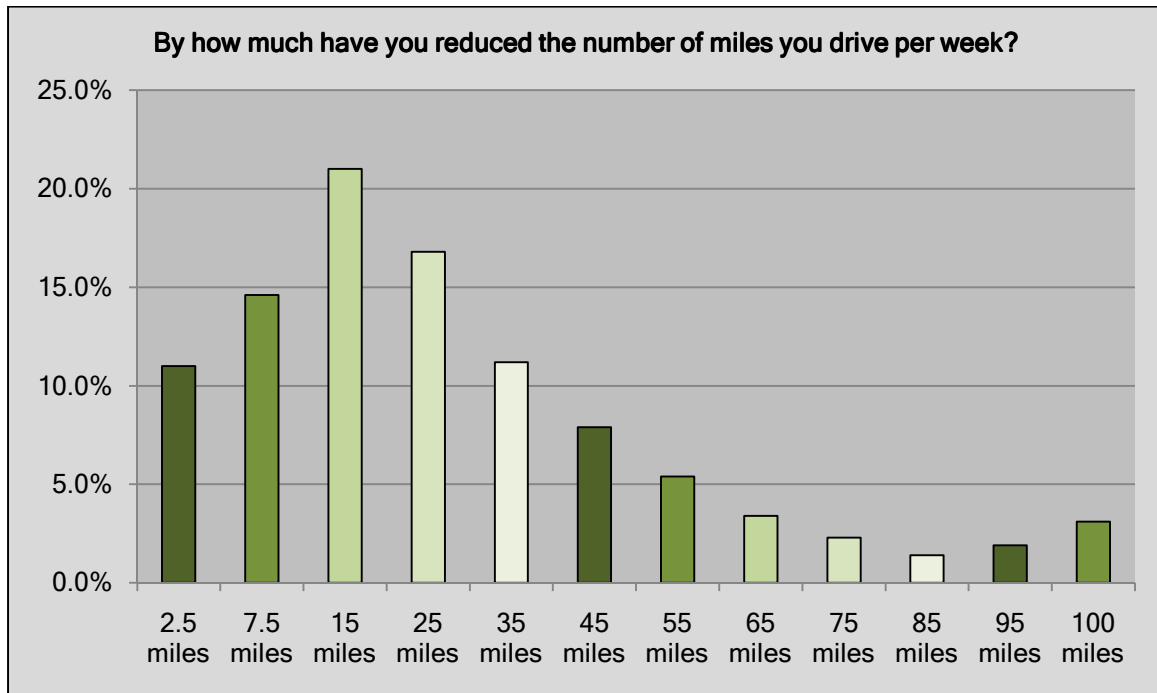


- The London and the South East has the largest take up of cycle to work participants (30%), although participation was well spread across the county:



7.2. Environmental benefits: Reduction in car usage and CO₂ emissions

- The majority of respondents (71%) said they would travel to work by car if they did not cycle;
- 70% of respondents had reduced the number of miles they drive per week as a result of using the cycle to work scheme;
- 64% of users reduced the distance they drive by up to 50 miles per week.
- 70% of respondents felt the scheme was an important way to reduce their carbon footprint.



It has been estimated that, currently, members of the Cycle to Work Alliance are helping approximately 260,000 people take part in the cycle to work scheme.

Extrapolating from this, it is possible to estimate that current users of the cycle to work scheme are saving **133,442 tonnes of CO₂** per year.⁵ This is the equivalent of:

- The CO₂ emissions of 24,000 homes per year or a city larger than Hereford;⁶
- 76 full Boeing 747s flying around the world - more than the combined fleet of British Airways and Virgin Atlantic's Boeing 747s.⁷

In order to meet the Government's climate change target (a reduction in CO₂ emissions by 80% by 2050)⁸ both individuals and businesses will need to change their everyday behaviours. Participants of the cycle to work scheme surveyed show that a small change can create big results. By encouraging people to cycle instead of drive, the cycle to work scheme provides the incentive to change behaviour.

"The cycle to work scheme is a fantastic idea ... The health benefits and reduction in CO₂ and congestion should make it a no brainer for the government to continue in their support"

35-45, Male, North West

⁵ See Appendix A

⁶ See Appendix B

⁷ See Appendix C

⁸ <http://www.decc.gov.uk/assets/decc/About%20us/decc-business-plan-2011-2015.pdf>

7.3. Health benefits

- 87% of respondents have noticed a health benefit from cycling to work.
- The health benefits noticed by scheme users include:
 - Increased fitness;
 - Weight loss;
 - Improved mental health, wellbeing and happiness.
- 84% of users believed the scheme was an important and easy way to keep fit.

The Government’s recent public health white paper Healthy Lives, Healthy People, sets out plans for improving public health.⁹ At the heart of the changes is a commitment to encouraging people to take greater responsibility for their own health and to live healthier lifestyles. Making active travel and physical activity the norm in communities across the country is a fundamental aspect of this strategy.

“My asthma has improved, I feel generally fitter and I have begun losing weight.”

25-35, Male, London

87% of participants of the cycle to work scheme we surveyed noticed a health benefit from their more active commute to work. By using the scheme, people

are able to make exercise an everyday activity, rather than having to find additional time for it, changing their behaviour and ensuring that exercise becomes part of their daily routine.

7.4. The importance of the financial savings to deliver behavioural change

- 73% of users are basic rate tax payers;
- 76% said they would not have bought their bicycle if it hadn’t been offered it through the cycle to work scheme;
- 73% of participants stated that the savings the scheme provided were very important in their decision to cycle to work;
- 61% of respondents said they did not cycle to work before using the scheme;
- 98% of respondents said they would encourage other colleagues to take part in the cycle to work scheme;

With 98% of respondents saying they would encourage other colleagues to take part in the cycle to work scheme, the survey reinforces industry research showing that the cycle to work scheme is the second most popular salary sacrifice based employee benefit, with 82% of employers who offer salary sacrifice schemes making it available to their staff.¹⁰ This positive recommendation by colleagues is a powerful driver of the scheme’s growth.

The Coalition Government is including in their policy formulation, aspects of behavioural economics. The Behavioural Insight Team, based at the Cabinet Office, aims to discover ways to help people to “make better choices for themselves”.¹¹

“I am absolutely delighted with the Cycle to Work Scheme and the bike that I have bought which I could not afford under normal circumstances. I have become a lot fitter, have halved my daily commute and it’s not costing me anything. What has struck me more is that I tend to use the car less for leisure purposes and am saving over £40 a month in fuel, not to mention the reduction in CO₂. I am recommending the Scheme to everyone and enjoying every moment, my only regret is that I had not cycled sooner. Thank you.”

35-45, Male, East London

⁹ http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_122252.pdf

¹⁰ http://www.employeebenefits.co.uk/download/3517/Tax_efficient_benefits.pdf

¹¹ http://www.cabinetoffice.gov.uk/media/409088/pfg_coalition.pdf

The Government's consistent theme of encouraging and incentivising behavioural change is clearly reflected in the cycle to work scheme. 61% of respondents declared they did not cycle to work before using the scheme and 73% said that the savings the scheme offered were very important to their choosing to take part. The savings offered, as a tax-exempt benefit, clearly play a vital role in incentivising individuals to live healthier lives, reduce their carbon emissions and contribute to a more sustainable transport system.

As well as encouraging individuals to improve their health and reduce their carbon footprint the scheme makes cycling more affordable for lower paid employees. With the cost of living rising rapidly and petrol and rail fares on the increase, employees need to be supported with cost efficient modes of transport. The cycle to work scheme is used predominantly by basic rate taxpayers (73%) providing them with a low cost commute to work.

"The cycle to work scheme enabled me to get a bike and safety equipment than I couldn't have afforded on my own."

25-30, Female, East London

The savings offered by the scheme provide the tipping point to encourage behavioural change while at the same time helping employees reduce the cost of commuting. 76% of users surveyed declared they would not have bought their bicycle if it hadn't been offered it through the cycle to work scheme.

The Cycle to Work Alliance's members work with over 2,200 bike retailers across the country. Anecdotal evidence indicates that trade generated by the cycle to work scheme accounts for a significant proportion of independent retailer's revenue. As was stated above, 76% of participants of the scheme would not have bought their bicycle if it had not been offered through the cycle to work scheme. These scheme users are providing crucial investment in the cycling industry in a time when discretionary spending on leisure activities is down.¹²

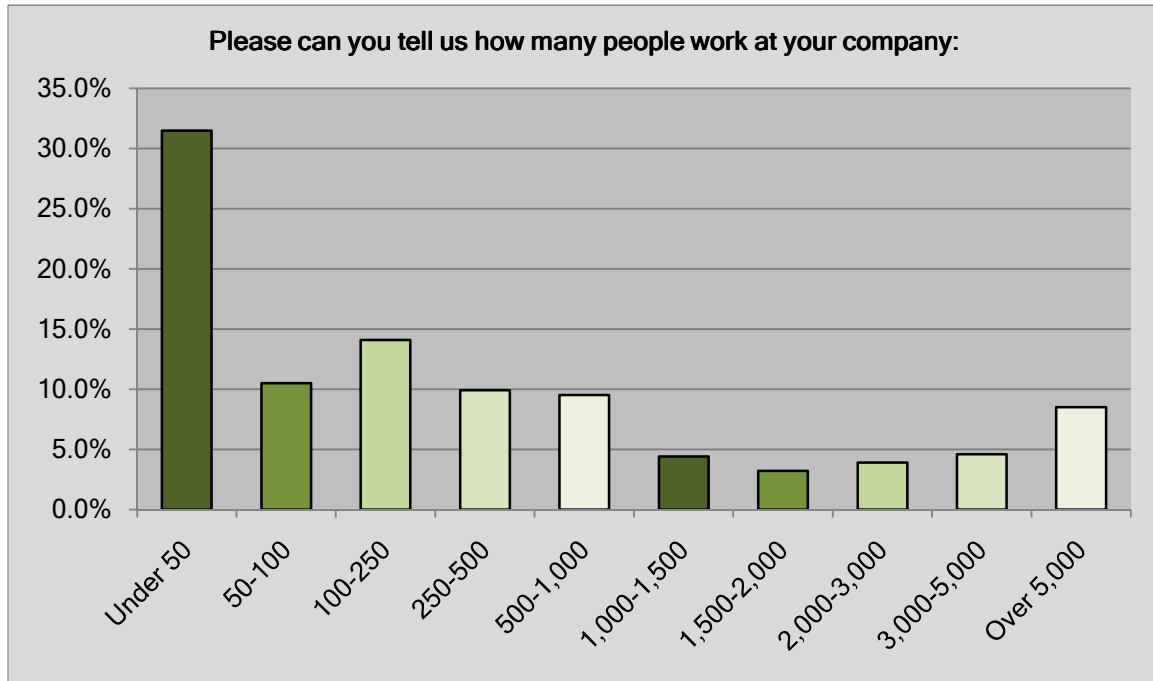
¹² <http://www.statistics.gov.uk/cci/nugget.asp?id=284>

8. Data Analysis: Employers

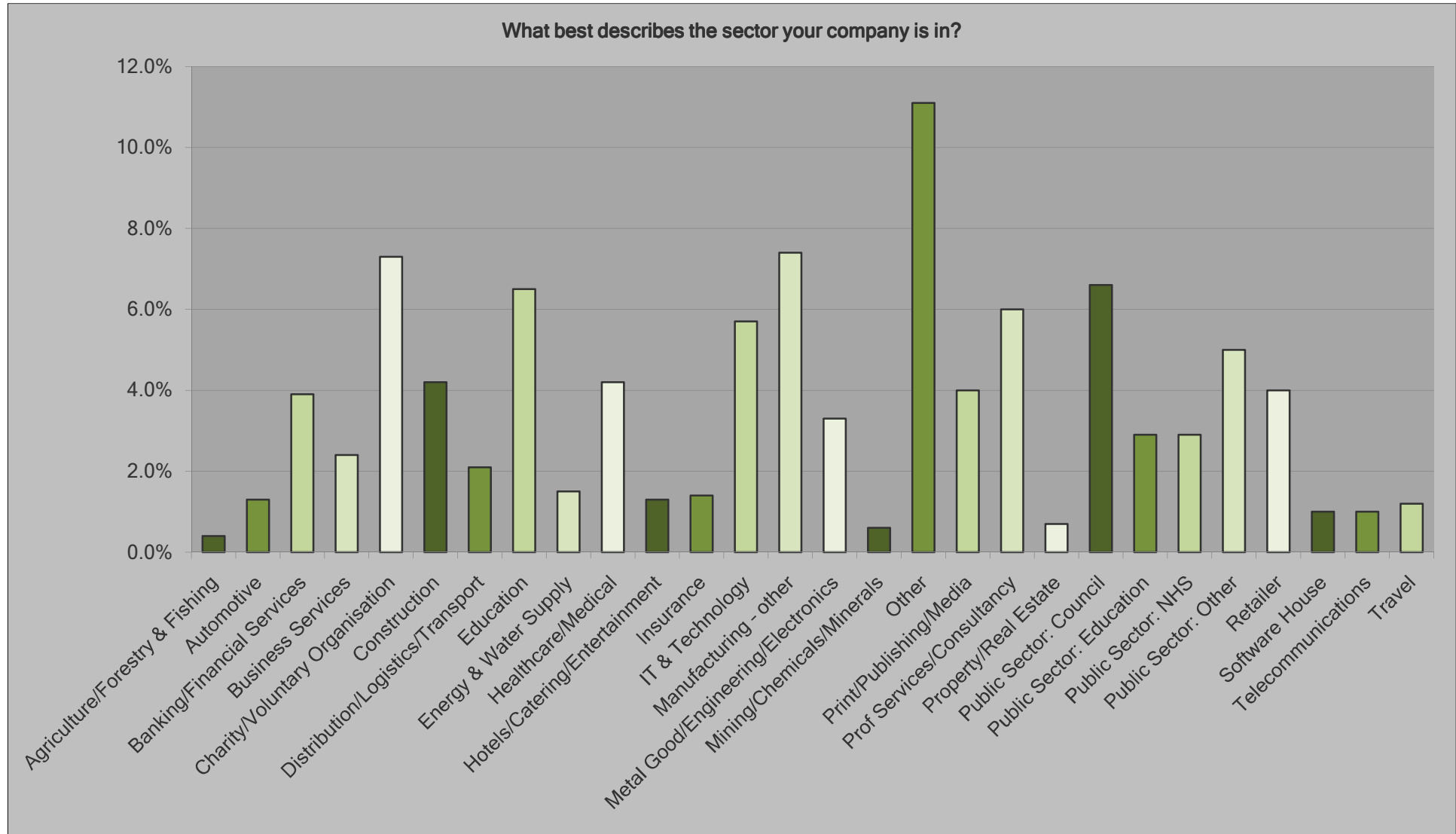
Number of employers who took part in the survey: 1,233

8.1. Profile of companies offering the scheme

- The majority of employers are small or medium sized businesses:



- Manufacturing companies are the biggest users of the cycle to work scheme (7.4%), followed closely by the charity and voluntary sector (7.3%), see page 11.



8.2. Public Health

- 97% of businesses think that the scheme is an important way to encourage a healthy workforce.

The Department of Health, in their recent public health white paper, proposes to work collaboratively with business, through the Public Health Responsibility Deal. According to the Department, the Deal will look at health at work and how employers can encourage behavioural change. The white paper also declares the Department of Health's plans to work "with employers to unleash their potential as champions of public health".¹³

"A brilliant scheme to encourage alternative work transport by generating a viable alternative and social debate."

A medium sized Financial Services Business

In addressing the root causes of ill health, the white paper believes that employers "should look to support the health and wellbeing of their staff".¹⁴ The Department of Health is exploring a range of models which will help to support small and medium-sized enterprises in promoting the health of their workforce.

Employers are evidently already recognising the need to maintain a healthy workforce, and 97% of them see the cycle to work scheme, as an important part of this. With 89% of employees noticing a health benefit from cycling to work, the scheme must be viewed as a vital way to help businesses fulfil their role in improving public health.

8.3. Employee engagement

- 89% of employers believe that the cycle to work scheme is an important means of improving employee engagement.

"There was more excitement about the cycle to work scheme than the annual bonus."

A small Professional Services Consultancy

At a time when businesses are tightening their belts, cost effective employee engagement strategies become increasingly important. With 89% of employers believing that the cycle to work scheme is an important way to improve employee engagement, the scheme clearly plays a vital role in creating a more productive and engaged workforce, while at the same time reducing companies' and individuals' carbon foot prints.

¹³ http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_122252.pdf

¹⁴ Ibid.

8.4. Reduction of Businesses' CO₂ emissions

- 90% of firms think that the scheme is an important way to reduce their carbon footprint.

The Department for Energy and Climate Change are committed to reducing businesses' carbon footprint.¹⁵ Low-carbon businesses are vital to delivering the UK's climate change targets. The Department aims to encourage organisations to take the lead in finding and implementing cost-effective measures that will cut greenhouse gas emissions.¹⁶ Central to businesses' cuts in carbon is their responsibility for employees' travel-based CO₂ emissions.

"This scheme has significantly increased the numbers of staff changing travel behaviour away from single occupancy cars"

A large public sector organisation

The cycle to work scheme clearly has a role to play in helping businesses reduce their CO₂ emissions in a cost effective way. With 90% of companies believing the scheme is an important way to reduce their carbon footprint; businesses are evidently becoming more aware of the need to reduce their CO₂ emissions.

¹⁵ <http://www.decc.gov.uk/assets/decc/About%20us/decc-business-plan-2011-2015.pdf>

¹⁶ http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/lc_business/lc_business.aspx

9. Recommendations

In light of our analysis of the benefits of the cycle to work scheme, the Cycle to Work Alliance would recommend to the Government, local authorities and businesses the following:

1. The Government's commitment to reducing CO₂ emissions by 80% by 2050 is an ambitious target at a time of challenging public spending cuts, however one that must be achieved if the UK is to play its part in the battle against climate change.¹⁷ The cycle to work scheme is a well established and cost efficient way of encouraging not only businesses to reduce their carbon footprint, but individuals too. Central Government should cite the scheme as an example of best practice for local authorities to achieve their sustainable transport and health duties.
- “The scheme has not only improved the health of a number of staff but some of the scheme members have been encouraged to complete events for charity”***

A Local Authority
2. By encouraging companies to take part and employees to take up the benefit, the Government is able to ensure they achieve their goal of better public health in a cost effective way. Local authorities' now have responsibility for the public health of their area and the behavioural change the cycle to work brings will help to ensure a large proportion of their population are able to live healthier lives. Local authorities need to actively promote the cycle to work scheme to business and employees in their area, to encourage individuals to lead healthier lives.
 3. The Behavioural Impact Analysis found that the majority (73%) of cycle to work participants are men. There is clearly a need to encourage more women to start cycling. This may be achieved by increasing the number of cycle routes, by demonstrating the improved safety of cycling, or by encouraging more companies to provide changing facilities.
 4. London has recently seen an increase in investment and awareness in cycling with the Mayor's 'cycling revolution' and the roll out of the London Cycle Hire scheme and the development of Cycle Superhighways. Yet cycling must also be promoted outside of London. The cycle to work scheme is run by businesses throughout the United Kingdom. Local authorities, with their new responsibilities for public health and sustainable transport, should encourage companies in their area to run a cycle to work scheme to achieve their targets.
 5. The financial savings the scheme offers must be maintained in order to successfully encourage individuals to change their behaviour to live healthier lives and reduce their carbon emissions. Our research clearly shows the importance individuals place on the savings offered with the vast majority stating they would not have bought their bike if it had not been offered through the scheme.

¹⁷ <http://www.decc.gov.uk/assets/decc/About%20us/decc-business-plan-2011-2015.pdf>



Appendices

Appendix A: CO₂ emission calculations

- A total of 901,663 miles were cycled by users;
- Divided by the number of valid respondents for that question (30,857) equated to an average 29 miles cycled weekly;
- 29 miles = 46.67 km (47 km);
- 260,000 (estimated total number of current users) x 47 km = 12,220,000 km/wk;
- 12,220,000 x 52 weeks = 635,440,000 km/yr;
- Average petrol car emits 210 g of CO₂ per km;
- 635,440,000 x 210 = 133,442,400,000 g of CO₂; or 133,442 tonnes of CO₂.

Table 9: Revised CO₂ emission factors for cars by engine size for 2010 update

Vehicle Type	Engine size	Size label	Final New 'real-world' 2010 GHG Conversion Factors ⁽¹⁾				MPG
			gCO ₂ per km			Total	
			CO ₂	CH ₄	N ₂ O		
Petrol car	< 1.4 l	Small	173.0	0.18	0.96	174.1	37.6
	1.4 - 2.0 l	Medium	214.9	0.18	0.96	216.0	30.3
	> 2.0 l	Large	299.4	0.18	0.96	300.5	21.7
Average petrol car			210.7	0.18	0.96	211.9	30.9
Diesel car	<1.7 l	Small	145.2	0.05	1.66	146.9	51.4
	1.7 - 2.0 l	Medium	181.0	0.05	1.66	182.7	41.2
	> 2.0 l	Large	245.5	0.05	1.66	247.2	30.4
Average diesel car			195.0	0.05	1.66	196.7	38.3
Car (unknown fuel)	⁽²⁾	Small	169.1	0.16	1.10	170.4	40.3
	⁽²⁾	Medium	203.8	0.13	1.22	205.1	34.3
	⁽²⁾	Large	272.4	0.11	1.34	273.9	26.5
Average car (unknown fuel)	⁽²⁾	-	206.9	0.14	1.21	208.3	33.5

Notes:

(1) Using a +15% uplift factor for NEDC ⇒ 'real-world';

(2) Estimated from the relative vehicle-km data from the UK GHG Inventory

DEFRA

<http://defra.gov.uk/environment/business/reporting/pdf/101006-guidelines-ghg-conversion-factors-method-paper.pdf>

Appendix B: household CO₂ emissions

- 133,442 tonnes of CO₂ divided by 5.56 (average CO₂ emissions per household) = 24,000 homes;
- 2.36 people in a household ([2001 Census](#)) x 24,000 = 56,640 people;
- Hereford has a population of 55,000 (<http://www.ukcities.co.uk/populations/>).

Fuel Type	Total use (TWh)	kgCO ₂ /kWh	GtCO ₂
Solid Fuel	8,762	0.34010	2,980
Gas	359,554	0.18523	66,600
Electricity	125,811	0.54160	68,139
Oil	35,278	0.24683	8,708
Total CO ₂ emissions			146,427
Total UK Households (000s)			26,336
Average CO ₂ emissions per household (tonnes)			5.560

National Energy Foundation
<http://www.nef.org.uk/greencompany/co2calculator.htm>

Appendix C: Flights CO₂ emissions calculations

- Boeing 747-400 flight 47% of all long haul flights, with an average 339 passengers, at a cost of 128.4 g CO₂ per passenger km (<http://defra.gov.uk/environment/business/reporting/pdf/101006-guidelines-ghg-conversion-factors-method-paper.pdf>);
- Circumference of the earth = 40,075.16 km;
- 1 person flight around the earth = 5,145650.544 g CO₂;
- A full Boeing 747-400 flying around the earth = 1,744,375,534.416 g of CO₂ or 1,744.38 tonnes of CO₂;
- 133,442 tonnes of CO₂ divided by 1,744.38 tonnes of CO₂ = 76.5 full Boeing 747-400 flying around the world.

- British Airways has 49 Boeing 747-400s (http://media.corporate-ir.net/media_files/IROL/69/69499/BAI_AR_2010_final.pdf, p 3)
- Virgin Atlantic has 13 Boeing 747-400s (http://www.virgin-atlantic.com/tridion/images/fleetnov_tcm4-426050.pdf)
- 49+13 = 62

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