EV0530 Evaluation of the Waste Reward and Recognition Scheme: Emerging findings

An Interim report by Brook Lyndhurst

December 2013
# Contents

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents</td>
</tr>
<tr>
<td>Executive summary</td>
</tr>
<tr>
<td>1. Introduction</td>
</tr>
<tr>
<td>1.1 Policy landscape and current state of affairs</td>
</tr>
<tr>
<td>1.2 Defra’s Reward and Recognition Scheme</td>
</tr>
<tr>
<td>1.3 Evaluating the Reward and Recognition Scheme</td>
</tr>
<tr>
<td>1.4 Data limitations and this report</td>
</tr>
<tr>
<td>2 Overview of findings</td>
</tr>
<tr>
<td>2.1 Introducing the eight schemes</td>
</tr>
<tr>
<td>2.2 Participants and behaviour at a glance</td>
</tr>
<tr>
<td>2.3 Tonnages and costs at a glance</td>
</tr>
<tr>
<td>3 Case studies</td>
</tr>
<tr>
<td>3.1 Aire Valley Recycling (AVR)</td>
</tr>
<tr>
<td>3.2 Bath and North East Somerset (BathNES)</td>
</tr>
<tr>
<td>3.3 Birmingham City Council (BCC)</td>
</tr>
<tr>
<td>3.4 Gloucestershire Waste Partnership</td>
</tr>
<tr>
<td>3.5 Norfolk County Council (NCC)</td>
</tr>
<tr>
<td>3.6 National Union of Students (NUS)</td>
</tr>
<tr>
<td>3.7 Preen Community Interest Company (Preen)</td>
</tr>
<tr>
<td>3.8 Westminster City Council (WCC)</td>
</tr>
<tr>
<td>4 Emerging findings and lessons</td>
</tr>
<tr>
<td>4.1 Tonnages and cost effectiveness</td>
</tr>
<tr>
<td>4.2 Behaviour and attitudes</td>
</tr>
<tr>
<td>4.3 Barriers, challenges and risks</td>
</tr>
<tr>
<td>4.4 Emerging lessons for future schemes</td>
</tr>
<tr>
<td>5 Next steps</td>
</tr>
</tbody>
</table>

---

**Acknowledgement:**

Defra and the research team at Brook Lyndhurst would like to thank all scheme staff at Aire Valley Recycling, Bath and North East Somerset, Birmingham City Council, Gloucestershire Waste Partnership, Norfolk County Council, National Union of Students, Preen Community Interest Company and Westminster City Council for their hard work and cooperation in providing all the data and explanations which made the analysis and drafting of this interim report possible.
Executive summary

Changing householder behaviour is key in going further and faster in terms of driving up recycling rates and reducing the amount of waste for disposal – recognising and rewarding the right behaviour can have a part to play in delivering this change.

Defra’s Reward and Recognition Scheme tests out how positive waste behaviour is affected through different kinds of reward and recognition schemes and what factors help or hinder such schemes in achieving this behaviour change. It is an opportunity and a safe-space to learn about what works and what does not work when delivering and evaluating these types of schemes. Up to £2 million was made available for three Spending Review years to 28 schemes. This support package was made available to pilots led by local authorities and civil society organisations. The programme supports an eclectic group of schemes looking at innovative ways of tackling issues around food waste, recycling, re-use and waste prevention and reduction. Defra commissioned Brook Lyndhurst as the schemes’ and programme’s research and evaluation partner.

This interim report looks at eight schemes which by summer 2013 had been assessed and offers a stock-take of emerging lessons based on this small, diverse sample, to share the schemes’ experiences with those setting up schemes now or considering doing so in future. The eight schemes assessed to date are diverse in terms of behaviours and audience targeted. With regard to behaviours: increasing on-the-go recycling, increasing purchases of reuse items and increasing participation in household dry recycling collections all feature. The target audiences of these eight schemes also vary, covering: students, passersby on busy streets, low recycling households and reuse shop visitors.

Reward and recognition schemes cannot be seen as a ‘quick fix’. They require careful consideration, time and investment, especially if they are not only meant to be successful, but also to demonstrate their success and impact. The common challenges encountered by the schemes were related to knowing what would work with their target audience, communications, choosing appropriate rewards, operational issues, project management and working with delivery partners. At this interim stage it is not possible to list the factors that help to deliver a successful scheme. It would appear, however, that unless certain preconditions are in place the schemes stand little chance of demonstrating success. The preconditions that ought to be considered are:

- Stable, simple, easily accessible and effective service provision;
- Clear information and strong communications tapping into different channels;
- In-depth knowledge of target audience;
- Tailored and regular recognition and feedback of service-use;
- Ability to demonstrate impact and attribution of rewards; and
- Tailored assessment and careful selection of reward delivery mechanism.

Across the schemes, improvements in recycling and reuse tended to be linked to better services and promotion rather than being attributable directly to the rewards. Rewards and recognition have the potential to validate, reinforce and, possibly, improve a pre-existing behaviour rather than act as a catalyst for new behaviours. Schemes made participants feel that recycling and reuse was ‘the right thing to do’ and showed participants ‘that their efforts were appreciated’. For some it also acted as a reminder that more things could be recycled and reused which links back to the importance of on-going feedback and communications.

The diversity of schemes, different monitoring and evaluation approaches, and data quality and limitations make scheme comparisons difficult. Therefore, it is not advisable to draw definitive results and conclusions - especially with regard to the sustainability and cost effectiveness of schemes. When further schemes have been assessed it is hoped that firmer conclusions can be drawn. In the meantime, readers are particularly encouraged to read the case studies in full that may be relevant to inform their own local scheme.
1.1 Policy landscape and current state of affairs

The Coalition Government’s programme made a commitment stating:

“We will work towards a ‘zero waste economy’, encourage councils to pay people to recycle, and work to reduce littering.”¹

Moving towards a ‘zero waste economy’ implies a society where resources are fully valued in monetary and environmental terms. This means respecting the waste hierarchy and reducing, reusing and recycling all that can be.

Recycling rates across England in recent years have gradually increased towards the 2020 50% target as illustrated by the graph below.² In the last five years household waste for recycling, composting or reuse increased by 10% while refuse waste fell by 17%.³

The current reuse estimate for consumer items (furniture, large WEEE⁴, small WEEE and textiles including clothes, linens, footwear and accessories) in England is 971,000 tonnes. This covers only the major reuse pathways for which reasonable estimates are available namely: furniture reuse and reuse organisations; charity shops, private second-hand, informal exchange, online exchange, car boot sales and other channels.⁵

Moving from actual data to self-reported data, three fifths of respondents (59%, n= 647) to WRAP’s 2011 tracker survey state that they recycle everything that can be recycled. When looking at values and attitudes to recycling, a strong majority (93%, n= 1,021) stated that recycling household waste was important to them and three quarters (75%, n=827) maintained that they recycle even if it requires additional effort.⁶

---

4 Waste Electrical and Electronic Equipment.
6 Source: 3Rs (Re-use, Repair, Recycle) England Tracker Survey, WRAP, 2011. Sample: 1,100 online respondents by GfK.
In the 2013 WRAP tracker, respondents were asked about disposing of items:

- Of those who disposed of **textiles** over two-thirds (69%, n=1,333) stated that they donated or gave them away.
- Of those who disposed of **furniture** over half (57%, n=397) stated that they donated or gave it way.
- Of those who disposed of **large electrical appliances** such as fridge, cooker, washing machine, etc. over one-third (35%, n=450) stated that they did so via the council.\(^7\)
- Of those who disposed of **small kitchen appliances** such as toasters, kettles, irons, etc. almost three fifths (58%, n=719) stated that did so via the council.\(^8\)

Despite these promising survey numbers and actual tonnages of recycling and reuse achieved, more needs to be done. The Government Review of Waste Policy in England 2011 outlined a relevant principal commitment:

> "Support initiatives which reward and recognise people who do the right thing to reduce, reuse and recycle their waste."\(^9\)

Changing householder behaviour is key in going further and faster in terms of driving up recycling rates and reducing the amount of waste for disposal.

In 2005 Defra commissioned 53 local authority- and waste partnership-led trials to test the effectiveness of incentives in encouraging positive waste behaviours. AEA Technology was commissioned by Defra to conduct a systematic evaluation of the costs and benefits of these schemes concluding that “incentives can be a useful tool to authorities that wish to enhance the performance of their waste collection service.”\(^10\) However, there is not a ‘one size fits all’ ideal solution and data quality made it difficult to determine impacts directly attributable to the offer of an incentive. Their key lessons were:

- Publicity and 360° communication are essential to raise awareness, motivate and recognise and reward people of ongoing success;
- Collaboration with local partners and stakeholders can maximise the reach of the scheme and be very cost-effective;
- There is a potential for additional benefits beyond increasing recycling rates (e.g. increased community cohesion); and
- Accurate and bespoke monitoring (e.g. monthly recycling tonnage figures, pre- and post-scheme participation rate monitoring, percentage of engaged households, contamination rate, media coverage, surveys, and partner feedback) is crucial to determine the attributable impact of the schemes.\(^11\)

More recently the Policy Studies Institute was commissioned by Defra to undertake a ‘Review of evidence on the use of reward and recognition schemes in enhancing recycling and waste prevention behaviours’. The research identified a number of evidence gaps, namely:

- The need for more rigorous and long-term approaches to evaluation in order to understand the specific mechanisms by which rewards and recognition work with diverse target groups;
- The cost effectiveness of reward and recognition schemes;
- The influence of rewards on consumption i.e. potential rebound effects; and

---

\(^7\) Via the council was defined to include waste recycling centre and council collection but excluded refuse collections as in “threw it away in my bin”.

\(^8\) Source: 3Rs (Re-use, Repair, Recycle) England Tracker Survey, WRAP, 2013. Sample: 1,819 online respondents by Icaro-Consulting and ICM.


The long-term effects of rewards and recognition on behaviour and an understanding of the additional measures needed to sustain behaviour change.\textsuperscript{12}

WRAP have also undertaken work with local authorities on incentive schemes looking at increasing waste prevention, reuse and recycling (e.g. London Borough of Bexley’s London Green Points Incentive Scheme.)\textsuperscript{13}

Given the work to date and the challenge ahead of delivering a ‘zero waste economy’ there was an appetite to trial and test new ways of encouraging pro-environmental behaviours. Specifically there was a need to explore how rewarding and recognising people for doing the right thing can encourage positive waste behaviour.

1.2 Defra’s Reward and Recognition Scheme

The Government believes that it is better to reward householders for doing the right thing with their waste than to penalise them for doing the wrong thing. With this in mind and as part of the Waste Review, Defra launched the Reward and Recognition Scheme in June 2011. This scheme aimed to investigate a range of approaches for rewarding and recognising people for adopting positive behaviours towards managing their waste. Applicants were encouraged to develop schemes relating to food waste, recycling, re-use, waste prevention and reduction. Up to £2 million was made available for three Spending Review years from 2011/2012 to 2013/2014. This support package was made available to pilots led by local authorities and civil society organisations.

Defra’s Reward and Recognition Scheme tests out how positive waste behaviour change is affected through different kinds of reward and recognition. The programme is an opportunity and a safe-space to learn about what works and what does not work when delivering and evaluating these types of schemes. The main intent behind the programme is to explore and learn from innovative schemes trialling reward and recognition techniques to encourage positive waste behaviours (e.g. more and better recycling and reuse).

16 schemes were funded in the first round and a further 15 were funded in the second round. This totals 25 unique organisations and 28 schemes (3 were extensions to first round schemes). These schemes all aim to engage and encourage people to recycle, and reuse via individual prize draws, individual rewards, community rewards and feedback - as the Venn diagram overleaf illustrates.\textsuperscript{14}

Rewards –at the community or individual level - are considered to be ‘consequence incentives’ which are provided after the performance of the target behaviour. Prize draws are a form of raffle or lottery where the award is attributed randomly to those participating. Recognition –at the community or individual level - is understood as providing (tailored) feedback to participants on the service and performance in order to encourage better and correct usage (e.g. feedback on what items cannot be recycled, comparison of recycling rates with neighbouring street). Some schemes introduced an element of competition in their mechanism of delivery so that participating audiences competed against each other in order to obtain the rewards.


\textsuperscript{14} For more information on the schemes funded see https://www.gov.uk/household-reward-and-recognition-scheme-guidance-for-local-authorities The eight schemes discussed in this interim report are in italics in the Venn diagram overleaf.
1.3 Evaluating the Reward and Recognition Scheme

Defra commissioned Brook Lyndhurst as research partner, with a dual role:
- To provide ad-hoc monitoring and evaluation support to the schemes funded; and
- To carry out a programme-level evaluation of the fund.15

The main elements of our evaluation methodology are outlined in the diagram below.

The research questions for the evaluation are:
1. What worked well and is it transferrable?
2. What were the barriers and challenges to the schemes?
3. What are the behaviour changes resulting from reward and recognition?
4. What is the cost effectiveness assessment of the schemes and programme?
5. Are the schemes sustainable post-Defra funding?16

---

15 For more information see [http://www.brooklyndhurst.co.uk/evaluation-of-the-reward-and-recognition-fund_-_184?path=17,184](http://www.brooklyndhurst.co.uk/evaluation-of-the-reward-and-recognition-fund_-_184?path=17,184)
Though our evaluation methodology and framework draws from HM Treasury’s Magenta Handbook, the evaluation is not intended to be a systematic impact assessment as understood by the Magenta Handbook or the Government Social Research standards. The evaluation was intended to provide evaluation and monitoring support to schemes and to attempt better comparability of data at a programme-level.

### 1.4 Data limitations and this report

This report presents the initial findings from eight of the schemes that had finished and reported to Defra as of summer 2013. The purpose of this report is to present the overview results of these schemes and discuss the emerging lessons around reward and recognition.

Beyond the literature mentioned in section 1.1 it is not the intent of this interim report to address the behaviour change theory which is being tested by the programme and the individual schemes. For a more complete discussion of the theory that informed the thinking behind this pilot see, for example, the work of Defra on pro-environmental behaviours, Andrew Darnton, MINDSPACE and Elizabeth Shove.\(^{17}\)

The primary audience for this report is local authorities, especially those considering reward and recognition schemes as a way of increasing recycling and reuse (for example, beneficiaries of the Department for Communities and Local Government’s Weekly Collection Support Scheme).

All schemes were evaluated against four key criteria: waste indicators; cost effectiveness data; control group data\(^{18}\); and behavioural insight data to assess the additional impact and attribution of this impact to the scheme.

The diagram below outlines the list of data indicators the evaluation team was looking to assess.

![Diagram of data indicators](attachment://diagram.png)

There is a mismatch between the data that the evaluation team set out to collect and gave support to collect (as outline in the diagram above) and the data submitted by the schemes as part of their final reports. The text below outlines the main data limitations that some (but not all) schemes encountered.

---

\(^{16}\) As discussed in section 1.4 this interim report only focuses on the first three research questions and provides a stock-take of eight projects rather than an overall assessment of the programme.


\(^{18}\) In this instance an ideal control group/area is defined as a collection round or rounds, university and reuse shop that have similar characteristics to the scheme area including aspects like: location, waste service systems, social-economic demographics, housing tenure and recycling/reuse rates. Control groups are areas where no scheme or intervention took place (i.e. no communications, no rewards, no feedback). Control group data contains both waste and behavioural and attitudinal indicators. Results of control groups are then measured against results from the scheme area to ascertain the additional and attributable impact of the scheme.
Main data limitations that some schemes encountered included:

- Lack of high quality comparable waste and behavioural insight data across the eight schemes (e.g. use of estimates not weights);
- Limited or missing control group data both for waste and behavioural insight;
- Lack of a matched-sample from pre- to post- monitoring for waste and behavioural insight;
- Lack of comparable time-series data over a long period of time for pre-scheme tonnage data;
- Lack of progress reported against original targets set in funding application;
- Waste data not collected following WRAP’s Monitoring and Evaluation Guidance (e.g. participation rates, timing of pre- and post-scheme monitoring, short monitoring periods);
- Missing data points or unexplainable anomalies in tonnage and participation rate data;
- Self-selecting/bias/predisposed/captive survey samples;
- Needing to rely on self reported changes in behaviour and attitude;
- Missing pre- or post-scheme data;
- Different categorisations of costs; and
- Small sample sizes – sample sizes of less than 50 respondents for behavioural insight data have been excluded from analysis.

Data limitations regarding a specific type of data (e.g. tonnage, costs, survey, etc) or a specific scheme are discussed in the relevant chapters.

In attempt to alleviate the data limitations, the research team undertook a thorough investigation of topline reported results, identified issues and where possible addressed them directly with the scheme. After this phase of data quality checking, a more forensic assessment of the raw data (where available) followed. In this phase the research team spotted, investigated and, where possible, rectified, data anomalies and errors. The final phase of data checking consisted of a sense-check of calculations and methods used. Where feasible the research team harmonised the data to make it comparable and standardised the data across the eight scheme (e.g. including non-responses in percentages for survey results, adopting same calculation for tonnage change with data series). As with any data checking process there comes a point where the data checking effort has diminishing returns in terms of outcomes. This factor along with lack of time and resources means that certain anomalies in the scheme’s data persist. With regards to the survey data the research team conducted some additional statistical analysis to assess the comparability of the results.

It is important to recognise that this report represents a stock-take of eight schemes rather than a systematic review of all 28 schemes, therefore, emerging findings and lessons learned need to be viewed in this context. Final results and lessons may change when analysing data from all the schemes. **This report focuses on the first three research questions stated above (section 1.3). The reader should not attempt to draw definitive conclusions from the results presented, especially around cost effectiveness and sustainability. The intent of this interim report is not to provide answers but to outline emerging insights against the research questions.**

The structure of the report is as follows:

- **Overview** of findings (chapter 2) – this chapter acts as a summary of the results to date looking at tonnages and costs, and audience and behaviour across all eight schemes;
- **Case studies** (chapter 3) – this chapter is formed of a two to four page, standalone case study of each of the eight schemes looking at how the scheme came about, scheme delivery, and impacts and outcomes;
- **Lessons and insights** (chapter 4) – a concluding chapter discussing key insights, lessons and take-out messages to date around the relevant research questions; and
- **Next steps** (chapter 5) – this chapter outlines the timeline for the evaluation and remaining schemes.
## Overview of findings

### 2.1 Introducing the eight schemes

Before introducing the eight schemes it is worth taking a step back to understand where these schemes came from. The table below presents each of the scheme’s leading organisations, location, service provision, service provision status and materials targeted so that the starting point of each scheme can be understood.

<table>
<thead>
<tr>
<th>Leading organisation</th>
<th>Type of organisation</th>
<th>Scheme abbreviation</th>
<th>Location type</th>
<th>Service provision</th>
<th>Status of service provision</th>
<th>Materials targeted by scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aire Valley Recycling</td>
<td>Community group</td>
<td>AVR</td>
<td>City - Bradford</td>
<td>Kerbside collection Source separated Boxes Fortnightly</td>
<td>Service established but pockets where service provision is missing</td>
<td>Dry mixed recyclables Textiles and shoes</td>
</tr>
<tr>
<td>Bath and North East Somerset</td>
<td>Unitary authority</td>
<td>BathNES</td>
<td>City and rural - Bath</td>
<td>Kerbside collection Boxes and bags Weekly</td>
<td>Service well established but pockets where service provision is missing</td>
<td>Dry mixed recyclables Textiles and shoes, batteries, mobile phones, ink cartridges, spectacles, car batteries, engine oil, cardboard, brown paper and cartons. Separate food waste</td>
</tr>
<tr>
<td>Birmingham City Council</td>
<td>Unitary authority</td>
<td>BCC</td>
<td>City - Birmingham</td>
<td>Kerbside collection Boxes and bags Fortnightly</td>
<td>Service well established</td>
<td>Paper and cardboard</td>
</tr>
<tr>
<td>Gloucestershire Waste Partnership</td>
<td>Six waste collection authorities and one waste disposal authority</td>
<td>GWP</td>
<td>City, town and rural – Gloucester, Cheltenham, Stroud and Tewkesbury</td>
<td>Kerbside collection Service provision varies by container type (box or wheeled bin) and frequency (weekly and fortnightly)</td>
<td>Service well established One district changed during the trial by expanding the range of materials accepted</td>
<td>Dry mixed recyclables Some districts also collect batteries, aerosols and cartons</td>
</tr>
<tr>
<td>Norfolk County Council</td>
<td>Waste disposal authority</td>
<td>NCC</td>
<td>City, town and rural</td>
<td>Reuse Shops at recycling centres Collection and sales</td>
<td>Reuse shops recently improved and re-branded</td>
<td>All unwanted household items except old electrical equipment and baby toys</td>
</tr>
<tr>
<td>National Union of Students</td>
<td>Voluntary membership organisation</td>
<td>NUS</td>
<td>City – Bristol, London, Reading and Winchester</td>
<td>Containers in student hall kitchens (recycling) Drop-off points in communal area (reuse)</td>
<td>Recycling service established in halls but new cohort of students come each year New reuse facilities</td>
<td>Dry mixed recyclables and some have additional materials (e.g. food waste) Reuse trial all items that could be reused</td>
</tr>
<tr>
<td>Preen Community Interest Company</td>
<td>Community group</td>
<td>Preen</td>
<td>Town/rural – Biggleswade and Dunstable in Bedfordshire</td>
<td>Reuse shops Collection and sales</td>
<td>Established - operating in the area for about 4 years prior to scheme</td>
<td>Furniture, electrical and electronic items, textiles, bric-a-brac, books, and other household goods</td>
</tr>
<tr>
<td>Westminster City Council</td>
<td>Unitary</td>
<td>WCC</td>
<td>City – London west end</td>
<td>Litter bins with separate compartment for recyclable items Paper and mixed recycling bins</td>
<td>Litter bins with recycling section had been recently introduced</td>
<td>Litter that can be recycled (paper, card, cans, plastic, cartons glass bottles and jars)</td>
</tr>
</tbody>
</table>

19 This is how the scheme is referred to throughout this interim report.
20 Dry mixed recyclables typically include cans, paper, card, plastic bottles, glass bottles and jars. For detail on any additional materials accepted or exceptions see individual case studies and notes in this column.
21 See case study for further information.
The eight schemes that this report compares are a diverse group both in terms of behaviours and audience targeted. With regard to behaviours: increasing on-the-go recycling, increasing purchases of reuse items at recycling centres and increasing participation in household dry recycling collections all feature. When it comes to target audience the schemes are also varied, including: students, passersby on busy streets, low recycling households and reuse shop visitors. The table below outlines the key characteristics of each scheme.22

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Scheme name</th>
<th>Delivery type</th>
<th>Recycling or reuse</th>
<th>Waste behaviour targeted</th>
<th>Target audience type</th>
<th>Target audience reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVR</td>
<td>‘Rewards for Recycling’</td>
<td>Community organisation</td>
<td>Recycling</td>
<td>Increase recycling participation and tonnages</td>
<td>Low recycling performing households</td>
<td>1,652 households</td>
</tr>
<tr>
<td>BathNES</td>
<td>‘You pledge—we’ll reward’</td>
<td>Partnership</td>
<td>Recycling</td>
<td>Increase recycling participation and tonnages</td>
<td>Low recycling performing households</td>
<td>5,082 households</td>
</tr>
<tr>
<td>BCC</td>
<td>Birmingham City Council’s Nectar Reward Scheme for paper recycling</td>
<td>Local authority with business role</td>
<td>Recycling</td>
<td>Increase paper and card recycling participation</td>
<td>Rounds with households that were motivated by rewards</td>
<td>4,392 households</td>
</tr>
<tr>
<td>GWP</td>
<td>‘Recycle for your Community Incentive Scheme’</td>
<td>Partnership</td>
<td>Recycling</td>
<td>Increase recycling tonnages</td>
<td>Low recycling performing households</td>
<td>10,132 households</td>
</tr>
<tr>
<td>NCC</td>
<td>No formal name – loyalty card or voucher scheme</td>
<td>Single local authority led</td>
<td>Single local authority led</td>
<td>Increase tonnages and sales of reuse items</td>
<td>New and existing visitors to recycling centres</td>
<td>Not specified</td>
</tr>
<tr>
<td>NUS</td>
<td>Student Switch Off recycling competition</td>
<td>Partnership</td>
<td>Recycling and reuse</td>
<td>Increase recycling tonnages</td>
<td>First-year university students living in halls</td>
<td>11,338 students</td>
</tr>
<tr>
<td>Preen</td>
<td>‘Preen Community Challenge’</td>
<td>Community organisation</td>
<td>Reuse</td>
<td>Increase tonnages and sales of reuse items</td>
<td>New and existing visitors to two reuse shops</td>
<td>252,000 individuals23</td>
</tr>
<tr>
<td>WCC</td>
<td>‘Bin, Scan, Win!’</td>
<td>Partnership</td>
<td>Recycling</td>
<td>Increase amount of litter recycled</td>
<td>Commuters, passers-by and visitors to scheme areas</td>
<td>Not specified</td>
</tr>
</tbody>
</table>

The eight schemes also had a variety of ways of rewarding and recognising. The table below outlines the main distinctions between the rewards and recognition in terms of type, size, mechanism and engagement.

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Reward or recognition</th>
<th>Reward type</th>
<th>Reward detail</th>
<th>Size of reward</th>
<th>Reward mechanism</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVR</td>
<td>Reward</td>
<td>Community</td>
<td>Benches, litter picks, compost container and workshops</td>
<td>Not known</td>
<td>If participation/tonnages increase then community gets rewarded</td>
<td>Door-knocking</td>
</tr>
<tr>
<td>BathNES</td>
<td>Reward + recognition</td>
<td>Individual</td>
<td>15 Bath Oliviers (local currency) or food caddy liners</td>
<td>Not known</td>
<td>Households rewarded if successful in pledge to recycle more or better</td>
<td>Door-knocking</td>
</tr>
<tr>
<td>BCC</td>
<td>Reward</td>
<td>Individual</td>
<td>Nectar points</td>
<td>£0.50 one off £0.13/collection</td>
<td>100 bonus points awarded at sign-up 25 Nectar points awarded/ collection</td>
<td>Printed materials and publicity</td>
</tr>
<tr>
<td>GWP</td>
<td>Reward</td>
<td>Community</td>
<td>Financial rewards to community groups</td>
<td>£0 to £635/ group24</td>
<td>If recycling tonnages increased group receive reward from recycling credits</td>
<td>Campaign by community groups</td>
</tr>
<tr>
<td>NCC</td>
<td>Reward</td>
<td>Individual</td>
<td>Vouchers: museum, DVD rental, gym and park &amp; ride</td>
<td>£1 to £24</td>
<td>Loyalty card £1 spent got a stamp - £4 would get you a voucher</td>
<td>Printed materials and publicity</td>
</tr>
<tr>
<td>NUS</td>
<td>Reward + recognition</td>
<td>Individual + community</td>
<td>Chocolates post-audit Money for hall/summer ball</td>
<td>£250 to £500/ winning hall</td>
<td>Hall with greatest increase in recycling or reuse awarded</td>
<td>Campaign, champions and social media</td>
</tr>
<tr>
<td>Preen</td>
<td>Reward</td>
<td>Community</td>
<td>Points to members for purchase and donation</td>
<td>Up to £5,000 cash &amp; £22,000 Preen vouchers across 78 parishes25</td>
<td>Parish councils got awards based on donation tonnages, participation and money spent in Preen shops</td>
<td>Local champions and parish councils and councillors</td>
</tr>
<tr>
<td>WCC</td>
<td>Reward</td>
<td>Individual</td>
<td>Voucher: Amazon, M&amp;S, John Lewis, Love2Shop or theatre</td>
<td>£20</td>
<td>Scan QR code on recycling bin with phone and enter daily prize draw</td>
<td>Printed materials and publicity</td>
</tr>
</tbody>
</table>

---

22 See individual case studies in Chapter 3 for further information.
23 Out of the five community groups range was from £0 to £635; average was £224 and median was £164. Values were: £0; £125; £164; £198; and £635.
24 Preen had set aside up to £5,000 in cash and £22,000 in Preen vouchers across in the hope to engage a large proportion of the 78 parishes. This comes to ~£64 in cash per parish and ~£282 per parish in Preen vouchers assuming all 78 parishes participated. See individual case study for more information.
2.2 Participants and behaviour at a glance

In total the schemes had a potential reach of over 263,300 people (NUS and Preen - including Preen’s estimate of potential audience reach of 252,000 local residents) and over 21,200 households (AVR, BathNES, BCC and GWP). This excludes NCC and WCC as it was not possible to produce estimates of potential audience reach for these schemes.

When looking at actual participation almost 15,000 households and, additionally, over 11,300 individuals participated in the schemes. The table below outlines the audience reach, target and participant numbers for each of the eight schemes.

It is worth remembering that these schemes engaged with very different audience types. In the case of some schemes these were much more ‘captive’ in terms of location (e.g. NUS, NCC and Preen) than others. Furthermore, three of the schemes required participants to sign-up or opt-in (e.g. BCC, BathNES and Preen).

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Potential audience reach</th>
<th>Audience target</th>
<th>Participating audience</th>
<th>Units</th>
<th>Target met?</th>
<th>Comments on participating audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVR</td>
<td>1,652</td>
<td>960</td>
<td>637</td>
<td>Households</td>
<td>No</td>
<td>Participating audience derived from post-scheme participation rate multiplied by potential audience reach</td>
</tr>
<tr>
<td>BathNES</td>
<td>5,082</td>
<td>Not specified</td>
<td>3,866 710</td>
<td>Households</td>
<td>n/a</td>
<td>Participating audience derived from post-scheme participation rate multiplied by potential audience reach 710 were households who pledged</td>
</tr>
<tr>
<td>BCC</td>
<td>4,392</td>
<td>802</td>
<td>3,426 1,121</td>
<td>Households</td>
<td>Yes</td>
<td>Participating audience derived from post-scheme participation rate multiplied by potential audience reach 1,121 were households who signed up</td>
</tr>
<tr>
<td>GWP</td>
<td>10,132</td>
<td>Not specified</td>
<td>7,008</td>
<td>Households</td>
<td>n/a</td>
<td>Participating audience derived from post-scheme participation rate multiplied by potential audience reach</td>
</tr>
<tr>
<td>NCC</td>
<td>All users of two reuse shops and recycling centres</td>
<td>1,000</td>
<td>258</td>
<td>Individuals (based on loyalty cards)</td>
<td>No</td>
<td>NCC printed 1,000 loyalty cards to distribute but only 319 loyalty cards were exchanged for vouchers and of these 61 were repeat customers – hence the 258</td>
</tr>
<tr>
<td>NUS</td>
<td>11,334</td>
<td>1,701</td>
<td>2,710</td>
<td>Individuals</td>
<td>Yes</td>
<td>Participating audience is based on number of students who signed-up as Eco-Power Rangers (scheme supporters)</td>
</tr>
<tr>
<td>Preen</td>
<td>252,000</td>
<td>4,290</td>
<td>7,505</td>
<td>Individuals</td>
<td>Yes</td>
<td>Participating audience based on members who signed up during the scheme</td>
</tr>
<tr>
<td>WCC</td>
<td>All local passersby and commuters</td>
<td>500</td>
<td>844</td>
<td>Individuals</td>
<td>Yes</td>
<td>Participating audience based on number of unique entrants to prize draw during the scheme</td>
</tr>
</tbody>
</table>

26 Household figures used for BathNES and BCC are those derived from post-scheme participation rate multiplied by audience reach. Source: Images have been purchased from iStock: http://www.istockphoto.com

27 The potential audience reach is the maximum number of individuals or households that a scheme could engage with (e.g. number of households in target rounds for GWP, BCC, BathNES and AVR, number of students living in target halls for NUS).

28 The audience target, where available, are based on actual targets (either percentage or number) provided by the schemes.

29 The participating audience is either the number of sign-ups/entrants or derived from multiplying the post-scheme participation rate and the potential audience reach.
When it comes to changes in behaviour, as reported in the post-scheme surveys, most respondents stated that the scheme has not made a difference to how they recycle/reuse. Across the six schemes’ surveys between 16% (n=31) and 46% (n=136) of respondents stated that they already recycled/reused and the scheme has given them ‘extra encouragement’ to do so.\(^{30}\) The graph below compares the four most frequently given answer options to this question.\(^{31}\)

The research team used Pearson’s chi-squared test and standardised residuals to investigate whether the differences between the schemes with regards to a specific survey question were significant. More detail of the tests can be found in section 4.2.

After running these tests the following can be stated across the schemes:\(^{32}\)

- BCC and WCC respondents are more likely to have claimed that the scheme gave them extra encouragement to recycle. This may be linked to the individual nature of their rewards.
- NUS respondents are more likely to have claimed that they already recycled and that the scheme did not make a difference to how they recycle compared to other scheme respondents. This may suggest that some students were already in the habit of recycling before the scheme.
- AVR and Preen respondents were less likely to be aware of the scheme but started to recycle/reuse or recycle/reuse more for other reasons.

For a more detailed discussion of behaviours see section 4.2.

---

\(^{30}\) This question was not asked in NCC post-scheme survey and only asked in the online post-scheme survey for BathNES which achieved only 33 responses – so only the remaining six schemes are included in the analysis. In the survey analysis, NUS responses exclude London School of Economics as they offered a reuse scheme and had different questions in their survey.

\(^{31}\) It is worth noting that BCC, Preen and WCC asked these questions to those who had signed-up to their scheme which may reflect a more pre-disposed audience. Also some schemes added their own answer options to the question, these and ‘no response’ are also not shown in the graph. AVR, BCC, Preen and WCC asked this question of all respondents, while GWP only asked it of those who had heard of scheme. NUS had a routing anomaly in their results so it has been rebased on all respondents to survey.

\(^{32}\) It is worth noting that only the top four answers given to the question have been included in the statistical testing.
2.3 Tonnages and costs at a glance

Across all eight schemes the net increase in recyclables and reuse items was 171.1 tonnes. The 171.1 tonnes is made up of 79.4 tonnes of recycling from AVR, BathNES, BCC, GWP, NUS and WCC, and 91.7 tonnes of reuse from NUS, NCC and Preen. This was made up of an increase in recycling of 108.5 tonnes in AVR, BCC and NUS; an increase reuse tonnage of 93.4 in Preen and NCC; and a fall of 30.8 tonnes in GWP – Calton Road Infants School, NUS – London School of Economics, BathNES (round) and WCC.

Overall the schemes generated an additional 171 tonnes of recyclables and reuse items. Excluding where schemes experienced a tonnage fall (Bath, NUS – London School of Economics, GWP – Calton Road Infants School and WCC) this increases to 200 tonnes. The table below summarises the schemes’ achievements with regard to tonnages and participation.

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Participating audience</th>
<th>Length in weeks</th>
<th>Materials</th>
<th>Change in participation rate</th>
<th>Change in tonnages</th>
<th>Change in recyclables or reuse (kg)/ participant/wk</th>
<th>Method for measuring tonnages</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVR</td>
<td>637</td>
<td>52</td>
<td>Dry mixed recyclables and food</td>
<td>4%</td>
<td>24.2</td>
<td>0.7</td>
<td>Double set out rate not participation rate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Recycling tonnage estimates based on qualitative scoring looking at number and size of containers, fill rates and contamination.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Monitoring was done three times – pre-, mid and post- scheme.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>These were adjusted with a conversion factor derived from weighbridge measurements – each scoring point was equal to 1.1 kg.</td>
</tr>
<tr>
<td>BathNES (round)</td>
<td>3,866</td>
<td>35</td>
<td>Dry mixed recyclables and food</td>
<td>-3%</td>
<td>-19.0</td>
<td>-0.1</td>
<td>Weekly round weighbridge measurements</td>
</tr>
<tr>
<td>BathNES (pledges)</td>
<td>510</td>
<td>35</td>
<td>Dry mixed recyclables and food</td>
<td>n/a</td>
<td>0.6</td>
<td>1.1</td>
<td>Measured pledging households recycling at sign up and at three intervals at random afterwards. The change in tonnages is calculated from subtracting the sign-up reading from an average of the three intervals post sign-up. The monitoring occurred over ~ three months.</td>
</tr>
<tr>
<td>BCC</td>
<td>3,426</td>
<td>26</td>
<td>Card and card only</td>
<td>3%</td>
<td>10.9</td>
<td>0.1</td>
<td>Fortnightly round weighbridge measurements.</td>
</tr>
<tr>
<td>GWP</td>
<td>7,008</td>
<td>40</td>
<td>Dry mixed recyclables</td>
<td>-6%</td>
<td>-10.0</td>
<td>0.0</td>
<td>Fortnightly round weighbridge measurements.</td>
</tr>
<tr>
<td>NCC</td>
<td>258</td>
<td>52</td>
<td>Reuse</td>
<td>n/a</td>
<td>26.1</td>
<td>1.9</td>
<td>Receipts of items purchased are sent to the contractor for calculation of tonnages (based on FRN standard weights).</td>
</tr>
<tr>
<td>NUS</td>
<td>2,710</td>
<td>30</td>
<td>Dry mixed recyclables</td>
<td>n/a</td>
<td>71.6</td>
<td>1.1</td>
<td>Reading and Portsmouth - monthly bin weights; Bristol – yearly, derived from spot-check audits and volumetric conversions. Winchester – no data provided. LSE - at the end of 2012 and previous academic year contractor collected the reuse items and weighed them for each hall of residence.</td>
</tr>
<tr>
<td></td>
<td>2,181</td>
<td></td>
<td>Reuse</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preen</td>
<td>7,505</td>
<td>35</td>
<td>Reuse</td>
<td>n/a</td>
<td>67.3</td>
<td>0.3</td>
<td>Estimated from FRN standard weights of all items donated.</td>
</tr>
<tr>
<td>WCC</td>
<td>844</td>
<td>22</td>
<td>On-the-go dry mixed recyclables</td>
<td>n/a</td>
<td>0.0</td>
<td>0.0</td>
<td>Qualitative fill rate audits and volumetric conversions (average weights based on historical data).</td>
</tr>
</tbody>
</table>

---

32 Source: Images have been purchased from iStock: http://www.istockphoto.com
33 The 171 tonnes is derived from a change in tonnes when comparing pre- and post-scheme measurements – this is from actual long term data recordings/estimates for all schemes which increased tonnages except AVR which has been extrapolated from their qualitative audits and weighing.
34 For Bath the research team used the tonnage based on round data rather than just the pledging households given its more robust nature based on time data series over nine months. For further discussion and explanation on these two different methods see the case study.
35 For tonnage measurements only 510 out of the 710 pledging households had pre-scheme readings.
36 It is worth noting that of the five areas forming part of the GWP scheme four did increase tonnages, however, one area (Gloucester – Calton Road Infants School) experienced a decrease in tonnages which cancelled out the other four areas’ increases. GWP could not provide a reason for this significant fall.
37 This is the total participating audience (2,710 based on sign-ups as Eco-Power Rangers) minus those at Winchester (529) as no tonnage data is available for this university the changes in recyclables (kg)/ participant/week excludes Winchester students.
38 This includes an increase in dry recyclables at Reading and Bristol and subtracts a fall in reuse from LSE. No data was provided for Winchester.
In terms of costs, Defra provided a total funding of just over £314,000. This is approximately £12 per participating household or individual. The distribution of this funding across the different cost headings for each scheme is shown in the graph below. The level of Defra funding black line shows the amount of funding secured from Defra by the schemes – it does not mean that items appearing above the line were not funded by Defra. For more detailed information about tonnages and cost effectiveness see section 4.1.
Case studies

3.1 Aire Valley Recycling (AVR)

How did the scheme come about?
AVR is a social enterprise providing a free kerbside collection to over 15,000 households in Bradford, as part of Bradford Metropolitan District Council’s much larger household recycling service. AVR’s ‘Rewards for Recycling’ came about because there were pockets of low recycling in Bradford which local stakeholders (Bradford council, AVR and local community groups) felt may be better targeted with rewards and local support to encourage behaviour change. The aim of ‘Rewards for Recycling’ was to increase the number of households participating in recycling and the amount recycled in specific areas of Keighley and Shipley by 40%. The original target was to engage with 1,500 households in this area.

Delivering the scheme
The ‘Rewards for Recycling’ scheme was mainly delivered by AVR with strong support from local groups including residents, Community Development Workers, Community Centres, schools and environmental groups and associations. AVR engaged with 50 local organisations to help the promotion of the scheme. Initially, Incommunities - a housing association which owns and manages the majority of social housing in the scheme areas - was going to be delivery partner to AVR and provide strategic support, communications and promotion. In practice, Incommunities was able to make only a light touch contribution owing to unforeseen constraints within the organisation.

AVR targeted 1,652 households in their scheme area and selected 174 households for their control area. This was a year-long scheme which started in November 2011 and finished in December 2012. In addition to door-stepping residents, a range of communications was used including: leaflets, posters, suggestion boxes, flyers, stickers, newsletters; and presentations and face-to-face discussions at local/community events. Those areas that increased participation in recycling received community-based, shared rewards (see poster which was displayed in community buildings above). Rewards were distributed at two points in the year to keep the momentum of the scheme going. The rewards selected by and distributed to the local community were:

- Local community litter picks and clean ups (e.g. with a team of learning disabled volunteers);
- Craft workshops for local school children and their families during summer holidays using recovered materials from AVR collection rounds to make models and puppets - known as ‘Scrap for play events’ (see top picture to the right);
- A double compost container built from AVR’s old pallets by a local youth programme donated to a primary school in the area (see picture to the right); and
- Two benches made from recycled plastics intended for use by local elderly residents.

It is worth noting that AVR ceased operating as an independent community organisation and was taken over by Bradford Council in summer 2013. At the time of writing it was still delivering a source separated box collection in AVR’s collection areas.
In order to assess the effectiveness of the scheme and to attribute the rewards, a range of monitoring and evaluation activities took place:

- Establishing a control area;
- Pre-scheme, interim and post-scheme set out rate monitoring over two consecutive collection rounds for scheme and control areas;
- Pre-scheme, interim and post-scheme monitoring of tonnage estimates of recyclates by household for scheme and control areas;
- Pre-scheme attitudinal and behavioural survey via door-stepping in scheme (n= 439) and control areas (n= 50);
- Post-scheme attitudinal and behavioural survey delivered by post in scheme (n= 200) and control areas (n=25); and
- Two discussion groups with local participants in the AVR schemes.

Impacts and outcomes

When comparing both pre-scheme to post-scheme, and scheme to control, the double set out rates have increased as illustrated by the chart to the right. It is worth noting that the control area was only based on 174 households, and though very similar to the scheme area in terms of socio-demographics, high levels of multiple deprivation, social housing levels and waste services, levels of recycling were the lowest of all areas monitored. Furthermore, though the rewards did not occur in the control, change in set out rates and tonnages may be as a result of information and infrastructure provision (e.g. boxes, lids) from door-stepping.

Tonnages increased by 38% (coming very close to their 40% target) when comparing the pre-scheme and post-scheme ‘snapshot’. The chart to the left shows the average weight of recyclables in kg per households per week at the scheme’s three monitoring intervals. The monitoring periods are only short ‘snapshots’, and take place at different times of year - natural or seasonal variability in waste tonnages may cause some of the increases between pre- and post-scheme for both the scheme and control.

When comparing data from scheme to control for both set out rates and estimated weights of recyclables, the scheme area has not increased at greater rates than the control area. This may be due to the low starting point of the control and the fact that information and infrastructure provision (provided in both scheme and control area) may have had a bigger role to play in more participation in recycling than the community rewards.

---

41 Recycling tonnage estimates based on qualitative scoring looking at number and size of containers, fill rates and contamination for each household presenting on monitoring days. These were then adjusted with a standard conversion factor derived from weighbridge measurements – this meant each scoring point was equivalent to 1.1 kg. This was done three times during the scheme - pre-, mid- and post- scheme.

42 There was disruption to AVR service and monitoring due to four bank holidays in spring 2012 and two collection rounds falling on a Monday, which affected the way in which data for the interim monitoring point was collected. Each holiday meant a four week wait between collections. Monitoring could not go ahead on the missed collection days and, therefore, qualitative scoring for the next collection date is unrepresentatively high, effectively blocking out a six week period from monitoring. This was the reason for splitting the set-out rate monitoring in May and having two rounds be monitored in July rather than May.
(provided only in scheme area). Lack of longitudinal historic data makes it difficult to know how different recycling levels in the scheme and control area were previously.

AVR managed to increase access to and ease of recycling for their target audience. At the post-scheme postal survey stage in the scheme area only 12% (n=24) stated they did not have an AVR box (compared to 31% n=137 at the pre-scheme door-stepping survey), and 24% (n=48) stated that they recycled all or some of their household items using avenues other than AVR (compared to 36% (n=156) at the pre-scheme door-stepping survey). Two in five (42%, n=84) respondents claimed that they recycled more often than before when compared to ten months ago and three in ten (30%, n=59) respondents stated they recycled a bigger proportion of materials than before. Two in five (43%, n= 86), however, also stated that the scheme made no difference as they already recycled and a quarter (24%, n=47) stated they increased their recycling for other reasons.

The scheme had low levels of recognition – when asked in the post-scheme survey only a third (33%, n=65) of respondents said they had heard of it. This may largely be explained by the lack of a clear scheme name, branding and strap line to make the scheme more memorable for participants and local residents. The scheme did not have a consistent public facing name. This lack of identity meant that discussion group participants also did not necessarily associate the rewards with the scheme or AVR generally.

Focus group findings revealed that the rewards were well received and that there seemed to be a preference for community rewards over individual rewards. There may be, however, a self-selection bias in the sample from those recruited to come to the discussion groups and/or from those actively participating in the scheme (i.e. non recyclers may be less likely to take part in community activities and respond to community rewards).

The cost for this scheme totalled £33,374 including estimates of value-in-kind contributions (£2,511). A breakdown of costs is shown in the pie chart to the right. Over half of the costs (57%) were revenue costs (i.e. staff time). The cost of the scheme was £20.06 per scheme household (excluding control area) or £17.62 per scheme household, excluding monitoring and evaluation. Evaluation and monitoring costs may not be as high if replicating or expanding the scheme.

This scheme achieved what it set out to do and managed to improve access and recycling rates of the target audience: however, it is difficult to attribute this to the community reward element of the scheme. Door-knocking residents with the improvements in information and service provision that brought and community engagement seemed to have played an important role in improving and increasing recycling. Anecdotally, AVR also felt that the scheme has built capacity to promote recycling amongst the community groups, Community Development Workers and community centres it worked with. AVR believes that the scheme has created ‘ambassadors’ for recycling in the areas they have worked in.
3.2 Bath and North East Somerset (BathNES)

How did the scheme come about?
BathNES is a unitary authority that offers residents a weekly collection of black sack refuse and recycling. A recycling box is provided for the collection of 16 materials (e.g. paper, cans, glass bottles and jars, foil, textiles, shoes, etc) with a separate blue bag for cardboard, brown paper and drinks cartons. Food waste collections are also provided using a kitchen caddy and lockable outside container.

The aims of the scheme were to increase overall tonnages in recycling collected; increase the number of households participating in the service; and reduce the impact poor presentation of waste had on services like neighbourhood cleaning, enforcement and missed collections. Three objectives were determined to measure the overall impact of the scheme:
- Deliver a recycling reward and recognition pilot scheme to 5,000 properties;
- Increase overall recycling tonnages at 5,000 properties by 20% on average; and
- Increase the number of households participating in food waste and cardboard recycling collections at 5,000 properties by 20% on average.

The scheme was called ‘You pledge...we’ll reward’. Successful pledgers could receive a reward in the form of Bath Olivers (15 Bath Olivers if they were successful in their pledge) or a roll of compostable food caddy liners. Bath Olivers is a means of exchange between local volunteers, residents and businesses. It is a coupon which rewards voluntary work and community activity with discounts in local shops and businesses, effectively acting like a local currency and discount scheme. A variety of local businesses accept Bath Olivers in return for goods and services.

Delivering the scheme
The scheme was designed and delivered by BathNES in partnership with the council recycling contractor, design consultant and waste consultancy. Door-to-door canvassing was the chosen method to engage with residents and to get them to pledge to improve their recycling performance. Recycling Rewards Advisors were recruited to deliver the campaign and also carry out monitoring. Between April and December 2012 a total of 5,082 households were visited in 9 recycling rounds within Bath and 1,808 people were spoken to. Residents could agree to one or two pledges:
- To recycle more; and/or
- To correctly present their recyclable materials.

Visits were made during mid-afternoons and evenings to maximise contact rates. Time was spent explaining the recycling service, how the pledge scheme worked and also carrying out a baseline survey. Pledge households were given a leaflet about the scheme and bin tags to ease identification for follow-up monitoring. If nobody answered information was put through the door and people could return pledges via the post.

In order to assess the impact of the scheme and to deliver the rewards, a range of monitoring and evaluation activities took place:

For more information see [www.bathmoney.org](http://www.bathmoney.org)
• Participation monitoring in all pledge rounds and the control rounds before the scheme and after pledges had been made;
• Weighing of recycling waste for pledge households during sign-up and at three randomly selected days over the following three months;
• Collection of recycling tonnage data by rounds; and
• Attitudinal and behavioural surveys at sign-up (n=930) and when rewards were distributed to pledging households either face-to-face or via feedback forms (n=293).

Impacts and outcomes
A total of 710 households made pledges (14% of households visited), 413 households were rewarded for recycling more and 622 households were rewarded for presenting their recycling waste correctly.

For the 510 households that had pre- and post- scheme measurement of their recyclables (200 did not have pre-scheme measurements) the increase in recycling tonnage was 10% (approximately an additional 0.6 tonnes of recycling when comparing sign-up weight to post-reward weight). Such an increase may suggest a positive impact of the scheme on individual households who pledged.

Looking at collection tonnage data for the whole scheme area, there was a 13.2% increase in recycling from pre-to post-scheme ‘snapshot’ weekly totals in the pledge rounds. However, a similar increase of 12.6% was noted in the control rounds. This ‘snapshot’ methodology takes the average weekly weights across three collection weeks prior to the scheme and the average weekly weights across three collection weeks at the end of the scheme. The last three collection weeks were the last three weeks of December which may have seen irregular collection services and atypical quantities of recycling due to seasonal variations. Furthermore when weighbridge measurements were missing, averages from weeks before and after the missing data point were used to determine the data point based on the trend.

When looking at a data series of tonnages over the lifetime of the scheme, the scheme area did not have an increase in recycling tonnages compared to the control rounds as illustrated by the charts below. The percentage change for recycling tonnages for the scheme rounds was a decrease of -1.9% and for the control rounds an increase of 1.5%. This contrasts with the ‘snapshot’ methodology above which gives a ~13% increase in both scheme and control. In either case the 20% target figure was not reached. The difficulties of taking ‘snapshots’ when measuring rounds can be seen by the graph overleaf which illustrates how much round tonnage data vary.

44 The control area was made up of two rounds covering 1,004 households.
45 During sign up householders agreed for their recycling waste to be measured and this was done shortly after they had been contacted.
46 A separate online survey was administered as well but only received 33 responses.
47 The lack of baseline data for 200 properties is because these households did not present any recycling materials in the pre-scheme monitoring period (i.e. within a week after pledging). There could be a number of reasons such as not having any recycling to present, being on holiday or forgetting, amongst others. However, these households were removed as the effect of not having any baseline data was that any recycling monitored and weighed in the scheme would have been a 100% improvement, which was not necessarily valid.
48 It is worth noting that BathNES measured pledging households recycling in each round at sign up and at three intervals at random afterwards. The percentage increase is calculated based on subtracting the sign-up reading from an average of the three intervals post sign-up divided by the sign-up reading.
49 The periods between pre- and post-scheme for rounds ranged between four to eight months, whereas the periods between pre- and post-scheme for weighing of pledging households was at most three months - this may explain why the increase shown is not as great.
Participation monitoring results (table to the right) show that in the pledge rounds participation fell slightly after the pledges had been made. Conversely, in the control round participation was slightly greater in the later monitoring. The pledge scheme did not appear to increase the number of households participating in the scheme overall.\(^{50}\)

In the post-scheme survey to pledging households 65% (n= 191) of respondents stated that the scheme made them more aware of what can be recycled and 67% (n=197) of respondents claimed that the scheme made them more aware of how to present their recycling correctly. Of those people who said that the scheme had helped them present their recycling correctly, the opportunity to speak to someone and the leaflet were the two elements said to have helped the most. When asked how motivating Bath Olivers, compostable food liners, money and no rewards are, the favoured option was compostable food liners where 52% (n=153) said they ‘helped a lot’. It is worth remembering that the survey sample is quite biased as it is pooled from pledging households.

The scheme cost a total of £104,116 including estimates of value-in-kind contributions (£3,288); the pie chart shows the breakdown. Monitoring and evaluation was a considerable part of the costs (31%). The total cost per household in the scheme (5,082 households) was £20.49; without the monitoring and evaluation costs this drops to £14.13 (although if running the scheme again there would still be a need to monitor each household for compliance against the pledges made). As 710 households pledged, the cost per pledging household is £146.64.

BathNES used the pledge initiative to engage directly with a large number of residents. This helped to remind residents of how the scheme worked and gave practical advice on recycling. The reward that was local and perhaps less familiar to people (Bath Olivers) seemed to be less popular than the one that had a practical and immediate benefit (compostable food caddy liners). The pledging households did not manage to have a ‘critical mass’ impact on round tonnage data.

---

\(^{50}\) Some explanation behind the slight fall in participation rates could be different staff carrying out the monitoring, pre-scheme monitoring was conducted over six weeks while post-scheme was conducted over 17 weeks as each round finished its reward stage. The post-scheme monitoring also started in August which tends to be a time where residents are away due to summer holidays and students are still in recess (30% of Bath population is made up of students). The post-scheme participation may also be influenced by Christmas holiday period and poor weather.
3.3 Birmingham City Council (BCC)

How did the scheme come about?

BCC, a unitary authority, wanted to increase paper and cardboard recycling amongst its householders. They worked with Nectar (www.nectar.com), one of the largest loyalty card schemes in the UK, involving companies such as Sainsbury’s and BP. This was the first time such a partnership had been established. The scheme was called ‘Birmingham City Council’s Nectar Reward Scheme’ for paper recycling.51

Objectives of the Nectar scheme were to:

- Increase resident participation in household paper and cardboard recycling;
- Establish if positive behaviour change can be achieved by using Nectar points as a reward; and
- To determine whether there was a business case to rollout to the rest of Birmingham.

Two paper recycling rounds were chosen for the trial; one in the north and one in the south of the city. The criteria used to select the rounds took into account paper recycling tonnage rates, demographics, location and operational issues. BCC selected the pilot areas also based on Experian’s GreenAware socio-demographic profiling. The segmentation model enabled BCC to identify households who were more likely to be recycling already, those who had a propensity to recycle or recycle more and those likely to respond positively to rewards. This enabled BCC to select the rounds that had a high proportion of households with positive environmental attitudes but that could be nudged to do more with regards to recycling. The two scheme areas selected were Cotteridge and Erdington, covering a total of 4,392 households. According to BCC the overall paper recycling tonnage for the two rounds were low to medium in comparison to the rest of the city (based on 12 months data). This would indicate that there is potential to improve paper recycling rates. BCC set up a project management team with representatives from various departments and Nectar.

Delivering the scheme

The scheme was launched in September 2011 and lasted until March 2012.52 Householders were sent a pack containing details on how to register and an address label with a radio frequency identification/bar-code sticker to place on their paper recycling box (see picture to the right). Press releases, press launch events, posters, dedicated web pages, email news bulletin, social media and email campaigns to registered households during the trial were all mechanisms used to promote the scheme. When participants registered they were awarded 100 Nectar (bonus) points53 and 25 points (currently equivalent to 13 pence54) per collection of their paper and cardboard allocated by the scanning of their recycling box. During the scheme, ‘double points’ campaigns were introduced to coincide with the Christmas period, and specifically to households who were not recycling frequently.

51 BCC could only reward for either paper/card or mixed dry recyclables (glass bottles and jars, food and drinks cans, and plastic bottles), not both as they are collected in different receptacles and they did not have the resources to do both. BCC chose paper over mixed dry recyclables as it has an identified direct income for the council as they directly sell paper/card to the local paper mill.
52 This was launched alongside a scheme that rewarded users of a specific BCC leisure centre with Nectar points.
53 Only provided to those households that registered within the first three months of the trial.
54 Accessed online 15/10/2013 http://www.nectar.com/spend.points
In order to assess the impact of the scheme and to reward points, the following monitoring and evaluation activities took place:

- Records were kept of the recycling round tonnage data both for the scheme areas and the rest of Birmingham which acted as their control area;
- Participation monitoring was carried out before, mid and after the scheme;
- A post-scheme online attitudinal and behavioural survey was conducted with participants (n= 294);
- A post-scheme telephone survey was also conducted with 68 participants and 34 non-participants; and
- Two discussion groups were carried out with residents\textsuperscript{55} and one amongst the project team.

**Impacts and outcomes**

Over a quarter of households (26%, n=1,121) signed up to the scheme. The graph below shows the paper tonnage data for the two trial rounds during the period of the scheme. It shows that there is variability in the round weights\textsuperscript{56} with no obvious upward trend as a result of the Nectar scheme.

![Average paper tonnes per fortnight](image)

The totals for kg/household/week for paper collected over different six month periods are shown in the bar chart to the right for the scheme area and the rest of Birmingham. The chart shows that more paper and cardboard were collected in the scheme areas during the trial compared to the equivalent six month period in the year before (an increase of 5%), while there was a fall for the rest of Birmingham (-3%).

When looking at participation monitoring very slightly more households were participating in paper recycling by the end of the scheme - 78% (July 2012) compared to the 75% established before the launch of the scheme (April 2011). Participation was measured as 74% at the mid scheme point. As all these measurements are very close it is difficult to attribute any increase to the scheme.

From the on-line survey only a handful of respondents (2%, n=6) stated that ‘I started recycling because of the Nectar scheme and will carry on’. Half (50%, n=146) of the respondents stated that ‘I already recycled and it hasn’t made a difference to how much I recycle’. Encouragement was, however, given to approximately half of

---

\textsuperscript{55} Attended by 13 scheme participants and three non-participants.

\textsuperscript{56} BCC queried the high tonnage for the Erdington round in November for anomalies in data or collection and there being no explanation to discount it decided to include it in the results. Its inclusion does not dramatically change the average tonnage. In early February the round configuration for Cotteridge changed so there are two data points missing.
respondents (46%, n=136) who stated ‘I already recycled and it has given me extra encouragement to recycle more’.

Online respondents were also asked whether in the last year they had personally received any of a list of aspects from Birmingham City Council Nectar Reward Scheme for recycling (see graph below). As all these respondents were registered and receiving Nectar points the results shown below are intriguing as only a quarter (26%, n=77) said they had received a reward for recycling but almost two fifths of respondents (38%) stated they received a ‘thank you’. One potential explanation is that participants in the scheme did not get notification each time they received the Nectar points (in any future scheme BCC would like to rectify this so participants do get feedback on points being awarded). All participants did, however, get regular email correspondence from BCC thanking them for taking part and recycling. It may also suggest that participants may have perceived the Nectar points to be a ‘thank you’ rather than a reward.

The role of being thanked is seen as important. Over half of post-scheme survey respondents (54%, n=158) stated that being thanked was very important/important, compared to two fifths (40%, n=117) who said receiving a personal reward was very important/important. BCC stated that they felt that the Nectar points acted more as a ‘thank you’ than an incentive to change behaviour.

From the research conducted with non-participants it would seem that one of the main reasons people did not sign up was that they were not existing Nectar card holders. In the post-scheme survey, however, when asked on a scale of one to five how motivated they were to take part specifically for Nectar points, almost two fifths (38%, n=113) of users stated ‘five – very motivated’ (see graph overleaf).

---

57 This was a multiple response question and those that did not respond or selected ‘none of the above’ have been excluded from this graph.
Total costs were £63,500 and are broken down in the pie chart to the right.\textsuperscript{58} It is worth mentioning that BCC secured £10,000 from the West Midlands Regional Improvement Efficiency Partnership Locality Investment Fund for this recycling trial which went towards staff costs for implementation (revenue costs). Given the importance placed on assessing effectiveness to inform roll-out, monitoring and evaluation costs are a significant proportion (38%).

It is worth noting that manual monitoring systems (e.g. handheld scanner used for scanning recycling boxes outside each household, bespoke Excel data capture, export and analysis) were used and if rolled out on a large scale more effective and automated systems could be implemented. The cost per household was £14.46 (£8.92 without monitoring and evaluation costs). As not every household participated in the scheme this increases to £18.54 for each participating household based on paper recycling participation rates\textsuperscript{59} (£11.43 without monitoring and evaluation costs). If just looking at the households who signed-up to the Nectar scheme this increases to £56.65 per household (£34.94 without monitoring and evaluation costs).\textsuperscript{60}

BBC also benefited from positive local and national press coverage which raised the profile and enhanced the reputation of the council – the estimated value of this publicity and public relations benefits was noteworthy.

The Birmingham Nectar Reward scheme was a novel initiative. It appealed more to those who had a Nectar card already and participants saw the Nectar points more as a bonus for doing something they already participated in. It achieved a 5% increase in paper recycling tonnages. The overall package of communications also acted as a good reminder and people felt that their efforts were being recognised. BCC is investigating whether it is worthwhile launching a city wide scheme with Nectar for different behaviours (e.g. recycling, leisure centre use, etc.)

\textsuperscript{58} It is worth noting that £4,000 for rewards is a maximum cost – due to contract terms with Nectar, BCC is not able to disclose exact Nectar fee and points cost.
\textsuperscript{59} Using the 78\% post-scheme participation rate of 4,392 households so 3,426 households.
\textsuperscript{60} Using the 1,121 households who signed up to the scheme.
3.4 Gloucestershire Waste Partnership

How did the scheme come about?
GWP is a partnership of all seven district, city and borough councils and the county council working together to improve waste management services in Gloucestershire. By working closely with community groups GWP wanted to see if offering rewards and recognition would achieve higher recycling tonnages. The scheme, called ‘Recycle for your Community Incentive Scheme’ (CRIS), would be delivered by community groups, with the community rewards being funded by any increase in recycling credits. GWP was keen to establish long term relationships with community groups and, if successful, expand the scheme further.

Delivering the scheme
The CRIS schemes started in March 2012 and finished around November 2012. GWP decided to pilot 5 trials in areas of low participation in recycling, some of which had high levels of social deprivation. The total number of properties targeted was just over 10,000. A project team was established involving Gloucestershire County Council, and the local waste collection authorities of Gloucester City Council, Tewkesbury Borough Council, Cheltenham Borough Council and Stroud District Council. A target, over the duration of the scheme, of 15% increase in recycling tonnages was set.

Via community centres, leaflets, websites and posters residents were invited to nominate community groups in the chosen areas. This took longer than planned as in some cases a vote was also required to decide on one community group. In one area two community groups worked together as they had received the same number of votes. In order to monitor recycling tonnages the CRIS areas had to be the same as recycling rounds, however these areas did not always match the geographical areas that residents considered their local community. The table below outlines the scheme areas, community group and how they engaged with local residents.

<table>
<thead>
<tr>
<th>Council</th>
<th>Scheme area</th>
<th>Community group</th>
<th>Communication and engagement methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloucester</td>
<td>Linden and Podsmead</td>
<td>Calton Road Infants School</td>
<td>Posters and banners displayed. Various promotions within the school and for local community (such as events). Leaflets delivered door-to-door and 50 boxes distributed by council.</td>
</tr>
<tr>
<td>Tewkesbury</td>
<td>Brockworth</td>
<td>Brockworth Albion Football Club &amp; 1st Brockworth Brownies</td>
<td>Banners at community centre and at football games. Leaflets delivered door-to-door by groups. 70 boxes distributed by council. Scheme promoted within the community groups and at a Community Day. Posters and stickers also used.</td>
</tr>
<tr>
<td>Cheltenham</td>
<td>Whaddon</td>
<td>Oakley Community Resource Centre</td>
<td>Banners at community centre. Leaflets delivered to households by council and also available at local event. Some additional boxes delivered by council on request. Posters and stickers also used.</td>
</tr>
<tr>
<td>Cheltenham</td>
<td>Springbank</td>
<td>Springbank Youth Club</td>
<td>Leaflets delivered door-to-door by council and available at events such as Eco Fun Day. Posters, banners and stickers also used.</td>
</tr>
<tr>
<td>Stroud</td>
<td>Stonehouse</td>
<td>Stonehouse Youth Partnership/Project</td>
<td>Promotions focussed on local schools, leaflets produced but not delivered door-to-door.</td>
</tr>
</tbody>
</table>

GWP gave the community groups budgets for the campaign and community engagement activities and recommended that the ‘Recycle for Gloucestershire’ branding was used. Some of the community groups already had skills and expertise in communications (for example having a website and newsletters) whilst for others it was a new experience. As the level of resources differed between the groups, officers from GWP gave advice and support where necessary.

A range of monitoring and evaluation methods were used to assess the effectiveness of the scheme:

---

81 See picture below of children from Calton Road Infants School delivering stickers.
Recycling tonnages from CRIS rounds and two control rounds (although changes in operations meant the control rounds were not monitored for all of the duration of the scheme);[62] Participation rates of CRIS rounds and two control rounds (including types of materials presented and contamination levels); Attitudinal survey pre-scheme (n= 658) and post-scheme (n= 690); and Four focus groups (one with residents aware of the scheme, one with residents unaware of the scheme, one with the community organisations and one with the project team).

The main way in which the community groups were assessed was on recycling tonnages of the rounds, which were compared to the same period in the previous year.

**Impacts and outcomes**

The graph[63] to the right compares the weight of the recyclables[64] for each scheme and control area. It shows that there is variability in the amount of recyclables collected per household per month and that all the rounds started off performing significantly below the two control rounds.

The chart above shows the kg per household per week of recyclables for each scheme during the same period in the year before the scheme started (March to November 2011) and for the CRIS period (March to November 2012). Measuring the impact of Stroud’s Stonehouse Youth Partnership/Project was difficult as the community group was not able to start their work until June 2012 and the recycling service changed during the scheme. The service moved from kerbside sort to semi commingled which allowed for the collection of more recyclables (e.g. Tetra Paks, and plastic tubs, pots and trays). To allow for a more measured assessment of the community group’s actual influence GWP used a district wide comparison and reduced local tonnage data to reflect this – therefore, tonnage data are based on estimates rather than actual measurements. For these reasons, this data are shown separately (chart above).

---

[62] It is worth noting that when it comes to recycling one control area (Twyning) was a rural round centred around a village and considered to be lower performing for the local council but still performing quite well when compared nationally. The other control (Wheatpieces) was considered more typical of the CRIS rounds as it is an under-performing residential area of a town.

[63] Data series grouped into monthly kg per household for purposes of comparison, as collection dates and frequency varied. Control tonnage data was only collected until mid June 2012 (8 collections) as following operational changes tonnage data was no longer usable as routinely multiple vehicles were collecting on these rounds.

[64] Recyclables include paper, card, cans, glass, plastic bottles and batteries.
The table below summarises the average participation rates for the scheme areas.

<table>
<thead>
<tr>
<th>Area</th>
<th>Community group</th>
<th>Pre-scheme</th>
<th>Post-scheme</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloucester</td>
<td>Calton Road Infants School</td>
<td>70%</td>
<td>65%</td>
<td>-5%</td>
</tr>
<tr>
<td>Tewkesbury</td>
<td>Brockworth Youth Football and Brownies</td>
<td>88%</td>
<td>84%</td>
<td>-4%</td>
</tr>
<tr>
<td>Cheltenham (2 schemes)</td>
<td>Oakley Community Resource Centre</td>
<td>68%</td>
<td>54%</td>
<td>-14%</td>
</tr>
<tr>
<td></td>
<td>Springbank Youth Club</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroud</td>
<td>Stonehouse Youth Partnership/Project</td>
<td>70%</td>
<td>65%</td>
<td>-5%</td>
</tr>
<tr>
<td>Two control rounds</td>
<td></td>
<td>97%</td>
<td>80%</td>
<td>-17%</td>
</tr>
</tbody>
</table>

Some rounds had surprisingly high pre-scheme participation rates, but as this is measured on presentation of the recycling rather than quantity residents could have been putting out only a small amount. Overall participation rates fell in all areas with the two control rounds showing the biggest fall in participation (-17%). Whilst CRIS did not increase participation it may have slowed the decline shown elsewhere in Gloucestershire.

Four of the five areas experienced an increase in tonnages when compared to the previous year; however, these increases were not in the order of magnitude expected. The lack of increase in tonnages and participation may be explained by a lack of awareness of the scheme. The door-to-door post-scheme survey, carried out with 690 residents, showed that overall only 19% (n=128) of those questioned were aware of CRIS. Leaflets (47%, n=60) and word of mouth (16%, n=20) were the main way that people became aware of CRIS. Two-thirds (66%, n=85) of those who were aware of the scheme stated they already recycled and that it hasn’t made much difference to how/how much they recycle. A quarter (25%, n=32), however, stated that they already recycled but the scheme gave them extra encouragement to recycle more and 8% (n=10) started to recycle because of CRIS and will continue to recycle. The focus groups confirmed that most residents knew little about the schemes.

Both the project team and community groups considered the schemes to be positive and useful experiences even though they had not increased recycling tonnages. Rewards were meant to be funded by recycling credits but these rewards for the community groups were small (e.g. a couple of hundred pounds) in comparison to the communication budget provided and other funding streams available. For example, one community group was successful in winning £1 million from the Big Lottery Fund making any reward available under CRIS seem very small.

Total costs for this scheme were £60,343. A breakdown of the costs of this scheme is shown in the pie chart. A large proportion of the budget was spent on monitoring and evaluation. A record of tonnage data from the rounds was not expensive to keep so if repeating the scheme it would be less costly. The cost of the scheme was £5.96 per household but without monitoring and evaluation costs it was £2.49.

The CRIS schemes did not increase recycling tonnages by 15% and so will not be expanded. They did, however, help GWP shape future community engagement work and have provided lessons on the difficulties of setting up, delivering and monitoring community based reward schemes.

65 In Cheltenham the configuration of recycling rounds was changed so that direct comparisons of the rounds before and after the scheme were not possible (although an average for all three rounds in the scheme areas was calculated).
66 Participation rates seemed particularly high - one round in Stroud had 100% participation as did the control round in Twyning. Reasons for these high participation rates may be due to rounds being fortnightly and the fact that properties were counted as setting out irrespective of the quantity or materials placed out for collection (e.g. if paper was set out only once over 3-fortnights monitoring period, the household is counted in the participation calculation).
3.5 Norfolk County Council (NCC)

How did the scheme come about?
NCC is a waste disposal authority, one of their roles is to provide a range of recycling centres for Norfolk residents to dispose of bulky waste. They have encouraged more reuse of items through the establishment of Reuse Shops at seven of their Main Recycling Centre Plus sites. Customers can donate all unwanted household items that they feel are reusable and they can also purchase items.

NCC decided to trial a reward scheme at two of the Reuse Shops to see if this would encourage greater reuse and in particular increase reuse sales. Customers were issued with loyalty cards, which were stamped for every £1 spent. When 4 stamps had been collected they could exchange the card for a voucher. The vouchers could be redeemed at NCC facilities and varied in their cash-equivalent. The vouchers included:

- Free entry to museum for up to five people (worth up to £24);
- £1 off DVD rental at libraries;
- Free Park and Ride (£4.20); and
- Gym pass (£6.58).

In addition NCC approached a number of local and national businesses to support and donate vouchers to the scheme but all declined to do so.

In terms of targets NCC aimed to promote the Reuse Shops and Recycling Centres and generate an additional 100 tonnes of donations for reuse (including bric-a-brac, small furniture, DVDs, bikes, toys, pictures, frames, etc.) from the scheme sites.

Delivering the scheme
NCC ran an extensive communications campaign to promote all the Reuse Shops in the first quarter of 2011 (the Reuse shops had recently been re-branded and made more visible and appealing). A whole package of promotions were used including: advertisements and articles in local papers, radio interviews, petrol station forecourt boards, social media, websites, blogs and a stall at Royal Norfolk Show. 70 posters and 300 leaflets were distributed in outlets throughout the county.

The loyalty card scheme started in January 2012 and ran until December 2012 in two Reuse Shops at Kings Lynn and Ketteringham. A training talk about the scheme and how it operated was delivered to staff at the two sites. Vouchers, posters, leaflets, loyalty cards and feedback forms specific to each test site were produced and distributed. Displays, events and promotions were carried out in the nearby towns (King’s Lynn and Wymondham) to the two sites.

The following records were kept to monitor the effectiveness of the loyalty card scheme:

- Number of loyalty cards and vouchers issued;
- Income generated at the scheme Reuse Shops and the four Reuse Shops used as control;
- Tonnages of all waste delivered to scheme sites and control sites; and
- Feedback forms available at trial Reuse Shops (n=297) and control sites (n= 41).

---

67 There are eight such centres in Norfolk and they are defined as ‘plus’ because they provide additional services including Pay As You Throw (for additional amounts of DIY above their 80L threshold) and Reuse Shops.
68 All unwanted items that are in a condition to be resold are welcomed except old electrical equipment and baby toys.
Impacts and outcomes

A total of 319 loyalty cards were returned in exchange for vouchers (61 people exchanged loyalty cards more than once), this is less than a third of what was originally anticipated by NCC. 387 vouchers were unaccounted for at the end of the scheme, this may be attributed to the various methods of collection and distribution that were used during the project. If such a scheme was replicated elsewhere then appropriate checks would need to be put in place in order to ensure the correct distribution and use of vouchers.

The bar chart to the left shows the annual reuse tonnages derived from sales data for the scheme Reuse Shops and the control site of Caister. All the Reuse Shops dealt with greater tonnages of reuse items as time progressed. It is difficult to attribute this increase to the reward element of the scheme and it may, in part, be due to the promotional campaign and rebranding and improvement of the shops. When comparing 2011 (pre-scheme) to 2012 (scheme year), the control site increased tonnages by 48% compared to a 101% increase at Ketteringham and a 10% increase at Kings Lynn. Overall compared to 2011, 26 additional tonnes of reuse items were generated in 2012 in the scheme sites. It is unknown why, based on tonnage data, Ketteringham achieved such a bigger increase compared to Kings Lynn. NCC suggests that this outcome may be related to the different characteristics of the Reuse Shops/Recycling Centres: the shop at Kings Lynn has been open for longer, is larger and is manned at all times so perhaps given the different starting points it had less room for improvement than Ketteringham.

The graph below illustrates quarterly tonnages for the scheme sites and the control site. The dip in tonnages in Q4 in 2012 can be attributed to a steep decline (40%) in tonnages at Kings Lynn site.

---

69 NCC had printed 1,000 loyalty cards to distribute.
70 NCC distributed 881 vouchers to the Reuse Shop staff at the Main Recycling Centre Plus sites ahead of the scheme: 319 were distributed and 127 were returned which leaves 387 unaccounted for. All vouchers were donated by other NCC departments (e.g. NCC Leisure Department) and no up-front costs were incurred by donors until vouchers are redeemed. At the time of writing NCC were still investigating whether the 387 vouchers had been exchanged for council services or were mislaid.
71 Staff personnel at sites send a receipt of item purchased to the contractor for calculation of tonnages based on estimates from FRN average weights of items sold.
72 Originally NCC had four Reuse shops acting as controls, however, the quality of the historic and scheme time data was inconsistent and often not comparable. One control site did not have historic data pre-scheme as it opened in January 2012, one had used estimates rather than actual weights for most of the monitored period and one had used estimates for at least six months of the scheme period. The control site shown here is Caister as they relied on actual weights rather than estimates. It is worth noting, however, that Caister Recycling Centre and Reuse Shop moved to a new and improved site, doubling the size of the shop.
73 This dip in the tonnage remains an unexplained anomaly in NCC dataset. NCC and site contractors have suggested that it may be due to smaller or fewer items being purchased in Q4 of 2012.
Feedback forms were completed by 297 respondents at the scheme sites. Questions were asked about the Reuse Shops rather than the loyalty card scheme. Those that heard about the shops had done so because they were regular users of the recycling centre (51%, n= 152 for the scheme sites). Very few said that they had heard about the shop from the radio or newspaper advertisement. The campaign did not seem to bring in new users into the shops as only a handful of respondents at the scheme sites were visiting for the first time. It is worth remembering that respondents to the feedback form may not be representative of all visitors, however, the scheme seems to have created an opportunity to better engage with existing visitors.

The income from sale at the scheme Reuse Shops was recorded and the graph below shows the two sites compared to the control site. Over a third (36%, n= 108) of respondents were at the Reuse Shop to buy items. A fifth of respondents (21% n=61) stated that the reason they were in the Reuse Shop was because they had come to the recycling centre and popped into the shop while they were there. The only method of capturing participants’ motivations for joining the scheme or assessing a change in behaviour (either by buying more or donating more) was the feedback form. It may be that the loyalty cards rewarded regular site users by giving them a new reason to enter the reuse shop and make purchases, rather than bringing in new visitors.

This initiative cost £27,371 and is broken down into the various elements as shown in the pie chart. The vouchers themselves were a significant proportion of the budget (48%) – this was funded by NCC rather than Defra. The other big cost was communications (33%); however, this covered promotional material for all the Reuse shops in Norfolk (i.e. not just those trialling loyalty cards as part of this scheme). For each participating user this means a cost of £106.09; without monitoring and evaluation costs it was £104.15.

There seems to be little evidence that the loyalty card attracted new shoppers to the Reuse Shops. The scheme, however, provided a useful opportunity to draw in site users to also visit the shop while they were there. Given the lack of a robust control and the fact that all Reuse Shops were rebranded it is near impossible to attribute the increase in tonnages to the scheme. NCC felt that loyalty cards could have contributed to the Ketteringham site increase in reuse tonnage but not to Kings Lynn where the increase was lower than the increase in the control site.

---

74 Income data had to be estimated for the last quarter in 2012 for Caister - the control site. This is likely to be due to late arrival of data and staff issues on site. 75 The £13,081 cost is a maximum amount of money that could have been used in exchange for the vouchers that been issued (319) or mislaid (387). This is not necessarily the cost of the vouchers upfront as it is only when a voucher is exchanged at a NCC run facility for the actual service /experience e.g. museum visit, gym pass that it actually costs NCC money. 76 This is using the lowest estimate of 258 unique users (319 minus 61 repeats – but it is not possible to know how many of the 61 were single repeat users of the loyalty card).
3.6 National Union of Students (NUS)

How did the scheme come about?

The National Union of Students (NUS) is a voluntary membership organisation and confederation of 500 students’ unions that promotes, defends and extends the rights of students. The NUS had previously delivered the Student Switch Off campaign which ran energy-saving competitions within university halls to achieve reductions in electricity usage and take action on climate change. From evaluating this campaign NUS realised that adding recycling as an action was the next natural progression. This combining of actions led to the birth of the Student Switch Off Recycling Competition and ReLove Reuse Competition. The main aim of the scheme was to increase recycling rates across halls by 10% when compared to the previous year by encouraging competition amongst the different university halls. NUS also expected the scheme to deliver additional benefits around increased environmental awareness and community cohesion in the universities. NUS felt that targeting students at this key life stage – when they have just left home – meant that they are more amenable to adopting pro-environmental behaviours as their original habits have been disrupted by moving home.77

Delivering the scheme

The scheme launched at the Freshers’ Fayre at each university in September 2011 and finished in June 2012 – lasting the whole academic year. The scheme was delivered by the same staff as the Student Switch Off campaign to ensure synergies and economies of scale. It was delivered in collaboration with hall managers and student volunteers from four partner universities - University of Reading, University of Winchester, University of Bristol and London School of Economics. There were different levels of engagement for students. Students could sign up as Eco-Power Rangers to show their support for the scheme, become ambassadors and attend communications skills training, and become auditors. Those that became auditors were effectively student volunteers of the scheme and carried out the recycling audits at each kitchen in each hall along with project staff once per term. During the audits, if students had used the recycling facilities correctly, they were left a ‘Recyclometer’ card78 giving them feedback and were rewarded with chocolates. At the London School of Economics the scheme focused on reuse rather than recycling. The table overleaf summarises the facilities, engagement activities and rewards for each of the four universities.

In order to measure effectiveness, the scheme:

- Attempted to secure recycling and refuse tonnage data from a control university (Portsmouth)79;
- Attempted to secure reuse,80 recycling and refuse tonnage data or estimates from participating universities;
- Administered pre-scheme (n=1,162) and post-scheme (n=913) online attitudinal and behavioural surveys for recycling universities;
- Administered pre-scheme (n=281) and post-scheme (n=215) online attitudinal and behavioural surveys for reuse university (see table overleaf); and
- Conducted four discussion groups (one at each university).

At the end of the academic year the hall/flat in each university that had the highest proportion of recycling/reuse was awarded the prize.

---


78 See image of ‘Recyclometer’ card to the left.

79 It is worth noting that Portsmouth data had many anomalies and missing data points – only had valid data from Jan to April in both 2011 and 2012. Therefore, in the calculations below it was decided to include the control in the recycling rate comparison given that it is based on proportions but not when comparing total or per student tonnages.

80 Only relevant for LSE - London School of Economics.
Recycling rate (with glass) in the scheme

<table>
<thead>
<tr>
<th>University of Reading</th>
<th>Halls</th>
<th>Students in halls</th>
<th>Facilities in place at halls</th>
<th>Engagement activities</th>
<th>Reward</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
<td>4,334</td>
<td>Bins in kitchen for plastic, cans, cardboard and paper</td>
<td>Eco-Power Rangers: 534</td>
<td>Chocolates depending on audit outcome</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Glass collection bags in kitchens but students empty them</td>
<td>Facebook fans: 208</td>
<td>Hall versus hall recycling competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cleaners empty all bins but glass</td>
<td>Volunteer communication training</td>
<td>£250 prize to hall Junior Common Room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hall managers levy fines to users if facilities are not used correctly</td>
<td>Leaflets, posters and talk</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Photo competitions</td>
<td>Summer ball tickets for each student winning flat (£50x6)</td>
</tr>
<tr>
<td>University of Winchester</td>
<td>109 flats</td>
<td>1,314 Scheme focused on 714</td>
<td>One mixed recycling bin in kitchen for plastics, card, paper and glass</td>
<td>Eco-Power Rangers: 529</td>
<td>Chocolates depending on audit outcome</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cleaners empty recycling bin but not refuse</td>
<td>Facebook fans: 139</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaflets, posters and talk</td>
<td>Summer ball tickets for each student winning flat (£50x6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Photo competitions</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Climate change quizzes</td>
<td>Summer ball tickets for each student winning flat (£50x6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Three recycling audits conducted</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td>Bristol University</td>
<td>13</td>
<td>3,301 Scheme focused on 2,837</td>
<td>Bins in kitchen for food waste, plastic, paper, cardboard, glass, cans, batteries, phones, WEEE, clothes, and printer/toner cartridges and confidential paper</td>
<td>Eco-Power Rangers: 1,039</td>
<td>Chocolates depending on audit outcome</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cleaners empty all bins</td>
<td>Facebook fans: 157</td>
<td>Hall versus hall recycling competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Infrastructural changes made during scheme (e.g. more items collected)</td>
<td>Volunteer training in communications</td>
<td>£500 prize to hall Junior Common Room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaflets, posters and talk</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Photo competitions</td>
<td>Summer ball tickets for each student winning flat (£50x6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Climate change quizzes</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One recycling audit conducted</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td>London School of Economics (LSE)</td>
<td>8</td>
<td>3,449</td>
<td>Reuse facilities were added in communal areas at each hall (e.g. laundrette, common room)</td>
<td>Eco-Power Rangers: 608</td>
<td>£250 prize to allocate at hall manager’s discretion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Piggy backed on a previously run campaign called ReLove that coordinated an end-of-year collection of unwanted items</td>
<td>Facebook fans: 62</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volunteer training in communications and promotion</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Leaflets, posters and talk</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Photo competitions</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Climate change quizzes</td>
<td>Flat versus flat competition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Three visits used as door-knocking campaigns to raise awareness</td>
<td>Flat versus flat competition</td>
</tr>
</tbody>
</table>

Impacts and outcomes

As the graph to the right shows, recycling rates at Bristol University and University of Reading – where they could be measured/estimated with some accuracy – increased when compared to the same period the year before (October 2010 to April 2011) and when compared to the control. For Bristol University the increase in recycling rates was 14% (exceeding the 10% target) and for the University of Reading this was 4%. It was not possible to have

---

81 In Reading data were provided by waste contractor as monthly bin weights but some data points were missing, and glass data was omitted from the comparison as the collection data used an estimate of the fullness of the collection banks. In Bristol data were derived from spot check audits coupled with volumetric conversions. NUS reported that the methodology for this calculation has been consistent over the past four years so the year-on-year comparison should be consistent and meaningful. The tonnage data for Bristol covers all 3,301 living in halls rather than the 2,837 which the scheme focused. In Portsmouth some data points were missing and others appeared abnormally low in particular for 2010 to 2011. Data was only deemed reliable enough for the period of January to April 2011 and January to April 2012.

31
similar data for Winchester as the pre-scheme data were not considered reliable enough. When looking at aggregate and comparable tonnages, the trend shows that refuse waste decreased and recyclables increased (graph below\textsuperscript{82}).

The pattern remains quite similar when looking at tonnages per number of students.

The overall weight of materials handed in for reuse at the London School of Economics fell by 1,696 kg when compared to the same period in the previous year. This was largely explained by a turnover of key university staff and lack of resourcing which meant that the scheme was not well promoted - though 68% (n=147) of student respondents to the online post-scheme survey at LSE claimed to have heard of the scheme. Across the recycling universities,\textsuperscript{83} recognition rates, were high - with over three quarters of respondents (76%, n=690) claiming to have heard of the scheme. Though close to half of respondents (49%, n=445) stated that it had not made a difference to how much/how they recycle, one in five (20%, n=183) did state that the scheme gave them extra encouragement.

When comparing pre- and post-scheme the reasons why students recycle have not changed. The most popular reason remains because ‘it is good for the environment’ (74%, n=677) followed by because it is convenient (70%, n=637) and awareness of the facilities (67%, n=615). Only one in ten respondents (10%, n=88) stated incentives for recycling and only 9% (n= 80) gave the recycling competition between halls as a motivator for recycling.

\textsuperscript{82} Data are from October 2010 to April 2011 for pre-scheme and October 2011 to April 2012 for scheme. Please see caveats in footnote 77. 
\textsuperscript{83} All survey data is only taken from the recycling surveys conducted at Winchester, Reading and Bristol – excluding LSE.
Despite these responses, when asked what it was about the scheme that encouraged them to recycle, respondents tended to mention the prize elements of the scheme (see graph below). Though the competition and rewards (chocolate and prizes) encouraged some to recycle, some focus group participants felt that these incentives would not engender a habit of recycling in the long run.

The total cost of this scheme was £65,338 including estimates of value-in-kind contributions (£659). The pie chart to the left shows that the bulk (56%) of the costs was revenue costs, meaning scheme staff time. When looking at the total costs divided by the number of participants (Eco-power rangers signed up) this gives a cost of £24.11 per student or £17.46 per student if excluding monitoring and evaluation costs. When extending this to the potential reach of the scheme (i.e. the total number of students in halls targeted) this gives £5.76 per student or £4.17 if excluding monitoring and evaluation costs. It is also fair to add that NUS found it very hard to disaggregate costs for the recycling and reuse elements of the campaign from the energy parts.

Overall a change in tonnages and recycling rates was noticed in the universities where this scheme operated. Given the results of the control university (where recycling rates remained roughly the same) and the high recognition rates of the scheme at the universities it is likely that some of the additional tonnages are attributable to the scheme. However, the proportion and probability of this attribution is not clear given the missing data, the overlap with the energy part of the Student Switch Off and the slight changes in facilities at Bristol during the course of the scheme (e.g. more items could be collected, at the discretion of the hall manager). As this pilot was deemed successful, the Student Switch Off Campaign is offering the recycling competition as a bolt-on cost for universities. In early 2013 it was being rolled out to 18 universities where the rewards were more frequent and direct based on how a flat performed in a term (Ben & Jerry’s parties every term). NUS staff personnel stated that this element of the scheme is self-sustainable partly because it can piggy-back on the Student Switch Off energy campaign so it benefits from its foundation, network and brand.

---

84 Estimates of university staff time involved with organising access to halls, for data collection and analysis, etc. are included under opportunity costs.
3.7 Preen Community Interest Company (Preen)

How did the scheme come about?
The scheme was led by Preen Community Interest Company (Preen), a reuse social enterprise based in the operational area of Central Bedfordshire Council, in collaboration with local parishes. The scheme was a new reward and recognition scheme, aiming to increase purchasing and donation to the two Preen reuse shops. No such scheme had existed in the past. Items for reuse included furniture, clothing, books, bric-a-brac and electrical appliances. Preen had two target audiences for the scheme: the local councils (both at local authority level and parish/town councils) and the general public. Their potential target audience was 252,000 (the population of the area from which they collect used furniture). The geographical area of the local authority is one of the least densely populated in England. Preen had approximately 6,500 registered members before the start of the scheme and aimed to increase this by 4,000 (registration was compulsory for anyone wishing to buy or donate). Preen aimed for a 33% increase in tonnes of donation for reuse, 30% increase in re-use goods purchased and 66% increase in members.

Delivering the scheme
The scheme was called the ‘Preen Community Challenge’ and was in operation from March to October 2012. It was managed by Preen staff. The logic of the scheme was as follows:

- Whenever anyone donated or bought items from the shop, they had to register as a member.
- Members received points every time they donated or purchased an item (the number of points depended on the type of item which was loosely related to its weight), and these points were allocated to the members’ parish council.
- Parish councils competed against each other through this points system.
- As well as getting points for donations and purchases, parish councils could also obtain points by engaging with the scheme (e.g. attending the launch, getting residents to fill in surveys, etc.).
- The winning councils and runners-up in each category (see below) would receive a community reward in the form of cash (up to £5,000) and Preen vouchers (up to £22,000), to be spent on community improvements (e.g. furnishing a village hall) or distributed as they saw fit.

There were three categories for which awards were given: average tonnage donated per household, percentage of households in parish participating in scheme and amount of money spent in Preen shops per household. An extra award was given to the parish that collected the most points. The rewards were originally ring-fenced irrespective of turnover projections but given that increases in turnover were achieved (actual sales income), the rewards were funded in this manner. Not all of the reward pot, however, was distributed as not as many parishes participated as Preen had hoped. At the end of the scheme a discretionary award was given to the parish considered to be most engaged in the scheme, funded through some of the reward pot.

Preen relied on their proprietary database, which recorded information on members, donations and purchases to assess impacts. This database used the Furniture Re-Use Network standard weights to estimate tonnages. Online surveys were sent to Preen members when they signed up (n= 125) and at the end of the scheme (n=169) to find out about reuse attitudes and behaviours, and how these changed over the course of the scheme. There was no control area and little formal qualitative research, although anecdotal evidence was gathered through talking to customers and reviewing comments posted on Preen’s social media website. There were some delivery issues:

---

65 It was not possible to measure data on re-use goods purchased so no data are available.
66 Preen used the data for households of each parish and then looked at the number of participating household from each parish. Each parish had its own unique number. Each member had the relevant number for their parish assigned to their data on sign up. Reporting for this was done on parish number. This was then compared to the total population/households figures.
67 1,804 households participated in the ‘Preen Community Challenge’ from 51 different parishes/towns (out of 78 parishes/towns in total). The total number of households that signed up was 81,255 from a total of 109,000 households.
Aspects that worked well included:

- the re-branding done as part of the scheme (this was thought to have had more of an impact than the scheme itself in engaging people);
- the collections organised through the parish councils (where people could drop off unwanted furniture at the village hall) were effective due to their convenience; and
- direct engagement with members to gauge reactions and impact (e.g. talking to members and using social media).

Impacts and outcomes

Preen targeted a 33% increase in tonnes of donation for reuse and 66% increase in members. The graph above shows the increase in tonnes reused and recycled, from 191 tonnes to 258 tonnes (an increase of 67 tonnes or 35%). These tonnages are estimated calculated from standard weights from the Furniture Reuse Network. Over the duration of the scheme an additional 4,857 individual members signed up (exceeding Preen’s target of 4,000 additional members). Preen therefore met its targets, indicating that the scheme had a noteworthy impact.

In the post-scheme survey, 50% (n=85) claimed to be buying more second-hand items and 48% (n=81) claimed to donate more items for reuse compared to a year ago. When asked about the scheme’s impact on behaviour, however, a third (34%, n=58) stated they had not heard of the scheme. Over a quarter (27%, n=45) claimed that the scheme gave them extra encouragement to reuse more, while a fifth (20%, n=33) stated that they already reused and the scheme did not make a difference to how much they reuse. When comparing responses of the follow-up survey to the baseline survey, there was not much change in how important respondents thought re-use was. In the post-scheme survey, over a third (35%, n=59) of respondents stated that they were happy with what they did and did not want to do any more. Over a third (36%, n=61) responded that there was not anything else they could reuse. These participant attitudes were confirmed by Preen staff, who felt that many members were already switched on to reuse/recycling issues even if they had not used Preen before. There was low recognition of the scheme – only 31% (n=52) of respondents to the post-scheme survey had heard of the Preen Community challenge. There may be, however, an opportunity to increase recognition through word-of-mouth – over two thirds of respondents pre- and post-scheme claim to have already recommended Preen to a friend/ neighbour.

The total cost of the scheme was £61,239 including estimates of value-in-kind contributions (£2,000), as outlined in the pie chart. These costs do not include estimates of time from the parish councils that took part as it is was considered low. The staff costs for monitoring and evaluation could not be disaggregated, and are included in revenue costs. When looking at the total costs and dividing this by the number of new members signed up over the duration of the scheme, this gives a cost of £8.16/new member.

---

88 It is worth noting that Preen had originally estimated their baseline tonnages for donations to be c300 tonnes when starting their scheme.
3.8 Westminster City Council (WCC)

How did the scheme come about?

WCC is a unitary authority covering some of London’s highest footfall areas (e.g. Oxford Street, Leicester Square) and boasts 1 million visitors daily. This large pedestrian flow and a lack of previous research on litter encouraged WCC to partner with Camden Council and deliver the ‘Bin, Scan, Win!’ scheme. With low take-up rates for on-the-go recycling\textsuperscript{89} and street litter continuing to cause issues it was felt that this scheme had great potential for impact. This scheme aimed to further promote the new recycling and litter bins and increase the amount of litter recycled by 1,500 tonnes. It aimed to do this by attracting passersby and commuters to use the recycling bins, scan QR codes and enter a prize draw.

The RRF presented a good opportunity for WCC and Camden to test this innovative technology with a novel target audience for waste. The scheme planned the application of QR codes\textsuperscript{90} on 1,000 street bins (left picture) which, when scanned by a smart phone, directed users to a dedicated website. WCC were keen to test this pioneering technology in changing waste behaviour by encouraging recycling. Given the local demographics of visitors, the main target audience of the scheme were young, technologically savvy, professionals who commute into Westminster and Camden. As the scheme took place during the 2012 Olympics it was thought that tourists would also be engaged by the scheme. The assumption was that these young professionals, likely owners of smart phones, tended to have high disposable incomes and a lower propensity to recycle and would be attracted to the scheme. The aspiration was that the scheme would engender a habit of recycling newspaper and lunch packaging in users. Both WCC and Camden hoped to engage a private sector partner who would offer the rewards and promote the scheme.

Delivering the scheme

The ‘Bin, Scan, Win!’ launched on April 30\textsuperscript{th} and ended on September 30\textsuperscript{th} 2012. It was delivered by WCC in partnership with Camden and Veolia Environmental Services. Despite making contact with businesses no interested parties came forward, potentially because the sponsor’s logo would not be allowed on any branding (e.g. bin, posters or website). This meant that WCC covered the costs for the prizes. There were not 1,000 suitable bin sites for QR code branding in the designated areas across the two authorities but 782 bins (647 ‘duo’ bins; 72 paper litter bins and 63 mixed recycling bins) were identified and branded with the QR code. In addition the scheme was promoted via 45 poster sites (right picture). When users scanned the QR code they were directed to a dedicated mobile website and asked to enter their details for entry into a daily prize draw. The prize draw was for a £20 gift voucher from a choice of five: Amazon, Love2Shop, Theatre Tokens, John Lewis or M&S. Each user was allowed to enter once in each 24 hour period.

There were over 2,300 entries to the prize draw overall and 844 were unique entrants. There were 147 winners including 12 repeat winners over the five months. This exceeded the original expectation of attracting 500 individual applicants. In order to measure effectiveness the scheme:

- Established a control area where no posters or QR codes were applied;
- Attempted to isolate the impact of the posters from the QR codes how by having a separate area where only posters were present;
- Visually monitored hourly fill rates of 150 bins in one day pre-scheme, mid-scheme and post-scheme across control area, poster area and QR code and poster area (50 bins in each area);

\textsuperscript{89} Just over half of respondents (53%, n=580) stated that they recycled items when out and about either all or most of the time according to an England-wide Tracker run by WRAP Source: 3Rs (Re-use, Repair, Recycle) Tracker Survey, WRAP, December 2011. Sample: 1,110 online respondents by GfK

\textsuperscript{90} A Quick Response Code is a type of matrix barcode which is machine-readable and contains information about the item on which it is attached. See image in top right corner of this page for this scheme’s QR code.
• Conducted on-street attitudinal surveys with passersby and users of bins (n=95); and  
• Administered a post-scheme online survey sent to all entrants to prize draw (n=135).

Impacts and outcomes

This scheme was not able to increase litter recycling by 1,500 tonnes. Recycling tonnages decreased when comparing pre and post scheme figures extrapolated to cover all scheme bins. The graph to the right shows the estimated weights of recyclables from the 150 monitored bins by area at the three intervals. This may be in part explained by Transport for London’s (TfL) assessment of travel demand in London and the West End in particular. TfL state that though number of visitors and thus number of journeys into West End stations rose during the Olympics there was a reduction in background/commuter travel which was the main target audience for this scheme. However, this trend would have affected both scheme and control areas.

When the 135 respondents to the post-scheme online survey were asked about the impact of the ‘Bin, Scan, Win!’ scheme, 43% (n=58) stated that they already recycled and the scheme has given them extra encouragement to recycle more. 28% (n=38) stated that it did not make a difference to how/how much they recycled. According to WCC, the main barriers for users seemed to be lack of technology or lack of understanding of QR code technology; feeling embarrassed about being seen scanning a bin; and lack of time – commuters, especially, were often in a rush. Daily entrants to the prize draw steadily increased throughout the duration of the scheme and peaked at 50 in a day. There was, however, no mechanism of verifying that users had actually recycled or scanned the bin in person – they could have scanned the bin and not recycled or been forwarded the website link. Future equipment, like contactless payment card technology, would be better positioned to overcome any misuse. A key lesson, from a monitoring perspective, was the need to have a more robust fill-rate method. Preferably this would use actual weights (either weighing at pick-up or bespoke weighbridge tickets), be over a longer period of time, monitor more bins and report overflowing bins.

The total cost of the scheme was £60,380 including estimates of value-in-kind contributions (£940). The pie chart to the right outlines the costs for this scheme. When looking at the total costs divided by the number of participants this gives £72/unique entrant or £60/unique entrant excluding monitoring and evaluation costs or £26/entry or £22/entry excluding monitoring and evaluation costs. Engendering a habit of on-the-go recycling with a very brief touch-point engagement was perhaps too ambitious: however, as a short-term communications campaign with the added bonus of a prize draw it was effective at raising the profile of WCC.

91 Bin weight estimates provide only snapshots, as measured over the course of several hours on three days (one each in April, July and September). Weight estimates calculated from fill rates and average weights. Average weights per bin have been taken from previous monitoring work undertaken by WCC (Mixed recycling and litter bin weight calculated from approx. 100 samples taken from mixed recycling and litter bins in Oxford Street and Praed Street in 2010. Paper bin weight calculated from 50 samples taken from paper bins from various locations in Westminster in 2008).

4 Emerging findings and lessons

4.1 Tonnages and cost effectiveness

In five of the eight scheme areas an increase in recycling and reuse tonnages collected was observed – the degree to which this increase can be attributed to the schemes and, more specifically, to the reward and recognition elements of the schemes is not certain. The schemes which targeted reuse appear to have achieved higher changes in tonnages than other schemes.

The table below outlines the detail behind this headline result. Details on how each scheme measured their tonnages can be found in the table in section 2.3 and in each individual scheme case study.

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Audience</th>
<th>Participation</th>
<th>Recycling and reuse tonnages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Length in weeks</td>
<td>Materials</td>
<td>Potential audience reach</td>
</tr>
<tr>
<td>AVR</td>
<td>52</td>
<td>Dry mixed recyclables</td>
<td>1,652</td>
</tr>
<tr>
<td>BathNES (round)</td>
<td>35</td>
<td>Dry mixed recyclables and food</td>
<td>5,082</td>
</tr>
<tr>
<td>BathNES (pledges)</td>
<td>35</td>
<td>Dry mixed recyclables and food</td>
<td>5,082</td>
</tr>
<tr>
<td>BCC</td>
<td>26</td>
<td>Paper and card only</td>
<td>4,392</td>
</tr>
<tr>
<td>GWP</td>
<td>40</td>
<td>Dry mixed recyclables</td>
<td>10,132</td>
</tr>
<tr>
<td>NCC</td>
<td>52</td>
<td>Reuse</td>
<td>All users of two reuse shops and recycling centres</td>
</tr>
<tr>
<td>NUS</td>
<td>30</td>
<td>Dry mixed recyclables</td>
<td>11,334</td>
</tr>
<tr>
<td>Preen</td>
<td>35</td>
<td>Reuse</td>
<td></td>
</tr>
<tr>
<td>WCC</td>
<td>22</td>
<td>On-the-go dry mixed recyclables</td>
<td>All local passersby and commuters</td>
</tr>
</tbody>
</table>

The indicator which is most reliable and consistent in monitoring data across the schemes is change in tonnages. This has been calculated by looking at the scheme period and comparing it with the same period in the previous year (pre- and post-scheme tonnages in table above). This was possible for all schemes except AVR, WCC and

---

*It is worth noting that of the five areas forming part of the GWP scheme four did increase tonnages, however, one area (Gloucester – Calton Road Infants School) experienced a decrease in tonnages which cancelled out the other four areas’ increases. GWP could not provide a reason for this significant fall.

*This is discussed in more detail in section 4.3 and in each case study.

**Cells highlighted in red indicate a decrease and cells highlighted in darker green indicate an increase.

---

93 It is worth noting that of the five areas forming part of the GWP scheme four did increase tonnages, however, one area (Gloucester – Calton Road Infants School) experienced a decrease in tonnages which cancelled out the other four areas’ increases. GWP could not provide a reason for this significant fall.

94 This is discussed in more detail in section 4.3 and in each case study.

95 Cells highlighted in red indicate a decrease and cells highlighted in darker green indicate an increase.

96 As mentioned in section 2.2 for AVR, BathNES, BCC and GWP the figure for audience participating is derived from multiplying the post-scheme participation rate with their audience reach. BathNES and BCC also have numbers who pledged (710) or signed up (1,121) to their scheme respectively. For NUS this number is based on the number of students that signed up as ‘Power Rangers’ to support their scheme. For Preen this is based on the number of unique entrants to their prize draw during the scheme.

97 This change in tonnages has been extrapolated from the change of an increase of 0.93 tonnes in the snap shot methodology. It has been multiplied by 52 as the scheme lasted a year and divided by two to reflect a straight trend line from the level at pre-scheme to post-scheme. For further details see the table in section 2.3 and the case study in chapter 3.

98 Only 510 of the 710 households that pledged had reliable pre-scheme measurements.

99 This is the total participating audience (2,710 based on sign-ups as Eco-Power Rangers) minus those at Winchester (529) as no tonnage data is available for this university the changes in recyclables (kg)/ participant and potential audience reach/week excludes Winchester students.
BathNES pledges. For AVR the research team has extrapolated the change in tonnages out from the ‘snap shot’ methodology\(^{100}\), for BathNES the round data was used and for WCC it was not possible to extrapolate and compare as this scheme did not have any historic data. When looking at changes in recyclables or reuse (kg) per participant per week – the most comparable indicator across the eight schemes - those that had more face-to-face or direct contact with their target audience (e.g. BathNES pledges, AVR, NCC and NUS) seem to have achieved better results.

One of the notable evaluation features of the Reward and Recognition Scheme is that schemes funded were strongly encouraged to find, where feasible, a control group. The table below compares the top level results in terms of change in participation and tonnages for recycling and reuse for each scheme and their control area.

<table>
<thead>
<tr>
<th>Name</th>
<th>Materials</th>
<th>Potential audience reach</th>
<th>Participating audience (^{101})</th>
<th>Size of control</th>
<th>Notes on control</th>
<th>Change in scheme participation rate</th>
<th>Change in control participation rate</th>
<th>Change in scheme tonnages</th>
<th>Percentage change in scheme tonnages</th>
<th>Change in control tonnages</th>
<th>Percentage change in control tonnages</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVR</td>
<td>Dry mixed recyclables</td>
<td>1,652</td>
<td>637</td>
<td>174</td>
<td>Small control and experienced information and service provision as part of scheme but no rewards</td>
<td>4%</td>
<td>6%</td>
<td>24.2 102</td>
<td>38% 103</td>
<td>2.3 104</td>
<td>53%</td>
</tr>
<tr>
<td>BathNES (round)</td>
<td>Dry mixed recyclables and food</td>
<td>5,082</td>
<td>3,866</td>
<td>1,004</td>
<td>Two rounds outside scheme with similar waste services and socio-economic demographics</td>
<td>-3%</td>
<td>1%</td>
<td>-19.0 -2%</td>
<td>3.3 2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCC</td>
<td>Paper and card only</td>
<td>4,392</td>
<td>3,426</td>
<td>415,608</td>
<td>Control is rest of Birmingham</td>
<td>3%</td>
<td>n/a</td>
<td>10.9 5%</td>
<td>-461.8 -4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP</td>
<td>Dry mixed recyclables</td>
<td>10,132</td>
<td>7,008</td>
<td>1,594</td>
<td>Two rounds outside scheme with similar but not identical socio-economic demographics and waste services - control data only collected for four of the nine month scheme(^{102}) and had much higher recycling tonnages</td>
<td>-6%</td>
<td>-17%</td>
<td>-10.0 -1%</td>
<td>-25.7 -10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCC</td>
<td>Reuse</td>
<td>All users of sites and recycling centres</td>
<td>258</td>
<td>-</td>
<td>One recycling centre with reuse shop</td>
<td>n/a</td>
<td>n/a</td>
<td>26.1 20%</td>
<td>22.2 48%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUS</td>
<td>Dry mixed recyclables Reuse</td>
<td>11,334 11,084(^{103})</td>
<td>2,710 2,181 107</td>
<td>2,656</td>
<td>Control data only reliable enough for four months, university collects similar materials and cleaners empty kitchen recycling bins</td>
<td>n/a</td>
<td>n/a</td>
<td>71.6 38%</td>
<td>4.1 11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preen</td>
<td>Reuse</td>
<td>252,000</td>
<td>7,505</td>
<td>No control</td>
<td></td>
<td>n/a</td>
<td>n/a</td>
<td>67.3 35%</td>
<td>n/a n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WCC</td>
<td>On-the-go dry mixed recyclables</td>
<td>All local passersby and commuters</td>
<td>844</td>
<td>-</td>
<td>Area with similar waste services and socio-economic demographics -control data comes from measuring fill rates of 50 bins in area without posters or QR codes</td>
<td>n/a</td>
<td>n/a</td>
<td>0.0 -11%</td>
<td>0.0 26%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{100}\) See case study for further details.

\(^{101}\) As mentioned in section 2.2 for AVR, BathNES, BCC and GWP the figure for audience participating is derived from multiplying the post-scheme participation rate by their audience reach. BathNES and BCC also have numbers who pledged (710) or signed up (1,121) to their scheme respectively. For NUS this number is based on the number of students that signed up as ‘Power Rangers’ to support their scheme. For Preen this number is based on the number of unique entrants to their prize draw during the scheme.

\(^{102}\) This change in tonnages has been extrapolated from the change of an increase of 0.933 tonnes. It has been multiplied by 52 as the scheme lasted a year and divided by two to reflect a straight trend line from the level at pre-scheme to post-scheme.

\(^{103}\) Based on ‘snapshot’ methodology.

\(^{104}\) See footnote 98 above as it also applies to change in tonnages for control area.

\(^{105}\) This was due to collection vehicle breaking down, snow and one round changing recycling operations meaning that multiple vehicles were collecting.

\(^{106}\) This number is the potential audience reach for tonnages purposes – it is made up of all 3,301 students at Bristol halls (as tonnages cover all these not just those targeted by the scheme), 4,334 at Reading and 3,449.

\(^{107}\) This is the total participating audience (2,710 based on sign-ups as Eco-Power Rangers) minus those at Winchester (529) as no tonnage data is available for this university the changes in recyclables (kg) participant and potential audience reach/week excludes Winchester students.

\(^{108}\) This includes increase in dry recyclables at Reading and Bristol and subtracts the fall in reuse from LSE. No data was provided for Winchester.
Given the different sizes and characteristics of the control areas it is difficult to meaningfully compare them at this level. The schemes that stand out are BathNES and BCC as they show an opposing trend when looking at control compared to scheme area. In the case of BCC it would suggest that the scheme did bring about attributable change beyond business as usual. While in the case of BathNES it may be that the 710 households that pledged simply did not have enough ‘critical mass’ to show a positive change in the round data. Comparisons between scheme and control data are discussed in more detail in the scheme case studies. In the case of GWP though both scheme and control areas declined in terms of change in tonnages – the scheme area did so at a lower rate than the control area.

One of the research questions that Defra asked the evaluation team to investigate at the programme-level is ‘What is the cost effectiveness assessment of the schemes and programme?’ At this interim stage it is premature and ill-advised to draw hard conclusions for cost-effectiveness, however, for completeness and transparency the interim findings of these eight schemes and relevant caveats are reported here.

In order to begin to address cost effectiveness were asked to outline their total costs around some standard headings. The graph overleaf illustrates the distribution of total costs (not just Defra funded costs) across these headings. It shows that the biggest costs were revenue (i.e. staff costs) and monitoring and evaluation which accounted for between 2% (NCC) to 58% (GWP) of a scheme’s costs. As discussed earlier the aim of the Reward and Recognition Scheme was to test, measure, assess and learn from innovative pilots, therefore, monitoring and evaluation being part of the programme’s funding requirements it was expected that a large proportion of costs would fall under this category. It is worth recognising that some schemes chose to do more in-depth monitoring and evaluation (e.g. GWP, BathNES) whilst others took a more ‘light touch’ approach using existing data readily available (e.g. Preen, NCC). Additionally, some schemes required a higher level of monitoring and evaluation in order to deliver the scheme and issue rewards (e.g. AVR, NUS) whilst other schemes were mainly doing monitoring and evaluation to learn about what works and what does not (e.g. WCC, NCC).

Most headings of the cost categories in the graph overleaf are self-explanatory; however, it is worth pointing out how some terms have been defined. Opportunity costs mainly covered diversion of staff time from what they otherwise would be doing in order to deliver the scheme (which was normally not covered by Defra funding). Revenue costs cover actual staff costs and other operating expenses (which was normally, in part at least, covered by Defra). Schemes were also asked to estimate value-in-kind contributions in monetary form for volunteers, partnerships and other value-in-kind contributions – though these were not strictly costs to the schemes, if other organisations were to replicate the scheme these would be costs they or other partners would incur. It is worth stating that not all schemes consistently reported items under each heading but where possible the research team standardised these anomalies to ensure better comparability across the schemes.

---

109 Preen did incur monitoring and evaluation costs but it was not possible to separate these out.
The table below outlines the total costs, Defra funded proportion, monitoring and evaluation proportion and value-in-kind proportion for each scheme. It then converts these costs to a £/unit where the unit is per household or individual both looking at potential audience reach and participating audience. The costs range from approximately £5 to £20 per audience unit – decreasing to £2 to £18 per potential audience unit when excluding monitoring and evaluation costs. When looking at the costs per participating audience this ranges from £8 to £107 – decreasing to £8 to £60 when excluding monitoring and evaluation costs.

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Total cost of scheme</th>
<th>Defra funding proportion</th>
<th>Monitoring and evaluation proportion</th>
<th>Estimates of value-in-kind contribution</th>
<th>Audience unit</th>
<th>Costs per potential audience reach £/unit</th>
<th>Cost per audience £/unit without monitoring and evaluation</th>
<th>Cost per participating audience £/unit</th>
<th>Cost per participating audience £/unit without monitoring and evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVR</td>
<td>£33,144</td>
<td>£26,500</td>
<td>£4,039</td>
<td>£2,511</td>
<td>Households</td>
<td>£20.06</td>
<td>£17.62</td>
<td>£52.03</td>
<td>£45.69</td>
</tr>
<tr>
<td>BCC</td>
<td>£63,500</td>
<td>£30,000</td>
<td>£24,332</td>
<td>£0</td>
<td>Households</td>
<td>£14.46</td>
<td>£8.92</td>
<td>£18.54</td>
<td>£11.43</td>
</tr>
<tr>
<td>GWP</td>
<td>£60,343</td>
<td>£38,500</td>
<td>£35,082</td>
<td>£0</td>
<td>Households</td>
<td>£5.96</td>
<td>£2.49</td>
<td>£8.61</td>
<td>£3.60</td>
</tr>
<tr>
<td>NCC</td>
<td>£27,371</td>
<td>£10,200</td>
<td>£500</td>
<td>£0</td>
<td>Individuals (based on loyalty cards)</td>
<td>n/a</td>
<td>n/a</td>
<td>£106.09</td>
<td>£104.15</td>
</tr>
<tr>
<td>NUS</td>
<td>£65,338</td>
<td>£57,350</td>
<td>£18,020</td>
<td>£659</td>
<td>Individuals</td>
<td>£5.76(^{110})</td>
<td>£4.17</td>
<td>£24.11</td>
<td>£17.46</td>
</tr>
<tr>
<td>Preen</td>
<td>£61,239</td>
<td>£36,636</td>
<td>£0(^{111})</td>
<td>£2,000</td>
<td>Individuals</td>
<td>n/a(^{112})</td>
<td>n/a</td>
<td>£8.16</td>
<td>£8.16</td>
</tr>
<tr>
<td>WCC</td>
<td>£60,380</td>
<td>£29,500</td>
<td>£9,500</td>
<td>£940</td>
<td>Individuals</td>
<td>n/a</td>
<td>n/a</td>
<td>£71.54</td>
<td>£60.28</td>
</tr>
</tbody>
</table>

\(^{110}\) This uses the total audience reach of 11,334.

\(^{111}\) The costs for monitoring and evaluation for Preen could not be distinguished and are mainly included in revenue costs.

\(^{112}\) Preen has not been calculated based on its 252,000 local population as it was not deemed comparable to other potential audience reach.
Cost saving scenarios

The research team have created potential cost saving scenarios for those schemes which saw an increase in recycling/reuse tonnages in their area in order to begin to unpack the cost effectiveness question. These potential cost savings have been developed from the perspective of a hypothetical local authority – thinking about both those that provide kerbside sort (sale to market) and those providing commingled recycling services which are later sorted at a Materials Recovery Facility (MRF). The following explanations of scenarios, assumptions, caveats and sources are worth noting:

- A local authority, if a waste disposal authority, would derive a cost saving from avoiding gate fees/landfill tax where additional material is diverted for recycling.
- A local authority may also gain income from the sale of the recyclables to the open market.
- In order to use standardised yearly figures/conversion factors, it is assumed that the schemes have led to any increases in recyclable or reuse tonnages in 2012, when compared to the equivalent period in 2011.
- It is also assumed that the increase in recyclables or reuse tonnages has resulted in an identical diversion from landfill.
- Costs for landfill gate fee including landfill tax have been taken from WRAP’s 2011/2012 Gate Fees Report.\(^1\)
- MRF income has been taken from WRAP’s 2011/2012 Gate Fees Report.\(^2\)
- The high sale to market for reuse value is taken from Furniture Reuse Network (FRN) at £3,090 per tonne.\(^3\)
- The low sale to market reuse value is taken from the NCC scheme’s income per tonne of reuse items for 2012, at £221 per tonne.\(^4\)
- Recyclables income is based on a typical composition of a tonne of waste presented to an MRF taken from WRAP assessments.\(^5\)
- Prices for recyclables are taken from WRAP’s Materials Pricing Report.\(^6\)

It should be emphasised that these are purely illustrative scenarios for a hypothetical local authority based on the emerging findings of the Reward and Recognition schemes at this interim stage. Service provision (e.g. kerbside separated or commingled), arrangements with local processors (e.g. local paper mill) and availability of local processing facilities, amongst other factors of the local context, will have an unknown influence on any potential cost savings. It is also worth bearing in mind that many of these potential cost savings are in reality more likely to benefit a unitary authority or a close partnership between a waste collection authority and a waste disposal authority which share the costs and savings by prior agreement.

Cost savings may increase if schemes were run throughout the borough (rather than in specific rounds or scheme areas) and if expanding existing schemes as some upfront costs would not be incurred. These costs savings do not take into account additional benefits like raising Local Authority’s profile and reputation, value of

---


3. Each year FRN collect and analyse data from their 350 members. According to their latest set of figures their members in one year diverted 110, 000 tonnes from landfill. These items saved low income families (and other purchasers) £340 million. Therefore, a typical tonne donated to a reuse organisation could have a value of approximately £3,090. It must be noted that by diverting suitable items for reuse and away from landfill there can be savings such as waste collection and disposal costs as well as reducing the amount of money that would be required on purchasing brand new items. Source: Furniture Reuse Network (FRN) via personal communication and accessed online 21/10/2013 from: [http://frn.org.uk](http://frn.org.uk)

4. Total income for 2012 from used control site and two scheme areas totalled £49,230 divided by tonnage generated 223.

5. The composition estimates are from 2013 and were as follows: paper 55%; glass 22% metal 4%; plastic 11%; and residual 8%. The research team used 2012 composition estimates for specific material grades with the broader categories provided by WRAP to match up with the prices provided in the Materials Pricing Report. Source: Economist, Waste & Resources Action Programme via personal communication October 11th, 2012.

publicity and public relations (e.g. local and national press coverage), etc. These values are hard to measure and estimate; however, both BCC and WCC mentioned these benefits as a positive ‘spin-off’ from their scheme.

Based on these assumptions and caveats the potential cost savings drawing from the three schemes that observed an increase in recycling tonnages are shown in the graph to the right.  

Based on the above assumptions and caveats the potential cost savings drawing from the two schemes that observed an increase in reuse tonnages are shown in the graph to the right below.

Both these graphs carry a sizeable health warning. They have been developed for illustrative purposes only and no firm conclusions should be drawn from them. Neither the research team nor Defra are suggesting that these are the cost savings to be expected from running similar schemes. Furthermore, as outlined earlier in this chapter, overall these schemes cost more to run than the cost savings they could potentially generate.

4.2 Behaviour and attitudes

As outlined in section 2.2 many respondents claimed that they were already recycling/reusing and that the reward and recognition scheme did not make a difference to how they recycled/reused. Up to two-fifths of respondents, however, for some schemes (WCC and BCC) stated that they already recycled but that the scheme gave them ‘extra encouragement’ to recycle.

When respondents were asked ‘what, if anything, about the scheme encouraged you to recycle more or better than you did before’, the two most popular responses were ‘made me feel it’s the right thing to do’ and ‘showed me that my efforts are appreciated’. The graph overleaf shows the top five responses to this question across the six schemes that asked it.

When looking at the schemes that provided an individual reward (WCC, BCC and NUS) compared to those that provided a community reward (AVR, Preen and GWP) aspects that related to personal agency and personal sense of purpose tended to be slightly more popular in individual reward schemes (e.g. ‘showed me that my efforts are appreciated’ and ‘made me feel it’s the right thing to do’). Community reasons, however, were less mentioned across all schemes. A minority of respondents mentioned community reasons (e.g. ‘inspired me to help my community by recycling/reusing’) and these tended to be more often in community reward schemes.

---

119 For NUS the total tonnages are 73.4 as it only takes into account recycling and excludes the fall of 1.8 tonnes in reuse.

120 Bearing in mind that NUS was both an individual and a community reward scheme but that for this analysis it fits better with the individual rewards category. In the survey analysis, NUS responses exclude LSE as they offered a reuse scheme and had different questions in their survey.
The research team used Pearson’s chi-squared test and standardised residuals to investigate whether the differences between the schemes with regards to a specific survey question were significant.\(^{121}\)

**Top five answers: What, if anything, about the scheme encouraged you to recycle more or better than you did before?**

<table>
<thead>
<tr>
<th>Reason</th>
<th>WCC (Base=135)</th>
<th>GWP (Base=128)</th>
<th>Preen (Base=169)</th>
<th>NUS (Base=219)</th>
<th>BCC (Base=294)</th>
<th>AVR (Base=200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made me feel it’s the right thing to do</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Showed me that my efforts are appreciated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reminded me there are more things that can</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>be recycled/reused</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made me feel I am part of something</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspired me to help my community by</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>recycling/reusing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After running these tests the following can be stated across the schemes:\(^{122}\)

- BCC respondents were more likely to claim that ‘showing their efforts are appreciated’ encouraged them to recycle more or better.
- BCC respondents were slightly less likely to claim that the scheme encouraged them to recycle because it ‘made me feel it’s the right thing to do’.
- GWP respondents were more likely to be motivated to recycle because the scheme ‘made me feel it’s the right thing to do’ and ‘inspired me to help my community by recycling’.

When investigating what motivated respondents to recycle/recycle more/recycle better direct face-to-face contact was mentioned by respondents across several schemes (BathNES, AVR and NUS). Other reasons were important in specific schemes. Almost two fifths of post-scheme BCC respondents (38%, n=113) stated they were very motivated to take part specifically to receive Nectar points; while three fifths of post-scheme Preen respondents (62%, n=104) stated that ‘helping local people in need’ was one of the reasons why they donated to or bought from Preen. As seen from the case study chapter, other reasons like better services and promotions were important reasons for any achieved improvements in recycling and reuse behaviour.

As expected, scheme recognition rates amongst respondents were lower where survey respondents were not participants who had opted into the scheme (e.g. AVR, GWP and Preen as opposed to BCC and BathNES). Another explanation for why recognition rates were low in these schemes could be linked to the lack of a scheme identity and ‘brand’. NUS project staff, which had a high recognition rate at 76% (n=690) for their scheme, stated that the strong scheme identity, name and brand helped. Both AVR and GWP scheme staff reported that if they were doing it again they would ensure that the scheme had a recognisable name and

---

\(^{121}\) The research team used the Pearson’s chi-square test to see whether there was an association between two categorical variables (i.e. a variable that can take on one of a limited, and usually fixed, number of possible values as in closed ended multiple choice survey questions). This statistical test is based on the idea of comparing the frequencies observed in certain categories to the frequencies you might expect to get in those categories by chance. A chi-square test is significant at a 95% confidence level when the p-value is <0.05. In this case, it means that there is an association between the two categorical variables. Software packages like IBM SPSS highlight these values when the test is run in the tables. In tables, where the chi-square test is significant, it can be useful to do a finer-grained investigation to identify what contributes to the overall association that the chi-square statistics measures. A way to break down a significant chi-square test is to use standardised residuals. A standardised residual is the error in between what the model predicts (the expected frequency) and the data actually observed (the observed frequency). By looking at a standardised residual, its significance can be assessed. If its value lies outside +/- 1.96 then it is significant at a 95% confidence level and it means that this specific result significantly contributes to the association between the two categorical variables.

\(^{122}\) Only the top five reasons have been included in the statistical testing.
stronger identity from the beginning. Establishing a strong scheme identity also better enables the attribution of any change in claimed behaviour back to activities or engagement delivered by the scheme.

In post-scheme surveys respondents were asked, amongst other things, how important the following were:

- Getting a personal reward for recycling/reusing;
- Winning a prize; and
- Helping win rewards for the community by recycling/reusing.

The graph to the right shows how important respondents felt personal rewards for recycling/reusing were. Preen and GWP respondents were less likely to state that a personal reward was important. BCC and NUS respondents were slightly more likely to consider a personal reward as important for recycling/reusing. This is where NUS scheme’s dual nature of individual and community reward comes through.

The graph to the right shows how important respondents felt winning a prize for recycling/reusing was. Respondents from NUS, which used a competition with a prize, and WCC, which used a prize draw mechanism, were more likely than other respondents to find winning a prize to be important. By contrast, Preen, GWP and BCC respondents were less likely to feel that winning a prize was important.

The graph to the right shows how important respondents felt helping win rewards for the community by recycling/reusing was. GWP respondents were more likely than any other scheme respondents to find winning rewards for the community to be important. NUS respondents, however, were the least likely to think that winning rewards for the community were important for recycling. On balance community rewards were rated important across the schemes even in schemes where community rewards were not offered.

It is interesting to note that despite the low levels of scheme recognition, respondents tended to select the important aspects most linked to whether the project was an individual or a community based reward scheme.

When asked about ‘being thanked’, NUS, WCC and BCC respondents were more likely to think that ‘being thanked for recycling/reusing’ was important. Preen and GWP respondents, however, were less likely to find that ‘being thanked for recycling/reusing’ was important. Again the individual and community reward divide appears – as being thanked is, generally, thought of as a more personal aspect.

---

123 It is worth noting that NUS changed some of the answer options and did not provide the same exact scale for the answer options to this question.
4.3 Barriers, challenges and risks

The eight schemes all attempted to change behaviour through novel and previously untested means on their own target audience. Inevitably there were barriers, challenges and risks associated with all of the schemes as they moved from planning to delivery. Considerable insight can be gained from their experiences and the table below shows those that are related to the delivery of the schemes.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Barriers, Challenges and Risks</th>
<th>Schemes that experienced these issues</th>
</tr>
</thead>
</table>
| **Knowing your target audience** | Not knowing their target audience in detail:  
  - Not being able to quantify and define specific target audience;  
  - Not making the rewards relevant to target audience (see below); and  
  - Not knowing enough about what type of engagement would work best with target audience. | WCC, NCC |
| **Setting appropriate targets** | Difficulties setting and monitoring progress against SMART objectives (for instance where a baseline is not known). | Preen, AVR |
| **Communications** | Raising awareness was not as easy as originally planned and lead to disappointing recognition rates in post- survey. Schemes often had to repeat messages and use a wide range of methods in order to raise awareness – no one size fits all solution. | GWP, Preen, NUS, BCC |
| | Encouraging recycling could lead to frustrations with the existing service set-up (e.g. size/shape of container provided, materials accepted) – careful communications were needed in order to overcome issue. | GWP, AVR |
| | Providing instant feedback was challenging and not always possible. | BCC, NUS |
| | Difficulties in awareness levels when there is not a clear scheme identity. | AVR, GWP, Preen |
| **Choosing your rewards** | Rewards not attractive to audience e.g. if householders did not wish to have a Nectar card, or unfamiliar with chosen reward e.g. Bath Olivers. | BCC, BathNES, NUS |
| | Rewards needed to be funded by cost savings (recycling credits) so this resulted in them being low compared to effort required and other funding options. | GWP |
| | Some rewards were chosen because they were in-house or easily available but these might not have been most appealing. | NCC, WCC |
| | Individuals who are already recycling or reusing well cannot necessarily increase their performance to get reward. | BathNES, Preen |
| | If rewards require participants to own particular technology (e.g. smart phones, Nectar card) then some who are doing the necessary behaviour may be excluded due to not having the needed technology/card. | WCC, BCC |
| | Community rewards required efforts from all community members so individuals might feel disheartened or frustrated e.g. members of Preen living in a Parish that had not signed up, or if community failed to reach target despite community group activity. | Preen, GWP |
| **Engaging with 'hard to reach' or low participation areas** | These groups had a variety of reasons why they were not previously participating. Whilst it was felt rewards would provide an additional incentive this was not always demonstrated. | AVR, GWP, Preen, BCC |
| **Attracting sponsorship** | Unsuccessful in attracting sponsorship or rewards from private companies or other sources. | NCC, WCC |
| **Delivery partners** | Using delivery partners meant that the scheme was out of direct control of lead organisation. This sometimes meant delays, changes or some areas not participating. | AVR, GWP, Preen |
| | Delivery partner did not deliver as initially thought (either didn’t get engaged as expected or changed priorities). | AVR, Preen |
| | Community groups did not always have the skill set and resources to deliver the scheme therefore more support was required than planned. | GWP, AVR |
| | Contractors did not always have the capacity and skill set to deliver as planned. | WCC, NCC, NUS |
| | Engaging partners is a lengthy and resource intensive process | GWP, NCC |
| **Encouraging new customers or a shift in behaviour away from the norm** | Generally schemes that encouraged recycling found it easier to deliver the scheme than those trying to give a reward for new behaviour (buying reused items). WCC gave rewards but did not know if this encouraged previous non-recyclers to recycle litter waste. | NCC, WCC, BCC |
### Activity | Barriers, Challenges and Risks | Schemes that experienced these issues
--- | --- | ---
Prevention of possible misuse of rewards | Risk that rewards will be misused, mislaid or issued without the intended behaviour change occurring. | NCC, WCC
Operational issues to service provision | Standard difficulties experienced by most organisations/authorities providing recycling and reuse services:  - Disruptions due to: service changes, round changes, weather, bank holidays, vehicle break down, etc. | GWP, AVR, BCC
Project Management | Most schemes experienced typical problems often encountered when delivering any project (staff sickness, change of staff, lack or resources, not having appropriate skills set, time delays, communication issues, unplanned changes or problems). | All schemes
 | Some projects felt that Defra’s Reward and Recognition Scheme timescale meant that some activities could not be carried out e.g. research before the project started, scheme launch. | GWP
Exit strategy | Schemes ran for a specific period as a pilot and it is difficult to know/it is not known if there were any effects of withdrawing the support once funding round had finished. | All schemes

All the schemes used a variety of methods to monitor and evaluate each scheme’s impacts. The majority of schemes (all except WCC) delivered rewards on the basis of actual performance so had to monitor this in order to issue rewards. All schemes also carried out evaluation activities as part of the requirement of being part of Defra’s Reward and Recognition Scheme. In terms of monitoring and evaluation the barriers, challenges and risks are listed in the table overleaf.
<table>
<thead>
<tr>
<th>Element</th>
<th>Barriers, Challenges and Risks</th>
<th>Schemes that experienced these issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable controls</td>
<td>Controls were often not comparable; ‘contaminated’ with activity; monitored for shorter periods; and, at times, too small. All schemes struggled to find suitable controls with accurate data. Controls were usually other parts of the local area not in scheme. In some instances historical data was lacking, controls changed mid-scheme, boundaries changed, and sites moved or expanded operations.</td>
<td>NCC, GWP, Preen, NUS, BCC, WCC, AVR</td>
</tr>
<tr>
<td>Capacity for monitoring and evaluation</td>
<td>Monitoring and evaluation proved an expensive element for some schemes involving investment in terms of equipment and resources (both internal and external contractors). The fact that it was a limited trial meant that manual methods were often used rather than more cost effective alternatives. Lack of capacity, skills or interest to engage with all monitoring and evaluation requirements.</td>
<td>GWP, BCC, BathNES</td>
</tr>
<tr>
<td>Having time series waste data</td>
<td>Schemes did not record/weigh waste over a long period of time (ideally 12 months at least would be required) and often baseline data was missing or of poor quality. This made target setting and performance monitoring difficult and recycling data more susceptible to standard (seasonal) variations. When it wasn’t possible to monitor constantly ‘snapshots’ were done but it was difficult to ascertain whether any change were due to natural variability or to the scheme. Granularity of waste data submitted inconsistent. Lack of long term data post-scheme meant any longer term impact of scheme is unknown.</td>
<td>WCC, AVR</td>
</tr>
<tr>
<td>Anomalies in waste tonnage data</td>
<td>In majority of cases there were anomalies and data gaps. This could be for a variety of reasons e.g. weather disruptions, bank holidays, vehicle breakdowns, service disruptions. Seasonal variations, transient populations and one-off events (Olympics) all lead to making analysis more difficult. Lack of standard approaches in monitoring participation rate and recycling rates.</td>
<td>GWP, AVR, BCC BathNES, WCC</td>
</tr>
<tr>
<td>Attribution</td>
<td>Too much background noise making it difficult to discern scheme impact (e.g. general communication campaigns). Inability to attribute measured change directly to scheme and/or reward and recognition element of the scheme.</td>
<td>NCC, NUS</td>
</tr>
<tr>
<td>Bias in self-reported surveys</td>
<td>Self-selected, predisposed and potentially bias survey samples. Some schemes felt that respondents replied in a manner they felt was socially acceptable rather than a true reflection of their own behaviour.</td>
<td>WCC, BathNES NUS, GWP</td>
</tr>
<tr>
<td>Qualitative evaluation e.g. focus groups</td>
<td>Some schemes did not fully capture qualitative information. This meant it was difficult to fully understand motivations of participants and non-participants or what improvements would have resulted in greater success.</td>
<td>NCC, WCC, Preen</td>
</tr>
<tr>
<td>Comparability</td>
<td>Lack of general comparability across the schemes.</td>
<td>All schemes</td>
</tr>
<tr>
<td>Data Protection issues</td>
<td>Some schemes had to grapple with data protection issues and permission to re-contact for surveys post-scheme.</td>
<td>NUS, WCC</td>
</tr>
</tbody>
</table>

### 4.4 Emerging lessons for future schemes

Despite the above mentioned barriers, challenges and risks, there were certain schemes and aspects of schemes that worked particularly well. The table overleaf identifies these key success factors.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Success factors</th>
<th>Examples of Schemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forged new partnerships</td>
<td>New partnerships and working arrangements with partners were formed specifically to deliver the scheme and these were deemed to be successful collaborations.</td>
<td>BCC, GWP, WCC</td>
</tr>
<tr>
<td>Engaging with participants</td>
<td>Almost 15,000 households and over 11,300 individuals participated in the schemes. Many different forms of successful communications were trialled for different audiences (e.g. social media, in person, etc.)</td>
<td>All schemes</td>
</tr>
<tr>
<td></td>
<td>Door stepping – tailored, direct and/or face-to-face forms of engagement seemed to be preferred by participants across several projects.</td>
<td>AVR, BathNES, GWP</td>
</tr>
<tr>
<td></td>
<td>Providing feedback/recognition can be just as important as the reward–inform participants on how they are doing and what is happening with materials – transparency of duty of care.</td>
<td>AVR, NUS, BathNES</td>
</tr>
<tr>
<td></td>
<td>Strong branding helps people take notice initially and then follow the scheme as it is delivered</td>
<td>NUS, BCC, WCC</td>
</tr>
<tr>
<td>Involving volunteers</td>
<td>Promote involvement in scheme using a variety of incentives e.g. employability, rewards, environmental benefits, community benefits, experience</td>
<td>NUS, GWP</td>
</tr>
<tr>
<td></td>
<td>Word of mouth and local champions are very effective in spreading scheme objective and acting as scheme ambassadors</td>
<td>NUS, Preen</td>
</tr>
<tr>
<td>Improved knowledge of target audience and appropriate rewards</td>
<td>Schemes tested different rewards with various audiences which revealed rich insight into what encourages certain people to recycle/reuse in certain situations.</td>
<td>NUS, BCC, BathNES, AVR, Preen</td>
</tr>
<tr>
<td></td>
<td>Striking the balance between size and chance of winning the reward</td>
<td>NUS, WCC, NCC</td>
</tr>
<tr>
<td>Attracted publicity and raised profile</td>
<td>The novel approach of schemes often attracted publicity (this value was often not quantifiable) and raised the profile of the organisation.</td>
<td>BCC, WCC</td>
</tr>
<tr>
<td></td>
<td>Being part of a Defra funded programme gave the schemes credibility and additional status.</td>
<td>WCC, BathNES</td>
</tr>
<tr>
<td>Learned lessons which have helped to improve future approaches</td>
<td>Although schemes will not necessarily be rolled out in the original format some schemes may be adapted for further roll out or their future approach changed and adapted to other contexts.</td>
<td>NUS, BCC, GWP, BathNES</td>
</tr>
<tr>
<td>Promoting service provision via scheme</td>
<td>Linking reward and recognition to easier or better access to service provision (e.g. knowing what materials can be recycled)</td>
<td>NUS, WCC, BathNES</td>
</tr>
<tr>
<td>Dedicated project manager</td>
<td>Having a dedicated project manager to the scheme meant careful planning, quick reaction to challenges and a constant point of contact for the project</td>
<td>BathNES, Preen, GWP</td>
</tr>
<tr>
<td>Being flexible and adapting to circumstances</td>
<td>Being part of an innovative set of pilots means that schemes could not plan for or predict all eventualities, in these instances being flexible and adapting the scheme to the circumstances, reacting quickly and efficiently to changes helped.</td>
<td>BCC, GWP, AVR</td>
</tr>
</tbody>
</table>

Drawing from all the emerging insights of these eight schemes, the interactive flow chart overleaf acts as a check list by outlining steps and questions that an organisation or local authority may wish to consider before embarking on a reward scheme.

From the emerging findings of this interim report it would appear that if certain preconditions are not place it is unlikely that an organisation or local authority would be able to implement a reward scheme that can demonstrate its success. The preconditions that ought to be considered are:

- Stable, simple, easily accessible and effective service provision;
- Clear information and strong communications tapping into different channels;
- In-depth knowledge of target audience;
- Tailored and regular recognition and feedback of service-use;
- Ability to demonstrate impact and attribution of rewards; and
- Tailored assessment and careful selection of reward delivery mechanism.
• **STEP 1: Ascertain service provision – ask yourself:**
  o Is the service operating well? Is it stable? Is it simple and easy to use?
  o Is it providing an effective service? Are there pockets of households which do not have access?
  o Does it have strong information, communications and engagement approaches?

  *If answers to above are ‘yes’, move to STEP 2.*

• **STEP 2: Re-assess communications campaign – ask yourself:**
  o Would a ‘straight forward’ communications campaign be more viable? More effective?
  o Would a communications campaign tapping into many different channels work better?

  *If answer to above is ‘no’, move to STEP 3.*

• **STEP 3: Know your target audience – ask yourself:**
  o Who is the target audience? What do they respond well to?
  o What are the target audience’s barriers and motivations to participating?
  o What specific behaviour does the target audience need to do?
  o Is it worth carrying out some market research into their attitudes and behaviours?
  o Are there segmentation models that can provide more insight into the target audience?

  *If answer to above is ‘answers are known already/no’, move to STEP 4.*

• **STEP 4: Recognition and feedback – ask yourself:**
  o Has tailored feedback been trialled unsuccessfully?
  o Has regular and tailored recognition (in the form of a ‘thank you’) been trialled unsuccessfully?

  *If answer to above is ‘yes’, move to STEP 5.*

• **STEP 5: Preparing for rewards – ask yourself:**
  o Will there be a control for the reward scheme? Is it comparable? Is it robust?
  o Will there be good waste data series over at least a year prior and during the scheme?
  o Will these indicators effectively assess the impact of the reward scheme?
  o Can any change in behaviour be attributed to reward?
  o Does the budget allow for rewards and the monitoring and evaluation of these rewards?

  *If answer to above is ‘yes’, move to STEP 6.*

• **STEP 6: Delivering rewards – ask yourself:**
  o Can the scheme reward actual and measurable behaviour change?
  o Have the risks for possible misuse of rewards been addressed?
  o Does the reward scheme model match up and address the barriers of the target audience?
  o Does the reward scheme provide a meaningful engagement with the target audience?
  o Is the delivery mechanism simple and direct?
  o Does the reward scheme have a strong and recognisable name and identity?
  o Has the potential for increased expectations from target audience been addressed?
  o Is the size and chance of getting the reward pitched appropriately for the target audience?

  *If answers to above is ‘yes’, deliver reward scheme.*
5 Next steps

As mentioned at the beginning, this report is based on the results of eight schemes and is very much a partial view of the emerging findings from the schemes which received funding from Defra as part of the Reward and Recognition scheme.

The remaining 20 schemes are due to finish by early 2015 with a few finishing by the end of 2013, another batch by spring 2014 and the rest by early 2015. A similar process of data quality checking, analysis and standardisation will take place in early spring 2015. The intention is that the final report will draw from the analysis and build on the emerging lessons, themes, insights and results of this interim report. The final report, looking at all 28 schemes, will be made publicly available in summer 2015.