

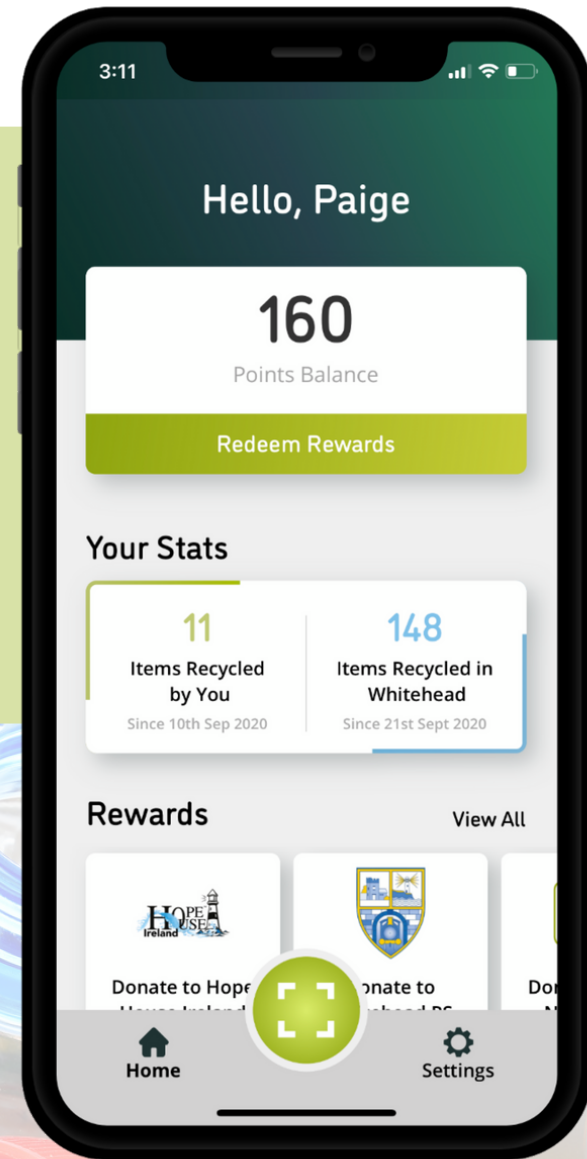
Reward4Waste Trial Whitehead, NI

Analysis and Assessment

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All references to this research to credit
Reward4Waste and Queens University Belfast

JUNE 2021



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Foreword



Reward4Waste is a Digital Deposit Return Scheme (DDRS) created by CryptoCycle. Our recent trial in Whitehead NI was to provide a proof of concept as a platform to enable further trials in this exciting area.

The trial was run in collaboration with **Bryson Recycling** and **MEA Borough Council**, with proud support from **Britvic Ireland**, **PepsiCo** and **Encirc**.

"The assessment of the Reward4Waste Whitehead trial was kindly undertaken by Queen's University Belfast, and we would like to extend our gratitude to them for their passion in uncovering key insights and consumer motivations which will help shape the future of a Deposit Return Scheme"

Rachel Warren | Marketing Director

About us



In response to the global waste crisis, CryptoCycle created Reward4Waste, an easy to use app that inspires and incentivises people for good recycling / re-use behaviour.

Digital intelligence using unique coding, green blockchain and AI, tracks packaging through the circular economy - for transparency and accountability, to help organisations achieve their EPR and DRS responsibilities.

Reward4Waste has various applications - this research was commissioned for the Reward4Waste digital DRS trial in Whitehead, Northern Ireland



About Queen's University Belfast



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Queen's University Belfast assessed the Reward4Waste trial in Whitehead, uncovering insights and rich data on Digital DRS and Reward4Waste

There were 3 delivered reports:

Attitudes on recycling, DRS, Digital DRS + Reward4Waste

Dr Martin Dempster, Dr Karen Orr, Dr Emma Berry - School of Psychology

Attitudes on DRS, Digital DRS + Reward4Waste with a view to uncover consumer insights and learnings to inform future trials

Hannah Robinson, Gregory Turnbull, Cara McVeigh, Leona Byers, Bonn Foong - Undergraduates

User Preferences for Conventional vs Digital Deposit Return Schemes - with a focus on Reward4Waste

Jenna Potter - Postgraduate

Trial collaborators and supporters



“Bryson Recycling is keen to look at innovative ways to help people recycle from home in a way that is convenient to them and results in high quality recyclables”

Eric Randall, Director,
Bryson Recycling



PEPSICO



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Trial logistics

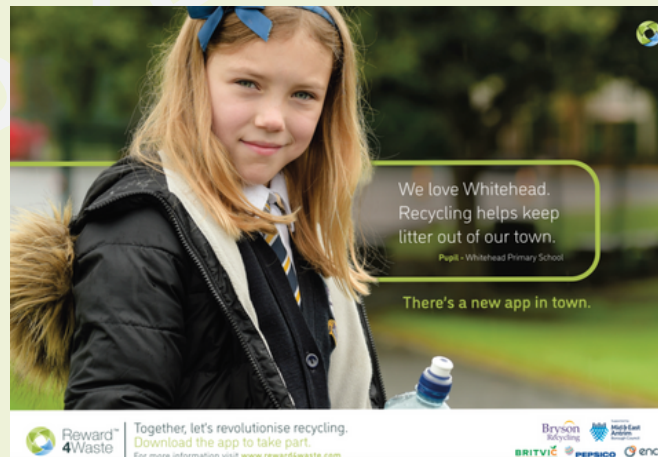


- **Trial objective: to provide a proof of concept for Reward4Waste**
- No deposit placed on participating items – only reward
- The trial was run in collaboration with Bryson Recycling and MEA Borough Council, with proud support from Britvic Ireland, PepsiCo and Encirc
- Whitehead, Carrickfergus. Northern Ireland. Self contained town, 2000 households
- Participating items had unique stickers and could be purchased from 1 x local retailer SPAR
- Kerbside recycling (weekly collections) + 4 x out of home (OOH) bins in litter hotspots
- Participating items: plastic drinks bottles including soft drinks and HDPE milk, drinks cans and glass
- Residents downloaded app for iOS or android, and scanned the unique code on their recycling box or out of home bins and drinks containers to register a recycle
- Redeem for SPAR vouchers or donate to charity
- 4 months from September 30th 2020 to January 31st 2021
- Further trials in 2021 to include deposit / return function

Trial comms



- Bespoke web page
- Door-knocking and delivery of information pack inviting residents to take part
- A support helpdesk
- Social media campaign
- Banners and posters including real Whitehead residents
- P.R. campaign with DAERA Minister Poots launching trial



COVID-19



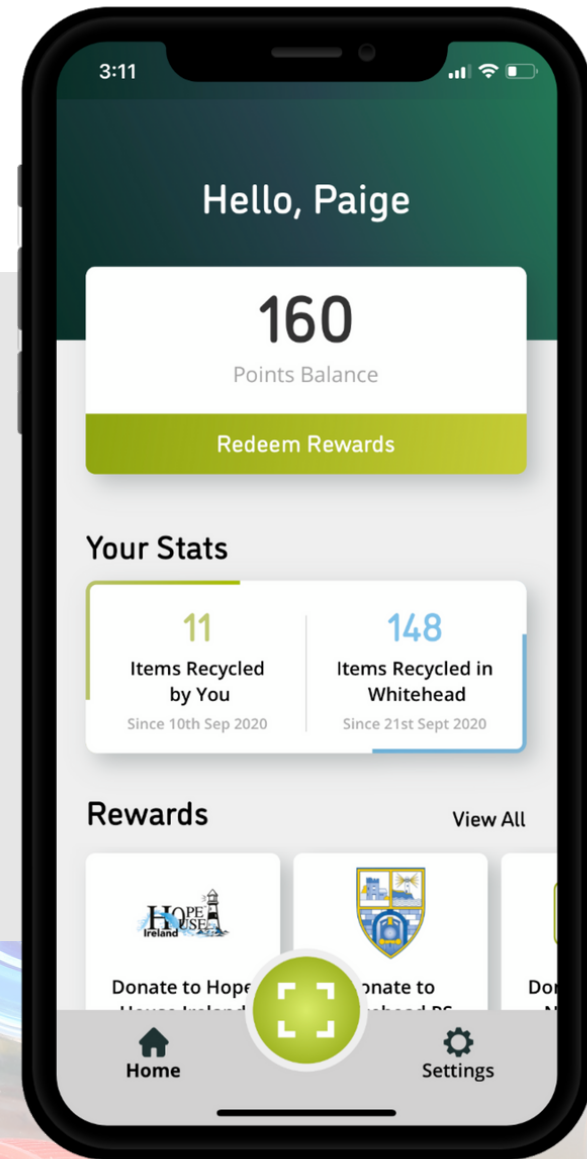
- The trial ran during COVID-19 between September 2020 and January 2021
- This meant that residents could take part in the Reward4Waste digital DRS trial without having to leave their homes - therefore staying safe and not exposing themselves or others to COVID-19
- It would be incredibly challenging, if not impossible, for a purely RVM led model (and the infrastructure surrounding it) to be able to adequately support the UK if there were another lockdown or crisis





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Reward4Waste Trial Research Headlines



Research headlines



“The roll-out of a UK DRS should consider a digital DRS approach instead of, or at least in addition to, a conventional DRS. The digital DRS allows consumers the convenience of recycling at home, which is the preferred option”



Queen's University Belfast - School of Psychology

“The main preference was for a digital deposit return scheme (DDRS). The reason for this preference was the concerns surrounding conventional DRS. These concerns can be categorised into the following: inconvenience, pollution, cost, discrimination, youth involvement and other alternatives”



Queen's University Belfast - Jenna Potter

Research Headlines



- > The roll-out of a DRS should consider a digital DRS approach instead of, or at least in addition to, a conventional DRS
- > Digital DRS is viewed as significantly more convenient than a conventional RVM model
- > Any intervention to improve recycling behaviour should take cognisance of opportunities for consumers to recycle with ease and convenience
- > The trial saw 18-80 year olds using the Reward4Waste app
- > If a sole digital DRS is advanced, then, in the interests of inclusivity, consideration should be given to the relatively small number of people who do not have a smartphone
- > For a larger trial, a more robust method of putting unique coding on products is recommended, such as at point of manufacture
- > Community altruism - just under half donated their points to charity
- > Reward4Waste was very easy to use with significant consumer acceptance

Research Headlines



85% find it easy to **recycle at home**

The amount of people who **would prefer to recycle at home**

is **70%**

only 5% would prefer to use an RVM instead of a **digital DRS**



86% would prefer to not use a **conventional DRS**



research has shown **significant preference towards digital DRS**

87% say they would like the DRS to extend to all plastic waste



The majority found **the Reward4Waste app** easy / very easy to download and use



21p is the level of deposit that would incentivise use of **digital DRS**

vs. **30p** for a **conventional RVM DRS model**

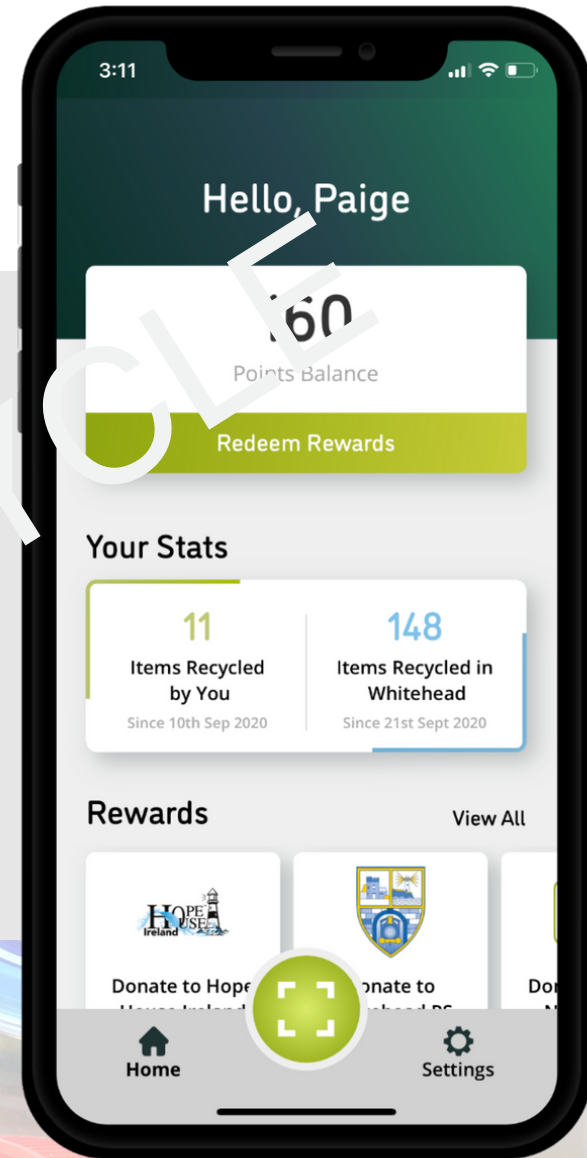
13-80 yr olds took part in the trial



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Reward4Waste Trial Details



Objectives, methodology and profile



Objectives

The aim of this research was to understand consumer attitudes and motivations towards DRS, Digital DRS, Reward4Waste and the Reward4Waste trial.

Methodology

The research was conducted online between February - April 2021 by Queen's University Belfast.

Citizens in Northern Ireland were recruited through email, leaflets and social media.

Sample

Respondents were from Northern Ireland - and included those who lived in Whitehead. There was a mix of those had and had not taken part in the trial. The majority of those captured in this research claimed to be 'good/committed recyclers'

Ages 18-66+

5 Focus Groups:

17 respondents

Questionnaire:

110 respondents

Pre-trial questionnaire



Attitudes towards recycling

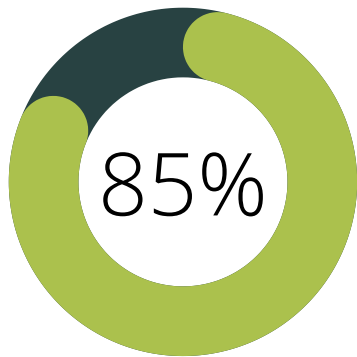
Attitudes towards conventional Deposit Return Schemes

- Survey Monkey (online questionnaire)
- 77 Whitehead residents took part in September 2020
- All of whom had registered for the trial (before the trial had started)
- The research was carried out by CryptoCycle and results given to Queen's University for analysis

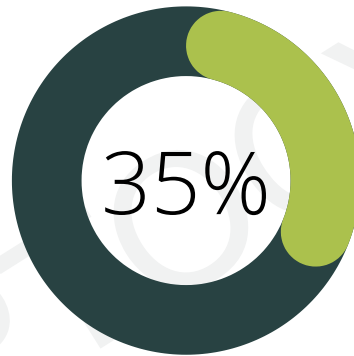
Recycling behaviour



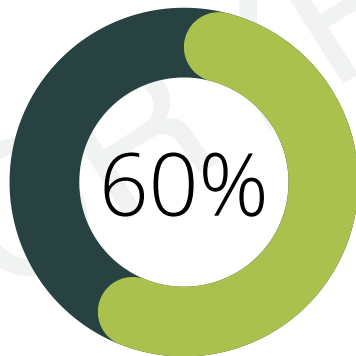
85% claim home recycling is easy. But there is room for improvement - with 35% saying they would recycle more if they knew what happened to their recycling



85% find it easy to recycle at home



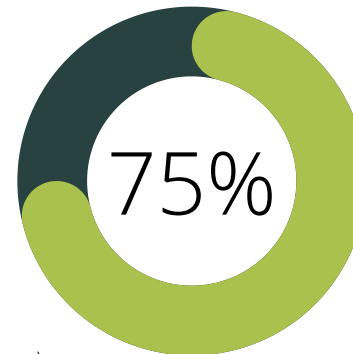
35% would recycle more if they knew what happened to their recycling



60% have no idea what happens to their recycling



75% are often confused about what can/can't be recycled



Reward4Waste brings true engagement helping educate people on what happens to their recycling, building trust.

CryptoCycle

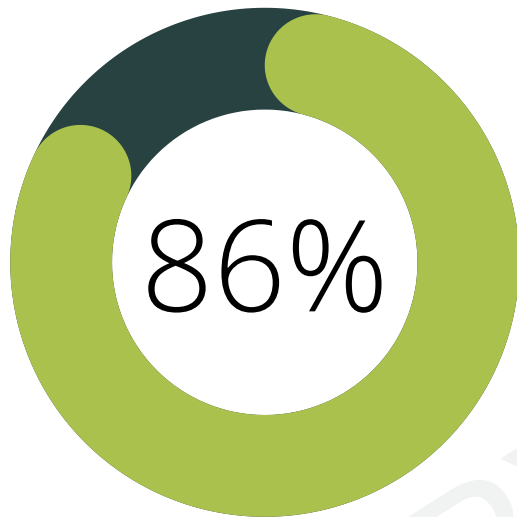
When asked about their current recycling behaviour (strongly agree / agree answers)



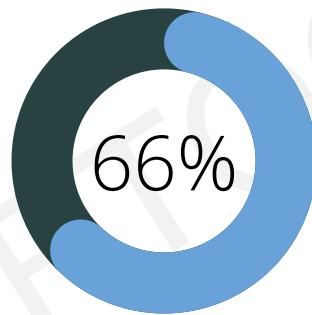
Attitudes towards a conventional DRS



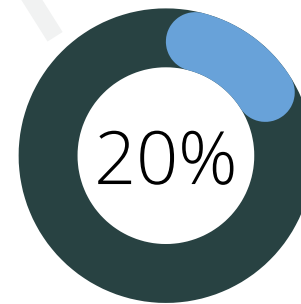
Concerns over the lack of convenience



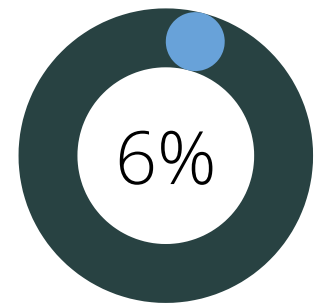
86% have concerns over using a conventional DRS



66% would not find using a conventional DRS convenient



20% do not want to use a conventional DRS at all



only 6% said a conventional DRS would be convenient / very convenient

When asked about a conventional RVM DRS (strongly agree / agree answers)

New recycling laws mean that in the future you could be asked to return your drinks container recycling to the retailer where you bought your items from or a central return point. Would you find this....

Post-trial questionnaire



Attitudes towards Deposit Return Schemes in general
Attitudes towards conventional Deposit Return Schemes
Attitudes towards digital Deposit Return Schemes
Attitudes towards Reward4Waste

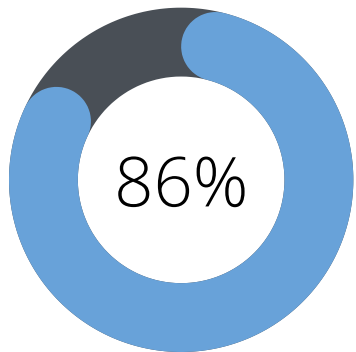
- Online questionnaire
- 110 NI residents took part in January/February 2021
- The research was carried out by Queen's University Psychology Dept
- The majority who took part viewed themselves as 'committed recyclers'

Profile

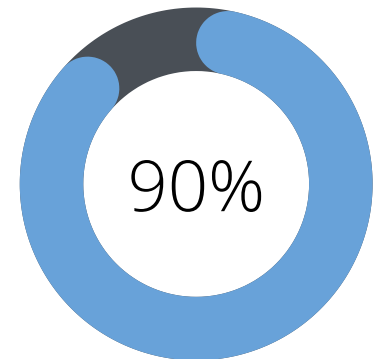


- 110 respondents
 - 67 from Whitehead, remaining from across NI
 - 43 had taken part in the Reward4Waste trial
- 56.5% were between 36-55 years of age
- 85.4% lived with a household with 1-3 people
- 46% lived in a house with a garage or outbuilding
- 63% in full time / 21% part time employment
- 65% shopped for food in-store, 24% shopped online, 11% used click and collect
- 90% used a car for travel
- 91% viewed themselves as committed recyclers

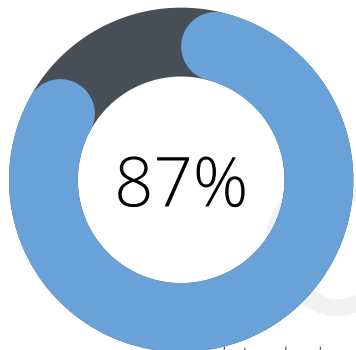
Attitudes towards DRS in general



86.3% think that DRS is a good idea



90.3% think that it that a DRS will benefit the environment



87.1% say they would like the DRS to extend to other plastic waste

Q: The government are introducing a 'Deposit Return Scheme' for drinks containers. The aim of a Deposit Return Scheme would be to reduce the amount of littering and boost recycling rates. The Deposit Return Scheme will be specific to drinks containers made from plastic, aluminium and glass. This scheme is due to be introduced in 2023 across the UK. Consumers will be charged a deposit for their drinks containers (including plastic, glass and cans) at the point of purchase and will be refunded their deposit money at the point of recycling. The details of the scheme are still to be decided. We would like to ask you some questions about this scheme and get your views on how you think it should work.

Perceptions around conventional & digital DRS



- Clear statistical results showing Digital DRS is believed to require less effort to recycle and is more appealing to use



Lower deposit required for digital DRS



Suggesting more acceptance towards a digital DRS



Digital DRS



Conventional DRS



When asked what the minimum amount of deposit that would need to be placed on products to motivate respondents to recycle under each type of scheme

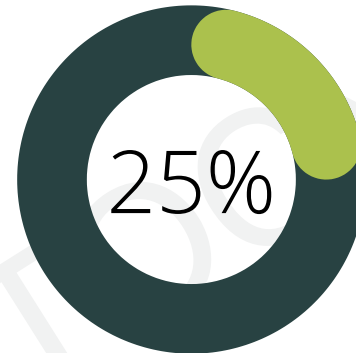
Strong home recycling preference



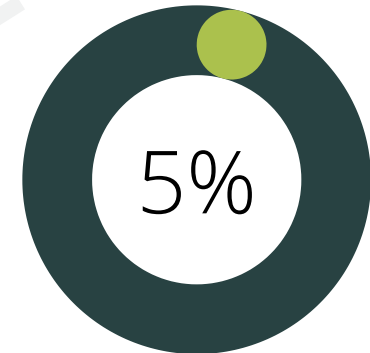
Conventional DRS is not perceived to be convenient



70% strongly agree / agree that they would prefer to recycle at home rather than an RVM



25% were unsure



Only 5% strongly disagree / disagree and would prefer to go to an RVM

When asked in the context of a DRS

Q: How much do you agree with this statement? I would prefer to recycle my waste at home rather than take it to a reverse vending machine or over the counter in a retailer or central return point

Attitudes towards Reward4Waste



Respondents agreed / strongly agreed that they found the app easy to download and use



I found it easy to download the app



The Reward4Waste app is easy to use

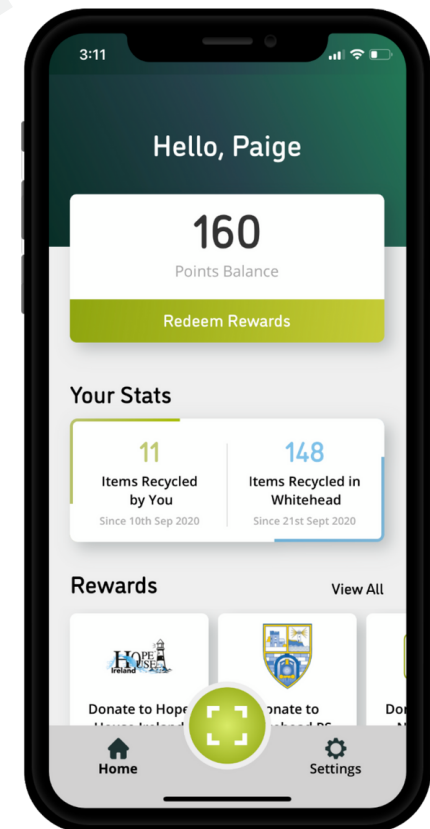


I found it easy to scan items using Reward4Waste



I like that you can donate to charity

Strongly disagree Disagree Strongly disagree Agree Strongly agree



Focus groups



Attitudes towards Deposit Return Schemes in general
Attitudes towards conventional Deposit Return Schemes
Attitudes towards digital Deposit Return Schemes
Attitudes towards Reward4Waste

To uncover consumer insights and learnings to inform future trials

- 5 focus groups - 17 people
- The research was carried out by Queen's University postgraduate and undergraduates

Profile



- 5 focus groups
- 17 respondents aged between 18-66+
 - Mix between those that took part in the trial
 - Those that lived in Whitehead but did not take part in the trial
 - Those that lived outside of Whitehead so could not take part of the trial
- To get an understanding of attitudes across the spectrum to get rich learnings
- All respondents believed they recycled 'as much as possible'

Attitudes towards conventional DRS



Convenience is critical to the success of a DRS

- A conventional model is viewed as significantly inconvenient
- The majority viewed going to **an RVM as a barrier** to use
- Even at 20p deposit there is still resistance to redeem
- Concerns a poorly designed RVM will reinforce bad behaviour

“ Unless it was made very easy then the people that are resistant to it would use it as an excuse to reinforce their poor behaviours ”

“ I can do it as I am committed to the concept, but I do not believe that the general public would be that committed to carrying their on-the-go items to a central point if they had to go a distance ”

Attitudes towards conventional DRS



Disproportionately punishing most disadvantaged

- Some raised the **discriminatory factors of a conventional DRS** regards poor mobility, access to a car, lack of storage space
- It was identified that a conventional model would mean people could not get their deposits back easily or immediately
- This may result in more drinks containers going into landfill

“ I am fortunate enough to have a garden shed to accumulate items but for anyone living in apartments, then there is the question of storing them until you have time to take them ”

“ I would not specifically take public transport to go to a reverse vending machine. Certainly, for lifting lots of glass it would not be practical ”

Attitudes towards conventional DRS



Disproportionately punishing most disadvantaged

“ I feel like it could be discriminatory... towards certain people who are disabled or have any physical or mental disability that could prevent them from getting there... You would essentially be punishing them for not being able to get out and about ”

“ I do not drive and would be 30 minute walk from the supermarket. Wouldn't mind going with plastics but glass would be different ”

“ If I could not drive it would put me off. Ageing and being less mobile and also weather depending, it would be very difficult for people ”

Attitudes towards conventional DRS



Environmental impact

- Many questioned the environmental impact of a conventional DRS - whether it will do more harm than good
- With many using online deliveries - journeys to redeem deposits were viewed as unnecessary carbon impact

“ Why would you do something additional when there is already a collection in place? ”

“ If you have to do a designated trip then you have to look at the carbon implications ”

“ If they were outside local shops then yes, I would use them as I live close by, however if they were at the supermarket... adding to pollution by doing additional journeys to the supermarket ”

Attitudes towards conventional DRS



Some mentioned children might like to get involved but this was not enough to drive acceptance

- Some participants would be encouraged to go to a conventional DRS if it was child friendly to encourage more participation from the younger generation

“ I would be encouraged. Especially if RVM was decorated in a child friendly way, it would encourage you to feed the ‘friendly monster’ to recycle more ”

Attitudes towards Reward4Waste



Those that took part in the trial found Reward4Waste easy and convenient to use

App layout
easy to use

Easy to take
part in the trial

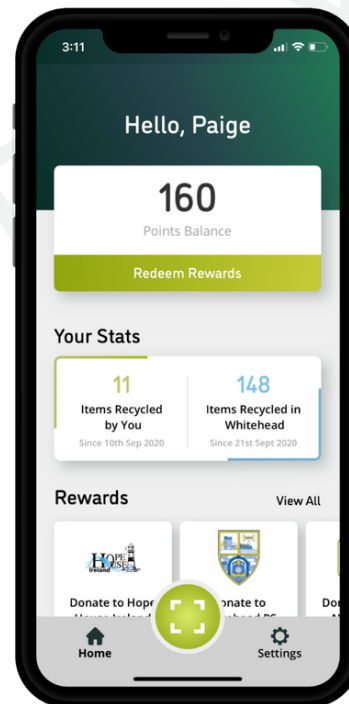
Liked that you
can see
community
participation

Easy to
scan

Charity
donation
liked

Likes being
rewarded for
good
recycling

Trial ran
seamlessly



Ideas to enhance Reward4Waste



We are now offering all of these functions or they feature in our product road map

CryptoCycle

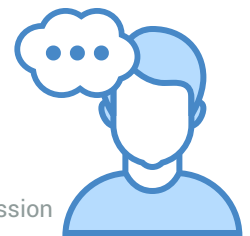


Trial learnings

Factors that would encourage future trial participation and ease of use

- Increased awareness of the trial
- More stores taking part (not everyone shopped at SPAR)
- Not all participating items were stickered due to the store owner becoming ill with COVID-19, some respondents could not find stickered items in store
- Compulsory participation
- Real deposit / return (not just reward based)

Our next trial will feature deposit / return. We have incorporated any learnings in our roadmap
CryptoCycle



What people said...



“...It would involve a lot of patience to have to stand and put the items into the machine. Why would you do something additional when there is already a collection in place”

“I definitely wouldn't bring it [recycling] back. It is hard enough to remember to bring your reusable bags with you to the shop, never mind last week's rubbish”

“I would not recycle as much as I do now if it meant having to leave my house and go to a central deposit point”

What people said...



“ I would be too embarrassed to take my bottles to an RVM ”

“ This makes sense (digital DRS) - it's a no-brainer ”

“ I'm not sure how environmentally friendly a conventional model would be ”

“ I wouldn't use an RVM because I recycle at home - regardless of the deposit it would be too much hassle and cost me more in petrol money ”

“ The Reward4Waste app was easy to use a piece of cake! ”

“ I found it easy to scan drinks (using Reward4Waste) but sometimes the drinks didn't have stickers on them ”

Summary



- The trial in Whitehead was our first public trial and proved that Reward4Waste works seamlessly with existing waste infrastructure with high consumer acceptance
- Our next trial with IWMA will demonstrate the deposit & return engagement
- It's important to recognise the role technology can play to bring a successful DRS to market - with the consumer at the heart of the solution digital
- The potential for digital brings not just consumer convenience but education and engagement - in an effort to fully immerse people in the circular economy
- We look forward to working with key stakeholders to help deliver the right Deposit Return Scheme to the UK

Summary and next steps



- > All the research points to a digital DRS being significantly preferred vs a conventional RVM model
- > Convenience is critical to the success of a Deposit Return Scheme - people view a conventional model as a 'burden'
- > Since the Whitehead trial, we have developed a home scan solution for people without mobile phones - offering a complete solution
- > We believe Reward4Waste brings a more inclusive solution. With Statista research forecasting a 93.4% smart phone user penetration in the UK by 2024 and now with home scan - we can deliver full coverage
- > A further trial has been secured to further test the more developed Reward4Waste app, including the deposit / return function
- > Consumers are tech savvy and we believe Reward4Waste will become part of people's habitual behaviour due to its convenience

Thank you!



- Thank you to Bryson Recycling and MEA Borough Council for helping make this trial happen, and to Britvic Ireland, Encirc and PepsiCo for their support
- Thank you Queen's University for this valuable assessment



Please get in touch



We welcome discussions...

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