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Reusable Food Takeaway Packaging Feasibility Study: Report

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INNOVATION ALLIANCE FOR THE WEST MIDLANDS

Report information

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Customer: West Midlands Combined Authority

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About Sustainability West Midlands

Sustainability West Midlands (SWM) was established in 2002 as an independent, not-for-profit company and has the Mission of making the West Midlands more sustainable, greener and fairer for everyone.

Our vision is that the West Midlands is leading in contributing to the national target of net zero greenhouse gas emissions by 2050 whilst addressing health inequality and driving inclusive growth. We monitor the West Midlands Sustainability 2030 Roadmap which acts as a framework that all organisations based or operating in the region can use to help them make changes to their activities in the knowledge that they will contribute to wider regional ambition.

SWM's support our members and other local stakeholders in the public, private and third sectors to implement these changes by enabling them to demonstrate innovation and leadership and provide opportunities to collaborate and celebrate success.

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Contents

Executive Summary

Single use food takeaway packaging is a significant environmental problem; in terms of embodied carbon emissions, resource use, and microplastic pollution from waste. Reusable food takeaway packaging could be a potential solution to this problem and could represent an opportunity for innovation and economic growth.

A feasibility study was therefore carried out to explore the barriers and drivers to the adoption and retention of reusable food takeaway packaging schemes, and to make recommendations as to the design of a potential pilot scheme. A high-level literature review was carried out and supported with a questionnaire survey of food outlets located in South Birmingham, and interviews from an existing reusable drink takeaway packaging scheme in the city.

The study finds that the introduction of a reusable takeaway packaging scheme requires a reconfiguration of the system of non-home-cooked food provision in its entirety. This will necessitate a number of different interventions to put reusable packaging collection infrastructure in place, make the scheme appear ubiquitous and the standard choice, and change the behaviour of both food consumers and producers. It is recommended that a pilot be designed to trial a scheme with the following characteristics:

- Use existing packaging or an existing delivery partner
- Create a community-level intervention
- Choose an appropriate pilot location
- Use anchor institutions to push the message
- Work with takeaway delivery platforms
- Positive communication
- Data collection

1 Introduction and background

1.1 Purpose of this document

This document sets out the findings of a feasibility study exploring the possibility for a reusable food takeaway scheme. The document will set out the background and rationale, the methodology, the findings and then results, before explaining the lessons learned that could be applied to scale up this feasibility study into a bigger pilot project. Five case studies of reusable food takeaway packaging systems are presented at the end.

1.2 Background and rationale

The EU Single Use Plastics Directive sets out the rules on single-use plastic products and aims to prevent and reduce the impact of certain plastic products on the environment, in particular the marine environment, and on human health. This includes food containers and is enforced through the Environmental Protection (Plastic Plates etc. and Polystyrene Containers etc.) (England) Regulations 2023, which bans (for example) polystyrene food and drink containers. Regionally, the West Midlands Circular Economy Routemap focusses on the three key sectors of manufacturing, construction and food. SWM have been involved in the development of this and sat on the Circular Economy Taskforce for the West Midlands Combined Authority, using our expertise to provide independent advice to shape the Routemap. The minimisation of unsustainable plastic food packaging is also an aim of the Birmingham Food System Strategy.

Despite these regulatory changes and policy innovations, there remain exemptions for plastic used as packaging "pre-filled or filled at the point of sale". This includes plates filled at the counter of a takeaway, or a tray used to deliver food.[1] As such, takeaway food outlets in the West Midlands and England are still using plastic tubs, which despite being recyclable rarely are, and compostable single-use food packaging which has challenges around appropriate composting facilities[2]. As such, the *re-use* of food takeaway packaging is likely to be less energy and resource intensive.

There is currently no widespread infrastructure for a takeaway tub re-use scheme in the West Midlands. There does exist a reusable cup scheme called 'Brummie Cups' whereby a number of cafes and restaurants in the Moseley and Kings Heath neighbourhoods of Birmingham take a £2 deposit for a takeaway Brummie Cup. This cup can be returned to any of the participating outlets, and the deposit returned to the customer. This suggests that there are several outlets willing to participate in reusable container schemes for takeaway food. This study seeks to formally test this assumption.

There is also the question of the removal of barriers to such a scheme. A number of schemes do exist[3] but are clearly not widespread. Discussions with colleagues at Innovate UK KTN's Longer in Use and Reuse programme advise that valuable questions to ask are 'What gets people to adopt and retain reusable item schemes?', 'What barriers to their adoption are there?', and 'How could these be unlocked?'. This study seeks to answer these questions.

[1] Single-use plastics bans and restrictions - GOV.UK (www.gov.uk)
[2] Personal communication from Ken Cigdem of Plant Carbon – SWM member.
[3] For instance Vytal in Europe and CauliBox in the UK

1.3 Objectives

The objectives of this study are therefore:

1. To collate current understanding of reusable food takeaway schemes through a literature review and case studies, to understand extant examples, and barriers and drivers to the adoption and retention of these schemes.
2. To carry out market testing for a pilot reusable food takeaway packaging scheme, to explore barriers and drivers for adopting such a scheme. This will be carried out by a questionnaire survey in the Kings Heath area of Birmingham and will be supported by interviews with outlets involved in the Brummie Cups scheme.
3. To recommend ways in which a reusable food takeaway packaging scheme could be trialled.

The original proposal for this study set out a more robust market testing activity (objective 2) than is given here – to ascertain the number of packaging pieces needed, and establish the desirable characteristics of takeaway packaging items, and schemes in general. However, the literature review revealed that many of these characteristics are already known, and are exemplified by existing successful reusable takeaway food packaging schemes in Europe. Therefore, it was decided to focus predominantly on drivers and barriers to adopting reusable packaging *schemes*, rather than on the individual packaging items.

2 Methodology

2.1 Literature Review

In the short time frame of this feasibility study, a selective literature review was conducted. Contact was made with colleagues at Innovate UK KTN with expertise in plastics recycling and reuse[4] who recommended particular references and bodies of research either carried out by Innovate UK KTN or funded by Innovate UK. Contact was also made with SWM's expert associates[5], and wider network, who made further literature recommendations. A full list of references reviewed can be found in Annex 1.

Through the course of carrying out this literature review, through suggestions from the same individuals, and through internet searching, five case studies were also identified.

2.2 Market Testing

The literature review informed the design of a questionnaire for food outlets, asking what packaging was currently used and how much, their interest in reusable packaging, how they could participate in the scheme (with regard to costs and logistics), and their perceptions of their customers' willingness to engage in such a scheme. The questionnaire can be found in Annex 2. This questionnaire was laid out in a Google Form, and the link shared with the Kings Heath Business Improvement District (BID) Manager, who shared it with all hospitality businesses within the BID (n=58). Over 50 paper copies were also printed and delivered to hospitality businesses. 23 full responses were returned, a response rate of around 46%.

[4] Sally Becken – Longer in Use and ReUse (LURU) and Smart Sustainable Plastic Packaging lead; Chris Pilgrim – Circular Economy Innovation Network

[5] Debbie Ward and Andy Whyle

2.3 Interviews with Brummie Cups Participants

Additionally, four interviews were carried out with individuals involved in the Brummie Cups scheme:

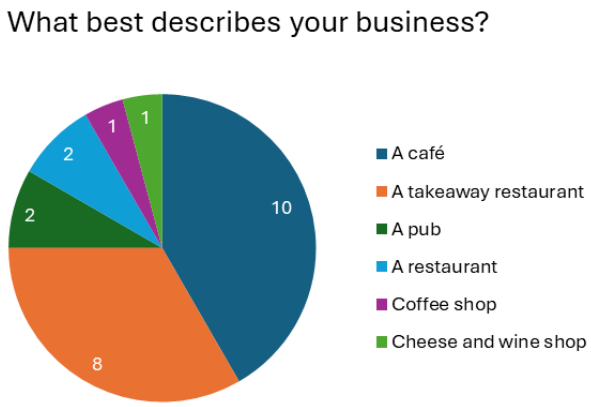
- Volunteer Organiser for Brummie Cups
- Manager at Early Bird Bakery (a Kings Heath café using Brummie Cups)
- Manager at Kitchen Garden Café (a Kings Heath café using Brummie Cups)
- Manager at Rowheath Pavillion (a Bourneville venue using Brummie Cups)

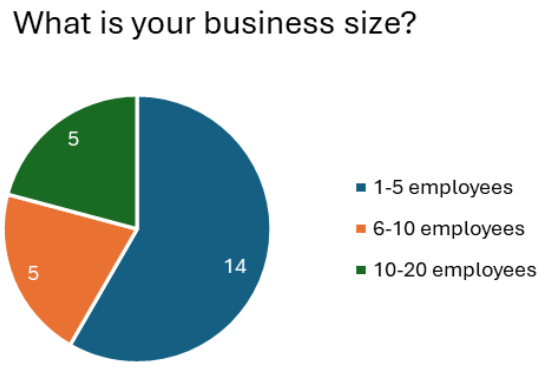
These interviews sought to understand how outlets were getting on with the existing reusable (drinks) packaging scheme, to glean any lessons that could be transferred to a reusable food packaging scheme.

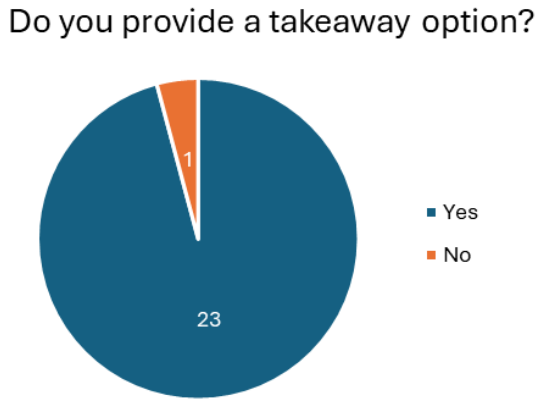
3 Findings

This section sets out the findings of the survey conducted with food outlets in the Kings Heath BID, as it is useful to see this data separately. This will be drawn together with the findings of the literature review, interviews and case studies in Section 4, to present an integrated narrative.

3.1 The Food Outlets



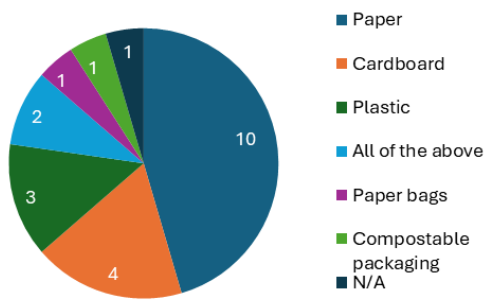




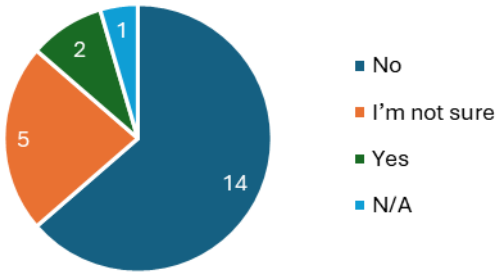
The majority of the businesses in the study were either cafes or takeaway restaurants of up to five employees. All of them provide a takeaway option except one, although this outlet was interested in reusable takeaway food packaging and the potential to adopt this, and so were not excluded from the sample.

3.2 Existing Takeaway Packaging

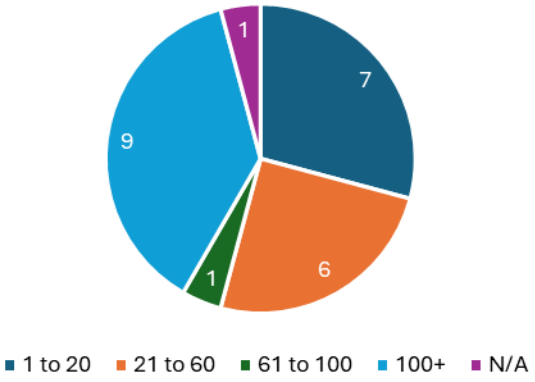
What are the main types of packaging materials you currently use for takeout orders?



Do you think your current takeout packaging approach has any negative impacts on the environment?



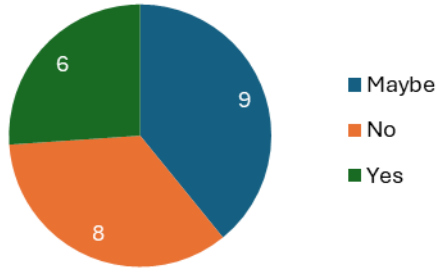
How many single-use packaging (plastic containers, paper bags, etc.) do you currently use for takeout orders every week?



Most of the outlets only used paper or cardboard containers for takeaways, which despite significant numbers of packaging items being used, could explain why so few outlets believed their packaging had a negative impact on the environment. However, three outlets that did provide plastic packaging nevertheless argued that their containers did not have negative implications for the environment. One of the cafes reported using compostable packages.

3.3 Interest in implementing a Reusable Packaging Scheme

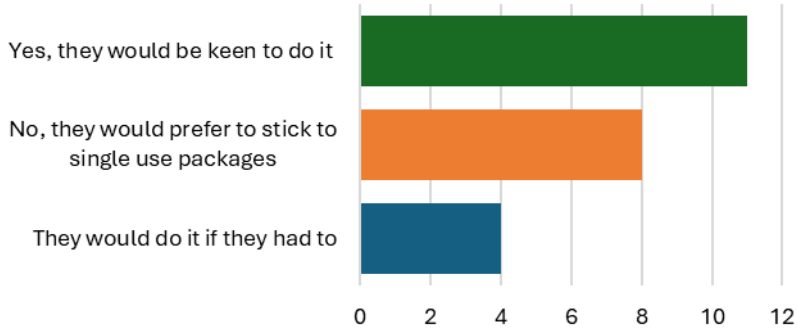
Would you be interested in offering reusable packages that customers can return for reuse?



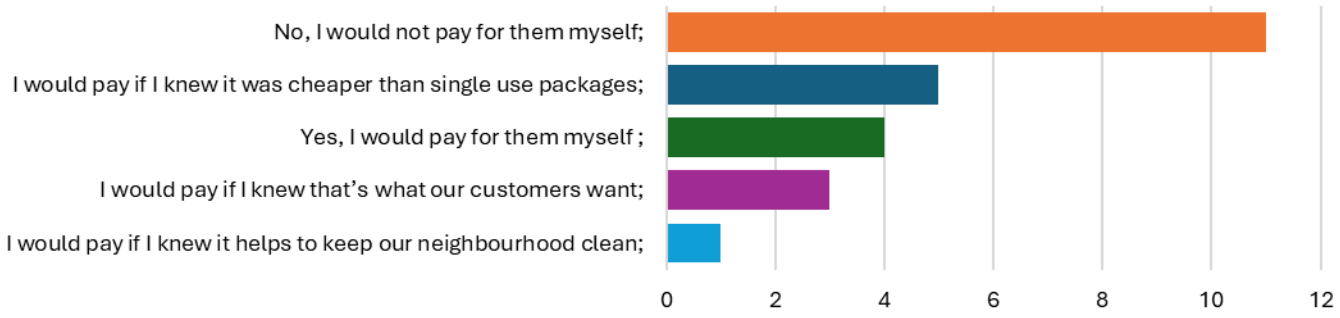
Interest in implementing a reusable packaging scheme for takeaway food was mixed, but a majority of those asked were potentially open to the idea. Many outlets felt their staff would be keen to participate in such a scheme.

However willingness to pay for such a scheme (specifically the packaging) is a useful test of this potential interest. The survey found that nearly half of outlets would not be willing to purchase reusable packaging themselves. However, half may be willing to pay for packaging, and for a range of reasons to do with less cost overall and customer preferences.

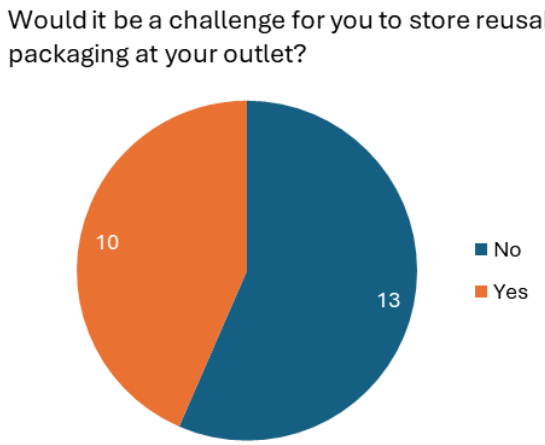
Do you think your team would be willing to offer reusable packages to customers?

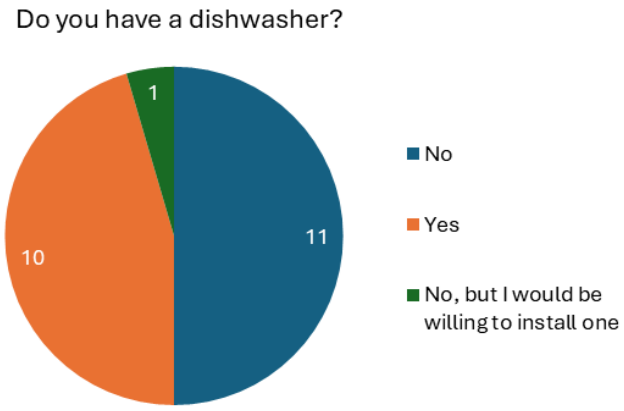


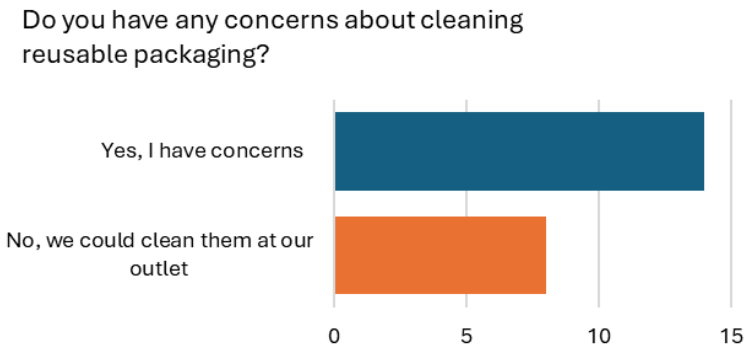
Would you be willing to purchase reusable packaging yourself?



3.4 Logistical challenges of a Reusable Packaging Scheme

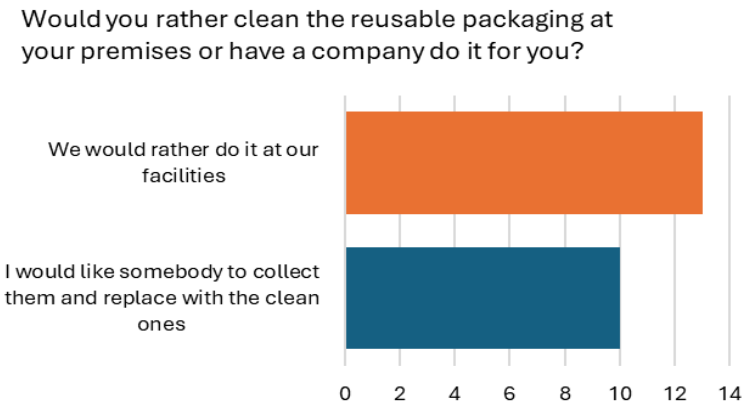






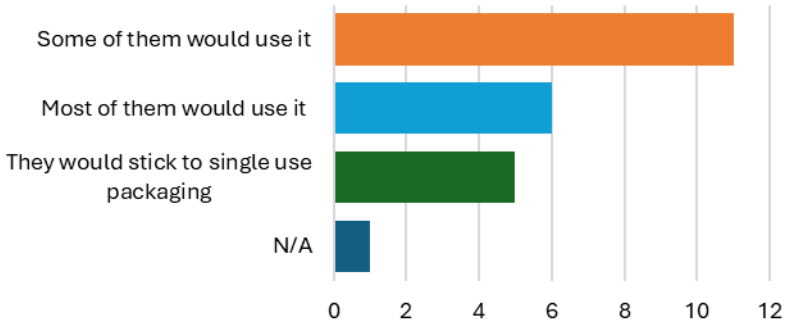
A slight majority of the survey respondents felt that storage of reusable packaging would not be a challenge, but a majority did have concerns about cleaning the containers – particularly with regard to ensuring hygiene and time constraints. One business felt that this would not fit their business model.

The picture was mixed with regard to the idea of having a third-party company manage the collection and cleaning of reusable containers – many would be happy with this, but a slight majority would prefer to do that cleaning themselves, even if it meant installing appropriate equipment for the first time.



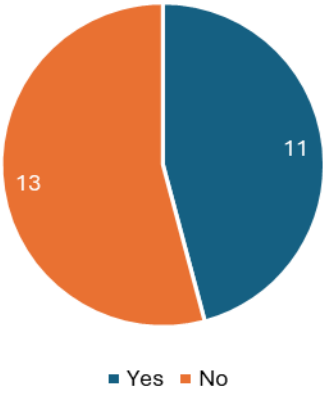
3.5 Perceptions of customer interest in a Reusable Packaging Scheme

Do you think your customers would be willing to use reusable packaging?



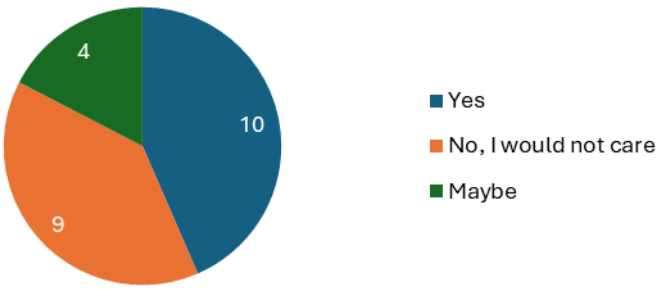
Most outlets believed that there would be some interest from their customers in using reusable packaging. A slight majority were not interested in operating reward schemes to encourage uptake, however.

Would you be open to rewarding customers who use reusable packaging instead of disposable ones? For example, by offering a free drink after every 10 purchases?



3.6 Collaboration

Would you want to collaborate with other venues in your area in this scheme?



The opportunity to collaborate with other outlets was the least important motivator to adopt a reusable food packaging scheme. However, one manager noted that their own interest in such a scheme would depend on its popularity, indicating that collaboration, or adopting a scheme at scale is reassuring to some late adopters. However once involved in such a scheme, a majority of survey respondents felt that they would definitely, or that they might be interested in collaborating with other outlets.

4 Analysis and discussion

This section weaves together the findings of the survey and literature review, the case studies and the interviews to provide a thematic narrative of the challenges and opportunities for introducing a reusable food takeaway packaging pilot. The themes under which this narrative will be described are system-level intervention, packaging requirements, logistics, maintaining enthusiasm, willingness to adopt (food outlets), willingness to adopt (consumers).

4.1 System-Level Intervention

The case studies and the literature demonstrate that there are several different reusable packaging schemes in different contexts across the world. The challenge is not one of finding an innovative technology or product to slot into a sequential reuse (return) model, but of building new perceptions of packaging and consumer roles (packaging as valuable, consumers as 'stewards' or 'custodians' of resources), new behaviours and habits to ensure recirculation, and new relationships between producers, customers and products that are built on transparency, trust and emotional connection with the products they use. In short, the system by which people consume meals which they do not cook themselves needs to be completely reconfigured. This will entail building a wider system infrastructure which incorporates packaging, convenient collection/return processes, storage, cleaning practices, and redistribution, supported by both producer and consumer expectations that this is how packaging operates. Germany had a system of reusable packaging for drinks which has remained stable over much of the second half of the twentieth century because of the regional clustering of drinks production, wholesaling and (standardised) reusable bottle collection – in other words the supporting infrastructure was well established. Moves to undermine this system by some (national and international) drinks producers have been combatted with taxes on disposable packaging, which arguably need to be higher.[6]

Legislation is helpful in driving these system-level changes. Germany's newly introduced Packaging Act requires that caterers above a certain size (five employees and a premises of 80m^2 or more) or more must offer reusable food and drink packaging, the cost of which cannot exceed that of single-use packaging for the consumer. This has driven the growth of packaging solutions and collection systems and their widespread adoption. Vytal is one company providing a reusable container system; it has 6,000 partners in Germany under their supportive legislative framework while having only two in the UK.

Legislation is also important for levelling the playing field. There are initial start up costs for reusable takeaway schemes, and higher logistics costs, and with no legislation to set targets and incentivise business to change, there will always be those who reduce costs by offering single use 'cheaper' packaging. However, it is important to remember that these costs are being paid – by the environment, by communities suffering litter and waste, by local authorities paying for the landfill or incineration of waste, and by people whose health suffers as a result of that waste disposal (particularly in the case of incineration). Legislation would help to place those costs solely with the appropriate businesses and their customers.

4.2 Packaging Requirements

[6] Beswick-Parsons, Jackson and Evans, 2023. Understanding national variations in reusable packaging: Commercial drivers, regulatory factors and provisioning systems. *Geoforum*

The literature review lists several requirements for reusable packaging. Preferably, the packaging will itself be made of material that is easy to recycle; preferably a mono-material. The material must be able to withstand higher temperatures; circa 80 degrees centigrade. This is because there is a Food Agency standard that commercial dishwashers tend to conform to consisting of a chemical wash at 50 degrees centigrade then a final rinse at 80 degrees centigrade. It is this final rinse that kills all the bacteria. The assumption is that if this is acceptable for washing crockery and cutlery for a cafe then this should be suitable for packaging.[7] The packaging must be able to withstand these higher temperatures and not warp.

Food takeaway packaging should also be standardised; stackable rather than collapsible, with smooth surfaces with no indentations to ease the cleaning process. They need to be shatterproof, in case they are dropped. Any packaging must therefore not be under-engineered, but also it must not be *over*engineered, such that customers wish to keep the packaging instead of returning it.

It is potentially advantageous to incorporate technology within the packaging to assist with product tracking; either a QR code, digital watermark or fluorescent tracer. This could help with sorting packaging, and generating the data required to provide the evidence that packaging is reused, is therefore reducing harm to the environment, and the scheme is economically viable.

Appropriate products already exist. Vytal have appropriately robust and quality containers with embedded technology (a QR code and associated app) which are leakproof, stackable, dishwasher safe and suitable for use in freezers. Tritan is another plastic material that containers made from which are used in a dairy in Germany for their products. This material can withstand the necessary high cleaning temperatures. Tiffin boxes made of stainless steel are also widespread. It is therefore unlikely that it will be necessary to create a new food 'tub'.

Reusable packaging *must* be less environmentally damaging than single use alternatives, and there must be transparency about this, and the conditions under which it is so (i.e. the number of times it must be re-used before its impact is less than one single use package). It is worth noting that legislation in Germany to drive reusable packaging is currently temporarily blocked as one political party objects that there is a lack of sufficient evidence that reusable solutions are indeed environmentally advantageous.[8]

4.3 Logistics

Aligned with the findings from the literature review, the survey results underscore that hygiene and cleaning of containers emerge as significant concerns for many participants. A notable concern from one of the outlets was around the storage of dirty containers before collection by any third-party cleaning company, posing hygiene risks. The survey also somewhat supported the literature review in pointing to space and labour challenges in storing and managing containers. However, some Brummie Cups participants also mentioned the storage of single-use packaging (which must be bought in bulk) to be a challenge.

Furthermore, although none of the survey respondents voiced concerns regarding container returns, it is noteworthy that the literature and case studies highlight challenges associated with relatively low return rates, which can reduce the economic viability of any scheme.

[7] Innovate UK Reusable Packaging Study
[8] German Packaging Act (VerpackG) 2024 - Fulfillment-Box

On a positive note, interviews with Brummie Cups participants however demonstrated that there was no challenge in adjusting the functionality of the till to manage the charge for the reusable cups, and to return deposits when cups were returned. All these outlets were small, independent cafes, which therefore have greater autonomy of these decisions.

Again, there are models already in existence (such as the aforementioned Vytal) which provide solutions to overcome challenges of storage and cleaning, and help save outlets money (another key concern). The challenge for any future scheme will be identifying appropriate 'early adopter' outlets to work with. This study suggests that either smaller, independent cafes might be more able to participate, or that 'chain' outlets need to be approached at the right level so the appropriate decision-maker can be found.

4.4 Willingness to adopt (food outlets)

According to the data analysis, cost savings emerged as one of the top two motivators for people to join the scheme, followed by reducing impact on the environment. The Bring it Back Project toolkit provides the following table illustrating to businesses how reusable cups can yield long-term cost savings:

	Cost of Cup	Time used	Number of Cups	Cleaning Cost	Total Cost
Non Reusable	£0.20	1	50	£0.00	£10.00
Reusable	£2.30	50	1	£0.10	£7.30

However, if this monetary incentive is not compelling enough, the outlets could be motivated by avoiding 50 non-reusable tubs ending up as waste, which aligns with the second most significant motivator to join the scheme – saving the environment. As evidenced by The Borrow* case study, although cost savings were paramount, incorporating environmental messaging enhanced the scheme's appeal, as it added a "feel-good factor." Furthermore, businesses would receive additional marketing support and greater exposure, which, according to the data analysis, also serve as important motivators.

The interviews with Brummie Cups participants supported this idea of "feel good factors" being important motivators. All of the cafés involved talked about how the motivations they had for signing up to Brummie Cups were part of their 'brand' – they valued authenticity, concern for the environment, and their place in their local area and community. They had not taken the opportunity to link Brummie Cups to those concerns and motivators, and communicate these to their customers, which was perhaps a missed opportunity.

4.5 Willingness to adopt (consumers)

It's crucial to recognise that without customer participation, the success of any food packaging reuse scheme is at risk, potentially leading participating businesses to lose interest and enthusiasm. Therefore, ensuring attractiveness to customers is paramount. Although the survey participants were exclusively businesses not customers, 17 of them believed that some or most of their customers would be interested in using the scheme. However, addressing challenges such as perceived hygiene concerns (following visible staining of reusable containers), return convenience, scheme attractiveness, and visibility is essential, as these are cited in the literature as primary barriers, dissuading people from participation.

Another challenge to the adoption and retention of these schemes by consumers is the confusion of choice. The interviews with Brummie Cups participants demonstrated that staff already have a number of choices to offer customers (for example, cows or plant milk, additional toppings for drinks, different types of bread in sandwiches, different types of payment methods etc), that it can be a challenge for staff to remember yet another option to offer customers. This is can also overwhelm customers. Also, the reuse schemes explored in this research all exist within a broader context where reusable packaging is outside the norm, and disposable packaging is ubiquitous. This works against habit formation and offers customers a choice which in many cases may not be necessary, and contribute to a sense of overwhelm. This reinforces the points made above in section 4.1 on the need for system-level intervention (including the possibility of legislation) to drive wider change. However, reducing unnecessary choice can still be done in the current UK context. One interviewee cited Boston Tea Party as a food outlet which now do not offer disposable takeaway drinks cups[9]. However, not every outlet will feel 'brave' enough to take such a decision; one of the Brummie Cups participants explicitly said they did not wish to add unavoidable costs for their customers, and thereby remove price-based choice.

To tackle all these challenges, the "How to Talk About Plastics" guide offers instructions and suggestions on effectively communicating these issues with consumers. For example, it suggests normalising the concept of reusable containers by likening them to plates and cutlery used in dine-in restaurants. Additionally, the guide recommends using clear and non-overwhelming messaging to enhance attractiveness, and to emphasise personal agency, environmental protection, fairness and 'systems thinking' in messaging. Furthermore, implementing QR codes and systems for easy return, along with providing a map of participating outlets for convenient drop-offs, can improve accessibility. Despite not being in the majority, 11 survey participants *did* express a willingness to reward users for returning containers, presenting another potential strategy for encouragement. Drawing inspiration from the success of the Borrow* scheme's most successful café, restaurants could aim to convert regular customers into reusable food packaging users, thereby fostering broader adoption. Ultimately however, the increasing ubiquity of reusable food packaging schemes and the removal of a single-use option, either through place-based collaboration or through legislative drivers, will also help increase adoption.

Finally, the literature also recommends working with schools and large employers, as closed loop systems[10]. This could be a way to normalise reusable takeaway food packaging for a large number of people, and they could receive messages about the system at multiple points (such as the canteen/message boards/line management/company-wide emails/lessons), but could also be applied in an open loop system, where a school or single employer makes a significant contribution to a local area.

4.6 Maintaining enthusiasm for Reusable Food Packaging Schemes

The Borrow* case study in Bradford showed that the most successful café in their scheme achieved a 91% return rate and by the end of the project was serving 70% of their hot drinks in reusable cups due to the staff's enthusiasm to promote the scheme. Conversely, the interviews conducted with Brummie Cups participants demonstrated that it was a lack of staff understanding of the Brummie Cups scheme and a lack of commitment to promote it which led to low return rates (for instance only 10 drinks were served in Brummie Cups out of 500 drinks sold in total in some months at Rowheath Pavillion). Yet this could be overcome – the Rowheath Pavillion manager explained that when a Brummie Cups volunteer came to

[9] Cups (bostonteaparty.co.uk)
[10] RECOUP – Bring it Back Project Toolkit

Rowheath to explain the scheme to people in the queue while they waited to be served, the number of Brummie Cups used did noticeably increase[11].

As a result of these insights, the survey participants were asked how keen their staff would be to promote the reuse scheme, with 11 of them saying "they would be keen" One of the respondents also mentioned that the likelihood of them joining the scheme would depend on the success of the initiative which indicates that focusing on being successful from the beginning is important to make the scheme scalable. Again therefore, the challenge for future schemes is to find appropriate early adopters – businesses that are enthusiastic about taking part in the initiative and are willing to draw more attention to that success in order to attract more interest. The Naked Takeaway scheme has been doing this by promoting their successful businesses through the press, thus attracting additional participants.

5 Recommendations for Scaling Up

The Brummie Cups scheme is already operational in south Birmingham and provides many lessons for the implementation and success criteria for a reusable food takeaway packaging scheme. Several businesses in Kings Heath in particular are also demonstrably open to the idea of reusable takeaway packaging. This feasibility study argues that there is the possibility of scaling up this work by trialling a potential pilot demonstrator project for reusable takeaway packaging, taking into account the following recommendations:

5.1 Use existing packaging or an delivery partner

Schemes like Vytal, Borrow and Cauli already exist, using appropriate packaging and often with supportive technologies for tracking, and even cleaning and logistics. Such an 'off the shelf' system could be procured for a demonstrator area. There is no need to reinvent the wheel with the technology – the challenge is trying to get an area to adopt and retain such a scheme.

5.2 Create a community level intervention

It is not in the gift of local or regional government to introduce legislative drivers to create the socio-technical system that would truly support the adoption and retention of a reusable takeaway food packaging scheme. However, by working in an appropriately sized geographical area, where participating outlets are concentrated together and so create a perception of ubiquity, where there can be greater return convenience for customers, and where participating businesses feel they are in the 'majority' and so less likely to miss out on custom to other outlets, a system level change can be simulated.

Working with a successful BID would be helpful – the BID would have an existing relationship with potential participating outlets, and could act as a coordinating body, using their own marketing capacity to launch the scheme and advertise it. Ways of incentivising businesses to participate in a pilot could be discussed with the BID but could include better advertising of their business through the BID, a potential business rate reduction, or other rewards.

[11] The interviewee could not remember figures.

It is recommended that businesses are recruited to the scheme, and potential customers alerted to the fact that a scheme is 'coming soon', before launching all at once with lots of advertising and celebration, in order to demonstrate that this new system is now 'in place'. This is preferable to having a small number of outlets trialling such a scheme, and having to work against the tide of an unsupportive local context where customers keep forgetting about reusable takeaway packaging, as Brummie Cups have found.

In this community area, the convenience of return could be increased by asking local shops with longer opening hours (such as Sainsbury, Asda or Lidl) to install a drop-off point. Finally, if participating outlets could commit to removing the 'option' to have single use packaging (as Boston Tea Party have done), this would be very impactful.

5.3 Choose an appropriate area

A pilot is more likely to work in a thriving BID with many independent outlets for whom zero waste could be incorporated into their brand, and who also have autonomy in decision-making. More affluent areas, where potential customers are perhaps less likely to be 'put off' by the upfront deposit (potentially) required to borrow the packaging (and where people may be more able to take environmental and ethical considerations into account when buying products and services) is also likely to be an important selection criterion. That said, an area that sees a mix of socioeconomic backgrounds coming together may provide some interesting learning opportunities. An area with 'anchor institutions' (see below) will also be helpful.

5.4 Use anchor institutions to push the message

There are significant opportunities to push for the adoption of a reusable takeaway packaging scheme using anchor institutions.

Schools are an important potential anchor institution. Schools could incorporate mention of a pilot scheme into lesson time (for example food technology or resistant materials technology), it could be covered in assembly, and advertised through the school. Students on work experience could (with appropriate supervision) provide information on the scheme in the street – an approach that Rowheath Pavillion found useful for Brummie Cups. Kings Heath BID already works with local schools and takes students out with street wardens to help them gain another perspective on the high street and better understand their own contribution and impact on it. Students from nine schools converge on Kings Heath High Street every afternoon as part of their journey home and represent a significant market for local takeaways. Volunteering on their local high street could be designed into applied community-based projects which could be incorporated into assessment, or even developed into meaningful extracurricular projects, in collaboration with local businesses. Young people care about the future of their environment and may welcome the opportunity to make positive change.

Universities and other big employers with a strong presence in a pilot area could also be used. Staff-wide emails and posters could be used to advertise the scheme, environmental champions or committees could push the message, and staff could potentially use any staff environmental volunteering days to do face-to-face promotion of the scheme. Another example might be organisations like Bruntwood; which owns multiple buildings, many of which have cafés. This would be advantageous for organisations looking for ways to demonstrate meaningful ESG activity and standards.

5.5 Work with takeaway delivery platforms

It is important to recognise the importance of delivery platforms to the takeaway food market, and therefore the importance of engaging with these if the scheme is to be successful. There are precedents for organisations such as Just Eat, Uber Eats and Deliveroo working to introduce reusable takeaway packaging. Just Eat worked with Vytal to provide reusable packaging for all takeaway food sold during the 2023 UEFA Women's Champions League matches, thereby aiming to remove over 20,000 units of single-use plastic packaging. Just Eat also partnered with CLUBZERO to run a three-month trial in London in 2001offering customers the opportunity to choose reusable packaging, and then arrange collection through the CLUBZERO app or at CLUBZERO drop off points. This has since been expanded to more Just Eat outlets in London. Uber Eats also trialling a reusable packaging collection scheme with a selection of their restaurants (again in London).

Therefore (again) a BID Manager, potentially working with public sector/innovation ecosystem colleagues may have more influence to engage with chain companies at a more appropriate level of decision-making. Discussions could be had around removing the option for disposable packaging for all participating outlets in the pilot area (all examples given above were 'opt in' for reusable packaging).

5.6 Positive communication

Effective communications about a pilot scheme are essential if a community level intervention is to be created, through posters, press releases, a major launch event, and social media. All messaging should follow the guidance of the 'How to Talk About Plastics' Guide and research from the Innovate UK funded Many Happy Returns project, namely likening reusable packaging to crockery, using clear and non-overwhelming messaging, using an appropriate blend of positive ("reuse is the new recycling") and "negative" or action-oriented ("don't forget your tub") messaging, and everywhere emphasising consumer agency, fairness, environmental protection and systems thinking.

It may also be valuable to explicitly outline the carbon savings of reusable packaging by comparison, for example "One single use takeaway polypropylene container is equal to 151g CO_2e. One long life polypropylene container is equal to the carbon emissions of five single use containers. Therefore, re-using a long life polypropylene container *more* than five times, leads to a lower carbon impact than five single-use takeaway containers[12]". This can be aggregated to explain the carbon emissions saved if (eg) 500 customers used reusable packaging, and so on. Reminding customers of the UK citizen's average greenhouse gas emission footprint (13tonnes of CO_2e[13]) also helps make this information meaningful. This could be explained in an eye-catching infographic, that could be standardised in every outlet.

5.7 Data collection

Evidence that the scheme is adopted and is reducing impact on the environment can be used to reinforce the scheme, and to 'sell' it to other areas, so a pilot can itself be scaled. Data will therefore need to be gathered on the number of reusable tubs 'sold', the number of times each is used, etc. Some third-party systems providers can track this information as part of their service.

[12] Figures from https://www.zerowastescotland.org.uk/resources/environmental-benefits-reusable-plastic
[13] https://www.carbonindependent.org/23.html

6 Case studies

Case study 1: Many Happy Returns – employing linguists to learn 'How to Talk About Plastics'

Overview:
The Many Happy Returns project, funded under the UKRI's Industrial Strategy Challenge Fund, employed linguists from the University of Sheffield to explore effective language strategies for promoting plastic reuse before recycling. Drawing from a comprehensive analysis of the everyday language surrounding plastics, including social media interactions and public forums, the team identified linguistic patterns to help encourage reuse behaviours. Additionally, they researched communication tactics employed by plastic producers through industry surveys and examination of public-facing materials. This research culminated in the creation of a guide, "How to Talk About Plastics," offering practical recommendations for businesses and organisations to tailor their messaging towards fostering pro-environmental actions and enhancing plastic reuse efforts.

Evaluation:
The research on language use in reusable packaging systems generated during this project (see Annex 1) highlights several key findings. It emphasises the necessity for clear and concise language on packaging, given the limited time consumers spend reading labels, as evidenced by WRAP's research. However, the study reveals that many manufacturers and retailers fail to provide such clarity, often using packaging with multiple, confusing messages in small fonts or unclear symbols. Additionally, despite increasing scrutiny of greenwashing practices, the research indicates that misleading environmental claims persist in marketing and advertising, evoking negative consumer reactions. Moreover, the study draws on insights from linguistics, psychology, and marketing, suggesting that consumers can feel overwhelmed by excessive green messaging and may react negatively to products perceived as overly environmentally conscious. Thus, the recommendation is to focus on a select few clear and actionable green messages, with an emphasis on easily understandable actions like reusing plastic packaging, which offers individuals a tangible way to positively impact the environment.

Lessons learned:
The Many Happy Returns project provides an example of an innovative and creative approach to solving plastic consumption challenges. By employing multidisciplinary experts, the team was able to explore holistic solutions to the plastic problem, which then acts as a foundation for further development of reusability schemes in Sheffield. A major challenge in behaviour change psychology is that an intention to change does not always convert into an action. However, the 'How to Talk About Plastics' guide can help to overcome it by adjusting the language used in the reusable campaigns. For example, by making marketing messaging easily understandable, actionable, and focused.

Source: Many Happy Returns - enabling reusable packaging systems (sheffield.ac.uk), How to Talk About Plastics.pdf - Google Drive

Image: https://player.sheffield.ac.uk/events/many-happy-returns-enabling-reusable-packaging-systems

Case study 2: Bradford city-wide reusable packaging scheme for hot drinks and takeaways

Overview:
The Borrow* pilot project in Bradford was one of six pilot projects to win Hubbub and Starbucks £1.4 million Bring It Back Fund. The Borrow* takeaway package scheme aimed to establish a scalable system for borrowing and returning hot drink cups and food packaging in cafes and takeaway restaurants. Customers paid a 50p deposit per reusable box when ordering in-store or over the phone at MyLahore, receiving a 5% discount on eligible orders for participating. Boxes could be returned in-store or with MyLahore delivery drivers on the next order, with the deposit refunded. Additionally, customers could scan a QR code on the box to earn rewards on the Maybe platform for their returned deposit, or at a return point in the cafe for points and entry into a prize draw.

Evaluation:
The project resulted in 2,500+ cups and food boxes being borrowed. Top performing Café Liza achieved a return rate of 91% and is now serving 70% of hot drinks in reusables cups because of the staff actively promoting Borrow* and converting regular customers. Borrow* will continue beyond the pilot project with plans for expansion into new cafes. Additionally, MyLahore commits to continuing its reusable packaging offer and integrating it into their events and catering operations in Bradford.

However, the uptake of reusable takeaway food tubs was not as successful. Sourcing reusable packaging suitable for all types of food on MyLahore's diverse menu proved difficult, as some items required ventilation while others needed to be fully sealed. This limitation prevented the full menu from being served in reusable tubs. Additionally, the inability to collaborate with delivery platforms restricted the scheme's reach, as most takeaway orders were fulfilled through these platforms rather than MyLahore's own delivery service, resulting in low uptake of the Borrow* scheme.

Lessons learned: The project highlighted the importance of effective messaging and raising awareness to encourage sustainable behaviours. Initially, the focus on cost savings proved valuable, aligning with audience motivations. However, recognising the significance of environmental impact, the project shifted towards environmental messaging to evoke the "feel good factor". Various channels, including in-café materials, social media engagement with local influencers, and community events, played a crucial role in raising awareness, particularly in areas with low public awareness of single-use packaging issues. While digital rewards incentivised some participants, a substantial portion engaged with the system without claiming rewards, presenting that appealing to diverse needs could be more effective.

Source: *Bring It Back Fund — Home, Bring it Back Fund - Impact and Learning | 23rd January 2023 | Hubbub by HUBBUB - Issuu*
Image: *https://issuu.com/hubbubuk/docs/2023.01.22_bring_it_back_fund_impact_report_bb_fin*

Case study 3: Vytal innovative reusable container system

Overview:
Responding to Germany's mandatory reusability law (VerpackG – see case study 4 below) and the escalating global waste crisis, Vytal presents a technological solution: a digital, deposit-free reusable container system. Beyond Germany, Vytal operates Europe's largest reusable packaging network, with over 6,500 partners and serving more than 500,000 users across 14 European countries. This includes eight outlets in Manchester and Sheffield. Vytal's system features a user-friendly app for both customers and food outlets, alongside a diverse range of reusable containers suitable for various dishes.

Evaluation:
Vytal's system offers flexibility, with outlets paying per container filling, resulting in cost savings as the filling fee is typically lower than disposable packaging. Additionally, customers receive automatic charges of 10 euros per bowl and 4 euros per cup if containers are not returned within the 14-day period. The system operates without a minimum contract period or deposits, and is entirely cashless. Vytal supplies containers for all food and beverage types, from sushi to pizza. Additionally, participating businesses benefit from Vytal's marketing assistance which helps restaurants to enhance their visibility. The Vytal App on Google Play boasts over 2,000 five-star reviews, showcasing its functionality, efficiency, and user-friendliness.

However, the system's success relies on market readiness. In Germany, where reusable packaging is mandated by law, and in other EU countries anticipating similar regulations, the market is compelled to adapt. For instance, the European Commission has proposed new packaging rules targeting certain single-use plastic packaging in all catering outlets by 01 January 2030. However, this law does not apply to the UK. Consequently, systems like Vytal risk remaining niche rather than becoming mainstream.

Lessons learned:
Despite the absence of specific laws and regulations regarding takeaway packaging, companies like Vytal offer a convenient global solution for implementing reusable packaging systems. One advantage of being a late adopter of such systems is the opportunity to learn from the obstacles and successes encountered by other countries and regions worldwide. While Vytal's system has gained traction with eight outlets in the UK, there is a need for innovative and creative strategies to expand its implementation further.

Source: Vytal - The sustainable reusable packaging system

Image: https://upstreamsolutions.org/biz-directory/containers-vytal

Case Study 4: Innovative Regulation in Germany

Overview:
Starting on 01 January 2023, the German Government implemented the mandatory reusability law under The Packaging Act. This legislation mandates that caterers with over five employees and a store area exceeding 80 m^2 must offer reusable food or beverage packaging options. Additionally, the law stipulates that the cost of reusable variants cannot exceed that of single-use packaging. Caterers have two options for providing reusable packaging: they can either purchase containers and lend them to consumers or utilise third-party providers.

Evaluation:
The introduction of new third-party providers, such as Vital and GreenBox, has simplified and made the reusability process more convenient. Many German companies, like the grocery store chain Rewe and the cosmetic brand Nivea, are now offering refillable containers for various products. Moreover, the law stipulates informing consumers about the reusable option, which helps to overcome the challenge faced by catering establishments unable to promote reusable choices, particularly prevalent among chain restaurants.

To further push the reusability agenda, on 27 June 2023, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety proposed a draft law with amendments to the Packaging Act. This draft law suggests a complete ban on single-use packaging for fast food, expanding the obligation for reusable packaging to materials beyond plastic, and allowing retail reusable packages to be returned to any outlet regardless of brand. These ambitious proposals underscore the urgency of environmental conservation efforts outlined in the German Packaging Act. While the Act already encourages manufacturers to seek sustainable business practices, the draft law aims to make manufacturers even more aware of their practices. However, the progress of this draft law has been put on hold as there is lack of sufficient evidence that reusable solutions are indeed environmentally advantageous.

Lessons learned:
Germany's experience highlights how introducing new and innovative ideas to address pressing issues can trigger a ripple effect, fostering the evolution of innovative systems to accommodate these ideas. The Packaging Act has supported the growth of successful companies like Vital, fostering innovation while achieving sustainability objectives. Yet, Germany's case also emphasises the importance of testing and researching reusable solutions in order to advice new regulations.

Source: German Packaging Act (VerpackG) 2024 - Fulfillment-Box
Image: https://www.food-service.de/international/int-news/mcdonalds--germany-how-market-leader-mcdonalds-is-introducing-reusable-packaging-54492

Case study 5: Naked Takeaway pilot scheme – award winning reusable container initiative

Overview:
In January 2021, Mold, Caerwys, and Llangollen Town Councils in Wales launched the Naked Takeaway pilot scheme to reduce environmental impact and promote a circular economy. Seven local businesses committed to providing stainless steel stacking tins and aluminium pizza boxes for takeaways, replacing plastic packaging. The transition to reusable containers was supported by a £7,310 grant from the Welsh Government Circular Economy Fund, covering the costs for both customers and caterers.

Evaluation:
Feedback on the pilot scheme has been overwhelmingly positive. The reusable containers not only benefit the environment but also offer practical advantages, such as ease of cleaning and improved food insulation. They can be reused up to 30 times and recycled indefinitely, providing long-term cost savings for businesses. The project received international recognition, winning the prestigious Chiocciola Orange 2021 Award and earning Mold the title of the first UK town to win the Cittaslow accolade. Media coverage, including a feature on BBC1 Wales, has helped raise awareness about reusable takeaway schemes. Although the scheme aimed to save thousands of single-use plastic and cardboard containers, challenges arose during the trial period. The Covid-19 lockdown hindered progress as businesses focused on survival. One business closed, while another found the alternative containers unsuitable for their tourist-heavy market. Data recording issues also made it difficult to track the scheme's impact accurately.

Lessons learned:
Despite these challenges, the pilot scheme demonstrated strong consumer and caterer interest in reusable takeaways, with 85% of surveyed customers expressing willingness to choose reusable options. The project also showcased the effectiveness of aluminium and stainless steel takeaway boxes, challenging the notion that plastic containers are the only viable option for reusable schemes. The Naked Takeaway pilot scheme serves as a successful model for similar initiatives, highlighting the potential for sustainable practices in the food industry. It also presents the importance of collaboration between businesses and local authorities in driving positive environmental change.

Source: *Naked Takeaway/Mold Plastic Reduction*
Image: https://www.bbc.com/news/uk-wales-57454450

7 Annex 1

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8 Annex 2

Market testing questionnaire

Reusable Takeaway Food Packaging – Kings Heath Feasibility Study

About the business

1. What best describes your business

- A takeaway restaurant
- A restaurant
- A pub
- A café

- Other *(Please specify)*

2. What is your business size?
- 1-5 employees
- 6-10 employees
- 10-20 employees
- 20+ employees

Current Packaging Usage:

3) Do you provide takeaway option?
- Yes
- No

4) How many single-use packaging (plastic containers, paper bags, etc.) do you currently use for takeout orders on a weekly basis?

- 1-20
- 21-60
- 61-100
- 100+

5) What are the main types of packaging materials you currently use for takeout orders?

- Paper
- Plastic
- Cardboard
- Other *(please specify)*

6) Do you think your current takeout packaging approach has any negative impacts on the environment?
- Yes
- No
- I'm not sure

Interest in Reusable Scheme:

7) Would you be interested to offer reusable packages that customers can return for reuse?
- Yes
- Maybe
- No

8) If you were to participate in a reusable package scheme, what benefits would you like to gain out of it?
- Marketing
- Cost saving
- Meeting customer needs
- Collaborating with other outlets locally

- Saving the environment
- Making our neighbourhood cleaner
- Other _____

9) Do you think your team would be willing to offer reusable packages to customers?
- Yes, they would be keen to do it
- They would do it if they had to
- No, they would prefer to stick to single use packages

10) Why do you think so? *(feel free to skip this question if short on time)*

Logistics and Operations:

11) Would it be a challenge for you to store reusable packaging at your outlet?
- Yes
- No

12) Would it be a challenge for you to clean reusable packaging at your outlet?
    - Yes
    - No

13) Do you have a dishwasher?
- Yes
- No
- No, but I would be willing to install one

14) Do you have any concerns about cleaning reusable packaging?
- Yes, I have concerns
- No, we can clean them at our outlet

15) Please explain any concerns, if you have time:

16) Would you rather clean the reusable packaging at your premises or have a company to do it for you?
- We would rather do it at our facilities
- I would like somebody to collect them and replace with the clean ones

17) Please explain your answer to the previous question (feel free to skip if short on time)

Customer Perception and Demand:

18) Do you think your customers would be willing to use reusable package?
- Most of them would use it
- Some of them would use it
- They would stick to single use packaging

Cost and Investment:

19) Would you be willing to purchase reusable packaging yourself?

- Yes, I would pay for them myself
- I would pay if I knew it was cheaper than single use packages
- I would pay if I knew it helps to keep our neighbourhood clean
- I would pay if I knew that's what our customers want
- No, I would not pay for them myself

20) Would you be open to rewarding customers who use reusable packaging instead of disposable ones? For example, by offering a free drink after every 10 purchases?

- Yes
- No

21) Please explain your answer to the above question. *(Feel free to skip if short on time)*

Collaboration and Partnership:

22) Would you want to collaborate with other outlets in your area in this scheme?

- Yes
- No, I would not care

23) Please explain your answer to the above question *(feel free to skip if short on time)*

-END-