The University of Manchester
Sustainable Consumption Institute

HENRY ROYCE INSTITUTE

Everyday Flexible Plastic Packaging Recycling Assembly

Briefing paper: organisational challenges, priorities, and required responses

Dr Torik Holmes
Assembly Convenor
Hallsworth Research Fellow
with focus on External Engagement and Impact and Sociology
The Sustainable Consumption Institute (SCI)
University of Manchester
torik.holmes@manchester.ac.uk

In collaboration with
Michaela Kiernan and Dr Jair Esquivel
Sustainable Materials Innovation (SMI) Hub, Henry Royce Institute
University of Manchester
smi.hub@royce.ac.uk

Contents

To cite this report, please use:
Holmes, T. 2025. Everyday Flexible Plastic Packaging Recycling Assembly Briefing Paper: Organisational Challenges, Priorities, and Required Responses, 10.5281/zenodo.17434530

Introducing the Assembly

It is estimated that 215 billion items of flexible plastic packaging, equating to 895 thousand tonnes, are placed on the UK market each year[1]. This placement is, in part, due to product lightweighting and part of well-meaning agendas to shrink carbon footprints and reduce the use of plastics. However, while flexibles represent 27% of UK consumer plastic packaging, only an estimated 7% are recycled annually[2]. Moreover, those that are recycled tend to go into bin bags, agricultural wrap, and plastic lumber, thus failing to achieve the higher closed loop principle of the circular economy. As acknowledged by industry and policy, the challenges run deep, cutting across packaging design, manufacturing, branding, retailing, waste management, collection, sorting, and reprocessing[3]. It is accepted that crosscutting responses are demanded. The 'Everyday Flexible Plastic Packaging Recycling Assembly' responds to this demand, providing a unique independent forum for in-depth professional knowledge exchange and development. It involves stakeholders from across the value chain, including representatives from small and medium-sized enterprises, multinational corporations, universities, local government, third sector and other organisations, with the shared objective of helping to accelerate sustainable transitions concerning the design, use, and recovery of flexible plastic packaging across the UK.

This briefing paper provides an overview of the first assembly's format and the findings generated in response to the intentionally provocative question: **what will it take to make the UK world-leading on flexible plastic packaging recycling?**

Assembly format and design

The first in-person assembly took place on 13th August, between 10:00 and 15:00, at the Alliance Manchester Business School (AMBS), The University of Manchester. There were 25 participants, involving a range of researchers and stakeholders from across the flexible plastic packaging value chain. The assembly was designed around three interlinked sessions, focused on eliciting discussion on key organisational **challenges**, shared **priorities**, and desired **responses** needed to accelerate UK sustainable flexible plastic packaging transitions.

Session 1 – Sharing and collating organisational challenges

Divided into two groups, participants spent 5-10 minutes completing the assembly challenge cards. This involved writing down:

1) the title of a key challenge regarding flexible plastic packaging recycling
2) the area(s) of the value chain the challenge concerns
3) a short note explaining the issue

Following this, participants introduced themselves and presented their identified challenges. Each group then selected a representative to summarise the key themes and share them with the wider group.

Session 2 – Putting organisational challenges in their place and discerning priorities

Again, working in two groups, participants spent the first half of Session 2 organising the collated challenges according to whether they are best defined as political, economic, infrastructural, material, technical, social, or 'something else'. These dimensions were inspired by the dominant framing of problems in existing industry and academic publications on plastic waste. The groups were given scope to decide on how they worked with the dimensions, adopting a matrix, hierarchical list, or mix of these approaches. Having mapped the collated challenges, the groups selected five standout issues, ranking them according to highest and lowest priorities (i.e., 1 to 5).

Session 3 – Pinning down organisational responses

In the third and final session, participants focused on distilling, in one-to-two sentences, the responses required to meet the ranked priority challenges.

Key findings: organisational challenges, priorities, & responses

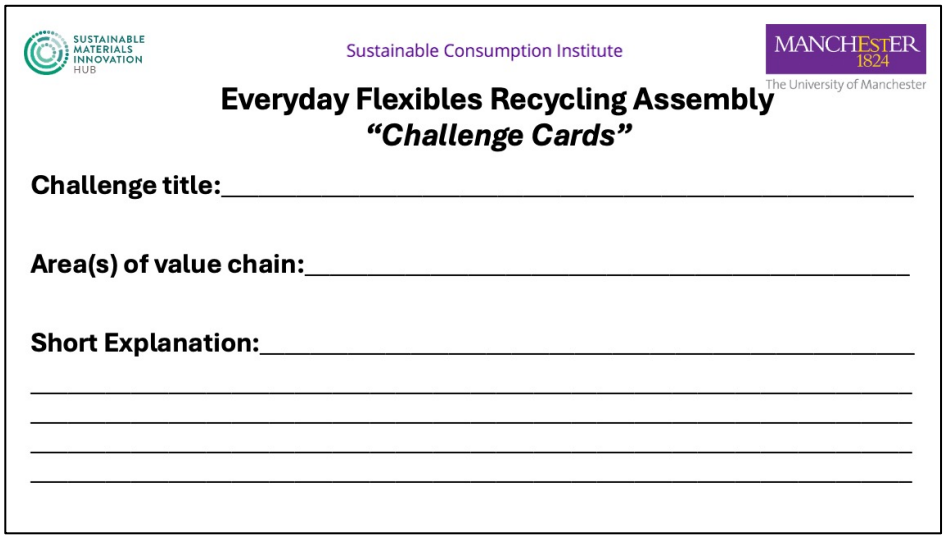
41 challenges were outlined on challenge cards in **Session 1**. These are clustered and summarised here according to overlapping areas of concern.

Challenge cluster 1: lack of UK infrastructure

- **13 challenge cards** regarded UK infrastructure, inc., collection, sorting, and mechanical and chemical reprocessing.

- **Challenge titles** cut across: collection, sorting, mechanical and chemical reprocessing; producing high-quality recyclate; poor consumer confidence; and developing understanding of what it will cost to deliver the infrastructure needed to recycle post-consumer flexibles.

- **Short explanation**: There is a clear lack of infrastructural capacity across the UK to collect, sort, and recycle post-consumer flexible plastic packaging[4]. With mandated collections due by 2027 under the rollout of *Simpler Recycling*[5] across England, there is a risk that materials will be collected without adequate infrastructure in place to sort, store, and reprocess them. Infrastructural investment faces the difficult challenges presented by flexible plastic packaging, including the mixed 2D and 3D presentation, and varied material composition, which make it difficult to determine the appropriate design specifications for new facilities. In terms of reprocessing, a key challenge lies in figuring out the right mix of mechanical and chemical recycling, and relatedly, how to scale innovation and attract investment. This challenge is wrapped up with figuring out how to upscale the production of food-contact approved recyclate. The continued lack of UK infrastructure risks undermining public confidence and compliance, as householders may come to believe that recycling flexibles is futile, as they are just backed up in warehouses, incinerated, sent abroad, littered, or put to less than circular ends (i.e., downcycled).


SUSTAINABLE MATERIALS INNOVATION HUB

Sustainable Consumption Institute

MANCHESTER 1824
The University of Manchester

Everyday Flexibles Recycling Assembly
"Challenge Cards"

Challenge title:_____

Area(s) of value chain:_____

Short Explanation:_____

Challenge cluster 2: challenging material stream

- **10 challenge cards** focused on the challenging material composition of post-consumer flexible plastic packaging.

- **Challenge titles** incorporated: complexity; multi-layer materials and films; high volume; light weight; contamination; and design for recyclability.

- **Short explanation**: Flexible plastic packaging commonly involves the use of multiple, layered materials, which are high in volume and light in weight, posing a series of challenges for collection, sorting, and reprocessing. For instance, mechanical recycling typically involves melt filtration, yet multi-layered materials do not melt at conventional processing temperatures, causing filters to become blocked. Accordingly, flexibles are sometimes described as contaminated by design. A challenge lies in encouraging packaging designers to adhere to consistent, 'design for recyclability' guidelines. This is no easy task. There are many established guidelines already in play and these are not always aligned. Moreover, mono-materials do not always fulfil the same functionality as multi-material packaging formats. The reconfiguration of packaging design practices in line with supply-chain shifts thus forms an overarching challenge, as it does more broadly regarding waste reduction and reuse. How best to balance the fruits of product light weighing, from a carbon footprint perspective, with recyclability remains another overarching issue.

Challenge cluster 3: broken end markets

- **6 challenge cards** concerned the lack of end markets for flexible plastic packaging.
- **Challenge titles** included: end use; having an end market; demand for recycled outputs; a marketplace free of crime; cheap imports; and, investible conditions.
- **Short explanation**: UK end markets for flexible plastic packaging are not only insufficient but broken. It commonly remains cheaper to incinerate flexible plastic packaging, export it for reprocessing, use virgin materials, or to import unverified recyclate from abroad. The latter point relates to unscrupulous, false claims, amounting to criminal practice. Such claims and wider market conditions negatively affect UK investment in innovation and infrastructure.

Challenge cluster 4: bad data!

- **2 challenge cards** focused on the poor quality of waste and recycling data and related reporting.
- **Challenge titles** were to the point: reporting is based on bad data; poor quality data and lack of data skills.
- **Short explanation**: The quality of reporting practice and the data generated regarding plastic packaging and waste management remains poor. Moreover, the design of the recently announced EPR recyclability assessment methodology (RAM)[6] and other reporting mechanisms, including the packaging waste recovery note (PRN) and packaging waste export recovery note (PERN) systems, does little to encourage and facilitate the use of primary, accurate, real-time data. In brief, substantial organisational effort, resources, and energy go into producing poor data as part of fulfilling political obligations. Improving data and accounting practice thus remains a critical challenge. A challenge that is as much about policy, infrastructure and systems, as it is about people and an upskilled workforce.

Other noted challenges included: getting the public to understand what counts as flexible plastic packaging, with the common use of other adjectives, including 'soft' and 'films', to describe the stream, complicating identification; attracting and upskilling the waste management workforce; the wider economic and regulatory environment; and, competing with other social, economic, and political priorities (i.e., the cost of living crisis; fears over national security and war; climate change).

In **Session 2.1**, when mapping the 41 challenge cards according to whether they were political, economic, infrastructural, material, technical, social, or 'something else', the two groups adopted slightly different approaches. **One group** saw the **political** and **economic** as forming a bedrock from which other dimensions were derivative. They also added '**data**' and '**environment**' as key framing dimensions. The other group instead chose to cluster their challenges around specific dimensions, without the primary focus on the **political** and **economic**.

Priorities and required responses

Three key priorities and related responses emerged from the work and discussion undertaken as part of **Session 2.2** and **Session 3**.

1. Legislation: improving and strengthening the UK's legislative bedrock

It is crucial to improve and strengthen UK legislative frameworks in ways that encourage industry investment in innovation and infrastructure. The change required is wide-ranging and runs deep. **It is crucial that legislative change:**

- Remains agile, making sure to align with and complement legislation unfolding across Europe (i.e., Packaging and Packaging Waste Regulation (PPWR)) and beyond (i.e., UN Global Treaty to End Plastic Pollution). Failure to do so will result in continued inefficiencies, which frustrate organisations and slow down wider-ranging, geographically stretchered, upscaled and accelerated sustainable transitions.

- Acknowledges and addresses current legislative pitfalls, in ways that encourage UK based innovation and investment. Specific pitfalls include, for example:
  - Tackling the fraudulent use of imported feedstocks that falsely claim to be recyclate to avoid paying the UK Plastic Packaging Tax (PPT);
  - Making sure it does not pay to export or incinerate flexible plastic packaging, over having it recycled in the UK due to the design of the PRN and PERN systems;
  - Mandating funds produced via EPR are ploughed back into recycling infrastructure, including that crucial to mechanical and chemical reprocessing.
  - Keeping infrastructural standardisation concerning collection and sorting a guiding principle of Simpler Recycling. As it stands, opportunities for localised interpretations of policy mean standard ways of collecting and sorting materials, and with these the benefits of quantity and quality, may not be maximised.

- Drives toward the widescale production and circulation of Food Standards Agency (FSA) food-contact approved recyclate from flexible plastic packaging waste streams. Without this focus, closed-loop circularity will not be achieved.

- Works toward mandating consistent design for recyclability guidelines, reuse, and ban problematic materials.

- Improves data standards, with the aim of making sure that the realities of what is "happening on the ground", as part of day-to-day packaging and waste management activities and supply chain dynamics, is efficiently and effectively captured and used to recoup tax and reward more sustainable practice.

2. Innovation: identify and back innovations, helping to upscale and accelerate UK sustainable transitions

System-wide collaboration and innovation is needed to upscale UK post-consumer flexible plastic packaging recycling. **This innovation should:**

- Be supported and guided by the strengthening of the UK legislative bedrock.
- Involve and develop the full expertise of UK research and innovation capacity, harnessing the potential of multiple universities, for example, as part of tackling flexibles recycling challenges in consort.
- Go beyond talk, involve practical engagement and work toward agreed, collective ends, such as accelerating the circulation of food-grade recyclate.
- Tackle, head-on, the challenges presented by “high hanging fruit”, including multi-material packaging formats, by investing time and resources into developing and delivering high quality sorting and reprocessing infrastructure.
- Facilitate AI implementation and integration to maximise the quality of sorting, reprocessing, and data collection, tracking, and sharing. Without the latter, standardisation and upscaling will not transpire as best it could from a sustainability perspective, with inefficiencies and fraud remaining a key problem.
- Keep consistently mandated and applied guides to recyclability at the forefront of any innovations in the space of flexible plastic packing recycling.

3. End markets: making flexibles recycling make sense and therefore add social, economic, and environmental value

The creation of stable and increasingly sustainable end markets for post-consumer flexible plastic packaging is crucial. **To get this:**

- The types of agile legislative changes already discussed need to be implemented.
- Likewise, institutional and financial investment in innovations, along the lines discussed, which make sure, for example, high quality recyclate, much of which should be of food-grade quality given primary packaging applications, need backing.
- Organisational resources and money also need to flow into making post-consumer flexible plastic packaging recycling pay: socially, economically, and environmentally. This necessarily involves acknowledging the full cost of making sure flexible recyclables are recycled in the UK and paying the price to cover this, over allowing the costs of inaction to pile up.

Future steps...

The first 'Everyday Flexible Plastic Packaging Recycling Assembly' got as far as determining key challenges, three priority areas, and required responses. The second assembly will focus on what it will take in practice to bring about the desired change, with attention paid to examples of best practice in plastics recycling and what can be learnt from these.

Get in contact with Torik and the team if you want to get involved, via torik.holmes@manchester.ac.uk.

MANCHESTER 1824
The University of Manchester
Sustainable Consumption Institute

HENRY ROYCE INSTITUTE

SUSTAINABLE MATERIALS INNOVATION HUB

References

1. https://www.suez.co.uk/-/media/suez-uk/files/publication/suez-flexcollect project-interimreport-2023.pdf?h=12&w=12&v=1&d=20240130T111002Z
2. https://www.wrap.ngo/resources/guide/creating-circular-economy-flexible-plastic-packaging
3. https://flexibleplasticfund.org.uk/flexcollect-report-2025
4. https://www.recoup.org/2022/10/24/recycling-plastic-packaging-in-the-uk-who-owns-the-bottleneck/
5. https://www.gov.uk/government/publications/simpler-recycling-in-england-policy-update/simpler-recycling-in-england-policy-update
6. https://www.gov.uk/government/publications/recycling-assessment-methodology-background-and-definitions/recycling-assessment-methodology-stages-of-recyclability-and-definitions