

Glass Packaging Forum Submission – Environment Select Committee

INTRODUCTION

1. The GPF is an industry led voluntary product stewardship scheme, which is accredited by the Ministry for the Environment, working to ensure that as much container glass as possible is diverted from landfill. The GPF was established in 2006 prior to the enactment of the Waste Minimisation Act 2008 and then was accredited under the Act in 2010. The GPF achieved re-accreditation to 2024 in 2017.
2. The GPF has over 100 member brands including producers, product manufacturers and retailers of glass, who contribute voluntary levies based on a cost per tonne of glass as it moves through the supply chain. The objectives of the GPF are to:
 - Minimise use of resources in design and specification of glass packaging:
 - Provide funding to increase the recovery of glass containers and improve the glass recycling rate by diverting waste container glass from landfill for use in manufacture of new glass containers or for alternate use:
 - Provide consumer awareness and education programmes:
 - Reduce the carbon footprint of glass packaging:
 - Support research into improving the collection of glass and finding alternative uses and specifications for the recovered materials.
3. The Glass Packaging Forum (GPF) fully supports the principles of product stewardship and actively encourages its communities and industry to take responsibility to steward products and packaging at end of life. We recognise the intent of the proposed container return scheme to reduce (plastic and marine) litter and increase recovery rates of beverage containers yet maintains that glass is unique and different to plastic packaging. As such glass should be considered separately and differently for reasons that are outlined in this submission.
4. Glass is superior to other packaging materials as it is 100% recyclable and infinitely recyclable with no loss in quality or purity. Glass has a longer shelf life than any other packaging material as it does not deteriorate, corrode, stain or fade. It is easily cleaned, sterilised and reused. It forms a natural barrier, impermeable to oxygen allowing the flavours and aromas of its contents to be preserved.
5. We advocate for glass out of any container return scheme (CRS) as:
 - Glass containers do not pose the same litter issue as plastic packaging
 - There would likely be unforeseen consequences due to glass' unique supply chain complexities
 - There is an existing successful product stewardship scheme which stewards all container glass at its end of life



LITTER

6. The primary aim of CRS is to minimise on-the-go beverage container litter issues, specifically its impact on the marine environment. The environmental harm caused by glass is minimal, particularly when compared to plastics. Glass, in the marine environment, will over time eventually be broken down into sand by natural processes. Glass beverage packaging is non-toxic and does not contribute to leachate or landfill gas creation.
7. Glass items do not form a significant part of the litter stream. In the 2017/2018 National Litter Survey, glass beverage containers comprised only 2.5% of all visible litter in the litter count, in comparison to all other beverage packaging, which made up 10.1% of all litter (National Litter Survey Litter Field Count 2017/18 – Waste Not Consulting).
8. Lightweight plastics can also be borne much farther by wind and water and they will breakdown into harmful microplastics. Plastics make up an estimated 80-85% of marine litter and present a serious ecological threat.

SUPPLY CHAIN

9. There are a number of factors within the glass recycling supply chain that add complexity and may have unforeseen consequences.
10. Glass in a CRS may have the perverse effect of undermining recycling of container glass. Other (non-beverage) container glass would not be captured by a CRS, so these items would be at risk of going to landfill where council chose to reduce the level of recycling investment due to the introduction of a CRS.
11. There are existing capacity constraints in the glass recovery supply chain, which are compounded with co-mingled glass collection, particularly in Auckland.
12. As the majority of glass packaging is used in the home most glass is collected in kerbside collections provided by local councils. Container glass is also collected directly from hospitality business and a small proportion from public recycling bins and community recycling centres.
13. Many collectors use the source separated collection methodology, which means glass is kept separate from other recyclable materials such as paper, cardboard and plastic. The glass is then colour sorted, prior to being transported to New Zealand's only beneficiation plant at VISY in Auckland. Recycled glass must be beneficiated before it can be recycled in O-I's manufacturing process. Beneficiation removes any contaminants including labels, lids and neck shrouds and then crushes the glass to a uniform size for use in the manufacturing process. This system of collection is the most effective and efficient as it provides the highest quality cullet as well as returning the largest proportion of collected material to be recycled.
14. Glass collected using the co-mingled methodology (eg Auckland collections) must be separated, colour sorted and beneficiated in a different way to glass that has been colour sorted at the kerbside. To separate co-mingled materials collected by Auckland Council, the VISY Materials Recovery Facility (MRF) systematically separates materials collected in kerbside recycling using machines. Once separated from other recyclables, co-mingled glass

TOTAL CAPTURE
RATE FOR
2017-2018 WAS

62%



is then beneficiated and machine- sorted into flint (clear), amber and green glass using optical sorting technology.

15. Machine colour sorting has limitations, as some glass is too small to be identified by the machinery and, compared to manual sorting at the kerbside, results in approximately 50% waste. Co-mingled material is also processed at a much slower rate than manually colour sorted cullet, placing a capacity constraint on the VISY beneficiation plant and increasing beneficiation costs.
16. The flint glass from Auckland collections must then be sent to the fine grind plant to eliminate any contamination by heat-resistant glass, which cannot be detected in the beneficiation plant. Colour-mixed glass that is under 8mm in size must also be sent to the fine-grind plant as it cannot be colour sorted by beneficiation machinery. This colour mixed fine ground glass cannot easily be used in glass remanufacture and can only make up a very limited proportion of cullet going to O-I's furnace.
17. The cost and time it takes to separate, colour sort, grind and beneficiate the glass from co-mingled collection adds significant complexity and cost to the glass recovery system and as a result means that the VISY beneficiation plant is close to capacity.
18. Cullet (recovered container glass) used in the manufacture of glass containers has a limited onshore market (O-I is only one onshore manufacturer of glass containers) and limited offshore market as cullet is a low value commodity and given its significant weight (compared to plastic) there is no export market. The cullet that O-I does not use will need to find an alternate market, or perversely, it will end up in landfill.
19. Demand for specific coloured cullet is driven wholly by O-I's customers' demands ie only green cullet can be used when manufacturing green glass. O-I works closely with key stakeholders and the GPF to regulate the amount of glass of a particular colour going to the furnace. Storage is limited throughout the supply chain and particularly limited onsite at O-I.
20. Once glass has been beneficiated at VISY, it must be delivered immediately to O-I for manufacture.
21. Extending the capacity within the supply chain would require an investment in the vicinity of \$55M (\$25M for a new beneficiation plant and storage and \$30M for a new furnace).

GLASS PACKAGING FORUM SCHEME

22. Glass is already a circular resource in New Zealand. The supply and recovery chain outlined is supported and managed by the Glass Packaging Forum (GPF).
23. As an existing glass recycling programme, the GPF currently manages glass beverage (and other) packaging effectively; having diverted 1.9M tonnes of glass from landfill since it was first accredited in 2010. The GPF has a targeted recycling rate of 82% by 2024 and as at September 2018 had achieved 62% capture of total glass to the New Zealand market.
24. In the last financial year, the GPF provided over \$422K in funding grants to projects that effected over 10K tonnes of glass to the furnace. Since its inception, the GPF has provided over \$3.5M in funding to community, council and commercial recyclers (refer appendices for further detail).



CLOSING

25. For the reasons outlined above, the GPF advocates glass out of any container return scheme (CRS) as:
- Glass containers do not pose significant litter issues;
 - Glass unique supply chain complexities;
 - Glass already has a successful product stewardship scheme.
26. We support practical evidence based solutions. Specifically:
- Litter and marine harm reduction
 - Kerbside and public place recycling
 - Simple solutions for consumers
 - Cost-effective, high-value solutions
 - Evidence-based policy
 - Improving existing solutions
 - Industry-led solutions
 - Onshore infrastructure

APPENDICES

1. FUNDING CASE STUDIES

- Logistics
- Smart collection methods

2. INVESTMENT MAP

FUNDING CASE STUDY - LOGISTICS

Historically glass recycling in the South Island has been difficult due to the distance to the furnace. The Kaikoura earthquake in 2016 compounded the issue for South Island glass recycling. From this problem rose a solution. With GPF funding, 5R Solutions, based in Christchurch, developed and built a custom loading system with built-in bottle breaker to speed up the processing of recovered container glass at their Christchurch hub. The machine streamlines the glass breaking and loading process, prevents double handling of the glass and allows for a greater volume to be transported per container, which are then transported via road and sea to Auckland.

This has allowed a 'hub and spoke' transportation model to be implemented with the 5R Solutions Christchurch hub receiving glass from all over the South Island. Further GPF investment to implement glass storage bunkers in more remote locations to counter seasonal fluctuations and transport limitations has improved the flow of South Island glass to O-I via the 5R hub.

The 5R Solutions facility has provided South Island regions more affordable access to recycling glass, which has resulted in higher value recycling rather than lower value uses like roading aggregate or landfill cover. 5R is now looking at expanding its operation to be able to handle more glass through their facility.

Highlights:

- GPF funding supported the build of a unique bottle breaker system
- Improved handling of glass ex South Island
- Increased volume of glass per container ex South Island
- O-I reports 26,000 tonnes of glass ex South Island in 2018
- Equates to 160% increase in glass since 2016

FUNDING CASE STUDY – SMART COLLECTION METHODS

In March 2018 Tauranga residents lost access to kerbside glass recycling following the decision by private waste companies to stop collecting glass at the kerbside. Following public outcry, the Tauranga City Council (TCC) approached the GPF and Ministry for the Environment (MfE) for funding to enable it to implement a glass kerbside recycling scheme. The GPF advocated source separated collection, meaning residents would be provided with a glass-only bin and the glass would be colour sorted on the collection truck. This would provide high quality colour sorted container glass which does not contaminate other recyclables. The GPF responded with funding of \$165,000 (its largest grant awarded to date). This allowed TCC to implement a kerbside glass collection in October of the same year. MfE recently confirmed its support of the project with a \$254,000 investment.

The scheme has provided ratepayers with a container for glass recycling. Each container has a RFID chip, which allows the TCC to collect data on its scheme. To date TCC has seen a 97% participation rate in the collection scheme and figures to date show glass volumes are double that being diverted from landfill a year ago.

Highlights:

- Successful implementation of a source separated glass recycling service in response to ratepayer demand
- Increase in quality and quantity of glass collected for recycling
- Smart (RFID chipped) collection containers allow for robust data capture
- Support of the scheme by both GPF and MfE in the form of substantial funding
- 97% participation rate amongst ratepayers
- Model collection service compared with co-mingled collection

GLASS PACKAGING FORUM INVESTMENT BY REGION 2006-2019



Total spend: \$3,472,834

