



British Glass

Glass Recycling for Scotland

Container Glass Production in Scotland

- 2 Glass manufacturers in Scotland
 - 2 billion containers/annum^[1]
 - 600,000 tonnes/annum^[1]
 - 65% clear glass mainly for the spirit sector
 - 25% of UK container production
- Scottish glass manufacturers are currently using up to 90% recycled glass in the production of new green bottles which is 30% of container production in Scotland
- Empty glass containers are imported into Scotland for the food and drink filling sector – from England and near-EU suppliers
- Spirit sector is the major demand for glass containers, 85%^[2] is exported as filled product, followed by beer, soft drinks and food sector
- Scottish glass manufacturers require more clear recycled glass, a majority of the glass from DRS will be green and brown, clear glass from food bottle and jars will be lost

ArdaghGroup 



[1] Calculated from Glass Global data 2017

[2] HMRC export data 2017

Placed on Market (POM) in Scotland

- UK POM 2017
 - 2,296 k tonnes per annum^[1]
 - **8.5 billion containers**
- Using population data and sales unit data for Scotland
 - 227,400 tonnes and **831 million units**^[2] of glass containers per annum
 - Beverage bottles (DRS glass)
 - 177,300 tonnes (78%)
 - **591 million units (71%)**
 - Food and non-food bottles and jars (non-DRS glass)
 - 50,100 tonnes (22%)
 - **240 million units (29%)**
- Split of colour

	Total POM		DRS		Non-DRS	
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)
Clear	109,496	48%	61,901	35%	47,595	95%
Coloured	117,904	52%	115,399	65%	2,505	5%
Total	227,400	-	177,300	-	50,100	-

Container type	Number of containers (million units)
GlobalData (BBPA) proxy	754
GlobalData (population proxy)	618
Euromonitor (FEVE member assessment)	591
Scottish Government (Kantar)	333

[1] Wrap GlassFlow 2025
 [2] Euromonitor data 2017

Current Glass recycling in Scotland

- 67% UK Glass recycling - driven as the obligated target
- 64% Scotland glass recycling rate^[1]
- PRN will remain until new UK EPR, producer paying twice (PRN and DRS responsibility)
- ZWS reported in 2012 that 70% of drink (beverage) bottles are **already** recycled in Scotland^[2]
- ZWS reported in 2017 that **clear glass was most dry recyclable material in residual waste** from Scottish households^[3]
- More than 25% of glass put on the market in Scotland will fall outside DRS collection schemes, of which a majority will be clear glass in the form of food jars, for the production of spirit bottles and food jars in Scotland
- **Collection is not recycling**
- Glass is already collected in Scotland from households and hospitality sector by an effective system, due to investment over recent years in the whole infrastructure, including collection, logistics, sorting and processing equipment
- Current sorting equipment is capable of sorting kerbside co-mingled collected glass of sufficient quality for remelt, and at a sustainable cost
- Remelt back into new glass containers (circular) needs to minimise crushing and contamination to maximise yield, they need to be collected whole to maximise recycling

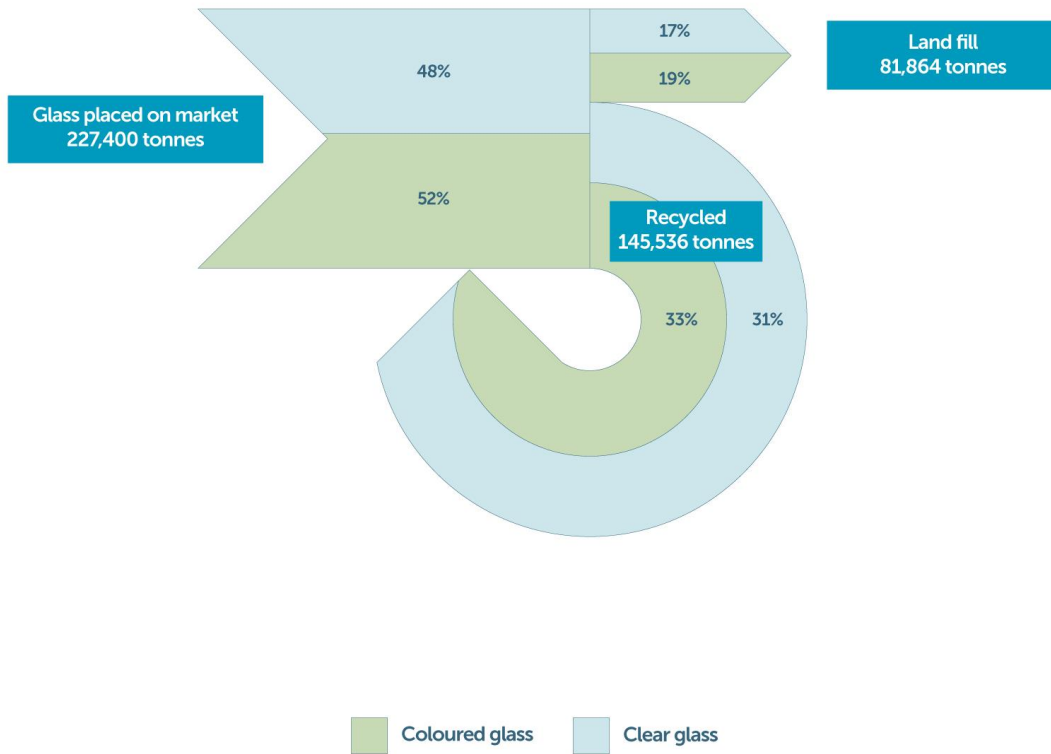
[1] https://www.gov.scot/binaries/content/documents/govscot/publications/foi-eir-release/2019/05/foi-19-01048/documents/foi-19-01048-document1/foi-19-01048-document1/govscot%3Adocument/DRSPB16_03a%2BThe%2BCase%2Bfor%2BGlass%2Breport.pdf (ZWS, 2018)

[2] https://www.zerowastescotland.org.uk/sites/default/files/SPRN_0.pdf (ZWS, 2015)

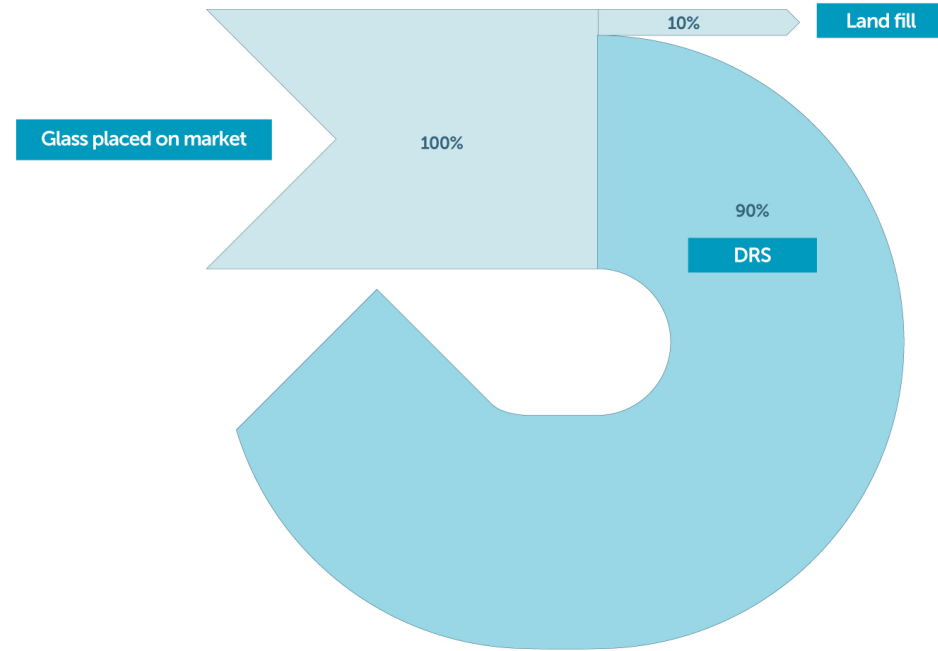
[3] Table 6.1. <https://www.zerowastescotland.org.uk/sites/default/files/The%20composition%20of%20household%20waste%20at%20the%20kerbside%20in%202014-15.pdf>.

Glass Recycling in Scotland

Glass recycling in Scotland – now



DRS perception



Proposed DRS Collection Points for Glass

- Reverse vending machines (RVM) that collect whole bottles are known as ‘softdrop’, will store around 200 whole glass bottles
 - Approximately 60 kg of glass containers
 - RVM glass bins will need to be emptied frequently, potentially multiple times per day, compared to other materials
- In comparison, a RVM (0.31 m³)
 - 2,050 aluminum cans
 - 765 plastic bottles
 - 200 glass bottles (soft drop)
 - 970 glass bottles (crushed)
- Therefore material values are:
 - 200 glass bottles @0.3p/bottle = £0.60
 - 2050 aluminium cans @1.4p/can = £28.70
 - 765 500ml PET bottles @0.3p/bottle = £2.30
- The crushing of PET bottles and aluminium cans is a key requirement to eliminate fraud and maximise storage capacity



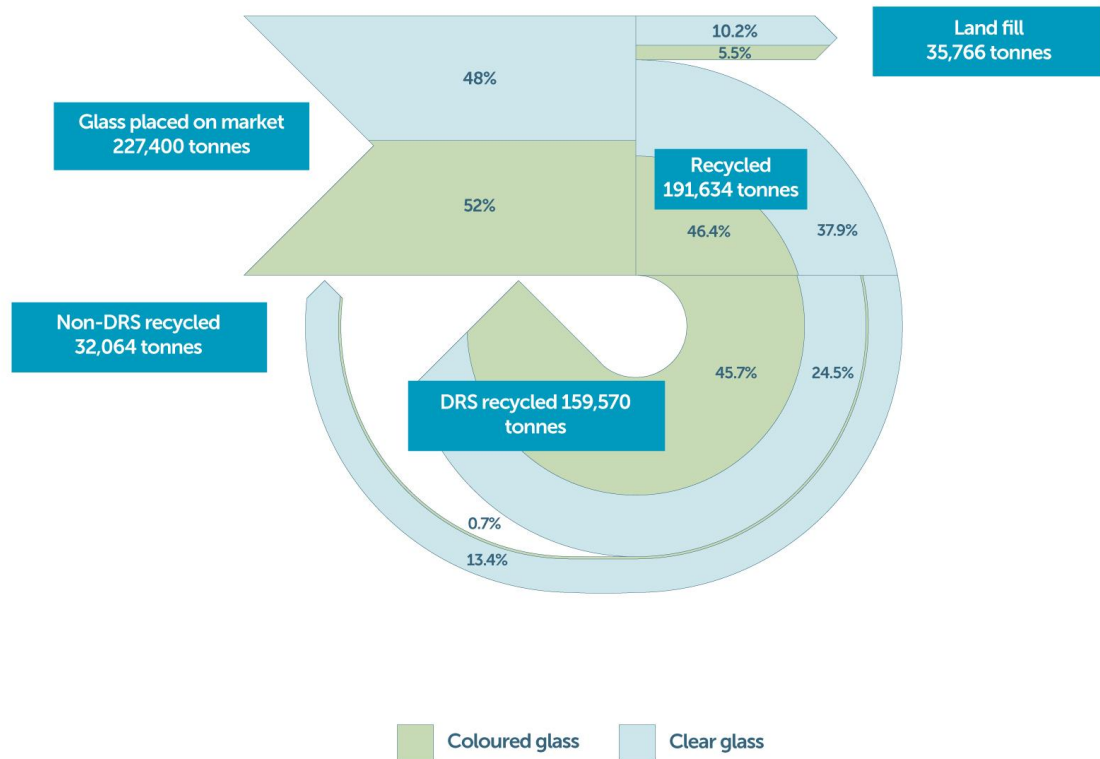
Proposed DRS Collection Points for Glass

- A majority of collection points will be via small retailers
- Manual take back
 - Bags or crates – 12 to 24 bottles
 - Restricted by manual handling
- Consumer returning
 - Wine & spirit bottles ≈ 500g
 - Beer 500ml ≈300g & 300ml ≈200g
- Beverage bottles will not be crushed on premises
 - Glass, plastic and cans received as is
- Secure containment to avoid fraud
- Health & Safety concerns
 - Food preparation
 - Personal safety

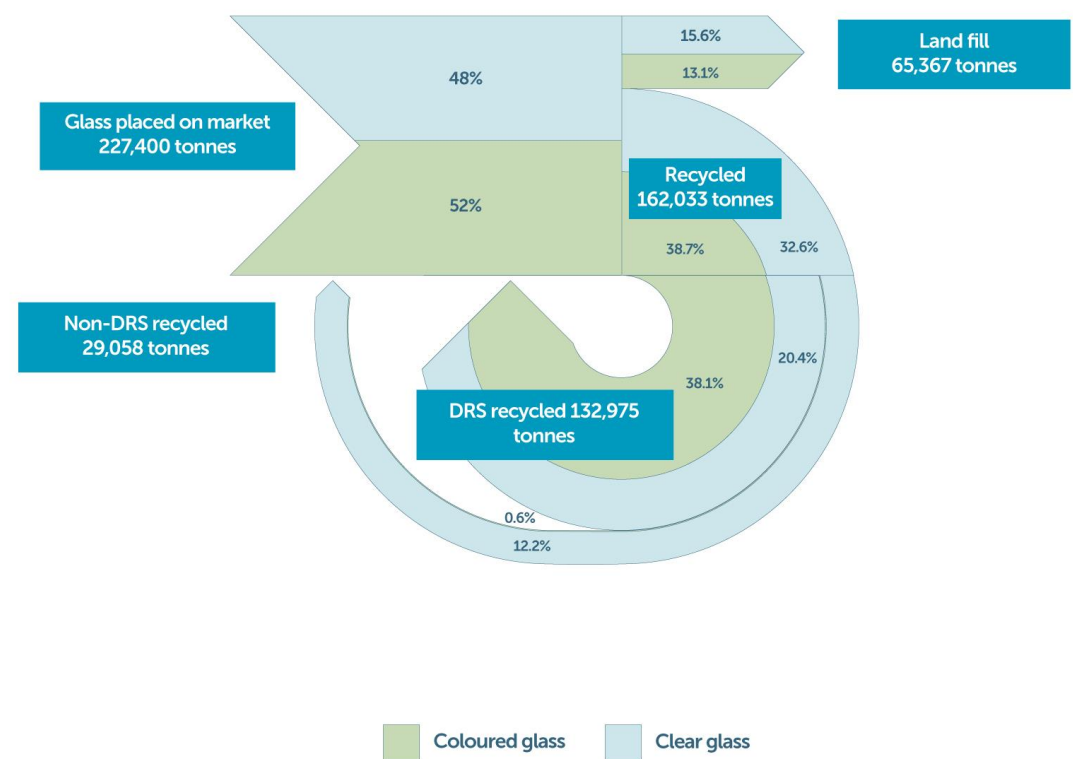


DRS Glass Recycling in Scotland

DRS – Zero Waste Scotland

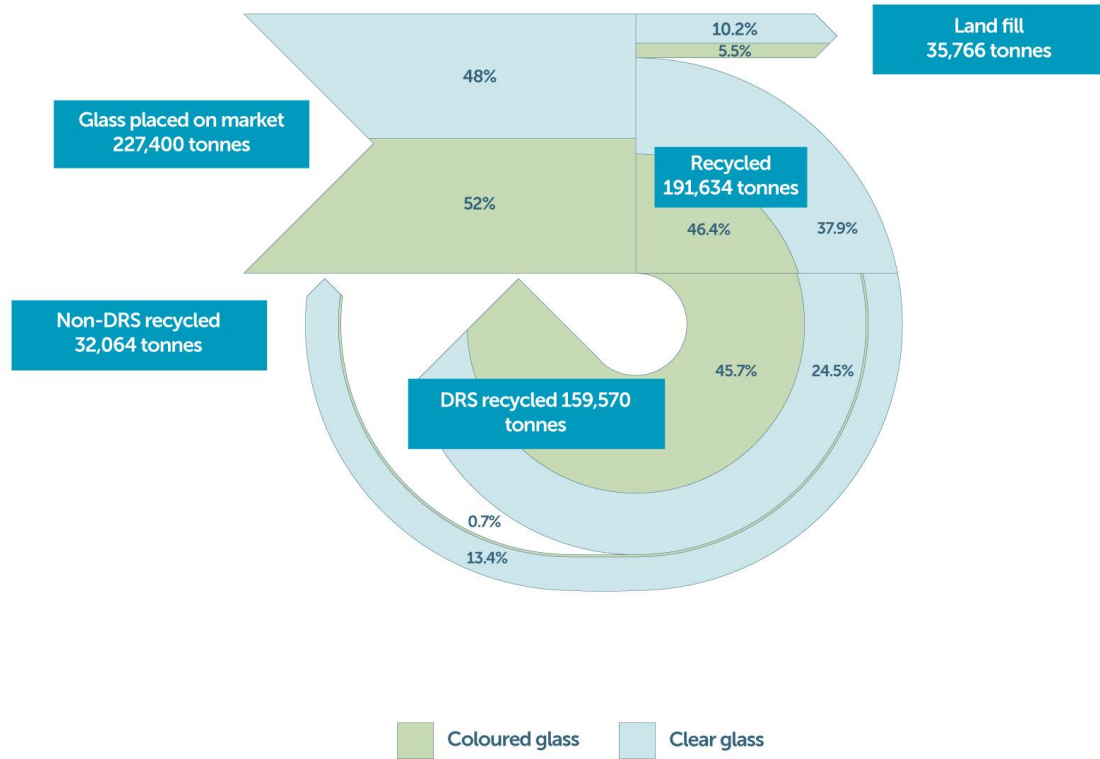


DRS – British Glass best

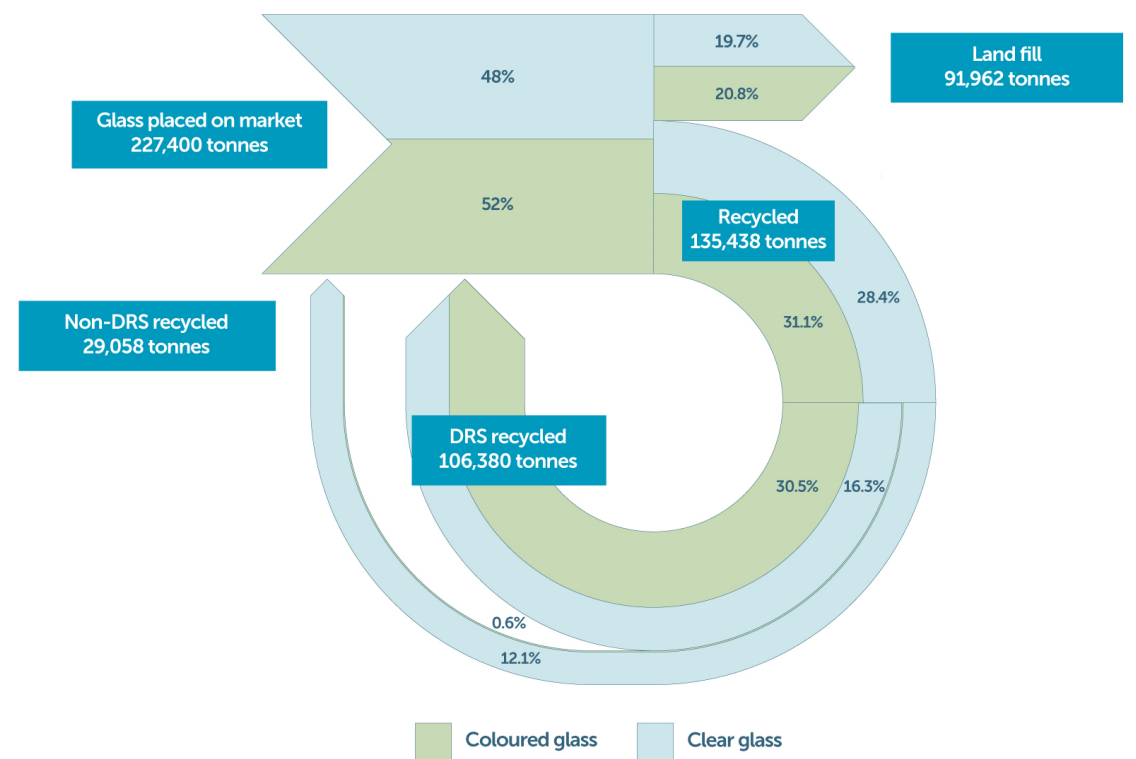


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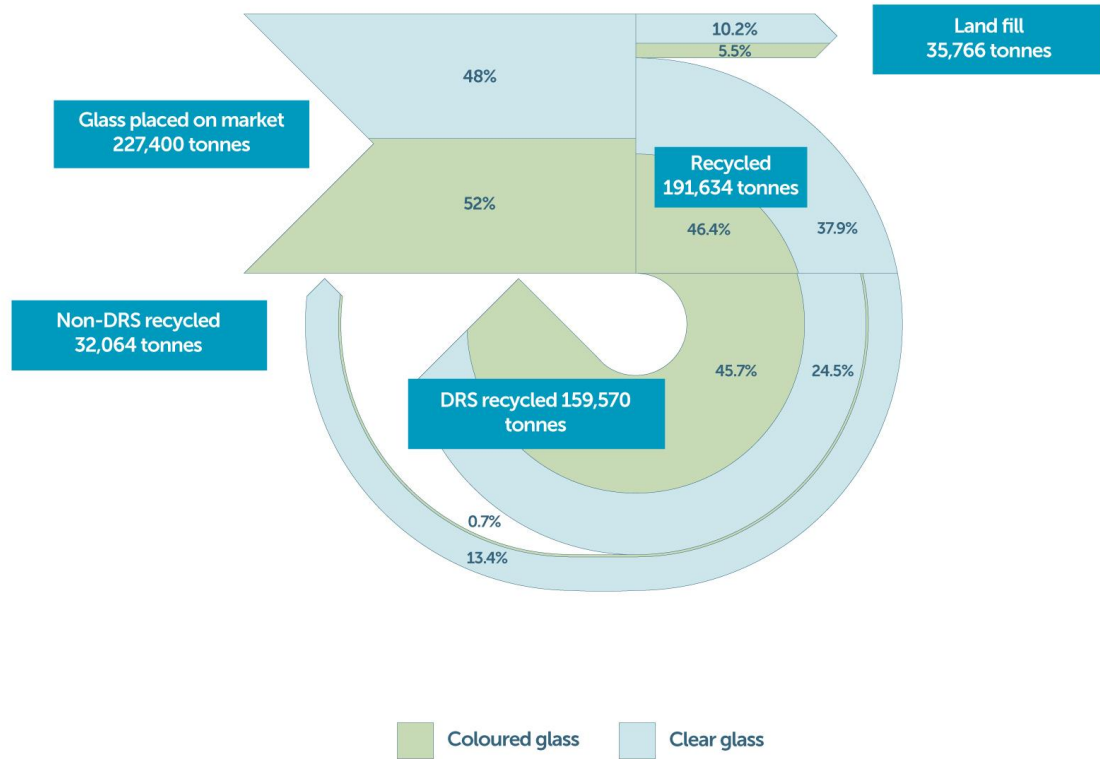


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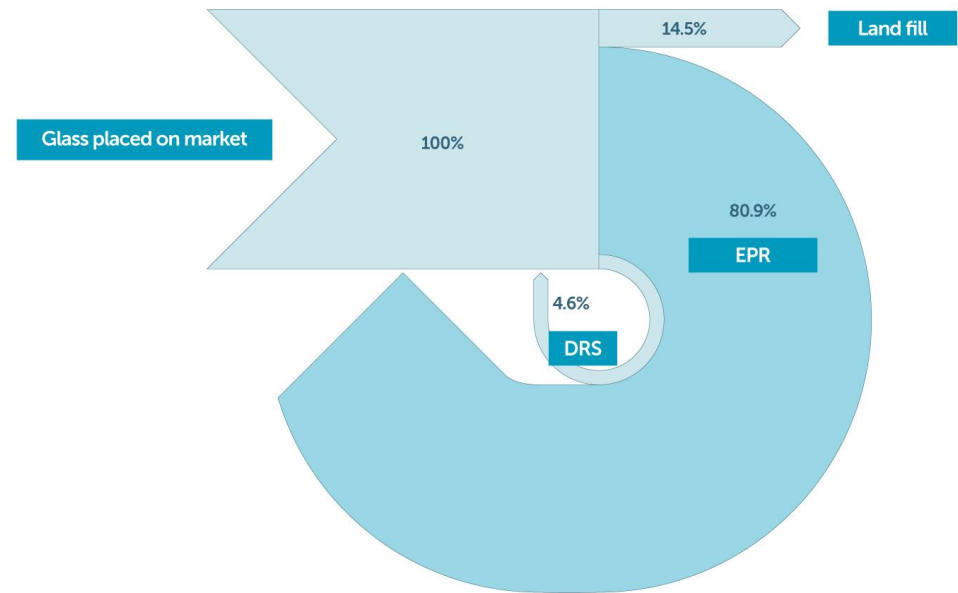


DRS in Germany

DRS – Zero Waste Scotland



Germany



The Solution for Scotland

- The glass container supply chain recommends a collection scheme for glass which is
 - More convenient for consumers, so encourages a higher consumer participation and higher glass collection rate
 - More cost effective for industry and the entire supply chain
 - Captures all glass for recycling in one stream
- This scheme would be a consistent system across Scotland, including
 - Continuing with 'bring sites' (bottle banks), in rural areas (e.g. The Highlands) with improved communication and support to increase participation rates
 - Introduce a 'container comingled' kerbside collection in urban areas and high population housing (central belt and tenement housing) for all non-DRS container packaging (HDPE, Aerosols, Food Cans, Glass Bottles and Jars), and more collection points in parks & gardens, popular areas of consumption outside of the home, and better education
 - As glass is already at a recycling rate of 64% in Scotland, glass recycling rates can be increased rapidly, and well within the ramp up period of the proposed DRS scheme
- The scheme would require
 - A mandatory recycling target for Scotland
 - Investment in a new sorting facility in Scotland for additional glass
 - Funding of this scheme would be via a producer pays scheme

Glass Recycling Model for Scotland





- A consistent collection across all 32 LA's funded via EPR and optimised by geography:

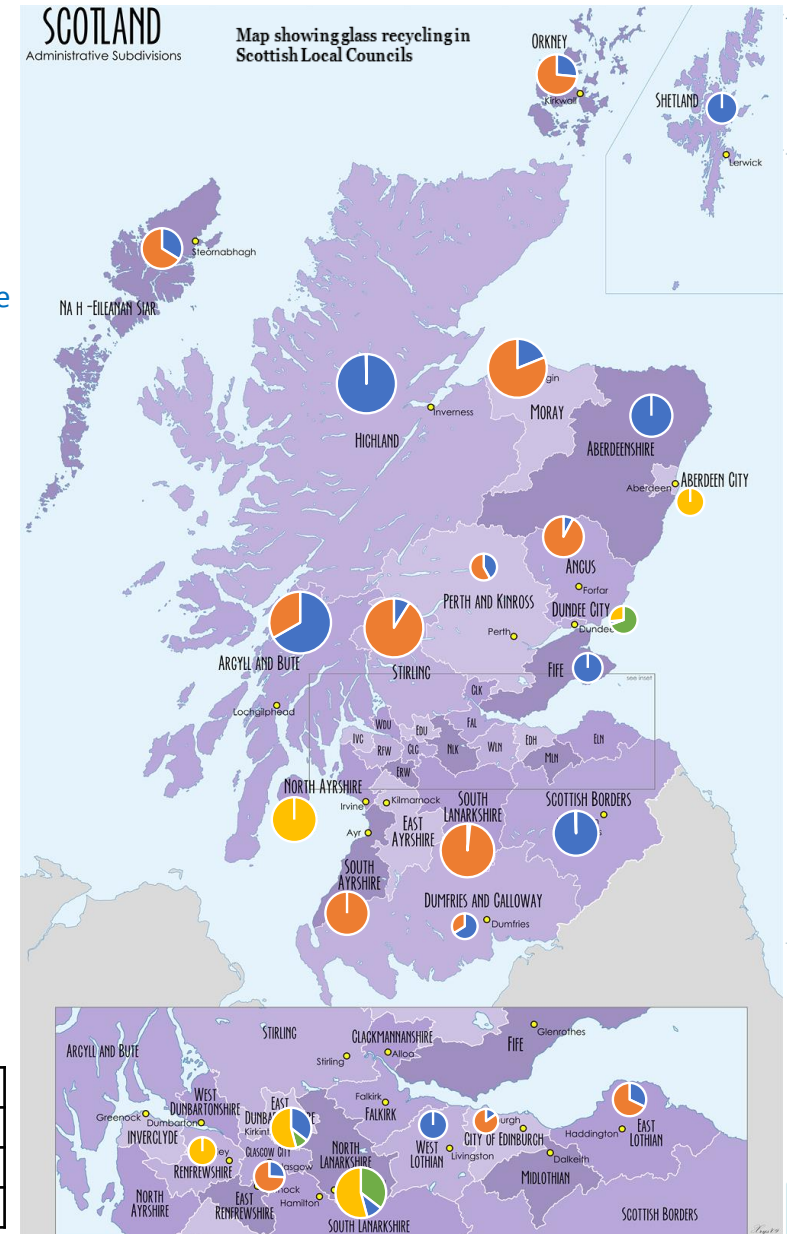


EPR – Glass Recycling

- The lagging Local Authorities would be supported to improve performance of the best 10 Local Authorities for household collections:
 - Average over 32 LAs: 44 kg/household
 - Average of the top 10 performing LAs: 61 kg/household
 - Additional 45,500 tonnes (majority clear)
- EPR would aid a 10% increase in commercial collection rates
- Glass return rates across all products and colours, provide clear glass for the Scottish industry and reduce domestic carbon emissions
- Extended Producer Responsibility (EPR) Scheme
 - EPR passes the responsibility for ensuring all packaging materials are recovered, with an aim of minimising cost to the consumer
 - EPR system will support and improve existing glass collection and recycling and yield a better return on investment than a DRS

- Top 10 LAs
- North Lanarkshire
 - Argyll and Bute
 - Moray
 - Stirling
 - East Dunbartonshire
 - Clackmannanshire
 - Falkirk
 - Highland
 - South Ayrshire
 - South Lanarkshire

	HWRC/ Bring sites
	Extracted Comingled
	Kerbside
	Separate collection kerbside



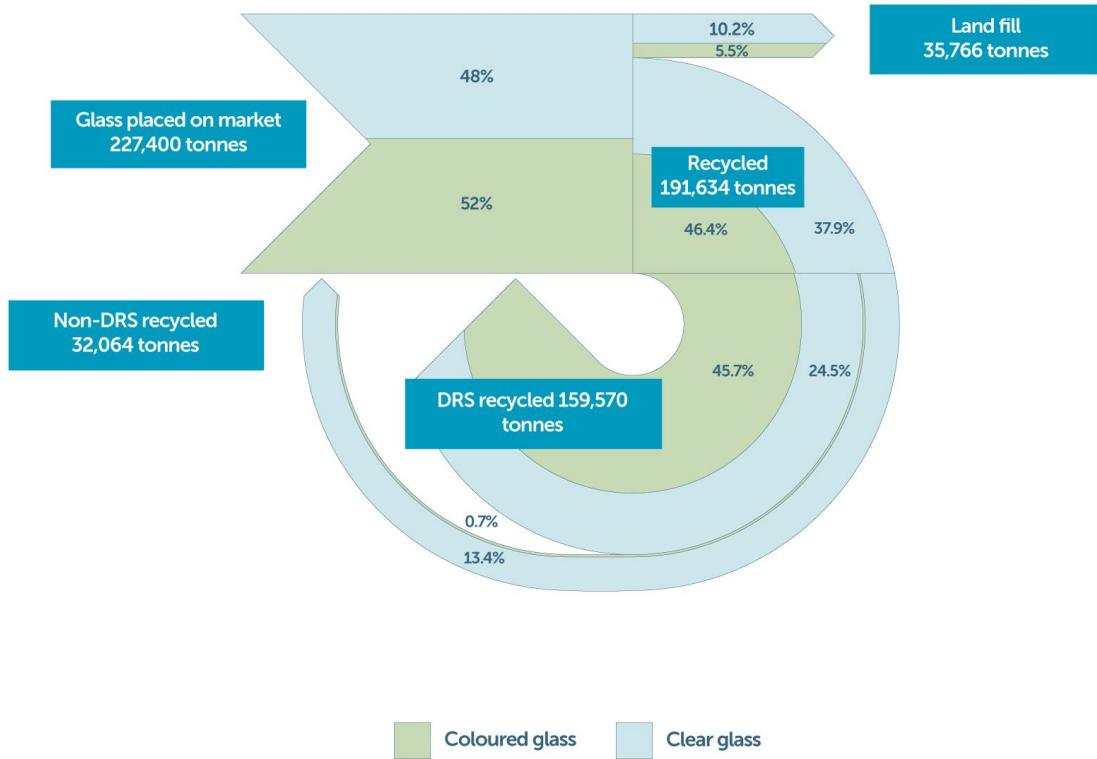
Opportunity for Scotland

- An uplift for an educational campaign although our research suggests this could be
 - Up to 34% increase from better education on glass recycling process (all colours)
 - Up to 7% increase education on rinsing jars etc (mainly clear glass)
- The glass industry has already demonstrated that glass recovery can be increased through public engagement
 - Lidl and Leeds case study – for areas without kerbside
 - Glass Guardian educational programme

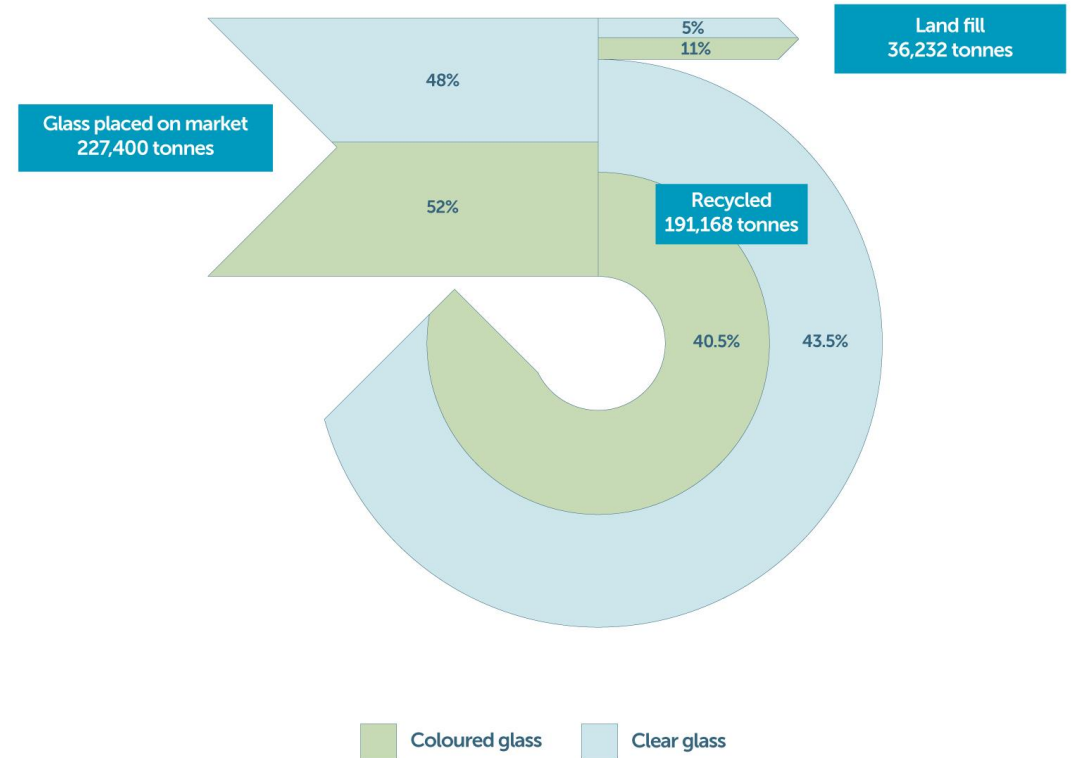


EPR Glass Recycling in Scotland

DRS – Zero Waste Scotland

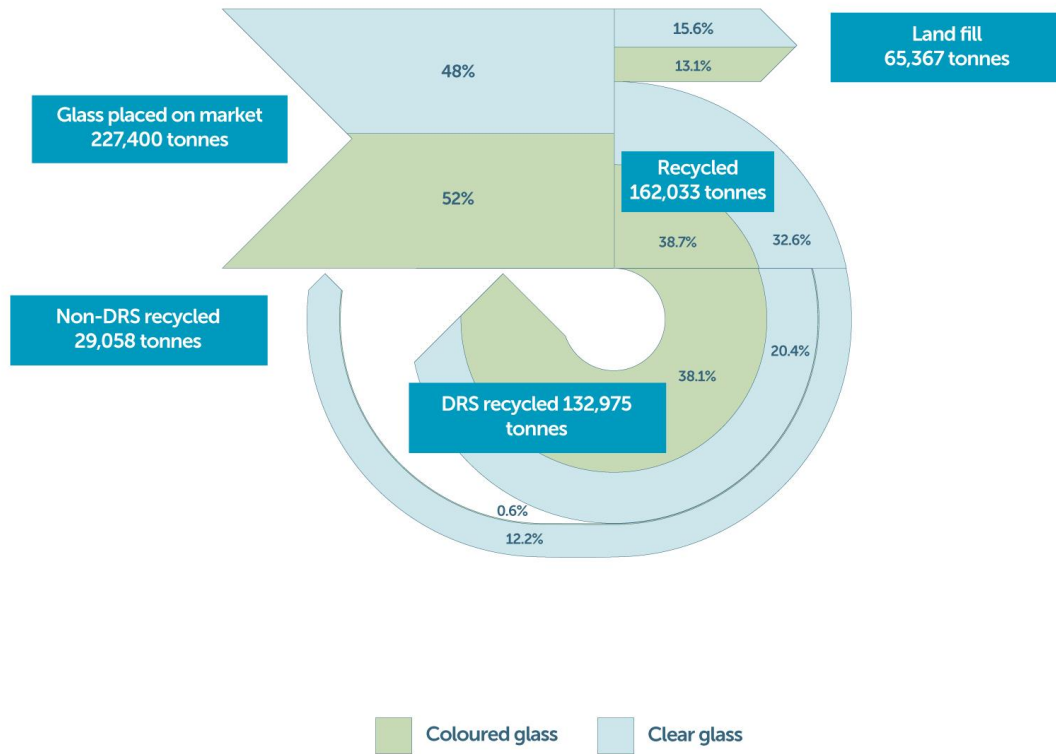


EPR / BG model

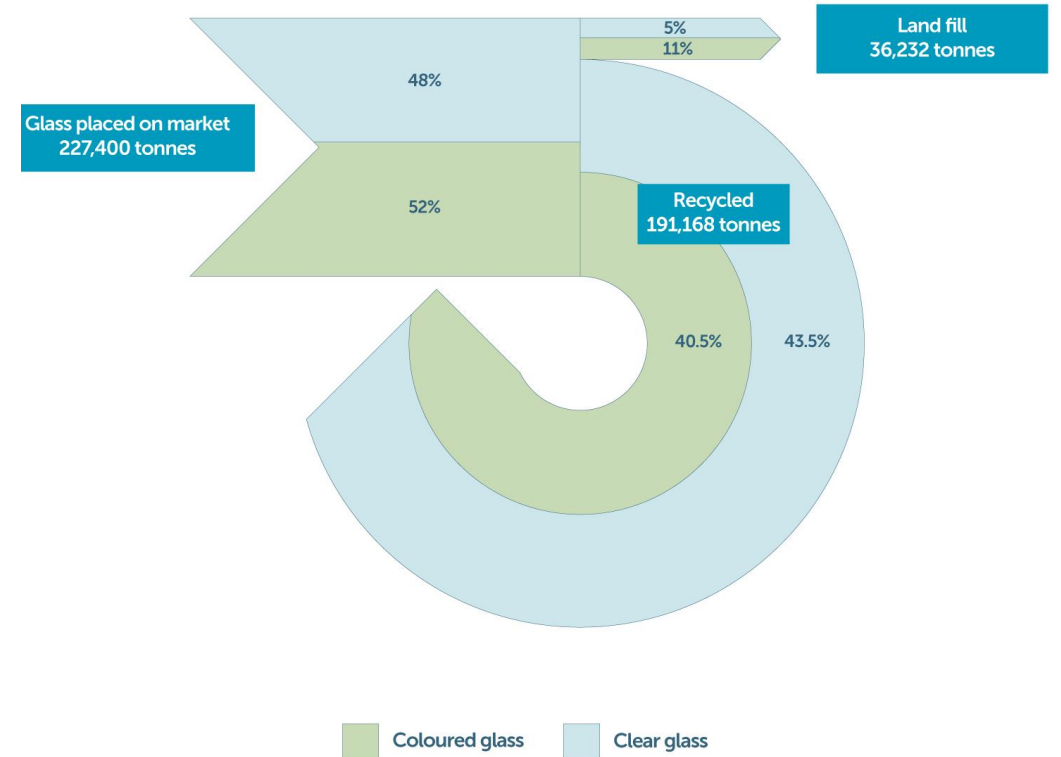


EPR Glass Recycling in Scotland

DRS – British Glass best



EPR / BG model



EPR Glass Recycling in Scotland

- We believe the proposed Scottish DRS is very optimistic
 - ZWS return rate for DRS glass is 90% (85% is stipulated as minimum in the draft regulations)
 - 75% consumer rate of return suggested by Toluna customer research survey
 - 60% rate of return in the Australian
 - There will be some losses so 90% return rate will not be 90% recycle rate
- BG propose the following should be considered
 - 65% to 75% DRS return rate
 - 58% recycling rate from households. This represents a 10% drop from the current non-DRS recycling rate caused by consumer confusion, and non-viability of current collection system when DRS is introduced

		DRS – ZWS best case: 90% DRS return rate and 64% non-DRS return rate	DRS BG best case: 75% DRS return rate and 58% non-DRS return rate	DRS worst case: 60% DRS return rate and 58% non-DRS return rate	British Glass (EPR) alternative model (as above)
Overall glass recycling rate		84%	71%	60%	84%
Extra tonnes glass recycled per year	Flint	16,094	3,953	-5,332	28,871
	Total glass	46,098	16,497	-10,098	45,632
Tonnes of CO2 saved per year	Scotland	9,335	2,293	-3,092	16,745
	Globally	26,737	9,568	-5,857	26,466

Glass Recycling - Behaviour Change



- We recommend working with Hubbub UK, to raise awareness and drive behavior change around the recycling of glass packaging. Some case studies on their work include:
 - In partnership with Highways England, The Kent Resource Partnership, Roadchef, Shell & Costa Express, a 2019 'Drive Down Litter' campaign achieved:
 - A 60% drop in litter and recycling of 7,000 coffee cups and plastic bottles
 - In partnership with Coca-Cola, a 2016 'Neat Street' campaign achieved;
 - A 26% reduction in litter over 6 months
 - In partnership with Leeds Council, a campaign, doubled on-the-go recycling from 17% to 32%.
<https://bit.ly/2njPSrw> Key Insight; Make recycling, simple, visual and fun!
 - A similar 'InTheLoop' campaign is being launched in 2019 in Swansea and Edinburgh

<https://www.hubbub.org.uk/>



Litter

- Glass is a small part of litter: 0.1% (and 0.4% without cigarette ends) ^[1] of all litter and 3% ^[2] of beach litter versus 66% for plastic – this is because glass is not typically consumed ‘on the go’
- Roadside survey^[3] over 100 m of road found more than 500 items of litter of which only 2 items were glass bottles
- No evidence of injury from glass litter to people or animals
- Anti-social behaviour contributes to glass litter
- Is glass a litter problem in Scotland?



[1] 2014 litter composition survey of Scotland carried out by Keep Scotland Beautiful for the Industry Council for research on Packaging & the Environment (INCPEN).

[2] The University of Exeter’s ‘Marine anthropogenic litter on British beaches: a 10-year nationwide assessment using citizen science data’ assessed data from volunteer litter picks of 736 beaches around Britain, organised by the Marine Conservation Society over 10 years (2005 – 2014).

[3] Keep Scotland Beautiful report on roadside litter <https://www.keepsotlandbeautiful.org/news/roadside-litter/taking-a-closer-look-at-litter-on-our-trunk-roads/>

DRS for Scotland and Glass - Summary

- 1) Impact to the Environment and the “Circular Economy” – will not achieve what the government want to achieve
 - Does not create more recycled glass material that we need in Scotland (i.e. clear glass)
 - Risk to current kerbside system
 - Risk of increasing PET and reducing Glass use, e.g. Germany , Finland and Croatia
- 2) Impact to the Society
 - The considerable cost of including glass, consumer will pay more 42%, whereas producers pay 32% (@90%)
 - Consumer will pay twice , Deposit and Council Tax
 - Handling, safety and security issues for glass pose high risks
- 3) Impact to the Economy
 - Shift from glass to plastic – the impact on investment and jobs
 - Cost to local authorities and risk to collection e.g.; Clackmannanshire and Inverclyde
 - Impact on recycling companies in Scotland , PET recycling capability and costs to set up
 - For glass this in not a cost effective solution
- 4) The EPR option is simpler, more cost effective, utilises existing infrastructure and convenient for consumers