



CIRCULAR SYSTEM CONTAINER GLASS



Container Glass, Sweden – Circular System Characteristics

System characteristics:

With the highest recycling rate of 99% for container glass, the Swedes have evolved a highly effective circular system. Recycling has food grade quality and enables reverse vending for bottle-to-bottle, brand-to-brand and jar-to-jar production. With over 5000 collection points a service system has evolved which is based on producer responsibility principles.

Availability/Role of recycling technology:

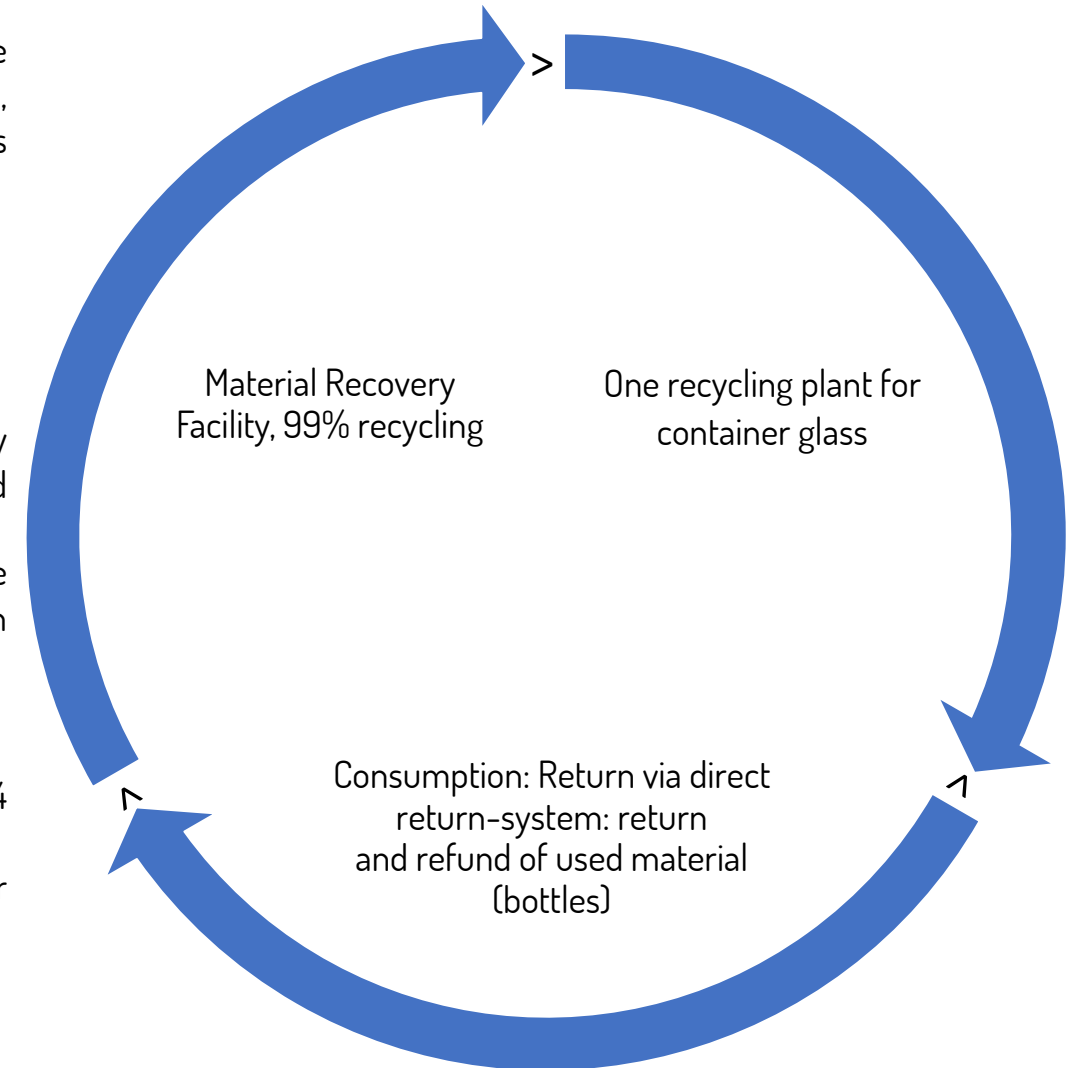
- Sorting machines and processing technology are of the highest standard.

Maturity of market:

- Monopolistic market structure: Swedish Glass Recycling (Svensk Glasåtervinning AB) is the only reprocessing plant for recycled glass in Sweden and world leading when it comes to collecting and recycling used and graded glass containers.
- Svensk Glasåtervinning AB was also given the responsibility by the producers, which are the owners of the company, to develop a collection system and a recycling plant (the only one in Sweden).

Policy intervention type/regulations/directives:

- **Littering prompted** the Swedish government to mandate a deposit return system for cans in 1984 and for PET bottles in **1994**.
- In 1994, the Swedish Parliament passed a law **on producer liability for packaging**: As a producer or importer of glass containers you need to pay a fee for the collecting and recycling of glass.





SWOT Container Glass

1. Closed loop
2. Technical cycle, C2C
3. Energy- and resource efficient
4. Food grade quality
5. Compliance for Circular Economy
6. High acceptance

Strength

1. Illegal sand extraction from nature protected areas

Weakness

Opportunity

1. Glass packaging market grows (average 7 %)
2. On average, there is still high potential for glass recycling in Europe (50 %) and worldwide (80 %)

Threat

1. Sand, meeting the chemical and physical requirements of the glass industry, makes up less than 1% of the sand extracted yearly

A close-up photograph of a piece of sea glass, which is a smooth, rounded, light blue-green object, resting on a bed of fine, light-colored sand. The glass has a slightly irregular shape with some darker, more saturated blue-green areas, suggesting it might be a fragment of a bottle or jar. The sand is composed of small, uniform grains, and the overall lighting is soft and even, highlighting the texture of both the glass and the sand.

1. Nature Science

The first glass was formed in volcanoes, people made glass for the first time in 5000 BC.

A low-angle, upward-looking photograph of the interior of a Gothic cathedral. The image captures the soaring height of the architecture, with tall, slender piers supporting a complex network of ribbed vaults that culminate in a high, pointed apex. Large, multi-paned stained glass windows are set into the walls, allowing colorful light to filter into the space. The windows feature intricate designs, including religious scenes and heraldic patterns. The overall atmosphere is one of grandeur and verticality.

2. Envisioning

Glass development in the roman empire was reserved for the church and the nobles for a long time .

A large radio telescope dish is mounted on a blue metal lattice structure on a grassy hillside. The dish is made of a fine metal mesh and is pointed towards the sky. Below the dish is a small, single-story white building with several windows. The background shows a clear blue sky and distant hills.

3. Investment

As glass can be used in many ways, investments in research and development promised technical innovation.

The background of the slide is a dark blue to black gradient, filled with numerous bright blue light trails and fiber-like patterns. These patterns consist of long, thin, glowing lines that curve and swirl, resembling optical fibers or data paths. Some lines are straight and radiate from a point, while others form complex, looping shapes. The overall effect is one of dynamic energy and technological sophistication.

4. Rocket Science

Using glass as fibers enabled more data technologies.

An aerial photograph of a large sand quarry. The landscape is characterized by deep, terraced pits and ridges of sand, showing signs of heavy excavation. A blue excavator is visible on the right side of the image, working within one of the pits. The overall color palette is dominated by various shades of tan and brown, representing the sand and earth.

5. Historic Event

Though sand appears to be an infinite raw material, specific sands used for glass making are scarce. Sweden belongs to the TOP 10 sand producers in the European Union. However, deliveries of sand and gravel from natural deposits have decreased by almost 50 million tons over the last twenty years in Sweden.



6. Cognition for System Relevance

High technology for industry, construction and other intelligent solutions in many areas are not possible without glass.



Photo via schweden.net



Photo by vetropack Switzerland

7. Technical Innovation

Its all about sorting. Today, up to 90% clean waste glass can be reused. The goal is 100%

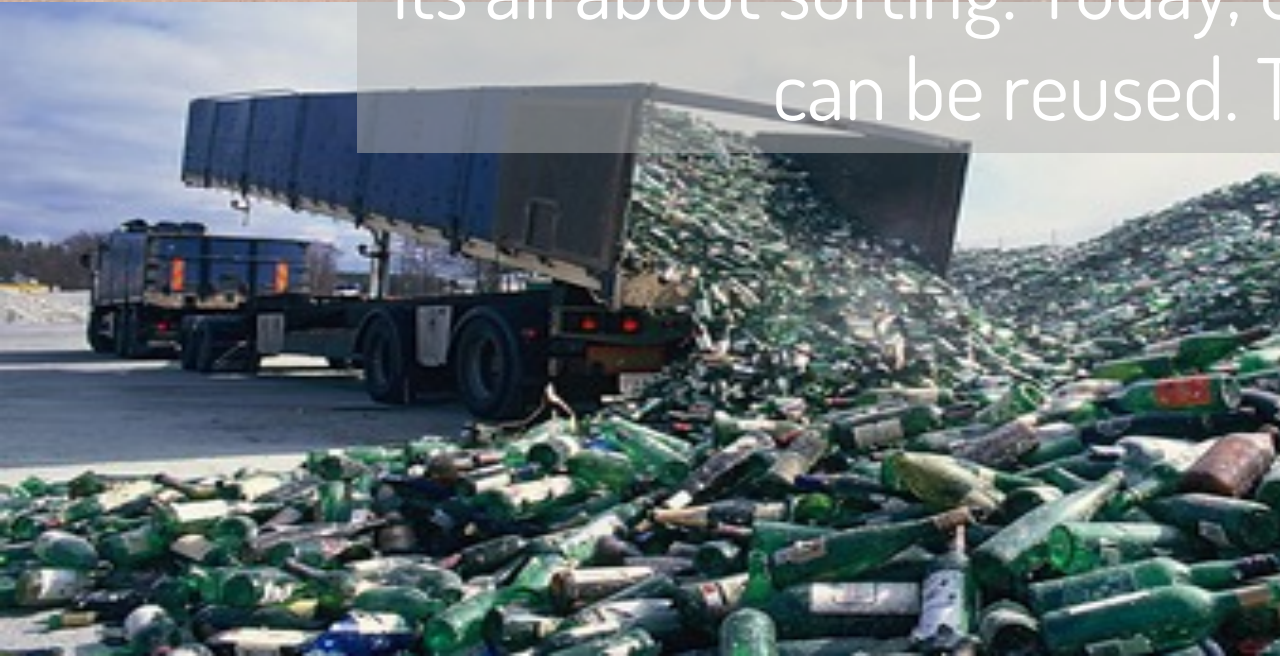


Photo by Besorec



The European Glass Packaging Federation

8. Business Innovation

A network of players is managing the system.



European Federation
of Glass Recyclers



ALBA Group
the recycling company

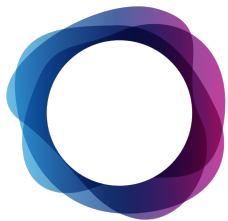




A blue faucet is shown pouring water into a clear glass. In the background, there are two green glass bottles, one of which is partially filled with water. The scene is set against a white background.

10. Forecast

The Europe glass packaging market size was valued at USD 19.24 billion in 2019 and is projected to reach USD 22.01 billion by 2027.

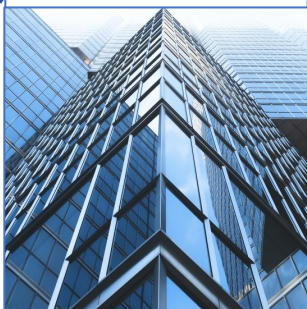


7. Handling Diversity



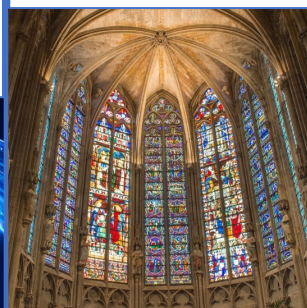
Society

6. Cognition for System Relevance



Organization

2. Vision



3. Investment



8. Business Innovation



9. LCA



10. Foresight



1. Discovery

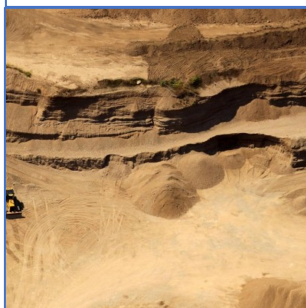


Individuum

4. Rocket Science

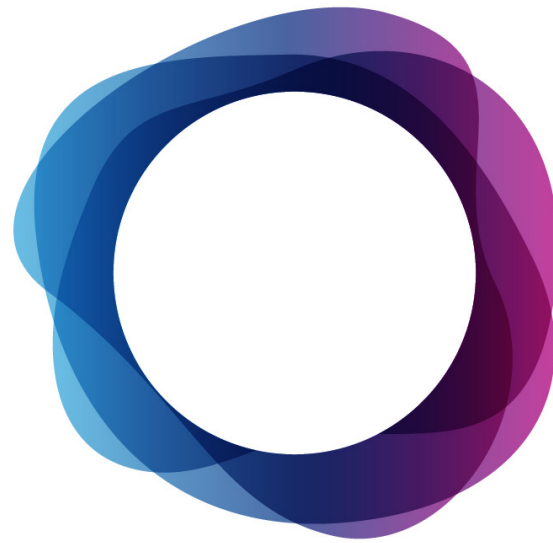


5. Historic Event



Thank you
for your
attention

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