

## Glass recycling: years of improvement

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## FERVER MEMBERS (2015)

34 Members – 57 Plants

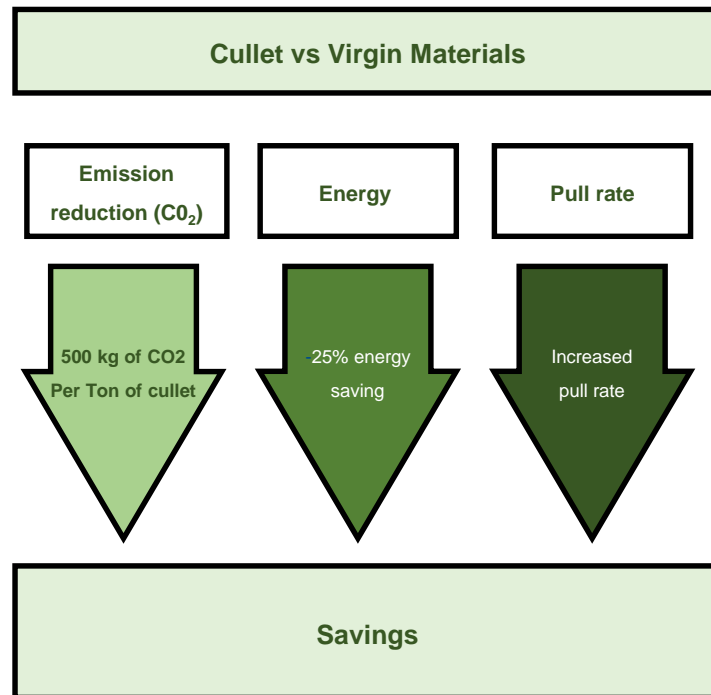
16 European countries

1.500 Employees



## Cullet trend : strong, irreversible and durable

Container glass recycling carries a unique value proposition for (1) The community by reducing and eventually eliminating the landfill disposal (2) The glass makers by diminishing the energy consumption and emissions (CO<sub>2</sub> and Sox).



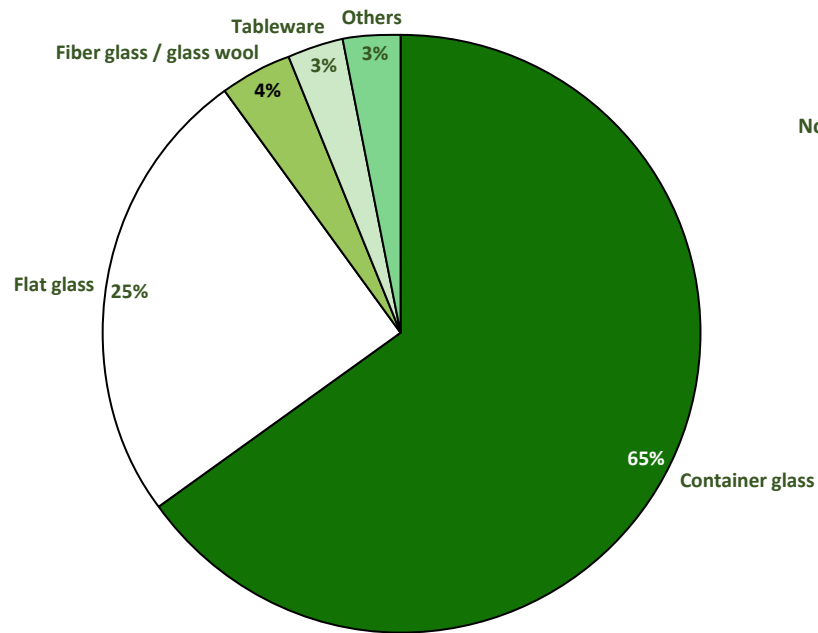
- Reduction in energy consumption: - 25%
- Pull increase.



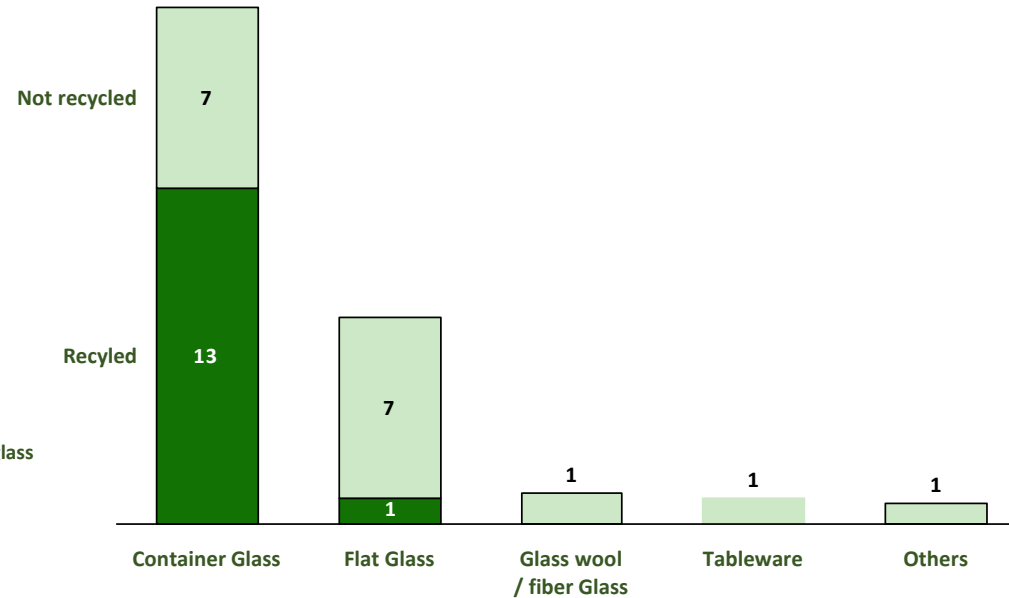
## Container glass – leading the glass recycling

The total glass production in Europe exceeds 30 million tons per year. A strong recycling base has been developed for container glass. Almost 70% material being recycled (13 MT).

### Container production in Europe



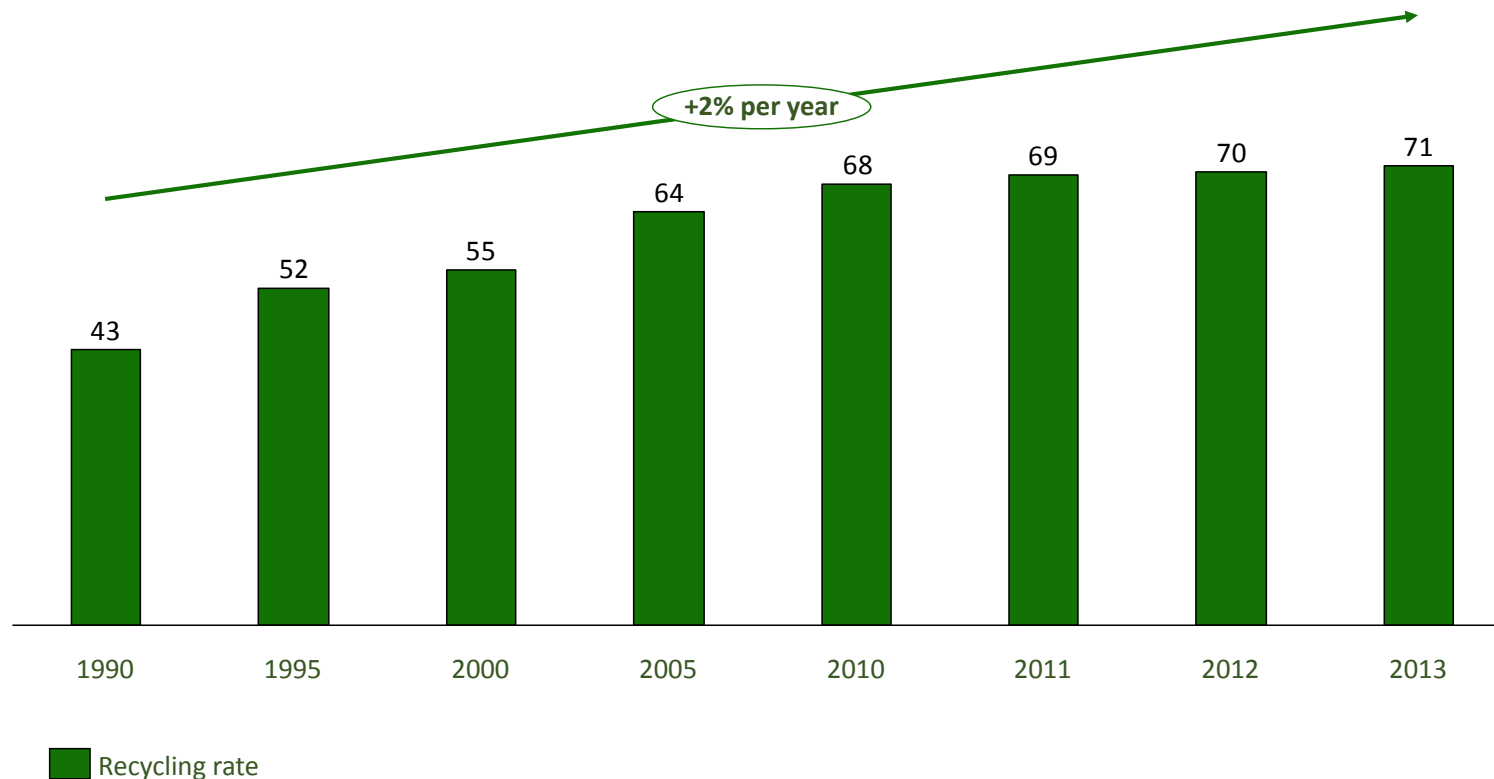
### Glass recycling in Europe (MioT)



## Container glass recycling – a success story

Container glass recycling followed an irreversible heavy growth trend for the last 20 years. It met the European Packaging & packaging waste directive 2004/12/EC of 60% recycling rate for glass packaging in 2008.

New EU targets under discussion – new Circular Economy Package – (they may reach 90% recycling by 2030) will ensure a continuous growth within the next few years.



## Container glass recycling- Disparity in Europe

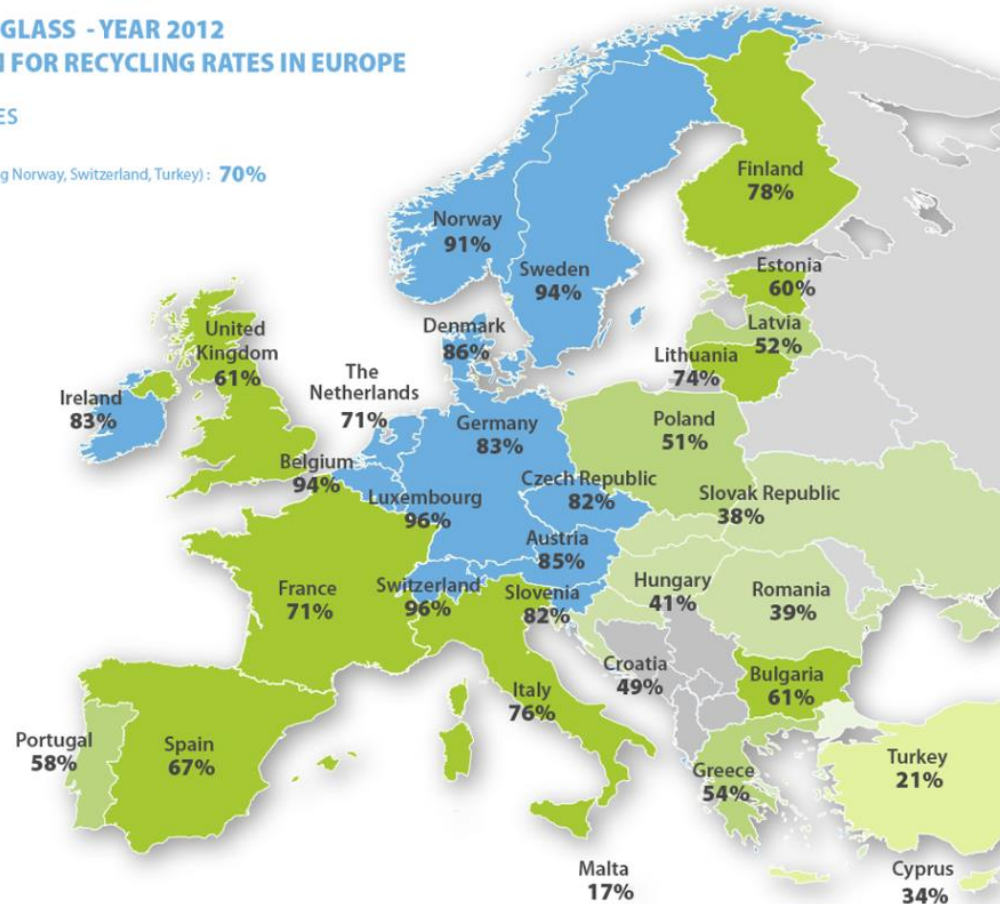
The European container glass industry has achieved a record of 67 % recycling rate in 2010. However there is still important potential for growth with important differences between Northern and Western Europe

### CONTAINER GLASS - YEAR 2012 COLLECTION FOR RECYCLING RATES IN EUROPE

#### AVERAGE RATES

EU28: **70%**

EUROPE (including Norway, Switzerland, Turkey): **70%**

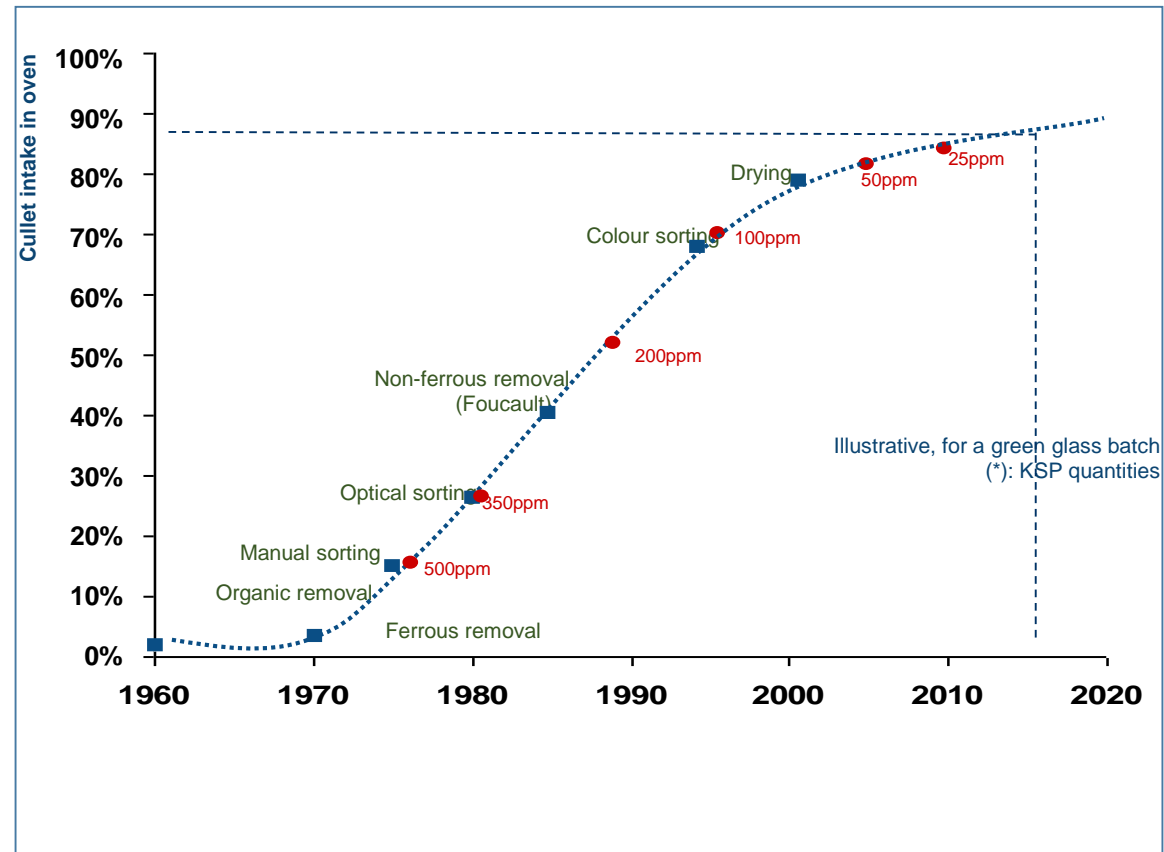


Source: FEVE

## Container glass recyclers – The enablers

Glass recycling capacity (>14 MioT in Europe) and technology step change allowed the production of furnace ready cullet.

Constant technology improvement (Heat resistant glass and lead removal for the latest) allowed the cullet intake to constantly increase in the batch.





# Container glass recycling – Challenges and opportunities

## Challenges

- Growing waste collection and continuous needs for heavy investment
- Increasing contamination of the waste being collected
- More stringent quality requirements as the cullet intake in the furnace batch is growing
- Needs for color sorting technologies
- Rapid growth of the waste elimination cost supported by the glass recyclers

## Opportunities

- Support the glass recyclers requirement for technology investment with the objective to increase the actual rate of glass being recycled
- Better Regulation and Enforcement for all types of glass waste

**1 bottle collected = 1 bottle produced (cradle to cradle)**

## Conclusion

- 30 Million tons of glass being produced / year
- Glass is one of the few materials that can be recycled without loss of material
- The container glass collection and recycling have seen a dramatic acceleration over the last 20 years to reach 70 % recycling
- A win – win equation for the community and the glass producers
- Glass re-processors technology step change (i.e color sorting) remains the enabler to maximize the glass recycling
- Glass recyclers are facing crucial challenges with more waste, higher contamination, more stringent quality requirements and needs for better sorting
- Supporting glass recyclers investment will allow all of us to collect more and more easily while getting the full benefit of glass recycling
- Zero waste and a closed loop recycling

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