

Maltha
Makes glass endless



Best Practice:

Glass Powder



Proven technology to further Close The Glass Loop



Maltha Group, company introduction

Key operational figures (2019)

Revenues: € 55m

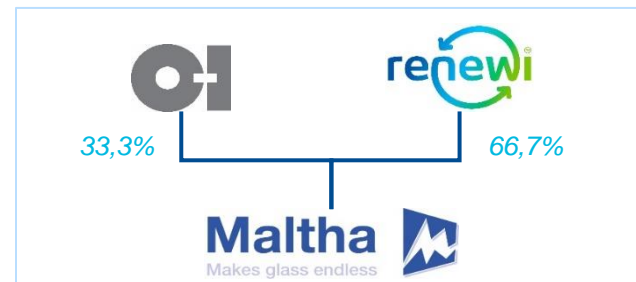
Countries: 5

Locations: 8

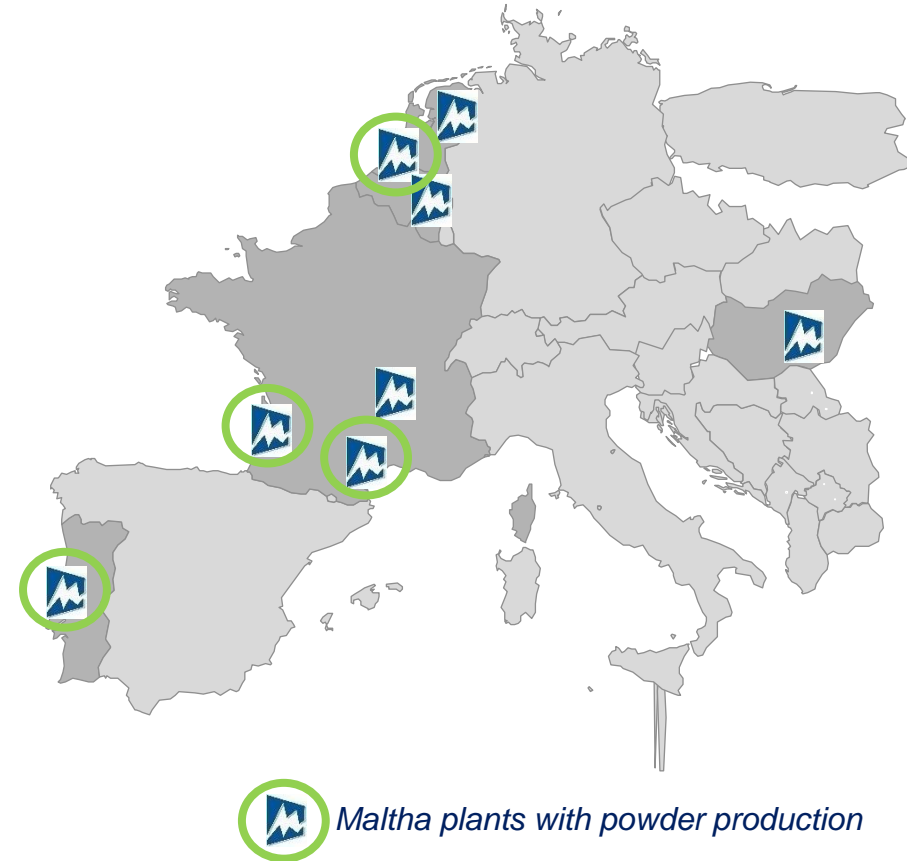
Employees: 200

Customers: ~ 20

Tonnes processed: >1,300,000



Current geographical footprint



What problem occurs at Glass Recycling?



- Glass Recycling
=> “Removing non-targeted, non glass materials from glass waste”
=> like Metals, Paper, Plastics, Organics and Ceramics, Stones & Porcelain (**CSP**)
- Removing **CSP** is technically only possible from the bigger cullet (> 3 to 10 mm)
- Glass Waste is sieved off to remove the **finer glass fraction** (< 3 to 10 mm) and to create high(er) quality of Recycled Glass
- The **finer glass fraction** is in this case lost for Glass Recycling

How is Glass Powder solving this problem?



- The fines fraction glass waste is cleaned up:
 - Metals, plastics, paper and organics are remove
- The fines fraction glass waste is crushed to $< 0,8$ to 1 mm
 - This is Glass Powder
- Glass Powder can be used as Recycled Glass in Glass Furnaces

What factors are causing & increasing the problem?

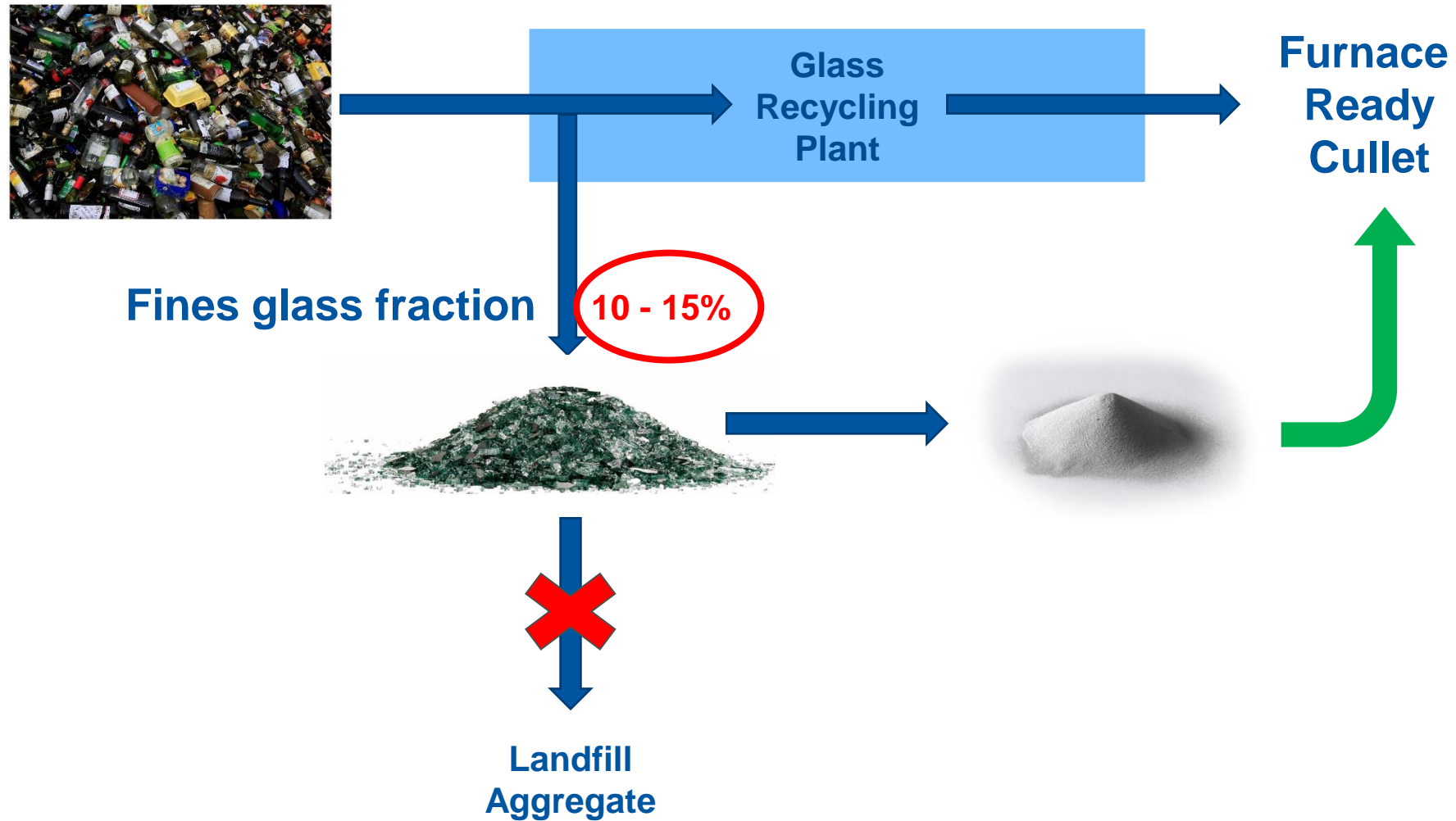
- Presence of Ceramics, Stones & Porcelain (**CSP**) in glass waste
- Increase of **finer glass fraction** in glass waste
 - Collection systems: Compacting Trucks, logistics via transfer stations
 - Glass Packaging Design: thinner bottles, more breakage
- Increase of **requested quality of Recycled Glass**
 - Lower level of contamination allowed
 - Lower level of fine fraction allowed
- Recycling Process by **drying** causing more fines fraction



=> More fine fraction to sieve off

=> More and more Glass Waste **lost for Recycling**

Glass Powder – Turns fines glass fraction into FRC



Powder in Bottle-glass & Glasswool Production

- **Maltha NL** (since 2016)
 - Bottle-glass production 6.000 T/yr
 - Glasswool production 12.000 T/yr
- **Maltha France** (since 2012)
 - Bottle-glass production 50.000 T/yr
 - Glasswool production 15.000 T/yr
- **Maltha Portugal** (since 2020)
 - Bottle-glass production 20.000 T/yr
- **TOTAL** > 100.000 T/yr

Glass Powder contributes to the Circular Economy of Glass Packaging

- It creates more value from Glass Waste Collection
- It increases the available material for more recycled content in new bottles & jars
- It supports EU Member States to achieve the targets on Glass Recycling
- It supports the further Closure of the Glass Loop

