



Inovacije za razogljičenje energijsko intenzivne industrije z uporabo OVE primer Steklarne Hrastnik

Gorazd Krese
Steklarna Hrastnik

7. junij 2023

HRASTNIK1860

About us

Hrastnik1860 is developing and manufacturing world-class engineered glass products, distinguished by some of the clearest glass in the world.

Hrastnik1860 is based in Slovenia and offers wide range of products that include **premium and super premium glass containers**, primarily dedicated to the spirit, perfumery and cosmetics market.

It focuses on flexible and excellent service, short time to the market and innovative tailor-made solutions.

1

285 t daily production capacity

2

600 employees

3

export to more than **50** countries worldwide

4

full service solution

5

160 years of tradition

What
We
Do



SPIRIT GLASS
PACKAGING



PREMIUM WATER
GLASS PACKAGING



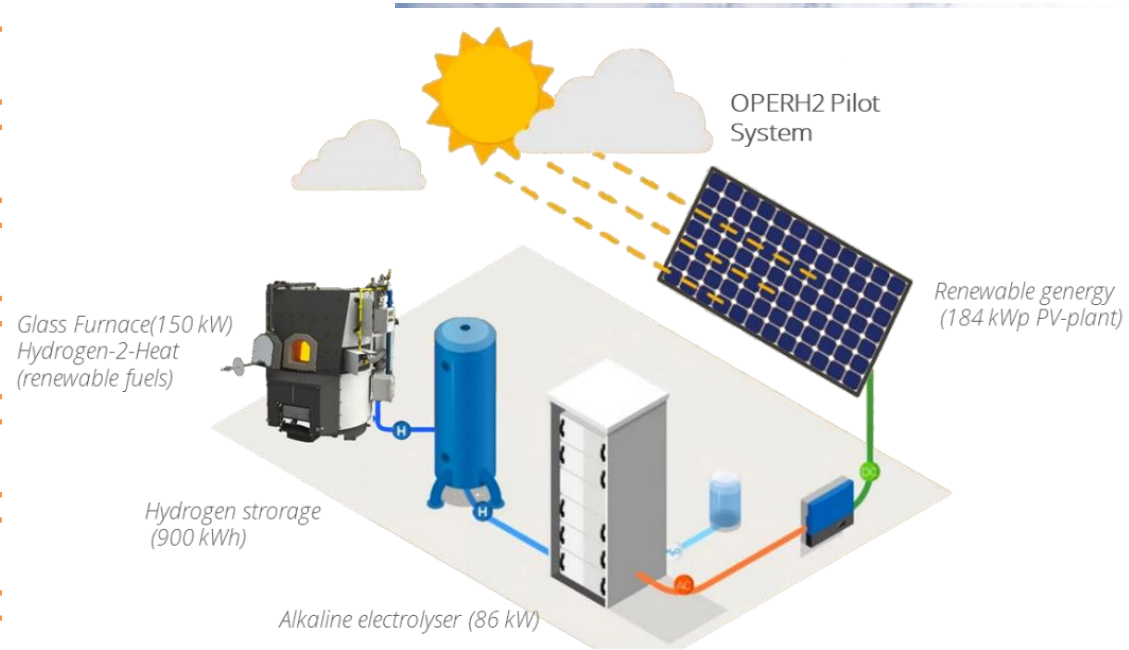
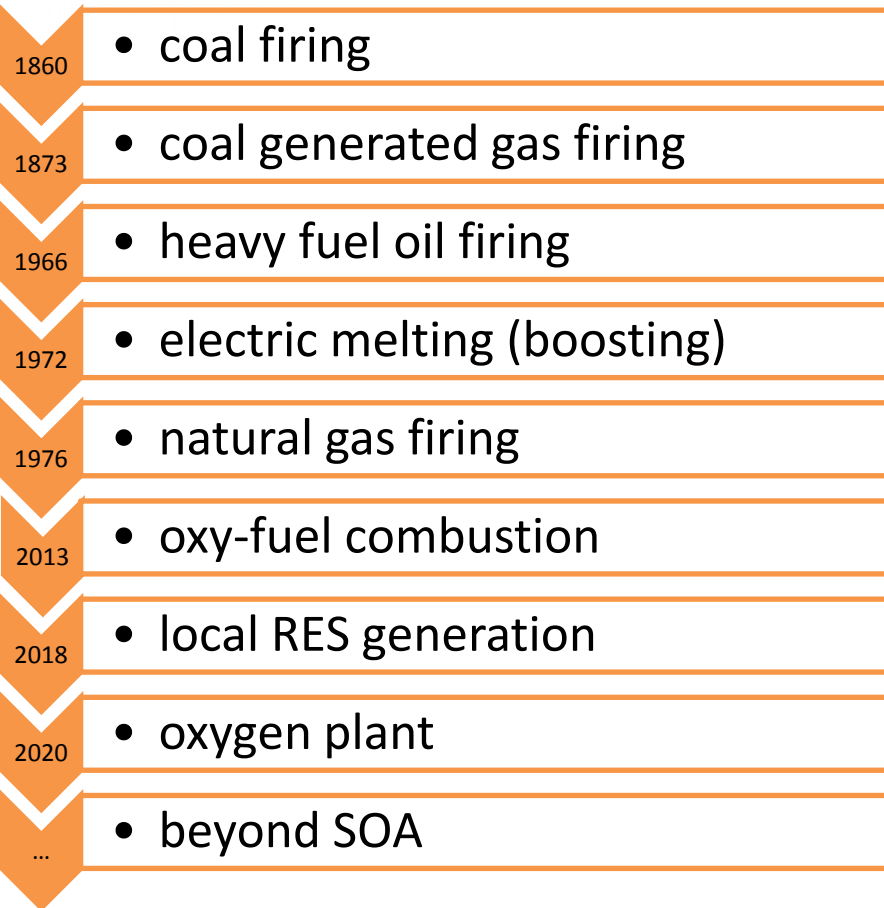
PERFUMERY AND
COSMETICS FLACONS

References



History

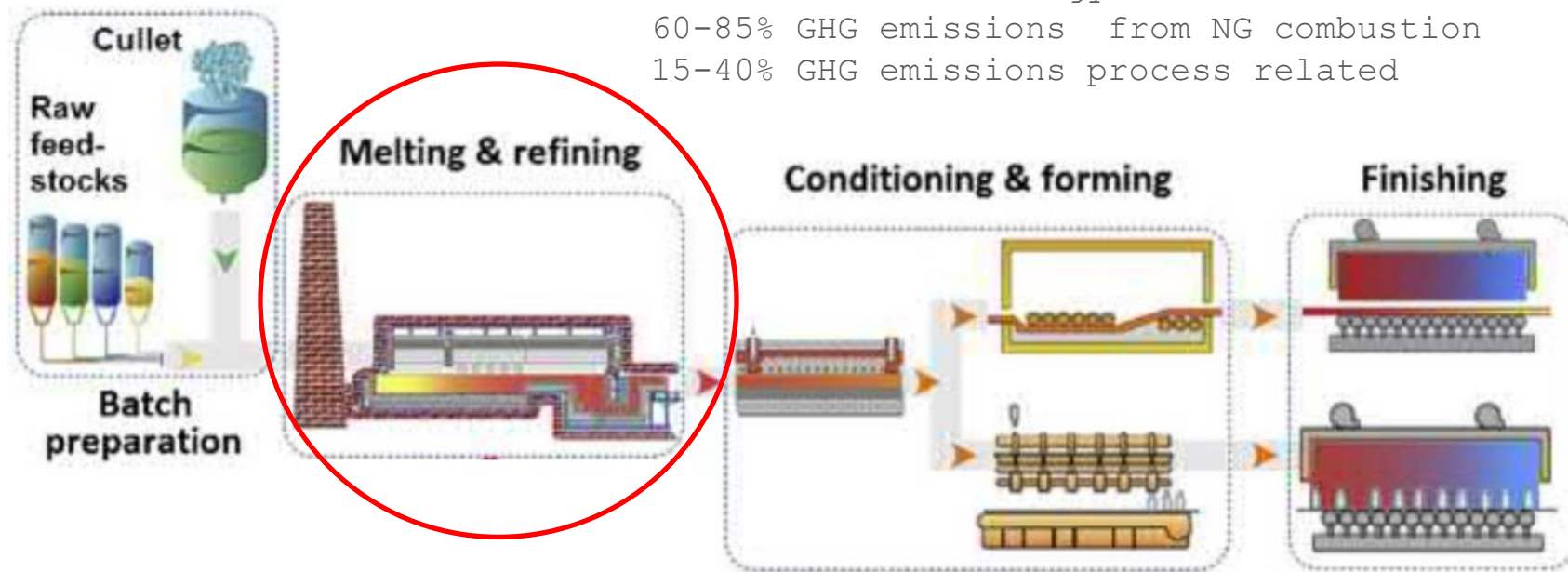
160 YEARS OF TRADITION AND DECARBONISATION



Motivation for innovation

- European green deal
 - 2030: GHG emissions reduction $\geq 55\%$ (1990)
 - 2050 Climate neutrality
- Glass manufacturing an energy intensive process

75-85% of total energy use
60-85% GHG emissions from NG combustion
15-40% GHG emissions process related

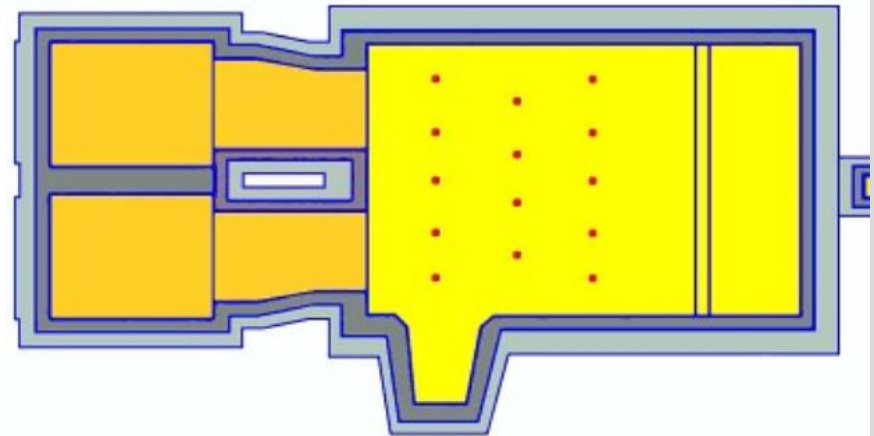


State-of-the art

End-fired regenerative furnaces

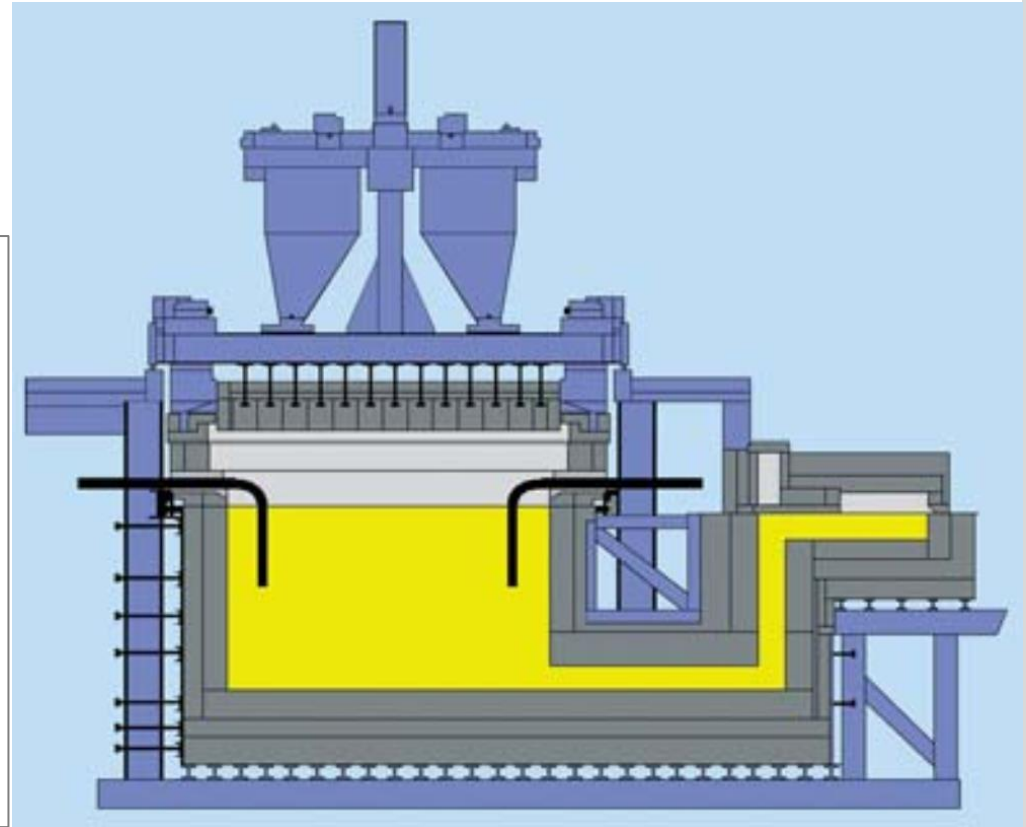
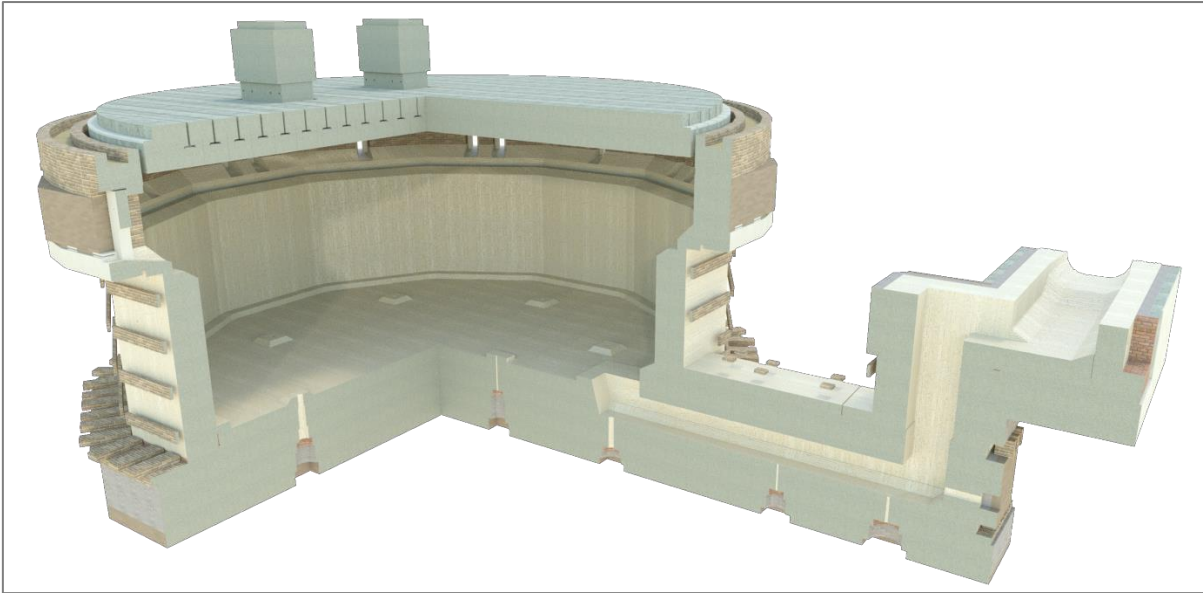


<10% boosting



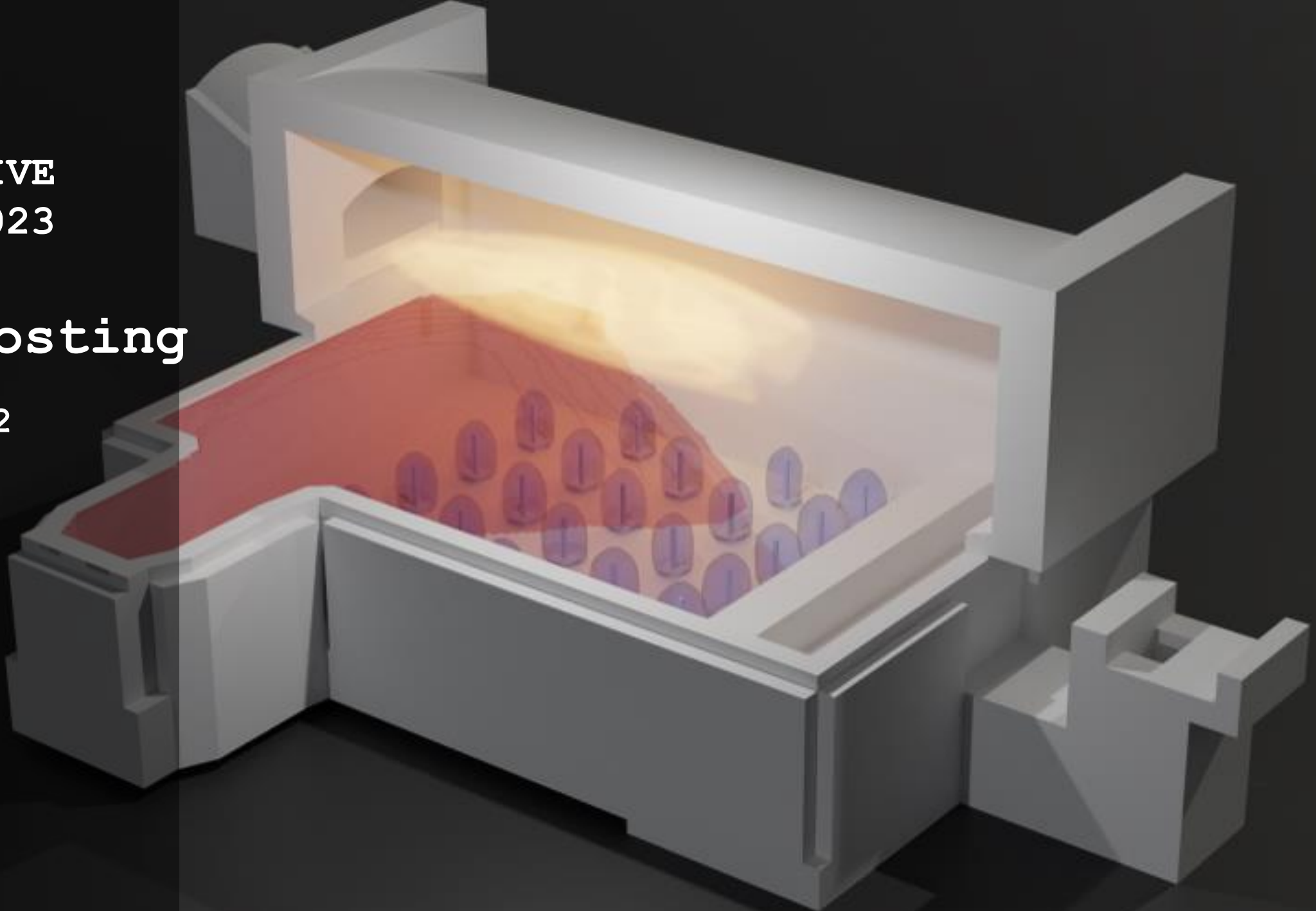
State-of-the art

All-electric furnace



HYBRID
REGENERATIVE
FURNACE 2023

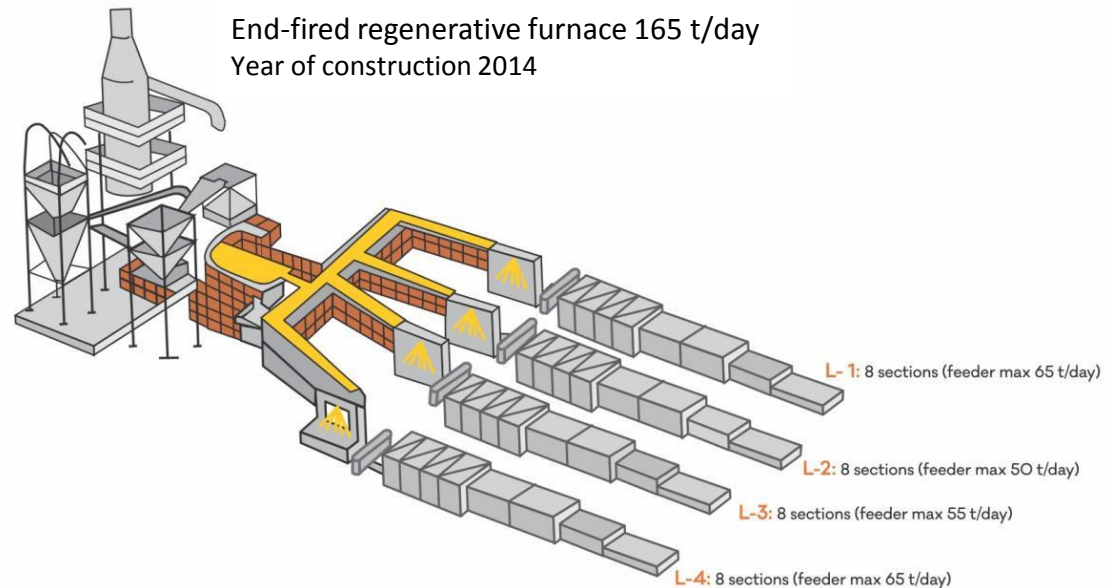
>40% boosting
-35% CO₂
-50% NG



HRASTNIK1860

Hybrid regenerative furnace

- Implementation in existing production site in 2023:
 - extra white flint glass ((super)premium quality)
 - 170 tons of glass per day
 - from <10% to >40% electrical melting



INNOVATION FUND

BEAR: Hybrid regenerative glass furnace

- First-of-a-kind hybrid end fired regenerative furnace
 - electric melting share >40% (SoA <10%)
- 50% natural gas consumption reduction
- 35% GHG emissions avoidance
- Alignment of glass melting with availability of RES
- Higher operational flexibility and resilience
- Improved job security for 600 employees (5% region, 10% GDP)



Co-funded by
the European Union

COORDINATOR

Steklarna Hrastnik d.o.o.

BENEFICIARY

Kemijski inštitut (NIC)

LOCATION

Hrastnik, Slovenia

SECTOR

Glass, ceramics and construction material

GHG EMISSION AVOIDANCE

0.1 Mt CO₂ eq

AMOUNT OF INNOVATION FUND GRANT

EUR 2 238 000

RELEVANT COSTS

EUR 3 730 000

STARTING DATE

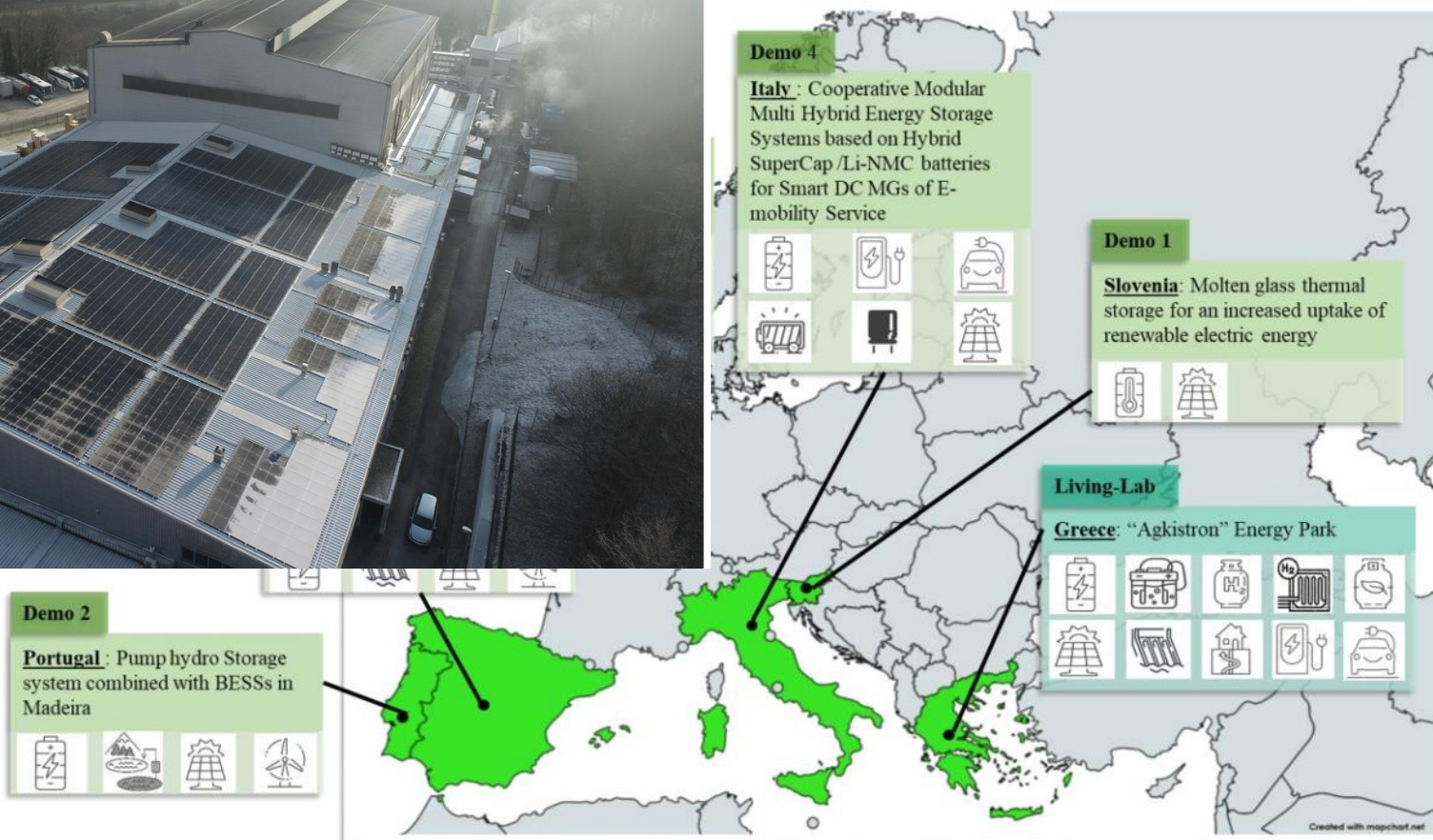
1 September 2022

PLANNED DATE OF ENTRY INTO OPERATION

Q1 2025

Horizon Europe i-STENTORE

innovative Energy Storage TEchnologies TOwards increased Renewables integration and Efficient Operation



Horizon Europe H2GLASS

SSC InnovFund application:



Co-funded by
the European Union

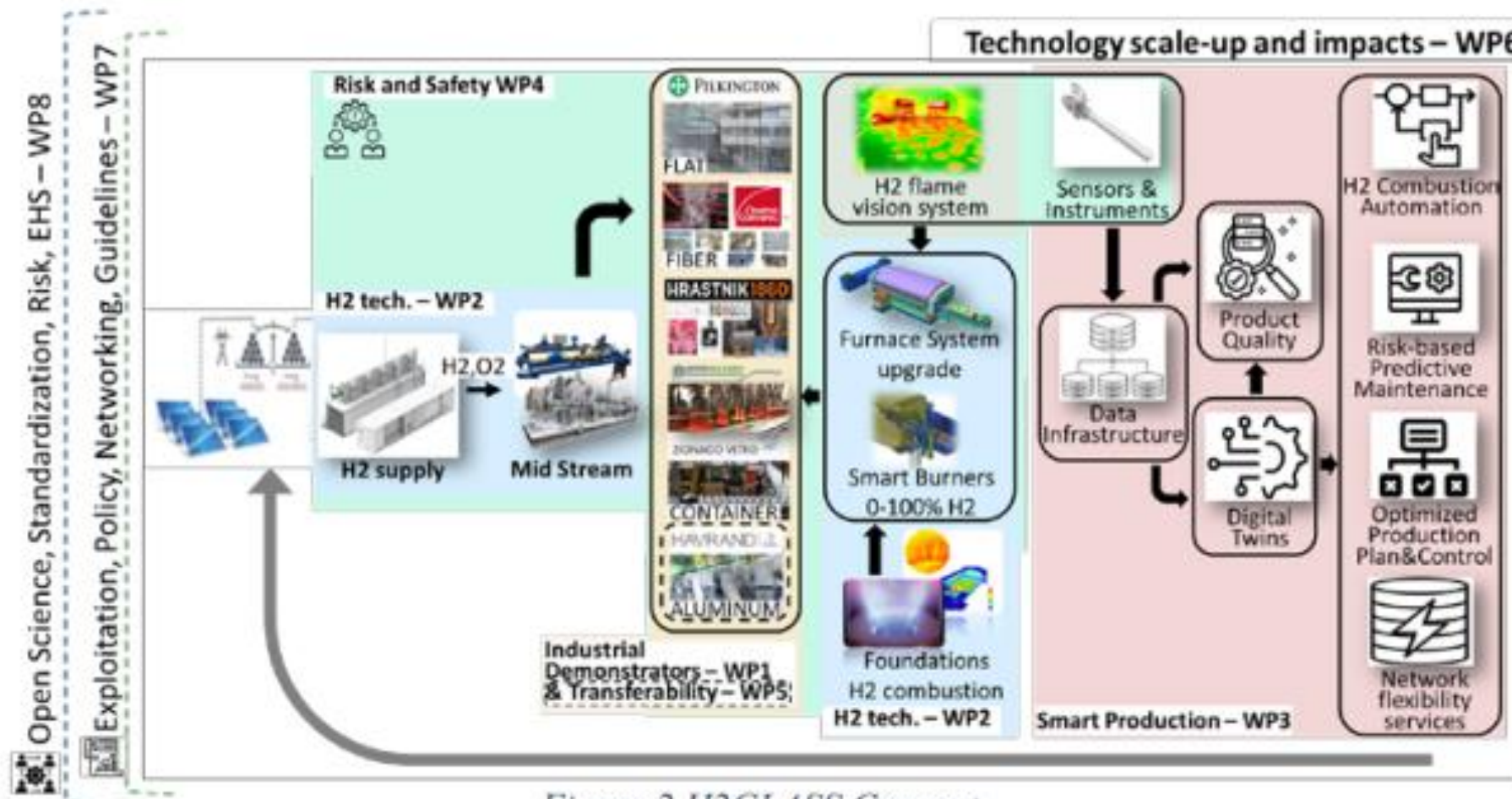


Figure 2 H2GLASS Concept

HRASTNIK 1860



Co-funded by
the European Union



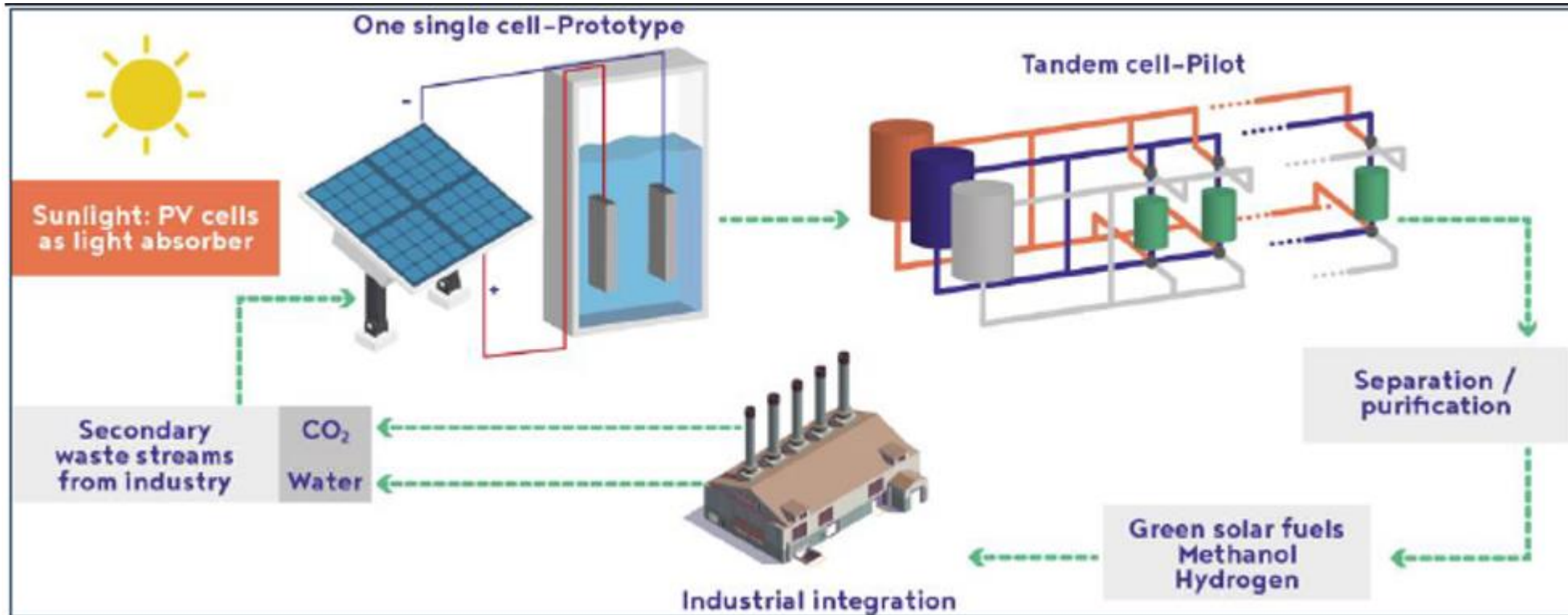
Horizon Europe PHOTOSINT

PHOTOelectrocatalytic systems for Solar fuels energy INTegration into the industry with local resources

PHOTO**SINT**



Co-funded by
the European Union



Product innovation

LIGHTWEIGHTING

SMART SOLUTIONS

E.BOTTLE

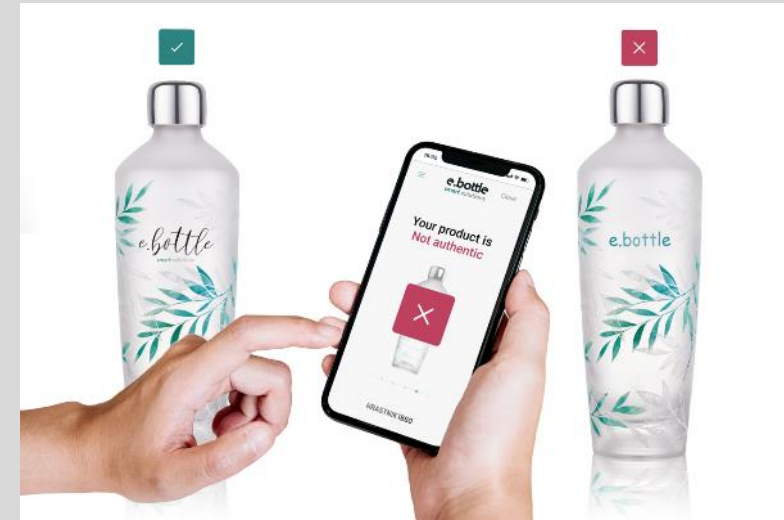
E.CAP

E.LABEL

SUSTAINABLE SOLUTIONS

DECOR SMART

FUNCTIONALITIES



e.bottle
smart solutions



red dot winner 2022



TRANSFORMING GLASS PACKAGING INDUSTRY



Q & A

HRASTNIK1860

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