



Co-funded by the European Union  
Emissions Trading System  
Innovation Fund

# INNOVATION FUND

## BEAR: Hybrid regenerative glass furnace

dr. Gorazd Krese, Steklarna Hrastnik

28<sup>th</sup> January 2025



# About Hrastnik1860

**Producing premium glass packaging  
since 1860**

Steklarna Hrastnik produces the most technically demanding bottles, mostly in the spirit segment, from one of the clearest glass in the world and offers an extensive range as a full-service solution partner, from the idea, design, development, and production. Being made of top-quality glass, products are acclaimed for their perfect crystal shine and are completely free of heavy metals. All items can be customized through comprehensive decoration techniques, resulting in stunning visual results.

## **Style, quality and award-winning design solutions**

Products are distinguished by a combination of style and quality from traditional designs to innovative, award-winning design solutions that received recognition and won awards like the 2022 Red Dot Design Award, German Innovation Award 2021, and EcoVadis Gold Medal 2022 for sustainability efforts.





**295 t** daily production capacity



**500** employees



export to more than **60** countries worldwide



**full-service** solution



160 years of **tradition**



**PERFUMERY AND  
COSMETICS  
FLACONS**



**PREMIUM WATER  
GLASS PACKAGING**



**SPIRIT GLASS  
PACKAGING**

# VISION



To be the **most inspiring** and **most sustainable glass packaging** company on the planet.

# MISSION

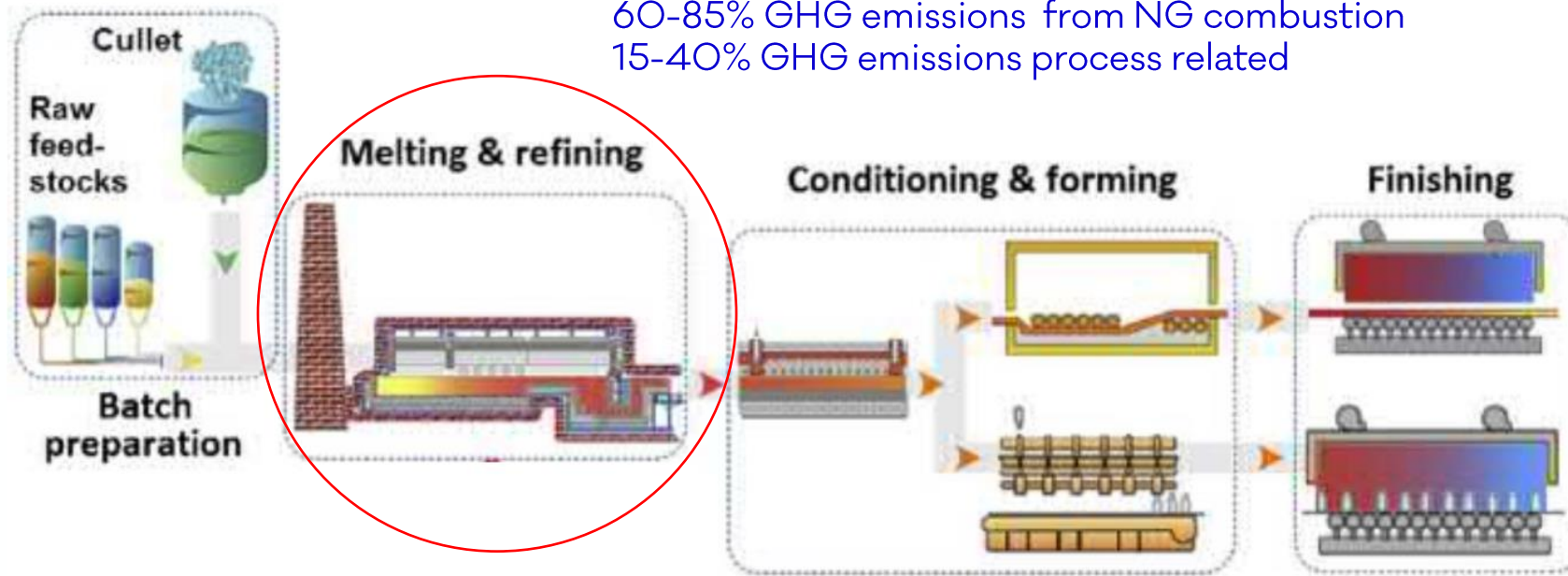


To deliver the **glass packaging experiences** that no one else can, with an **agility, pride** and **passion** that no one else can match.

# Motivation for innovation

- Climate change → global (warming) *weirding*
- 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



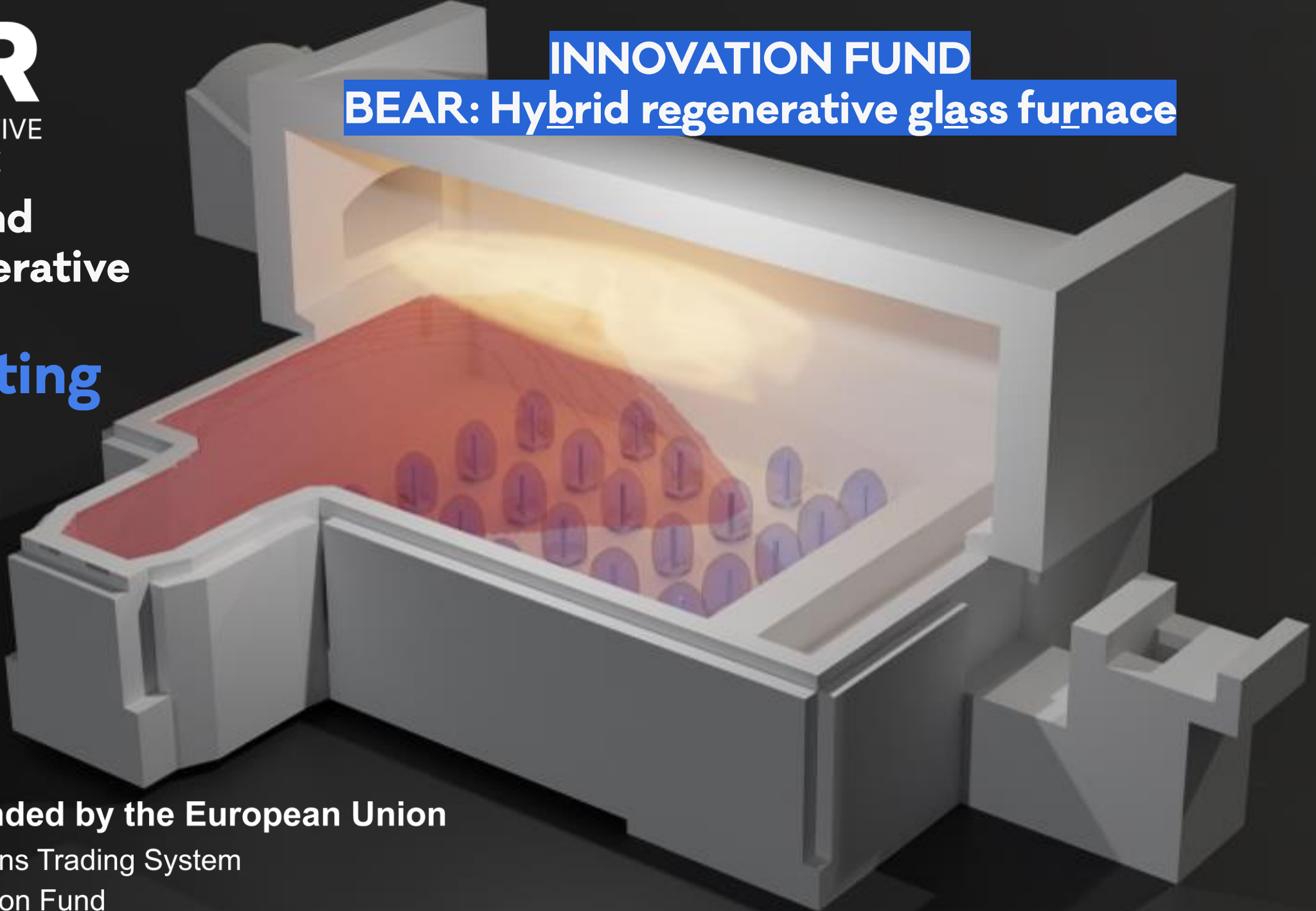
# BEAR

HYBRID REGENERATIVE  
GLASS FURNACE

**First-of-a-kind  
hybrid regenerative  
glass furnace**

**40% boosting**

INNOVATION FUND  
**BEAR: Hybrid regenerative glass furnace**



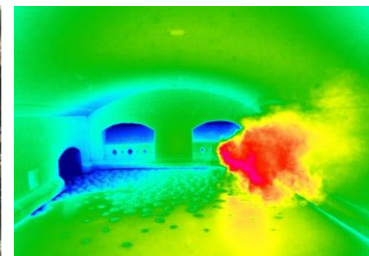
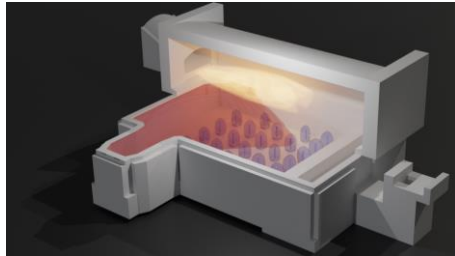
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# Project implementation



2022

2023

2024

2025

Start of project

Erection of furnace

Entry into **full hybrid** operation

**BEAR**  
HYBRID REGENERATIVE  
GLASS FURNACE



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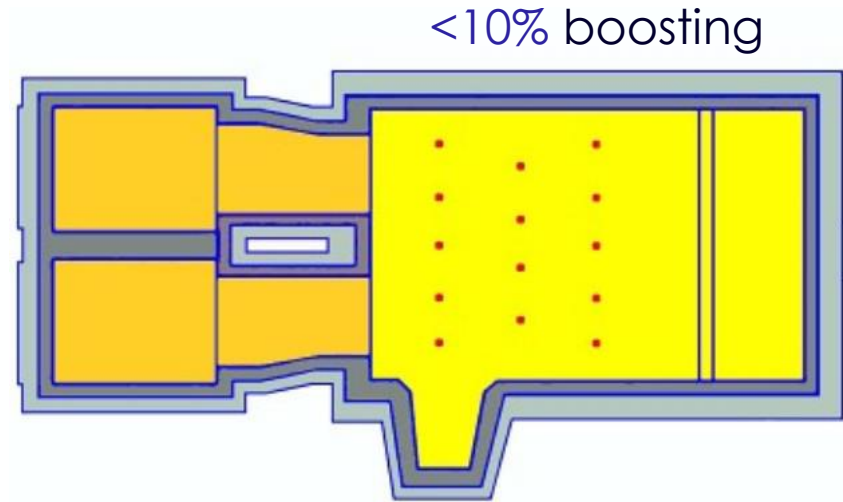
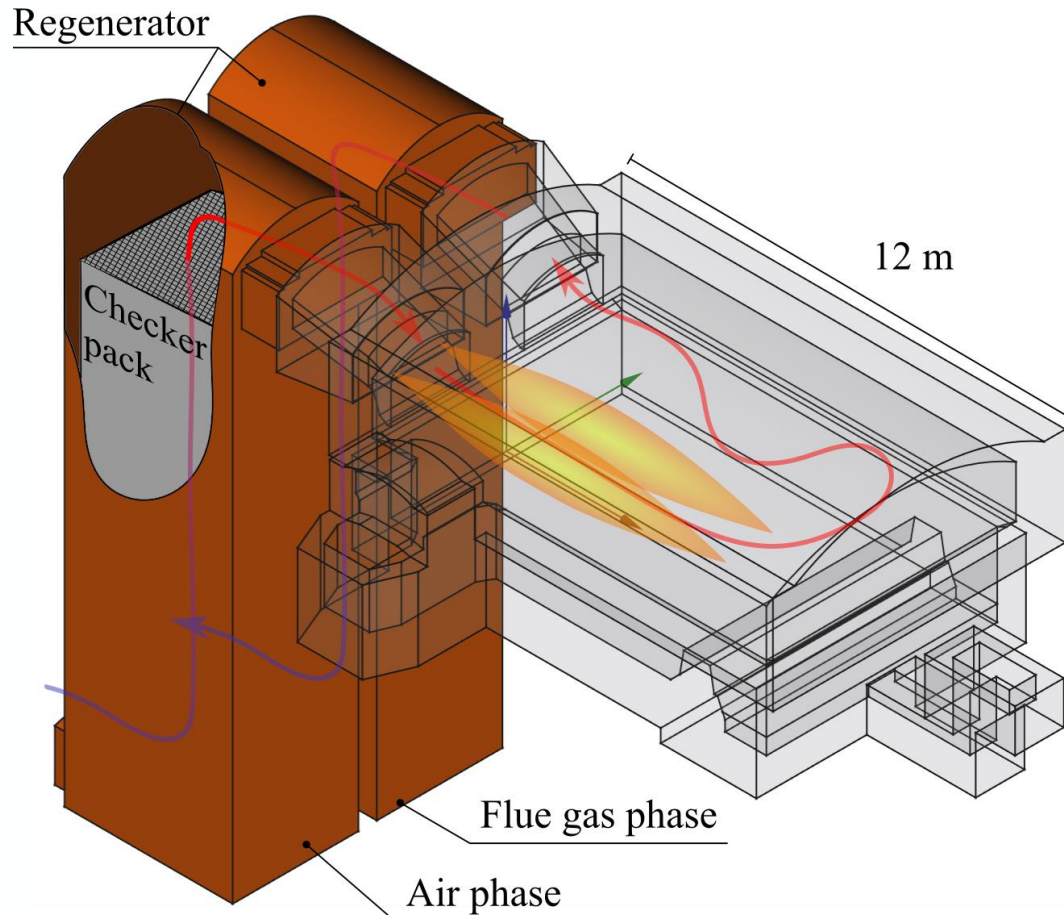
# How to succeed

SSC InnovFund application:

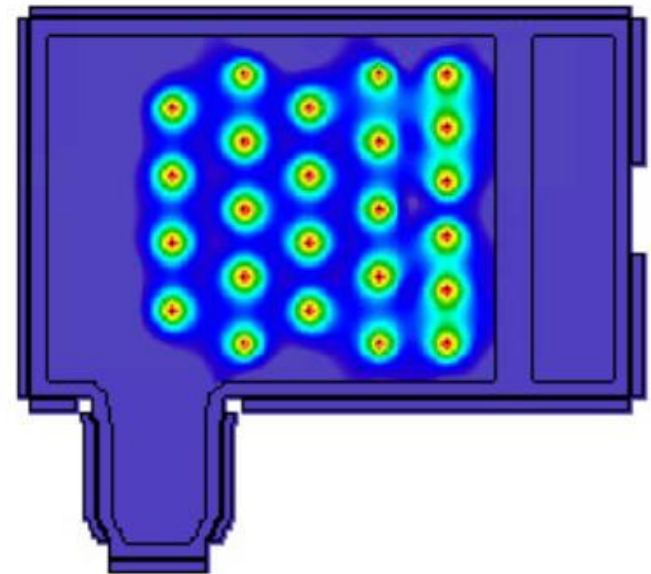
- Degree of innovation
- GHG emission avoidance potential
- Project maturity
  - Technical
  - Financial
  - Operational
- Scalability
- Cost efficiency
- ...

# How to succeed

SSC InnovFund application:  
• **Degree of innovation**



>40% boosting



# How to succeed

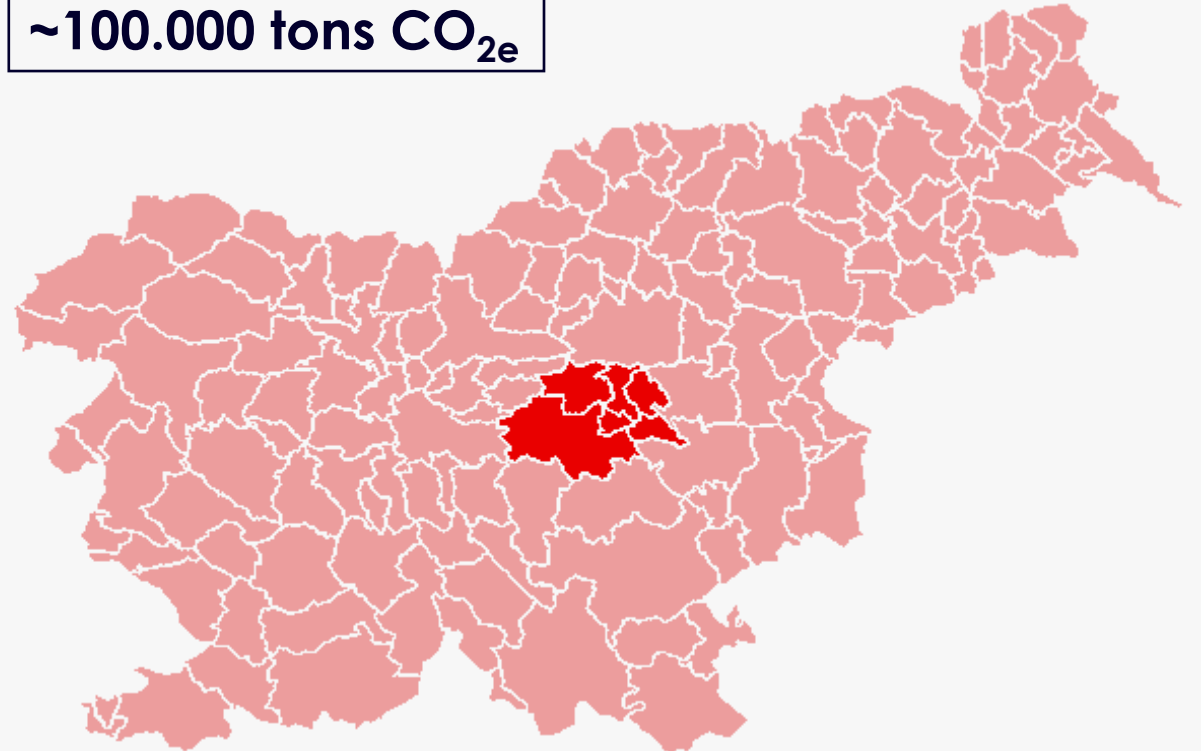
SSC InnovFund application:

- Degree of innovation
- **GHG emission avoidance potential**
- Project maturity
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- ...

The Innovation Fund is 100% funded by the EU emission trading system

$$\Delta \text{GHG}_{\text{abs}} = \sum_{y=1}^{10} ( \text{Reference (Ref}_y) - \text{Project (Proj}_y) )$$

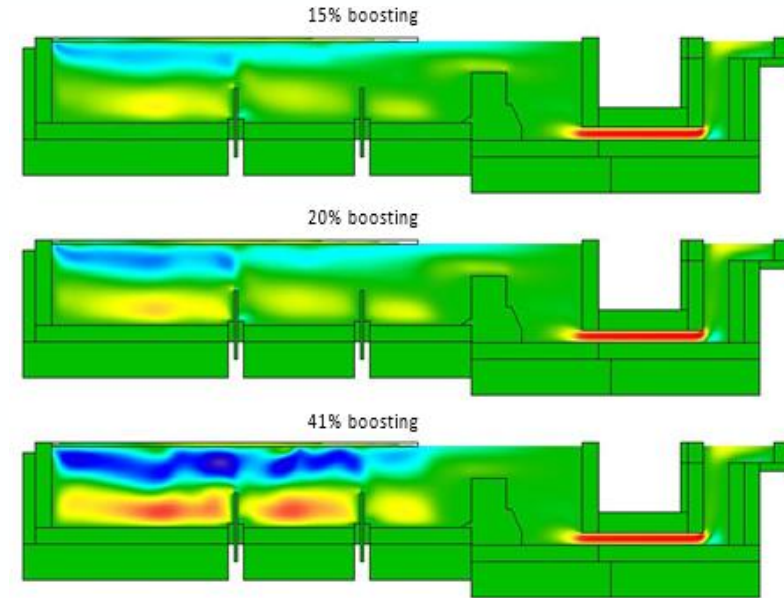
**~100.000 tons CO<sub>2e</sub>**



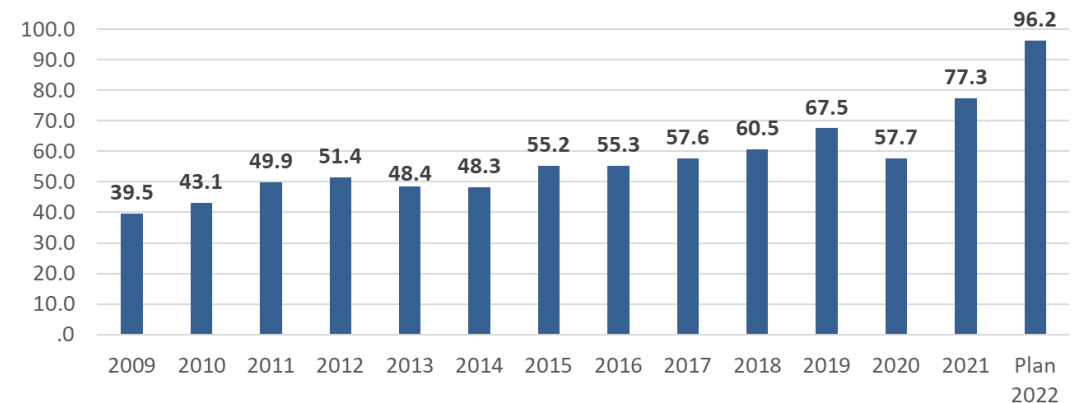
# How to succeed

SSC InnovFund application:

- Degree of innovation
- GHG emission avoidance potential
- **Project maturity**
  - Technical
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- ...



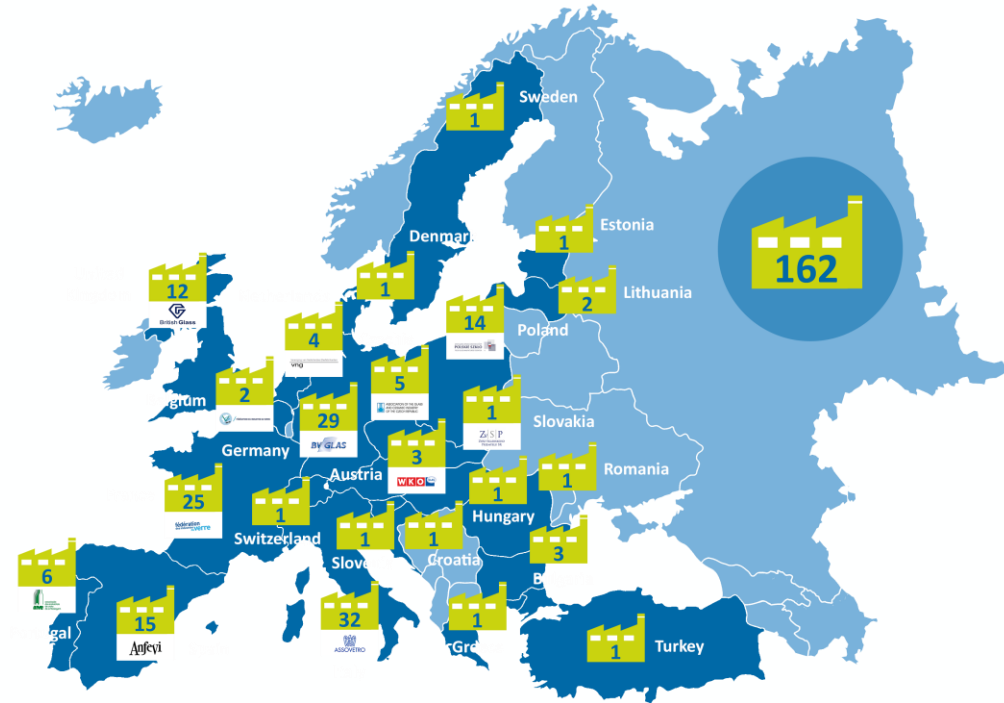
Technical maturity → **Feasibility study**  
 Financial maturity → **Business plan**  
 Operational maturity → **Competences**



# How to succeed

SSC InnovFund application:

- Degree of innovation
- GHG emission avoidance potential
- Project maturity
  - Technical
  - Financial
  - Operational
- **Scalability**
- Cost efficiency
- ...



-19.000.000 t CO<sub>2</sub>e  
-95.000.000 MWh NG

# How to succeed

SSC InnovFund application:

- Degree of innovation
- GHG emission avoidance potential
- Project maturity
  - Technical
  - Financial
  - Operational
- Scalability
- **Cost efficiency**
- ...



$$CER = \frac{\text{Requested IF grant}}{\text{GHG emmision avoidance}}$$

# Project implementation

- Implementation in existing production site **Special**
  - from <10% up to 40% electrical melting
  - -50% natural gas consumption reduction
  - -33% GHG emissions avoidance



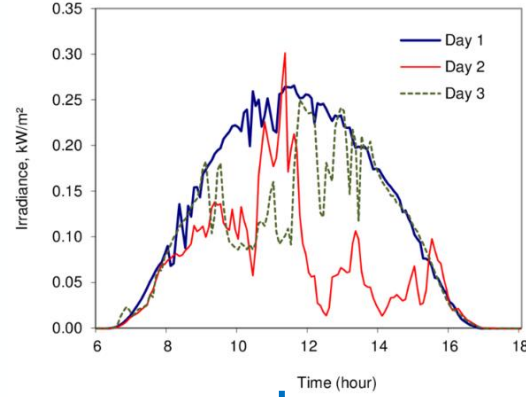
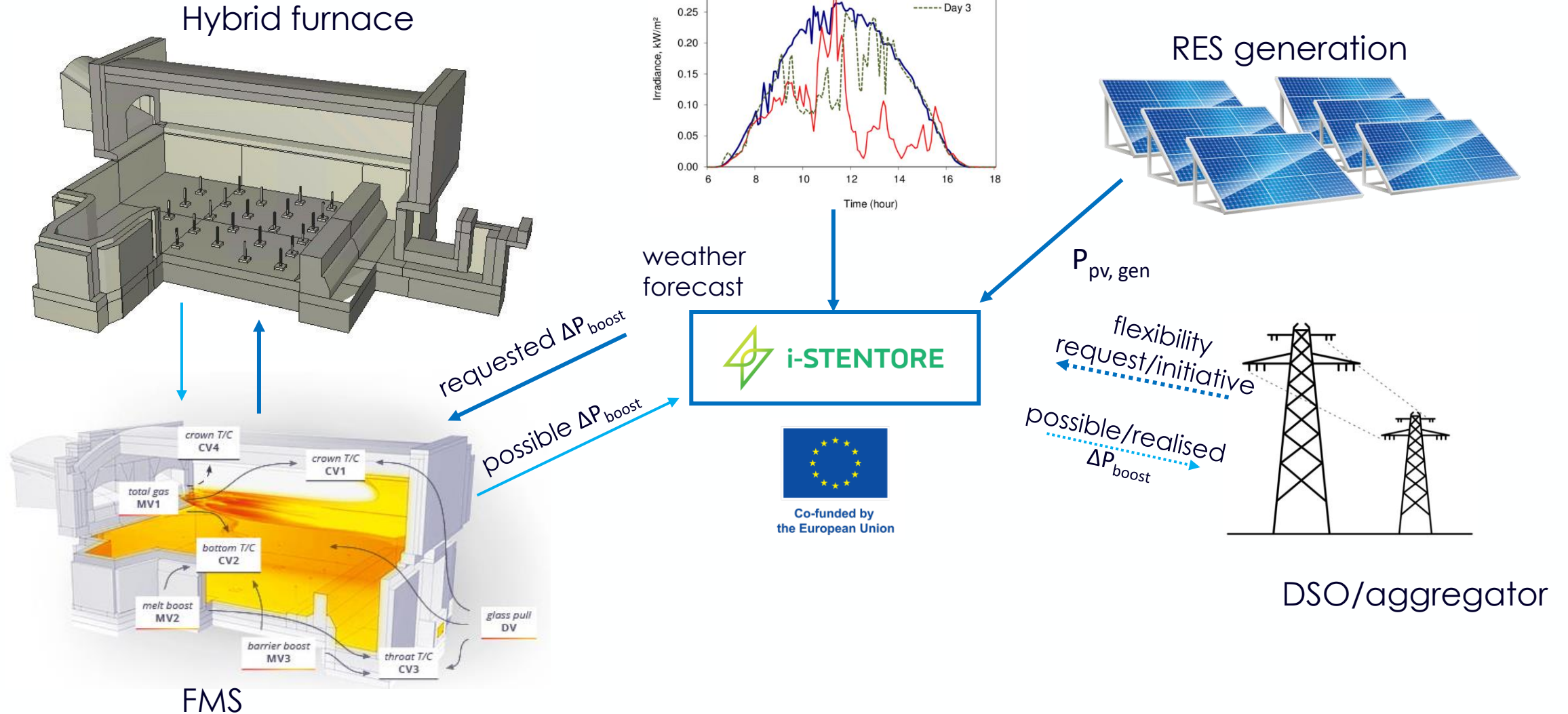


# Green electricity supply





# Horizon Europe i-STENTORE



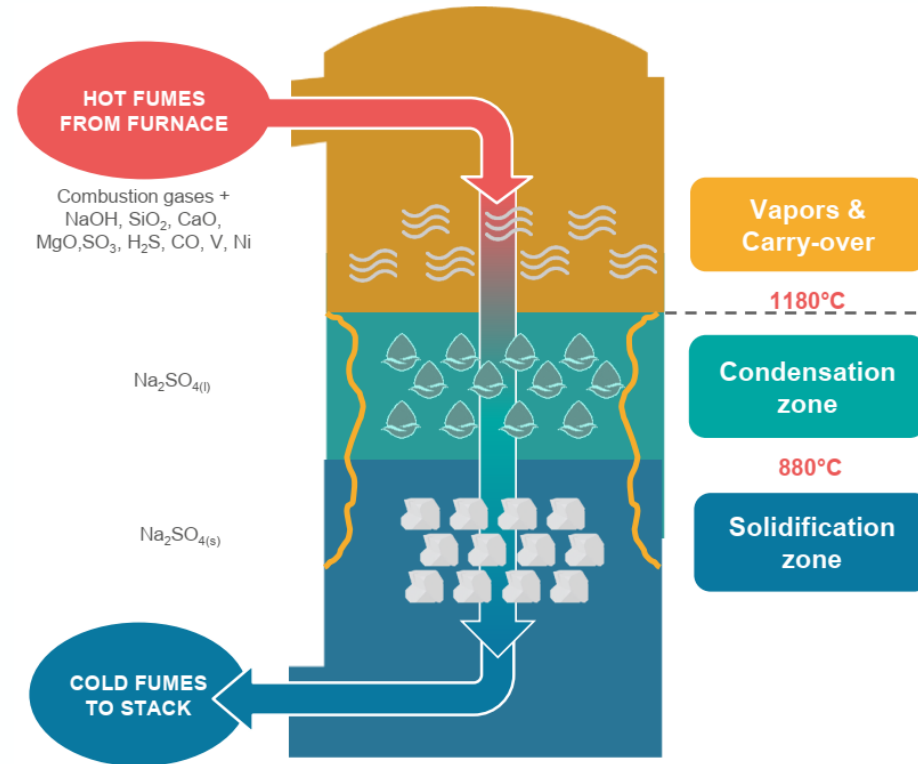
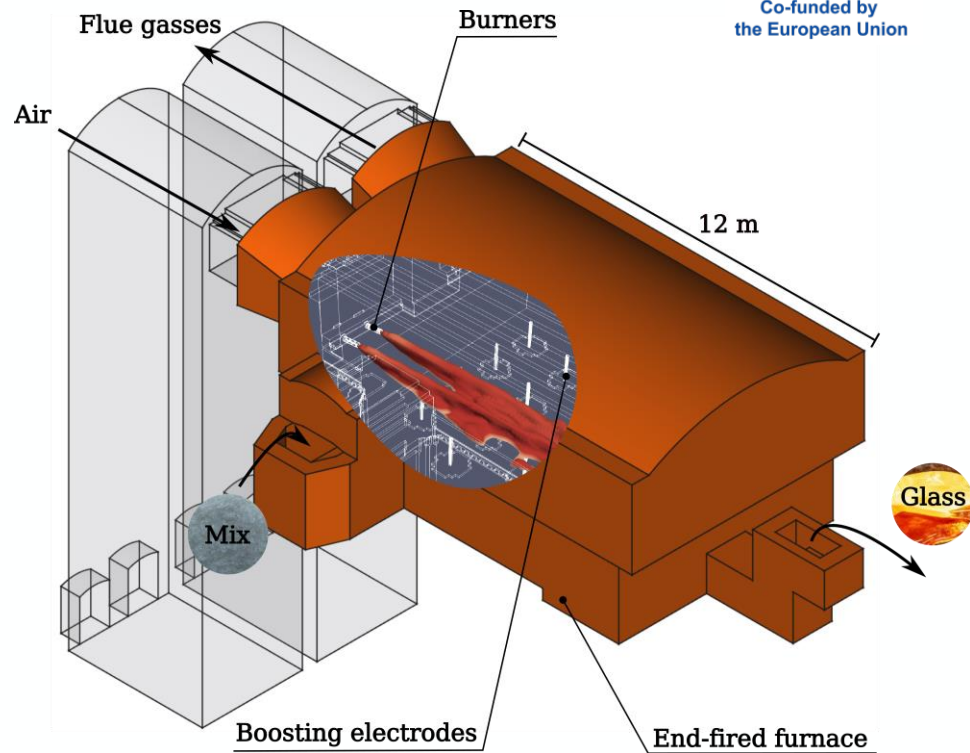
# Horizon Europe CITADEL

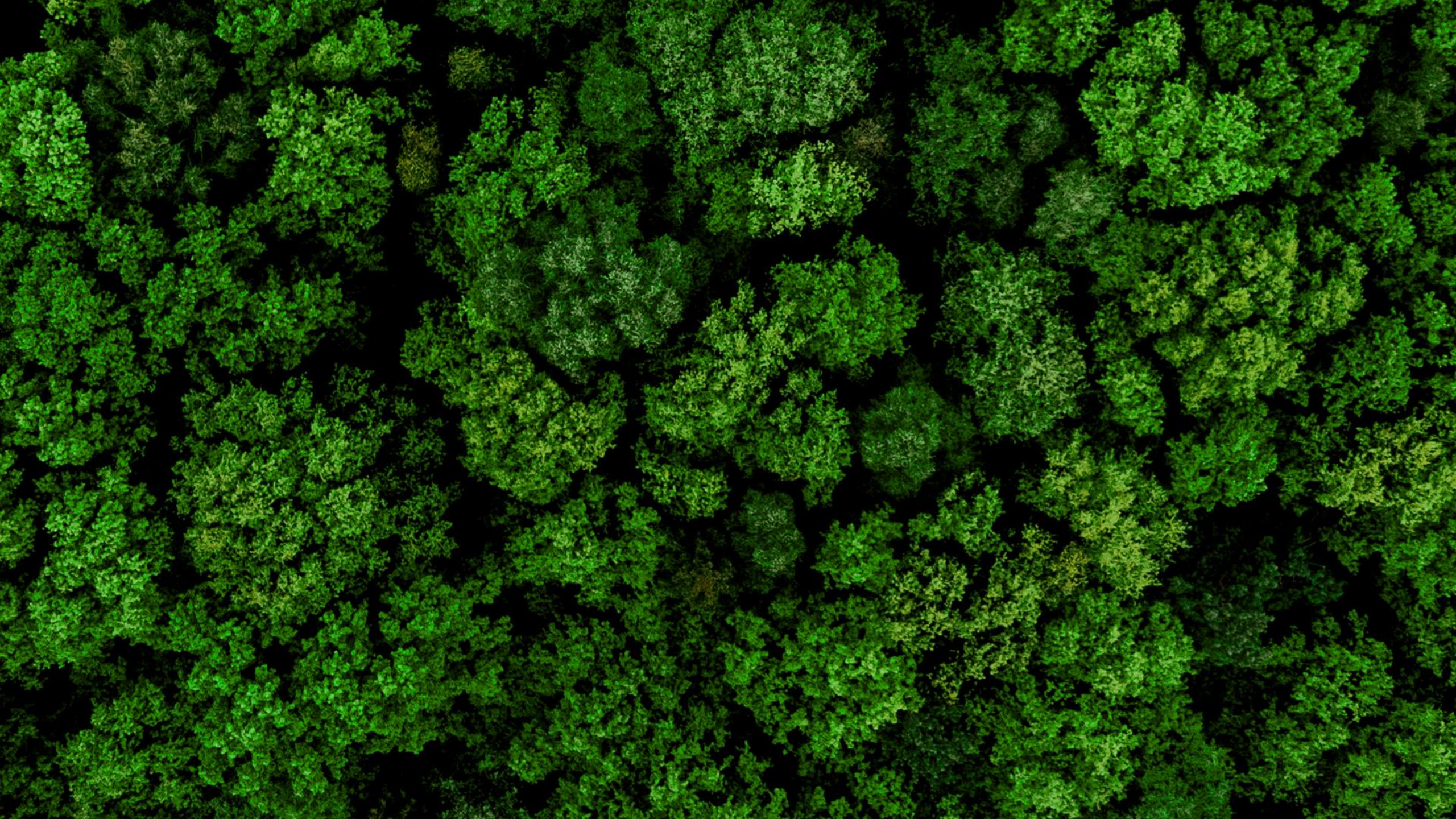
Increase electric boosting > 40% → super hybrid melting

**citadel** ⚡



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# Thank you for your attention Questions?

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or use QR code below

