

SAINT-GOBAIN GROUP

COMMITMENT TO CO₂ NEUTRALITY

EMMANUEL ABT

INTERNATIONAL DIRECTOR FOR WASTE HEAT RECOVERY AND CO₂ REDUCTION
SAINT-GOBAIN GLASS INDUSTRY - DTI



**SUSTAINABLE
ENERGY WEEK**

EXTENDED PROGRAMME
11-22 OCTOBER 2021
TOWARDS 2030: RESHAPING THE EUROPEAN ENERGY SYSTEM
#EUSEW2021

SAINT-GOBAIN IN A NUTSHELL

More than

167,000

employees and over
100 nationalities represented

Around

800 manufacturing

facilities worldwide, operations

in **70** countries

About

4,000

sales outlets

2050
NET ZERO CARBON

Commitment:
carbon neutrality
in 2050

Founded over

350 YEARS
AGO

2020 TURNOVER

€38.1 BN

Markets

85% construction

15% industrial

“

Be the worldwide leader
in light & sustainable
construction

”



SUSTAINABILITY AT THE HEART OF ALL OUR MARKETS

Sustainable construction



Decarbonization technologies for global construction players

Sustainable mobility



Technologies for glazing & electric vehicle solutions

Sustainable industry



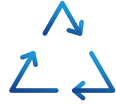
Specialty materials for industrial processes decarbonization

Avoided emissions: 40x our footprint¹

*for our customers,
from our solutions
sold in 1 year*

SAINT-GOBAIN IS COMMITTED TOWARDS CARBON NEUTRALITY

Product design & material formulation



Energy efficiency of our processes

2050
NET ZERO CARBON



Switching our processes to a less carbon-intensive energy



Action on our raw material suppliers



Carbon removal



Action on transport

Carbon footprint (2017)

Scope 1 + 2

8 + 3 Mt

Scope 3

23 Mt

2020

Internal carbon prices increased:
€150 for R&D

100 M€ invested per year for sustainable projects

2030 targets SBT-validated

2030

Scope 1 + 2

-33%

Scope 3

-16%

Absolute emissions reduction vs. 2017

THE BCP PROJECT

BATCH & CULLET PREHEATING



EXTENDED PROGRAMME
11-22 OCTOBER 2021
TOWARDS 2030: RESHAPING THE EUROPEAN ENERGY SYSTEM
#EUSEW2021

MAIN LEVERS FOR GLASS CO2 ROADMAP

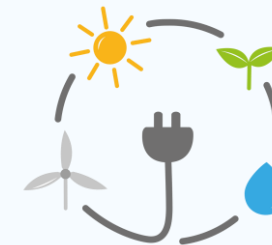
- **Energy efficiency first**
 - Improve the furnace design for each cold repair
 - Continuous improvement on Yield, energy consumption, ...
 - Waste Heat recovery (electricity production, **BCP project**, ...)



- **Recycling with max. cullet recovery and use**
 - Pre consumer recovery
 - Post consumer / end of life development



- **Renewable energy development**
 - Furnace electrification
 - H2 combustion development
 - Biogas combustion



EXTENDED PROGRAMME

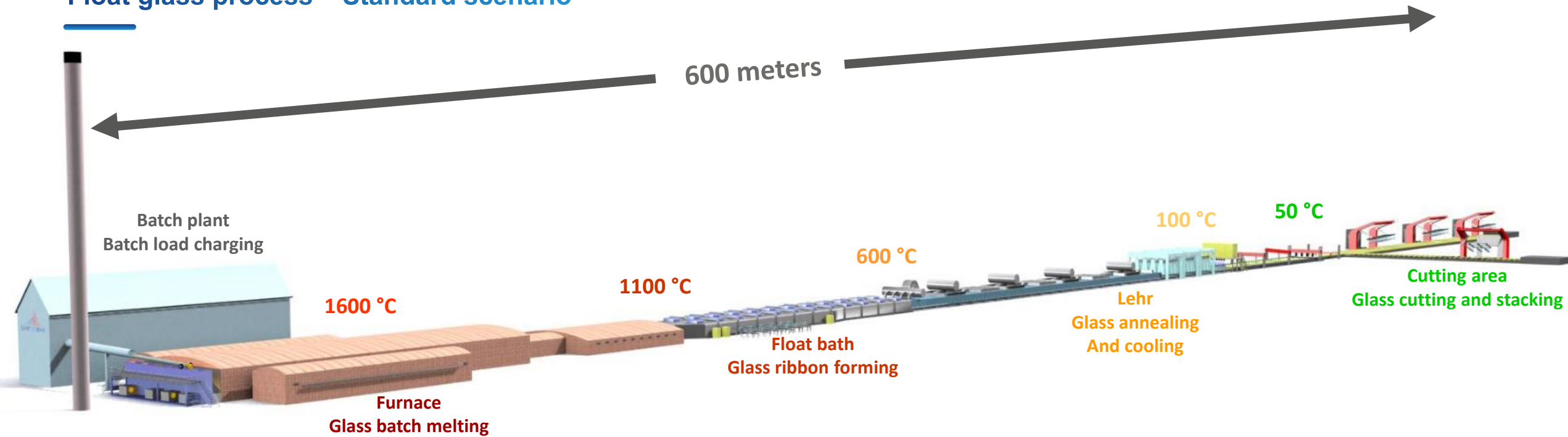
11-22 OCTOBER 2021

TOWARDS 2030: RESHAPING THE EUROPEAN ENERGY SYSTEM

#EUSEW2021

BCP PROJECT : PREHEATING OF THE BATCH & WASTE HEAT RECOVERY

Float glass process – Standard scenario



The BCP project will be located in SG Glass France in Aniche (France - Haut de France)

Float line capacity = 600to/d of melted glass $\Rightarrow \approx 200\ 000\ \text{t/y}$

Energy Furnace power $\approx 40\ \text{MW}$ $\Rightarrow \approx 350\ \text{GWh/y}$

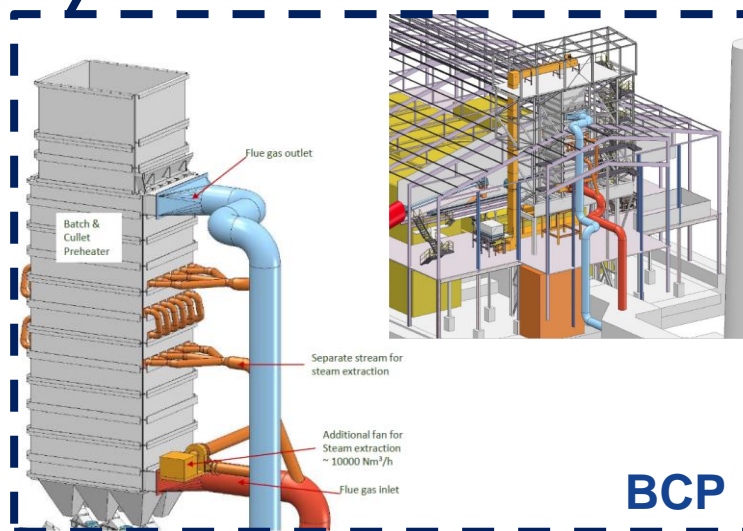
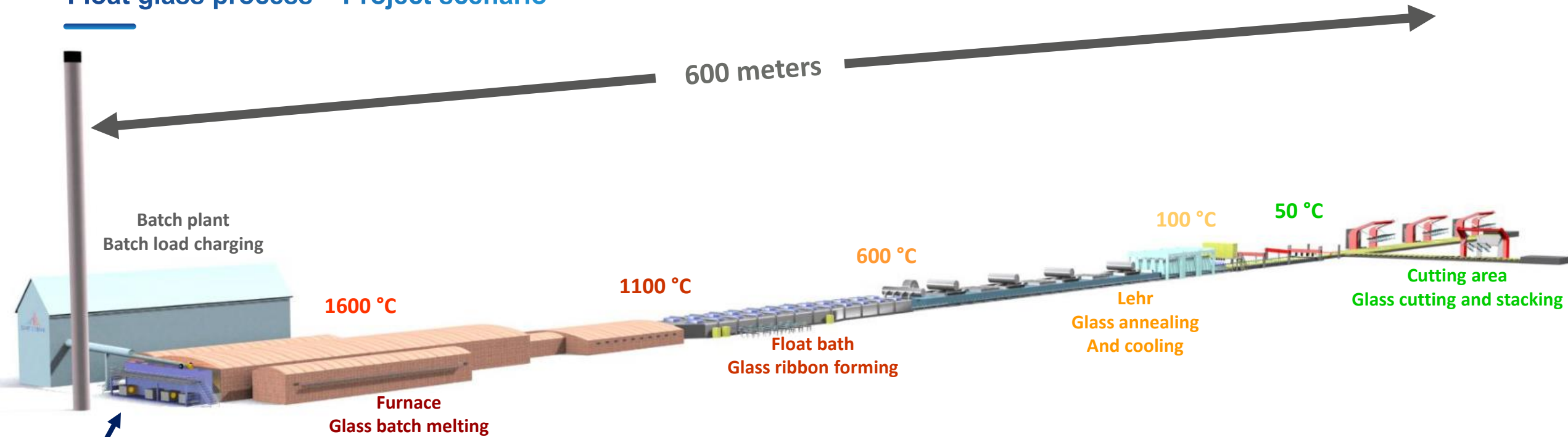
Temperature of the raw materials need to be raised to 1550°/1600°C to elaborate glass

Process CO₂ emissions come mainly from energy (70%) and raw materials (30%)



BCP PROJECT : PREHEATING OF THE BATCH & WASTE HEAT RECOVERY

Float glass process – Project scenario



Part of the residual heat of the furnace fumes (8 to 10 MWh) is used to preheat the batch mixture. The mixture reaches approx. 200°C (instead of 30°C without BCP) at the entrance to the furnace.

Energy savings ≈ 10% on furnace consumption
CO₂ emissions reduction ≈ 6 000 to/year (7% of plant emissions)

Innovation

1st industrial facility of batch preheater on float line process (specific conditions : moisture, cullet ratio, ...)

Investment ≈ 7,2 M€

INNOVATION FUND

GRANT PROCESS



EXTENDED PROGRAMME
11-22 OCTOBER 2021
TOWARDS 2030: RESHAPING THE EUROPEAN ENERGY SYSTEM
#EUSEW2021

SUBMISSION PHASE

- Large group / No consortium / Simple configuration
- Simple financing structure: 40% SG + 60% IF
- BCP project study already well advanced before launching the submission phase
- Approx. 3 very intense months, with a multidisciplinary project team, very frequent project & SC meetings
- Support from a consultant



GRANT AGREEMENT PREPARATION

- Very structured reporting process & tools
- Good collaboration with CINEA team and especially our Project Officer and
- Some debugging about being the first on IF SSC project



LEARNINGS

- Good experience to better understand other grant applications
- Good collaboration with Project Officer and CINEA team
- Need to fully understand and anticipate the expectations of the "Financial Close" step
- "Chaque projet mérite d'être tenté" - „Every project has its own chance"





MAKING THE WORLD A BETTER HOME

Thank you !



**SUSTAINABLE
ENERGY WEEK**

EXTENDED PROGRAMME
11-22 OCTOBER 2021
TOWARDS 2030: RESHAPING THE EUROPEAN ENERGY SYSTEM
#EUSEW2021