

# Towards sustainable glass manufacturing

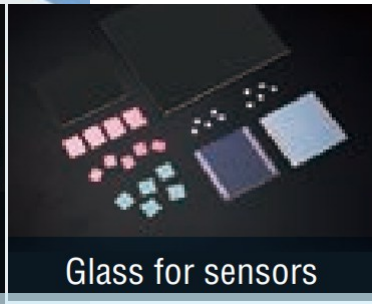
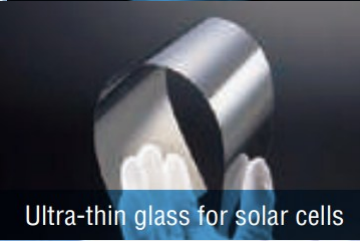
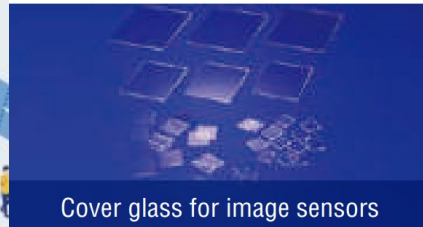
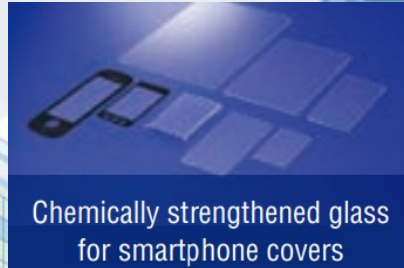
## -NEG carbon neutral Technologies-

March 8, 2025

Yuki Uno  
Nippon Electric Glass Co., Ltd.

# About Nippon Electric Glass

## Products and Business Fields



[Nippon Electric Glass Co., Ltd.](http://www.neg.com)



### Corporate philosophy

“We strive to build a brighter future for the world by uncovering the unlimited possibilities of glass for more advanced creative manufacturing.”

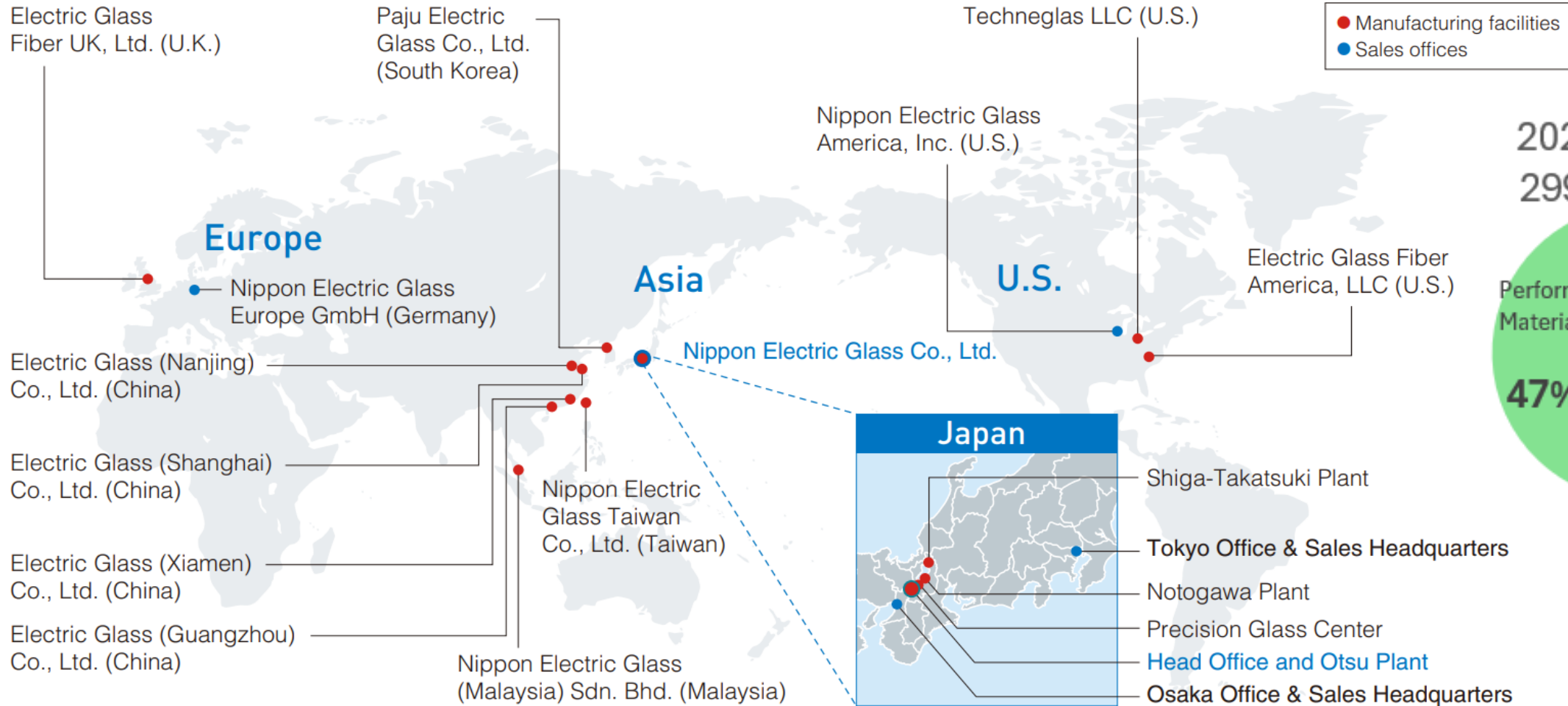
# Nippon Electric Glass Group

Fiscal 2023

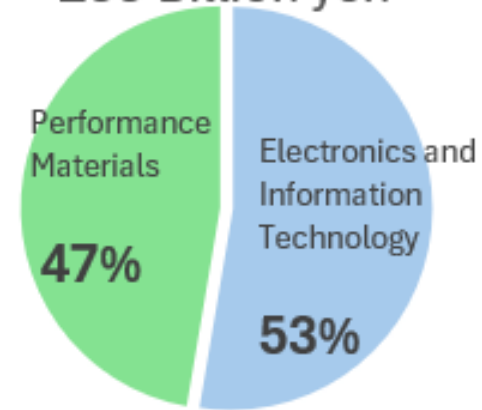


Number of employees  
**5,578**

## Global Operations



2024 Net sales  
299 Billion yen

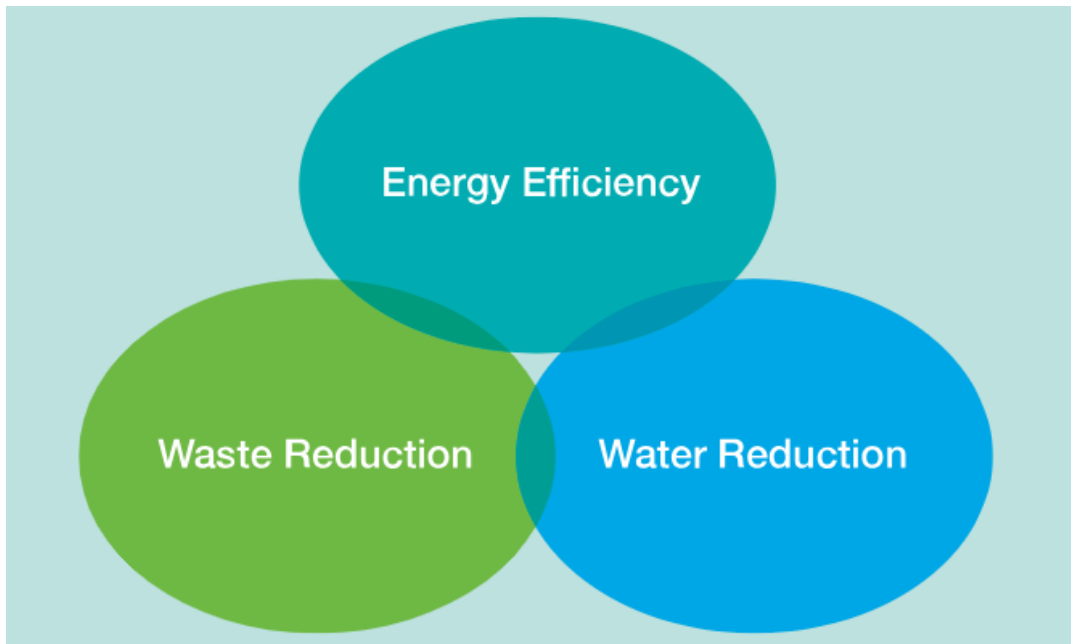


# Environment

With “consideration for the environment” as one of our key values, we will continue to manufacture products in an environmentally friendly way.

## Environmental Business Plan

(From 2000, over 24 years)



“Highly efficient manufacturing” ⇒  
“Environmental-friendly manufacturing”

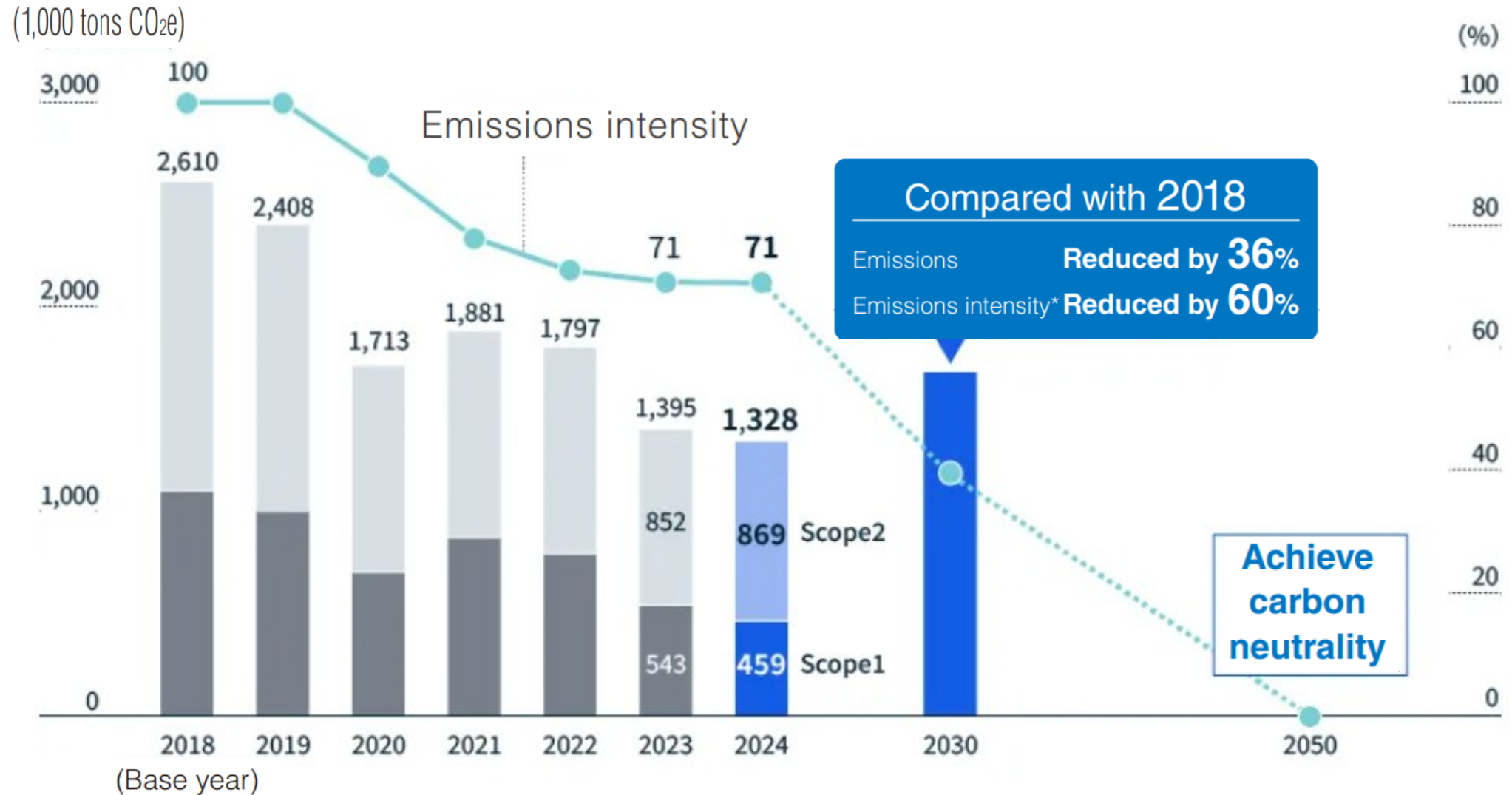
**Minimize Input & Output**

CSR



# Carbon Neutrality targets

## CO<sub>2</sub> Reduction Targets



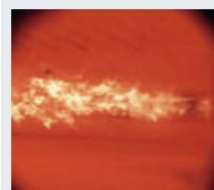
# NEG's approach to Carbon Neutrality



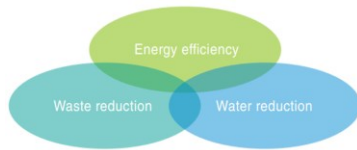
## Focus on Melting and Forming



**1974**  
Install all Electric melting furnaces



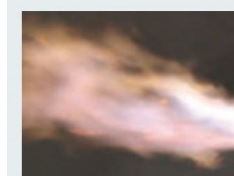
**1993**  
Install Oxy-Fuel Furnaces



**2000**  
Implemented Environmental Business plan



**2010**  
Fuel conversion (Fuel-oil free)



**2022**  
Established Hydrogen combustion glass melting

**CO<sub>2</sub> Emission factor**

Heavy Oil → Gas : 3/4  
Gas → H<sub>2</sub> : zero



# Carbon Neutrality

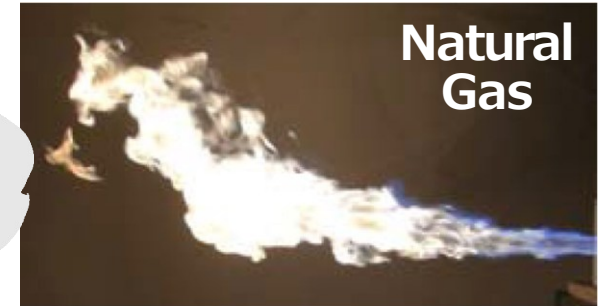
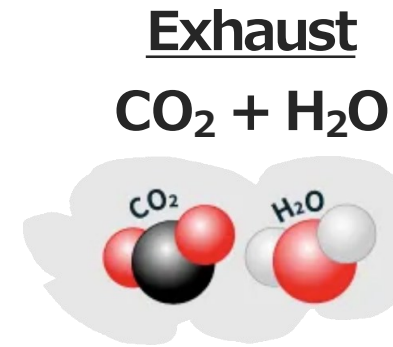
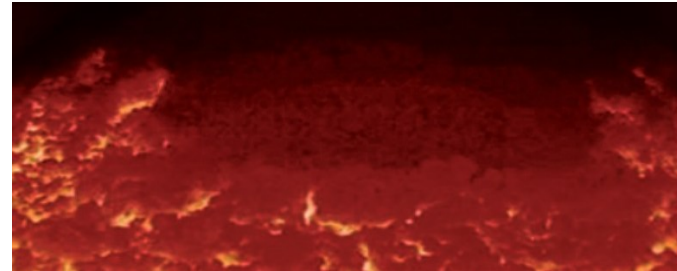
## CO<sub>2</sub> Free Technology

- All Electric Melting -

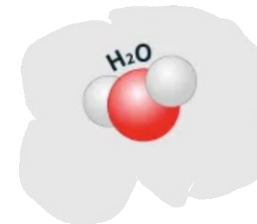
- Hydrogen Combustion -

Energy Consumption

	<u>Combustion</u>		<u>All Electric Melting</u>
Glass	20	=	20
Radiation	60	>>	27
Exhaust	20	>>	3
<b>Total</b>	<b>100</b>	<b>&gt;&gt;&gt;</b>	<b>50</b>



only H<sub>2</sub>O



Utilization of Renewable Energy ⇒ Achieve Carbon Neutrality in 2050

# Nippon Electric Glass, a Pioneer in Oxy-fuel Combustion, Begins Offering Carbon-Neutral Glass Manufacturing Technology to the Glass Industry

Promoting carbon neutrality throughout the glass industry with its engineering business



Glass Engineering

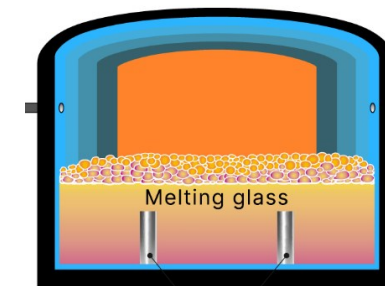


NOFC™



NFCS™

Electric melting furnace



Rod Electrodes



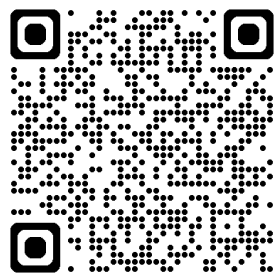
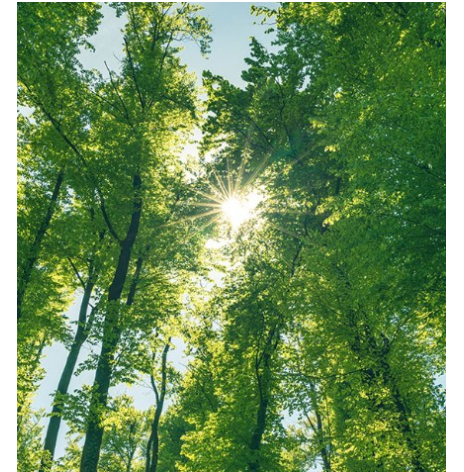
NEMT™





Feel free to contact us to learn more about NEG Glass Engineering Technologies.

Thank you / धन्यवाद / ありがとう



Web site

**NEG**

**Nippon Electric Glass**

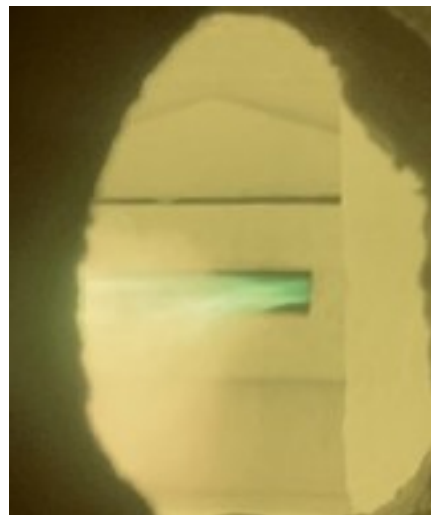


Inquiry



- **NOFC™ (NEG Oxy-Fuel Combustion)**

- 30+ years of experience and expertise
- Flexible burner lineup:
  - min 50kW – max 2500kW
- Easy maintenance / Less maintenance



- **NFCS™ (NEG Furnace Control System)**

- Multiple control; Combustion, temperature, Glass level, Furnace pressure,
- Multiple safety system
- Automated start(stop) sequence for Oxy-Fuel firing

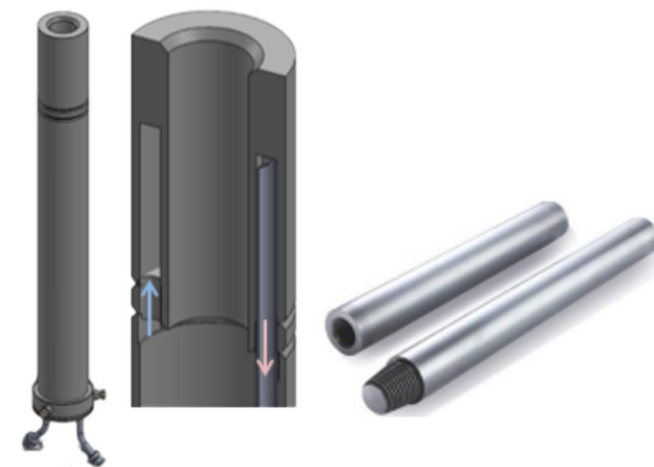
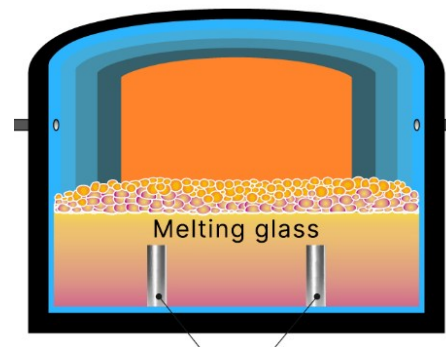


# NEG Glass Engineering Technologies



- **NEMT™ (NEG Electric Melting Technology)**

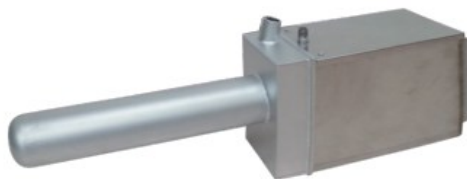
- 60+ years experience and know-how
- 15+ years continuous operation
- Electrode holders
- All Electric furnace



Electrode holder

Mo Electrode

- **Furnace equipment:** , - 70+ years glass manufacturing know-how ITV / Batch feeder / Glass leveler / CFD modeling , etc.



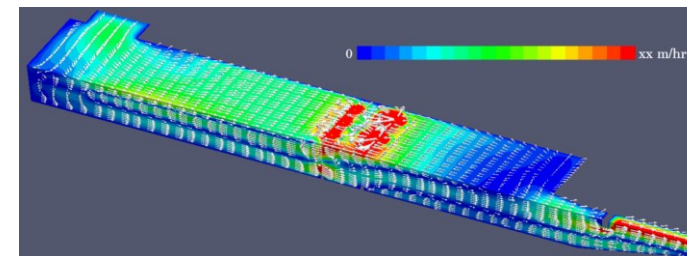
ITV (furnace camera)



High resolution image



Non-contact type glass leveler



Glass flow pattern image