



RHI MAGNESITA

RHIM's solutions for the Glass Industry

SERVICES

From Refractory Design to Heat-Up

During Operations

From Draining to Demolitions



Heating Up Efficiency, Cooling Down Emission: Shaping a Sustainable Path for the Glass Industry

RHIM is committed to helping our glass industry customers in **reducing CO2 emissions** and **enhancing furnace efficiency**. We achieve this by offering high-performance products and carefully evaluated lining concept for each part of the furnace.

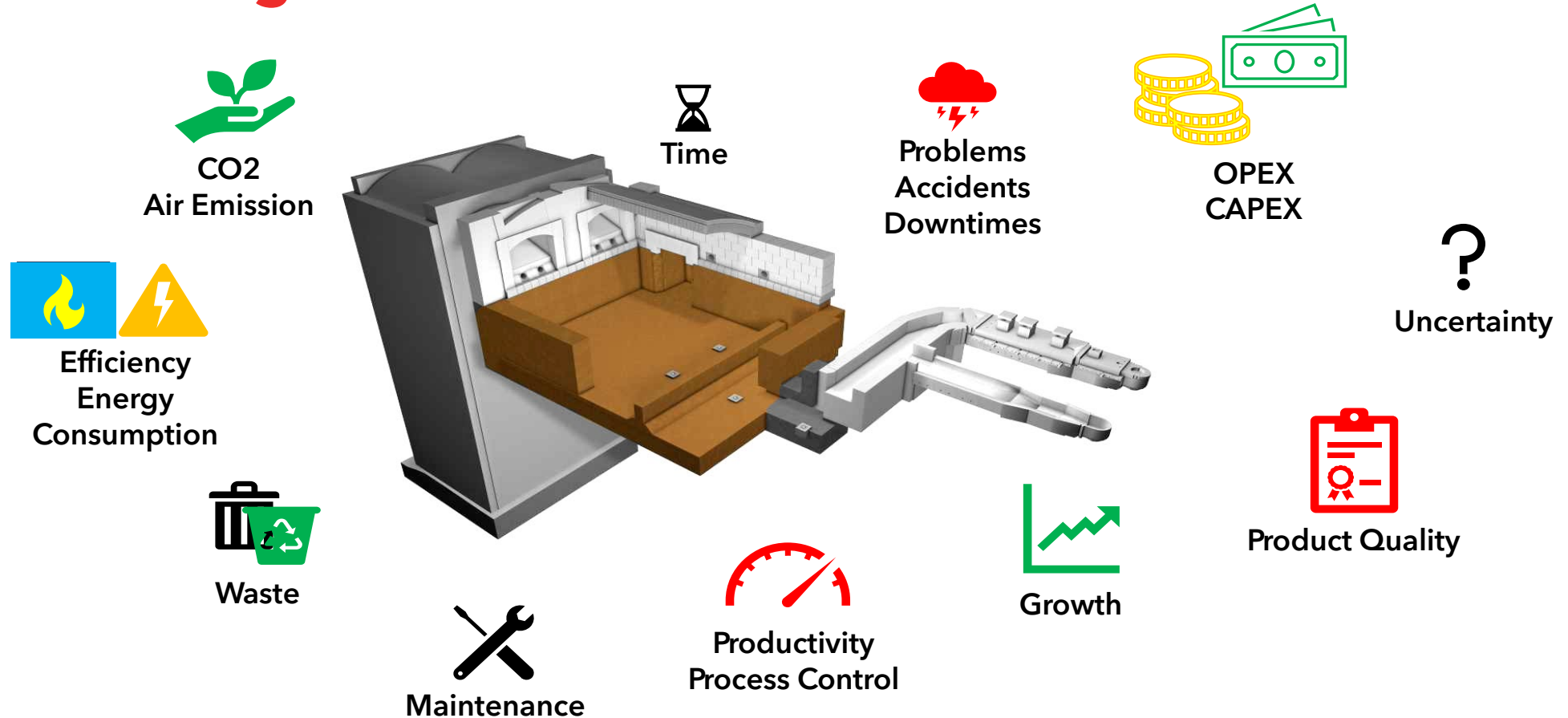
In the following slides, we will introduce RHIM's Services related to glass furnace. We are supporting all customers in the daily work to decrease consumption, extend the furnace's lifespan, and ensure superior glass quality.

Our objective is to help you achieve Net Zero goals.

If you require further clarifications or additional information, our experts are at your service.

We Understand Your Challenges

In the Management of a Reliable and Efficient Furnace



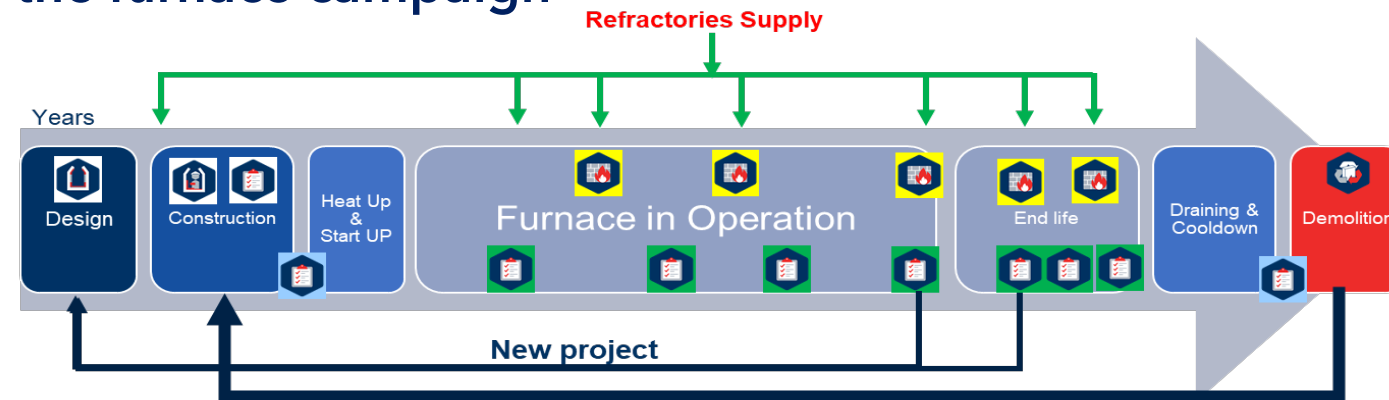
The furnace is an Important Asset with great impact on the Results of your Plant

We are Experts on Refractories, Furnaces and Glass

From the Furnace Concept till the End of the Campaign

RHI Magnesita, with the knowledge of its Glass Experts Team, a large portfolio of High-performance products and maintenance Services, support you on

- Keeping the furnace efficiency high during the years
- Reduce maintenance during operation
- Prolonging of the furnace campaign



Design & Construction Support

- Lining Concept & refractories Design
- Installation of refractories & Mixes
- Installation Supervision
- Cold Inspection before start up

Operations

- Endoscopy, Hot Inspection and other Controls
- Hot Maintenance (Ordinary, Extraordinary & Emergency)
- Refractories Recycling
- Trainings
- Lab

OUR SERVICES

From Refractory Design to Heat-Up



REFRACTORY DESIGN and **LINING RECOMENDATION**: RHI Magnesita Engineering offers comprehensive furnace refractory design services, including innovative solutions like INNOREG for regenerators. Leveraging our extensive experience in refractories, we can guide you in selecting the optimal solution based on the specific operational and economic requirements of your project.

HEAT-LOSS and **EFFICIENCY CALCULATION**: in addition to the design, RHI Magnesita, offer the possibility to perform Heat-loss and Efficiency Calculations on the various parts of the furnace in order to compare different lining solutions.

LAB ANALYSIS: our laboratories and research center can perform a wide range of analysis on refractories and glass defects before there are delivered and installed on the new furnace.

INSPECTION and **PREASSEMBLY** of refractory materials, including fused cast products with radar-testing

SUPERVISION and/or **INSTALLATION** of refractories materials

COLD INSPECTION of complete furnaces before start-up including Laser Inspection

HEAT-UP SUPERVISION for furnace, Regenerators, Forehearths and Tin Bath

OUR SERVICES

In Hot Conditions

LAB ANALYSIS: our laboratories and research center can perform a wide range of analysis on refractories and glass defects before there are delivered and installed on the new furnace.

PERIODICAL FURNACE AUDIT: Regular furnace inspections by external experts are vital for maintaining furnace efficiency and preventing issues during campaigns. Our inspections include Endoscopies, IR Camera Inspection, Visual Inspection.

HOT REPAIRS: RHIM, offer a wide range of products specifically designed for hot repairs and provides installation services for these products. Dry and Hot gunning are less invasive and more effective than other methods commonly used for repairing glass furnaces. Our hot repairs services include:

- Checker cleaning
- Overcoating
- Dry and Hot Gunning

REGENERATORS EFFICIENCY MEASUREMENT: Regenerators play a crucial role in the furnace efficiency. RHIM can perform regular assessment of the regenerator performance to follow the evolution and anticipate any issues.



OUR SERVICES

From Draining to Demolitions and Beyond

COOL-DOWN SUPERVISION for furnace, Regenerators, Forehearths and Tin Bath

POSTMORTEM INSPECTION and ANALYSIS at the of the campaign permit to understand better the behavior of refractories and improve the design for the future. The Laser scan inspection and calculation of the lining thickness will help the designer and people working on the furnace, to enhance the lifetime of the furnace in the future campaigns.

REFRACTORIES RECYCLING: refractories can be recycled and RHIM works on maximizing the quantity of recycling materials in its products. A key point is to separate in the correct way the materials during the demolition and then sorting and collecting them before being recycled into new bricks.

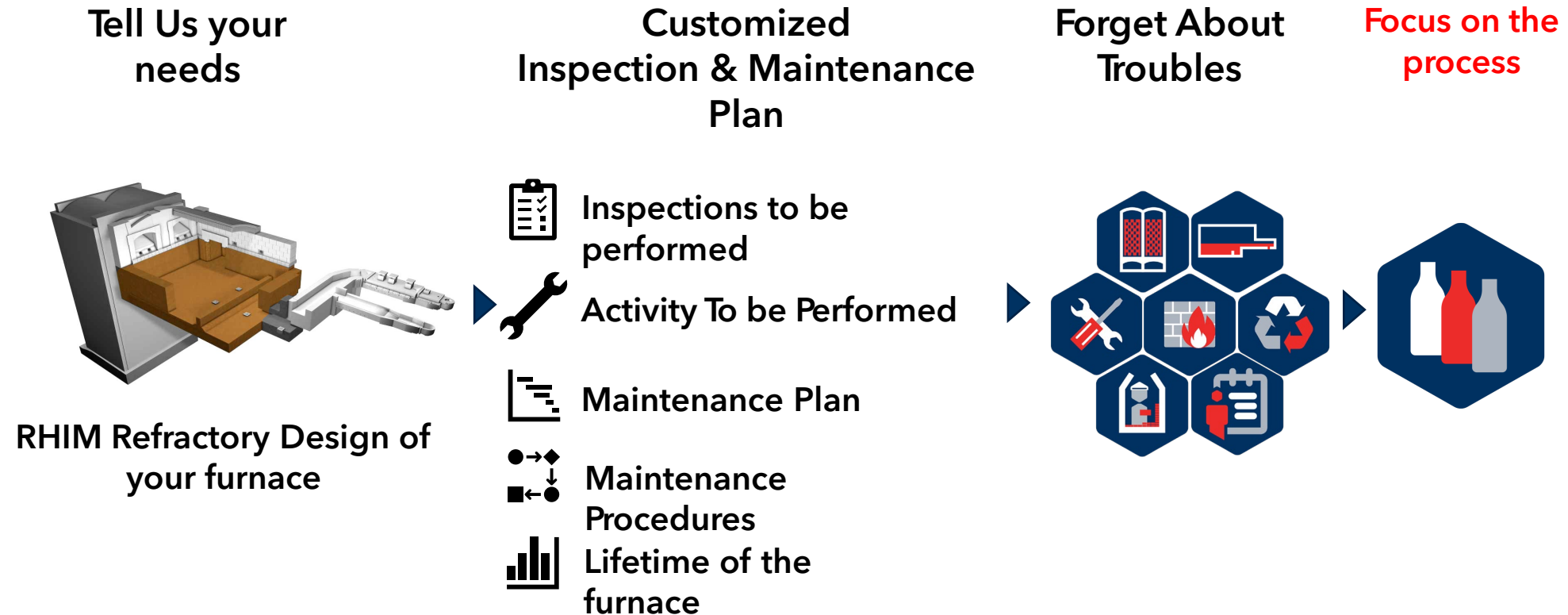
TRAINING: Every person working around the furnace must know the basic of refractories and their application inside the furnace or how to do hot repairs and what materials are best to be used. RHIM can support in the training journey with dedicated and customized trainings.



You Focus on the Production

While we Take Care of Your Furnace

RHI Magnesita can deliver a furnace's lifelong contract service to all the customer





RHI MAGNESITA

For More Information

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