

The future of refractories in Europe.

26th September 2018

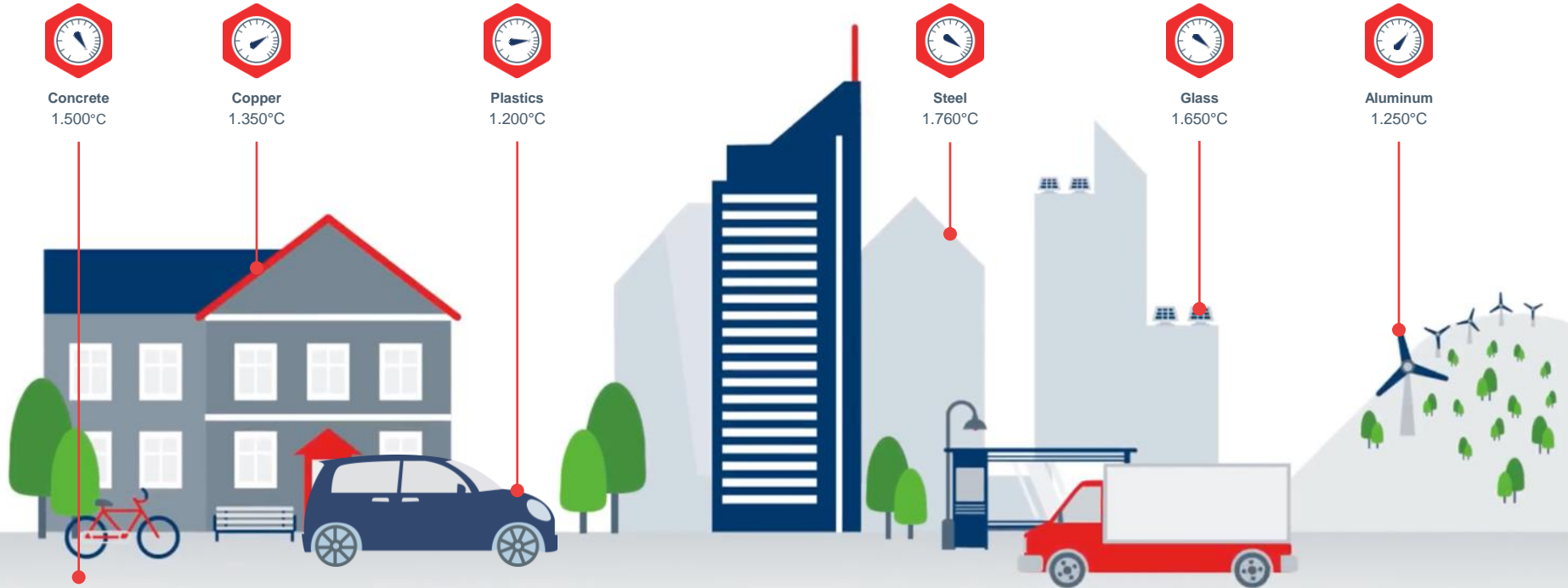
Can
we
stand
the
heat?



Why do refractories matter?



Essential for almost everything surrounding us!



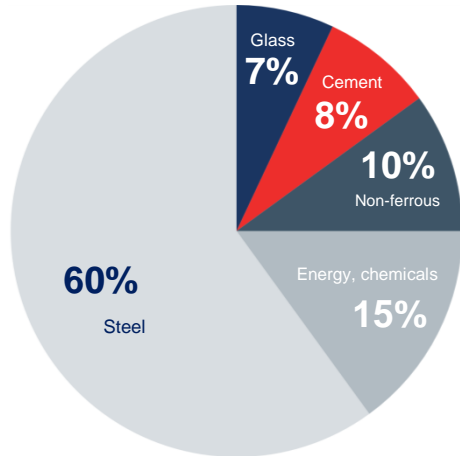


RHI MAGNESITA

Refractories

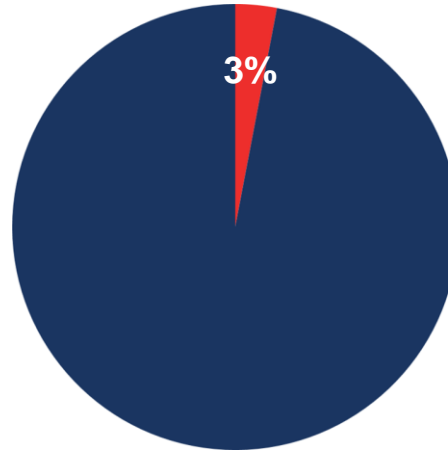
€ 20 bn

world wide
industry



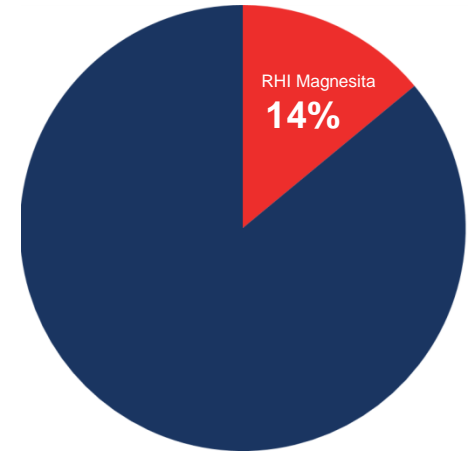
3% COGS

in Steel
manufacturing



14%

Global
market share



RHI Magnesita – from raw materials to refractories

The global player in the refractory industry



13

Raw material
sites



35

Main
production sites



180

Countries
shipped to
worldwide

€ 2.7 bn

2017 pro
forma
revenue

10,000

Customers



>14,000

Employees



70

Sales offices

>120,000

Individual
products

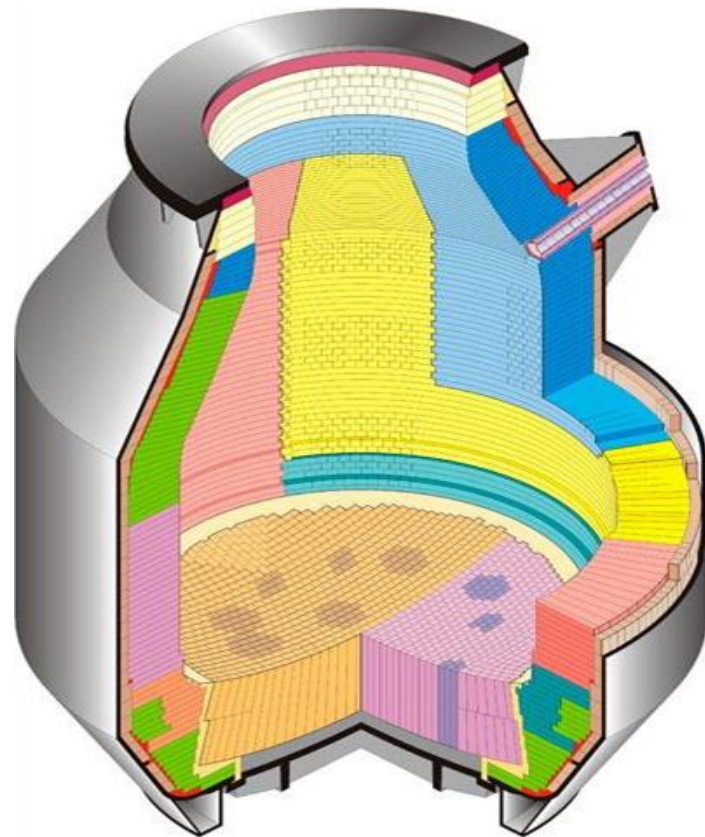
Customized product range

We keep thousands of customers in steel, cement, glass and other industries

Highly individualized products for each customer and each application

>120,000

Individual
products

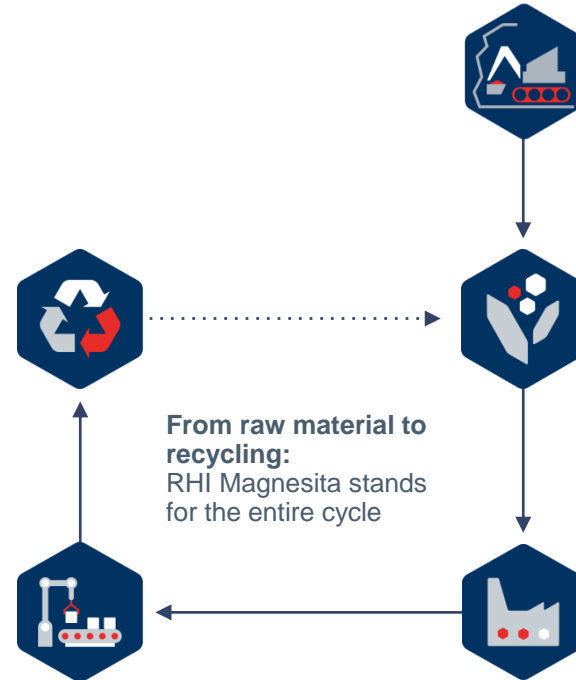


A value chain from mining to the final product – and beyond

Security of supply

Implementing innovations along the
value chain

With a strategic approach to recycling



Unrivalled competitive advantage through vertical integration, in multiple sites



Certainty of supply

High quality materials

Cost competitiveness

Our raw materials

What do we mine?



Raw materials

- Magnesite
- Sea Water
- Dolomite



Intermediary products

- Dead burned magnesite
- Fused magnesite
- Dead burned dolomite
- Calcined caustic magnesite



Final products

- Bricks
- Monolithics & pre casts
- Functional products

Various approaches to raw materials

How do we mine?

Open pit



Brumado (Brazil)



Uberaba (Brazil)

Underground



Breitenau (Austria)

Sea water

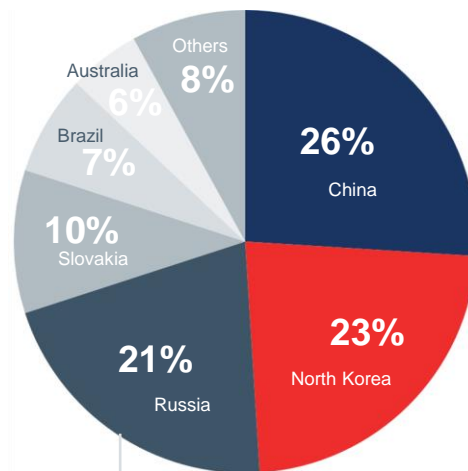


Drogheda (Ireland)

**70% of Global
magnesia
capacity
concentrated in
China, DPRK and
Russia, though
production
focused in CN**

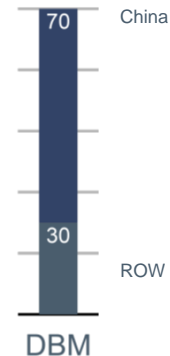
Global Magnesia resources and
production capacity

Resources [m tons]



**Top 3 countries
ca. 70%**

Production capacity



**Do we
still
want
Mining
in Europe?**



Do we still want Mining in Europe?

Digitization



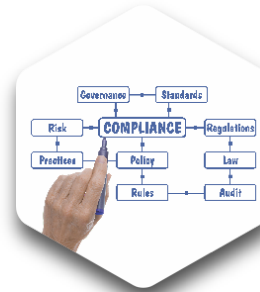
Competitiveness

Security of supply



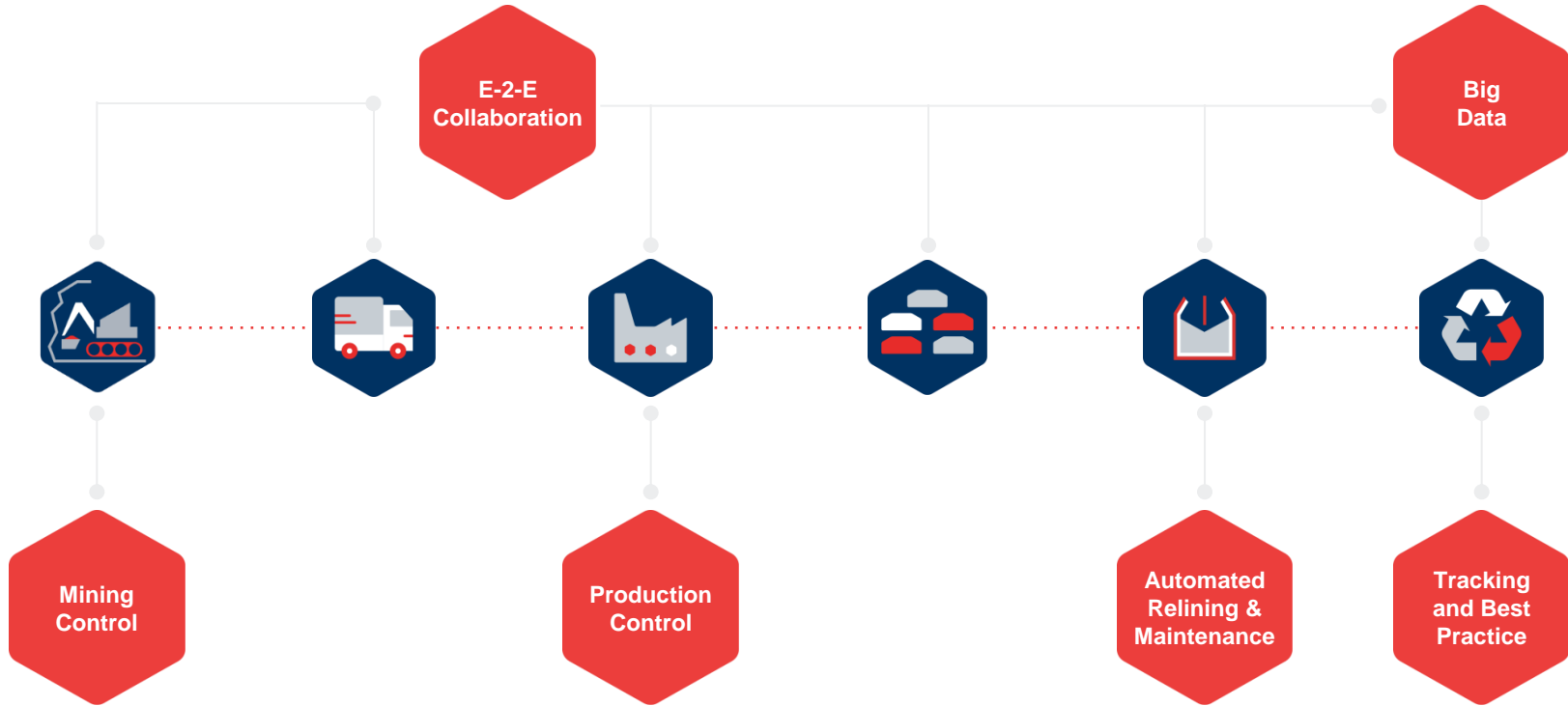
Independence for Europe

Regulatory framework



Long-term perspective

Digitization – Where we are heading to



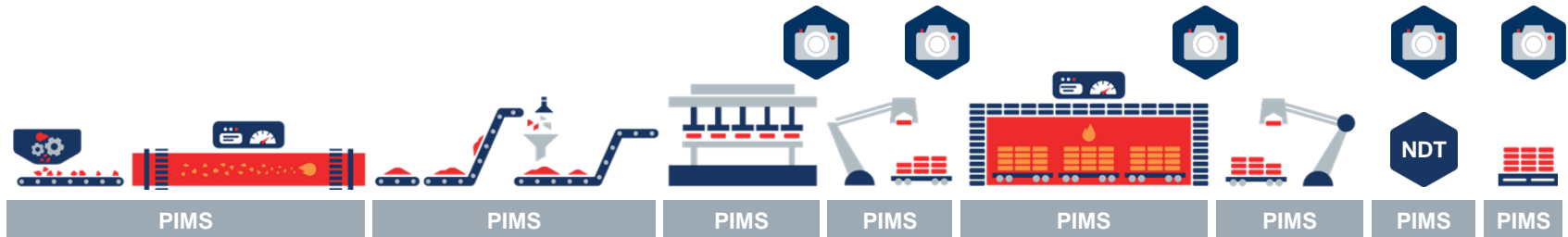
Example Digitization: Digital Fingerprint

Idea:

- Full traceability
- Connection of products and production process

Benefits:

- Deep understanding of product quality
- Improved production processes
- Live-monitoring of product quality
- Digital Twin
- Long-term vision: Self learning value chain from mine to recycling

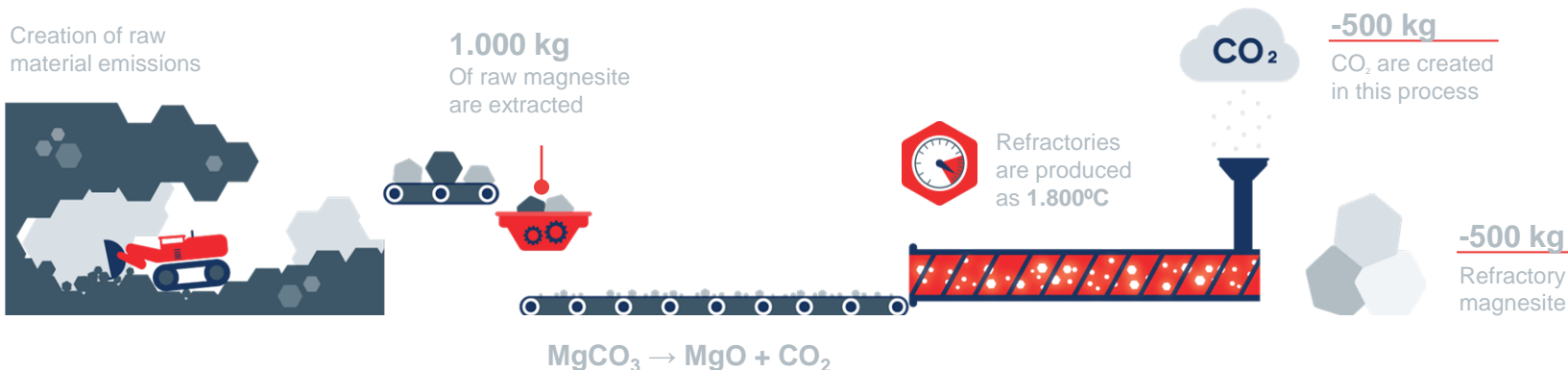


Regulatory Framework

Are we just a collateral damage?

Example CO₂

- Natural geogenic emissions are unavoidable by nature
- Recycling cannot replace mining
- Europe has to make a choice: Do we want a strong industry in Europe or somewhere else?



Regulatory Framework

High regulatory burden – a barrier to resource efficiency

Potential


 $1t =$

 $-1t$

In general, **each ton** of recycled refractory products would save approx. **1 ton of CO₂**

Three topics



End of waste

Harmonized interpretation of the **end-of-waste** criteria in the member states for the refractory industry, similar to the area of construction waste.



Cross-border waste shipments

Inclusion of carbon-bonded refractories in the "**Green List**" for **non-hazardous waste**.



Ecotoxicity assessment - HP14

Uniform application of the **calculation method** for the assessment of **ecotoxicity** and uniform bio-test throughout the EU - or at least mutual recognition of the methods of the member states.

Uniform regulations for a single market.

For effective recycling and an optimized value chain, a **harmonization** of the **legal framework conditions** is urgently needed.



Can
Europe
stand
the
heat?



Get in touch

Luis Bittencourt
CTO RHI Magnesita
Wienerbergstrasse 9
1100 Vienna Austria
www.rhimagnesita.com

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