



# LafargeHolcim

The global leader in sustainable and innovative building materials and solutions



LafargeHolcim



**Around 72,000 people work for the company,  
in around 75 countries that are  
balanced between developing and mature markets**



**The largest  
footprint in the  
industry**

# LafargeHolcim Fast Facts



**~75**  
countries



**~2,300**  
operating sites



**~72,000**  
employees



**26.7**  
billion CHF net sales  
Like-for-like



**Net Zero**  
pledge



**SBTi**  
validated 2030 targets



**ESG**  
Sustainalytics rating



**Green Solutions**  
1/3 of our sales



**Global R&D**  
center in France



**5**  
regional R&D hubs



**50% of R&D**  
In green construction



**40% of Patents**  
In green construction



The world's global leader in building materials and solutions

Leading the way in sustainable construction

Biggest Research & Development organization

All figures represent FY 2019



### North America

**12,614**  
employees      **608**  
operating sites      **6,311m**  
net sales (CHF)

### Europe

**20,880**  
employees      **960**  
operating sites      **7,670m**  
net sales (CHF)

### Asia Pacific

**17,505**  
employees      **367**  
operating sites      **6,491m**  
net sales (CHF)

### Middle East Africa

**11,277**  
employees      **158**  
operating sites      **2,903m**  
net sales (CHF)

### Latin America

**8,871**  
employees      **133**  
operating sites      **2,620m**  
net sales (CHF)

All figures represent FY 2019

## Four business segments

### Cement

**41,205**  
employees

**207.9**  
million tonnes  
sales volume

**264**  
operating sites



### Aggregates

**9,150**  
employees

**269.9**  
million tonnes  
sales volume

**649**  
operating sites



### Ready-mix concrete

**11,752**  
employees

**47.7**  
million m<sup>3</sup>  
sales volume

**1,402**  
operating sites



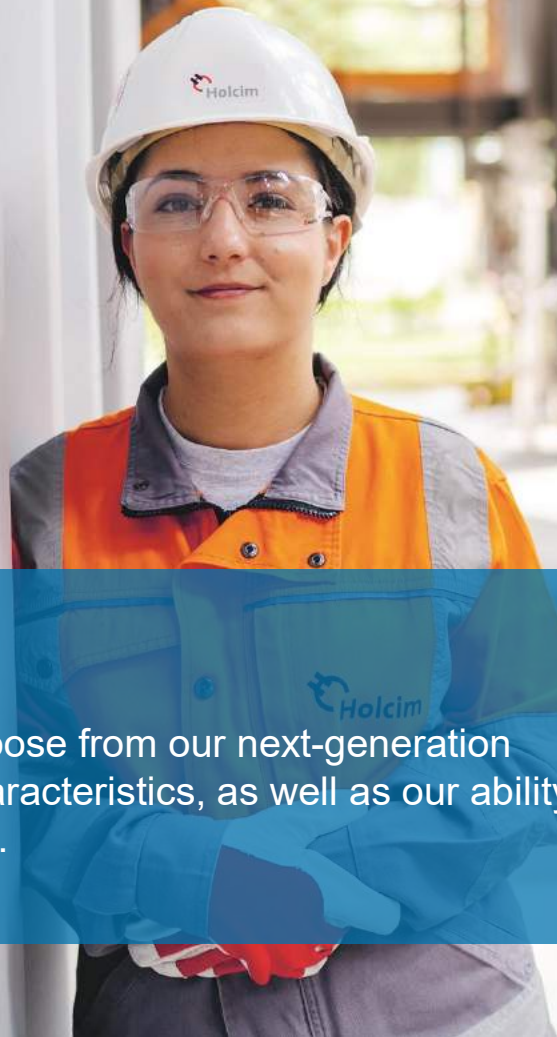
### Solutions & Products

- Precast concrete
- Asphalt
- Paving
- Dry mortars
- Contracting & services

**2.2**  
billion CHF  
net sales



All figures represent FY 2019



## Cement

Customers increasingly choose from our next-generation cements for specialized characteristics, as well as our ability to tailor them for specific uses.



**207.9** million tons sold  
**41,205** employees  
**264** operating sites

All figures represent FY 2019

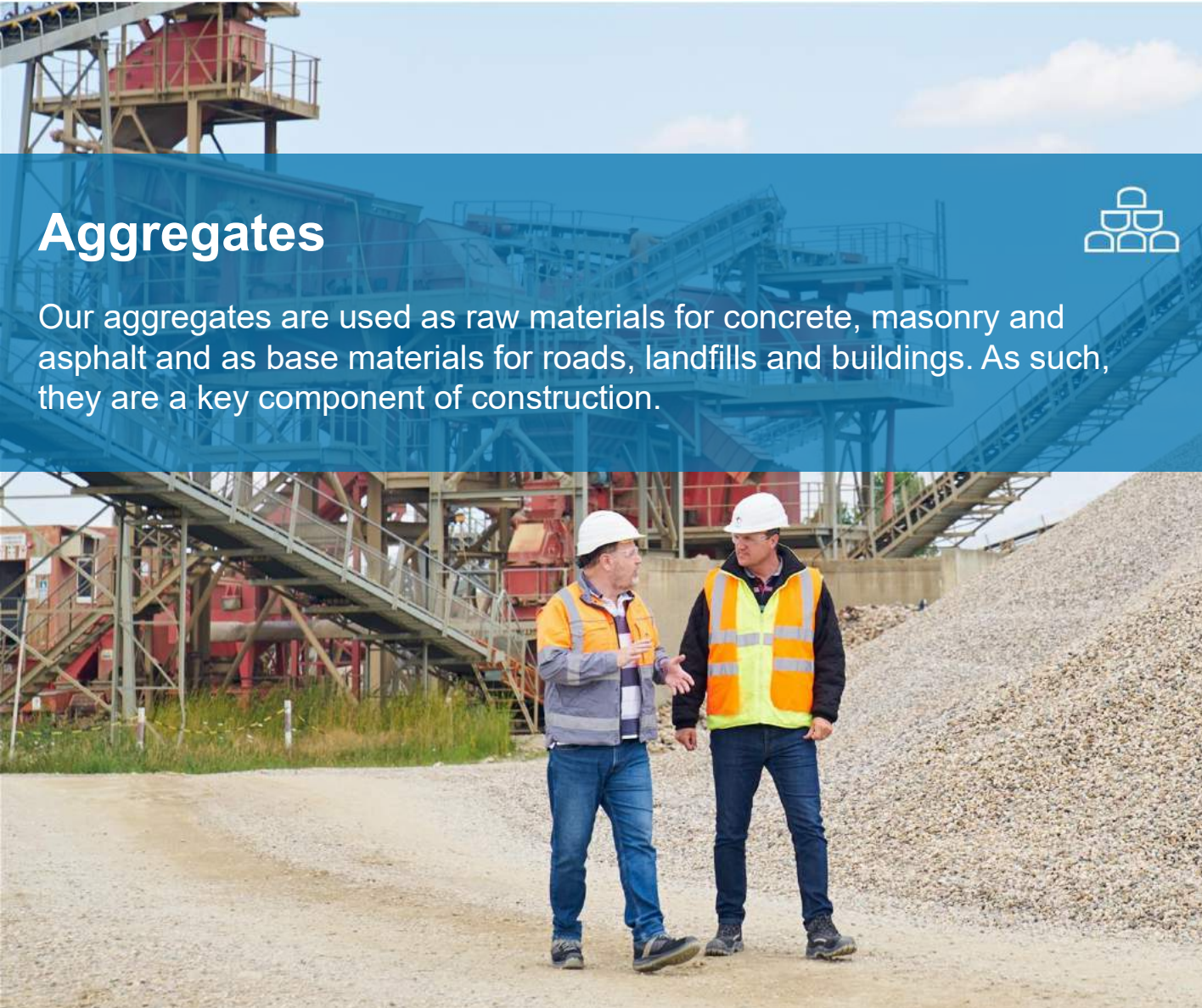
# Aggregates

Our aggregates are used as raw materials for concrete, masonry and asphalt and as base materials for roads, landfills and buildings. As such, they are a key component of construction.



**269.9** million tons sold  
**9,150** employees  
**649** operating sites

All figures represent FY 2019





## Ready-Mix Concrete

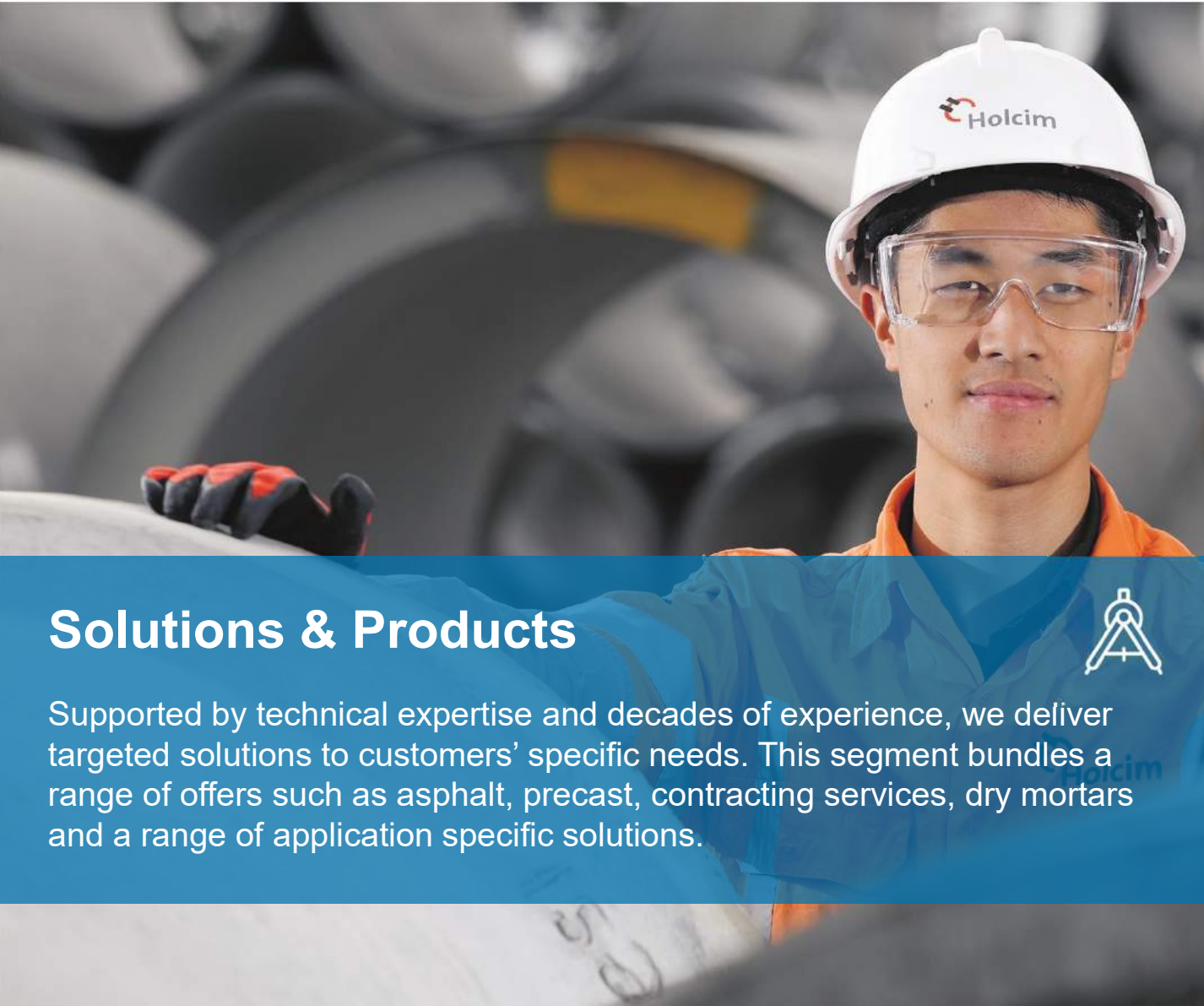


Customers value the quality and consistency of our ready-mix concrete products, the breadth of our portfolio, our expertise in large projects, and our flexibility and reliability. We offer a wide range of customized solutions including carbon neutral concrete.

**47.7** million m<sup>3</sup> sold  
**11,752** employees  
**1,402** operating sites

All figures represent FY 2019





## Solutions & Products



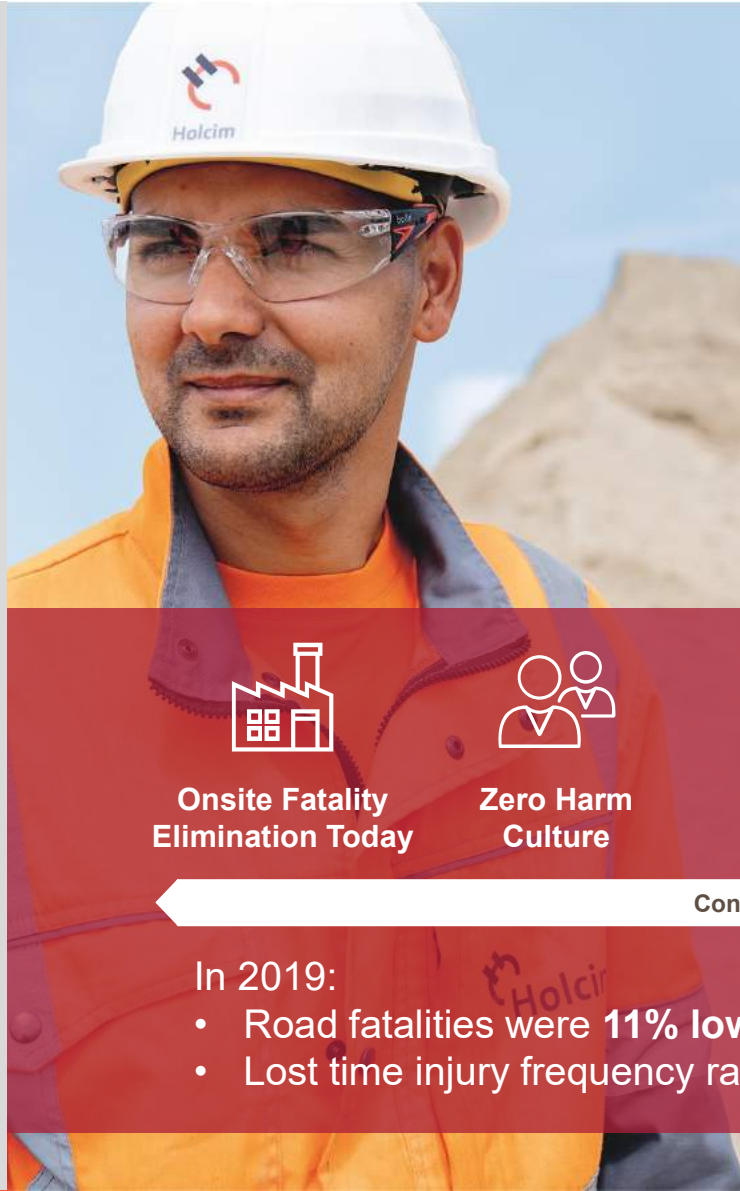
Supported by technical expertise and decades of experience, we deliver targeted solutions to customers' specific needs. This segment bundles a range of offers such as asphalt, precast, contracting services, dry mortars and a range of application specific solutions.

2.2 CHF bn in net sales

Innovative solutions and products for projects ranging from small scale refurbishments to new builds and large infrastructure projects.

All figures represent FY 2019

# Targeting a zero harm culture



Onsite Fatality  
Elimination Today



Zero Harm  
Culture



Systems &  
Processes



Control  
of Health Risks



Road Fatality  
Reduction



In 2019:

- Road fatalities were **11% lower** than in 2018
- Lost time injury frequency rate was **15% lower** than in 2018

# Answering sectoral needs with specific solutions

## Infrastructure



Mining



Transport



Roads



Energy



Oil & Gas



## Building & affordable housing



Individual housing



Collective housing



Industrial & Commercial



Affordable housing



## Distribution & retail



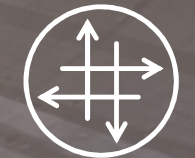
Distribution



Retail



E-commerce & services



## Major infrastructure partner



LafargeHolcim is a reliable global partner for major infrastructure projects such as roads, mines, ports, dams, data centers, stadiums, wind farms and electric power plants. With an unparalleled geographical footprint, LafargeHolcim is able to deliver in the most remote areas of the globe.



Sector experts who know clients and their needs



A partnership approach on a global scale



World-class excellence in project execution








# Making builders' lives easier



LafargeHolcim's solutions are designed to help home builders, masons, and contractors deliver high quality buildings and meet their daily challenges: getting the job done quicker, at the best cost, and with the smartest use of resources and the highest environmental performance.

-  Solutions that allow builders to gain time and maximize space
-  Materials and techniques that are more friendly to the environment
-  Affordable housing that can be passed from one generation to the next





## Close to our customers



We innovate for customers working at every level. Masons and individual homebuilders need materials and solutions close to where they live and work. We developed local retail networks in emerging markets, such as Disensa in Latin America and Binastore in Middle East Africa. E-commerce & services are also increasingly offered for customers to obtain the best building materials.



E-commerce channels provide easier access to our solutions



Retail franchise networks for smaller contractors and self-builders

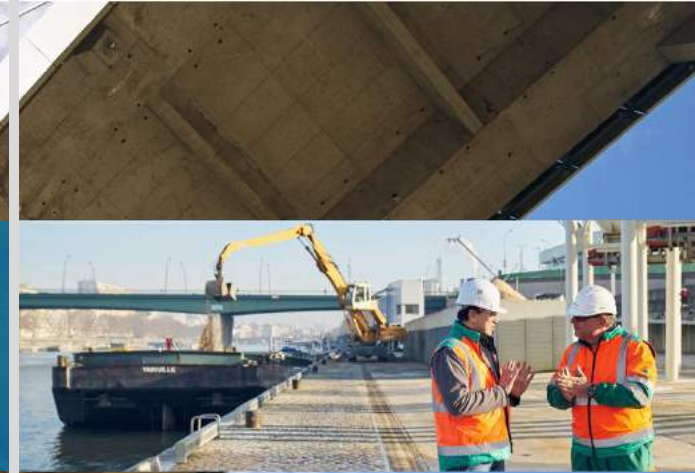


Optimized logistics to deliver the materials when and where they're needed

# Supporting vital infrastructure around the world

## Grand Paris Express, France

- 600,000 tonnes of aggregates, 260,000 tonnes of cement, 650,000m<sup>3</sup> of concrete
- 200km of new railway and 62 new stations



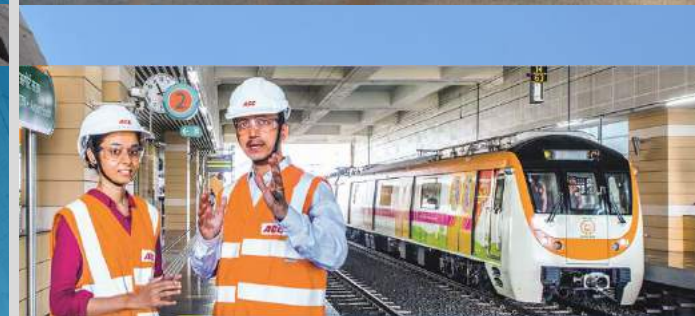
## Champlain Bridge, Canada

- 1.5 million tons of sustainably-sourced aggregates
- 165,000m<sup>3</sup> of ultra-high performance concrete



## Metro projects, India

- 10 cities across India choosing our materials for their metro projects
- Over 655,000m<sup>3</sup> of concrete delivered so far



## Sustainable cities and iconic buildings

**Zaha Hadid Tower,  
Milan, Italy**

40,000 tons of pozzolanic cement and 100,000m<sup>3</sup> of concrete to guarantee sustainability, resistance and strength

**One Dalton Street,  
Boston, USA**

70,000m<sup>3</sup> of concrete, including high performance Agilia® and Chronolia®

**ThyssenKrupp  
Tower, Rottweil,  
Germany**

15,300m<sup>3</sup> of concrete, including innovative shotcrete to secure the foundation







**Demand is driven by population growth, urbanization, improved living standards and sustainable construction**



**The global building materials market is worth \$2.5 trillion, and continuously growing**



**Concrete is the  
2nd most used  
material in the world  
after water**

**60% of the infrastructure  
required by 2050 has not yet  
been built!**

**New York City  
built every month**

**Cement industry is responsible  
for 6-7% of the CO2 emissions**

**1.6 billion people  
Lack adequate housing**

**Mega Trends Shaping our Industry**

# Five megatrends shaping the industry



## Population growth

Population expected to grow 22% by 2050 from 7.6 billion to 9.7 billion



## Urbanization

Approximately 2.5 billion more people are expected to live in cities by 2050



## Living standards

Increased demand for better living standards and more efficient infrastructure



## Sustainable construction

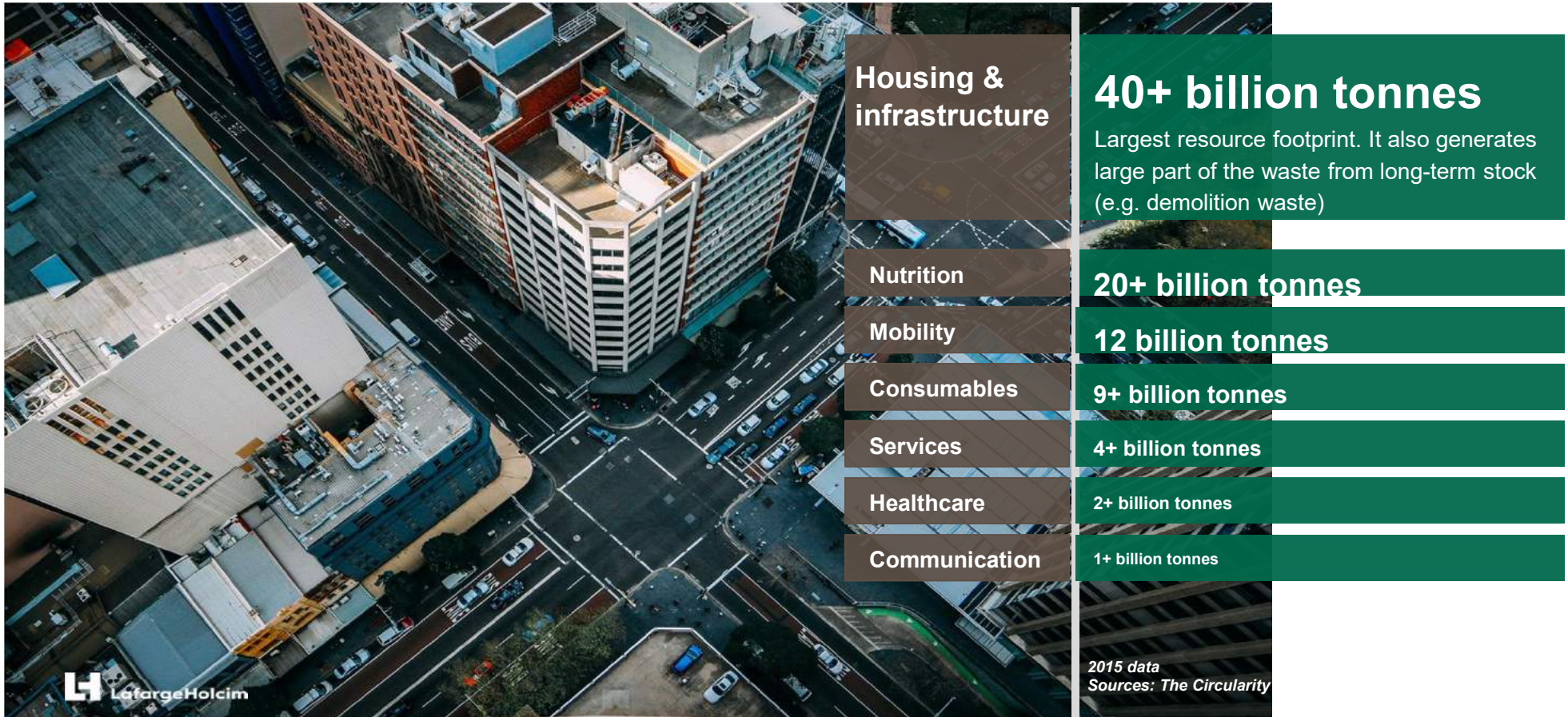
Increased demand for sustainable construction solutions and increasing resource scarcity



## Digitalization

Digitalization is opening new avenues for growth and innovation

# Almost 50% of resources extracted from Earth every year go to housing and infrastructure



# Circular economy can enable 40% reduction of CO2 emissions in cement, plastics, steel and aluminum



## Priorities for our business

Waste as a resource

Phase out fossil fuels

Low-carbon alternatives

*Source: The Circularity Gap Report*

# 2/3 of our carbon emissions comes from our chemistry

By decarbonating limestone

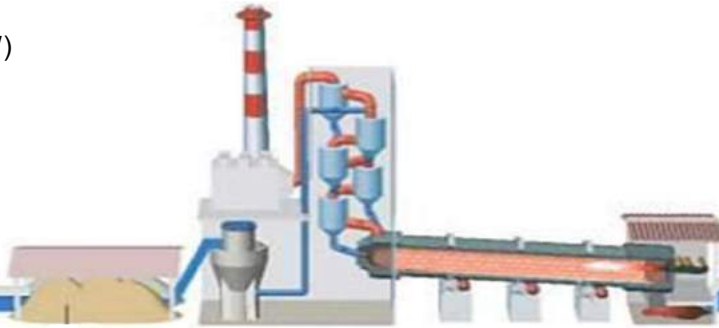
## Quarrying & Raw material

- Waste from production of other construction materials
- Construction and Demolition waste (CDW)
- Other mineral waste



## Clinker production

- Alternative Fuels



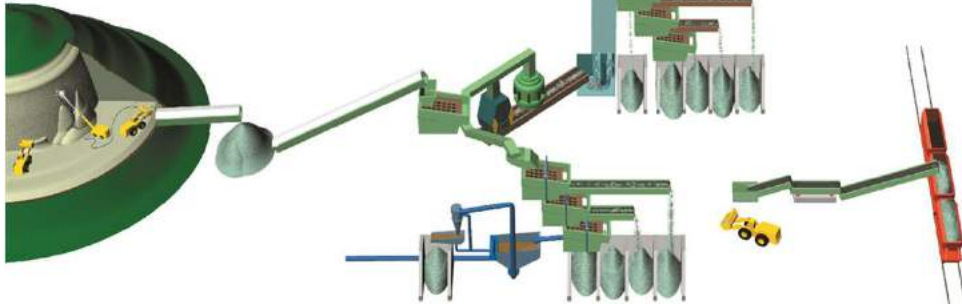
## Cement grinding and distribution

- Industrial Mineral Components (Fly Ash, Slag)
- CDW fines
- SynMIC



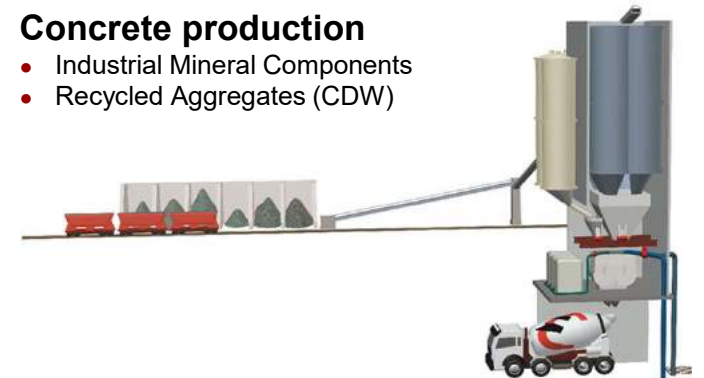
## Aggregates production

- Recycled Aggregates (CDW)

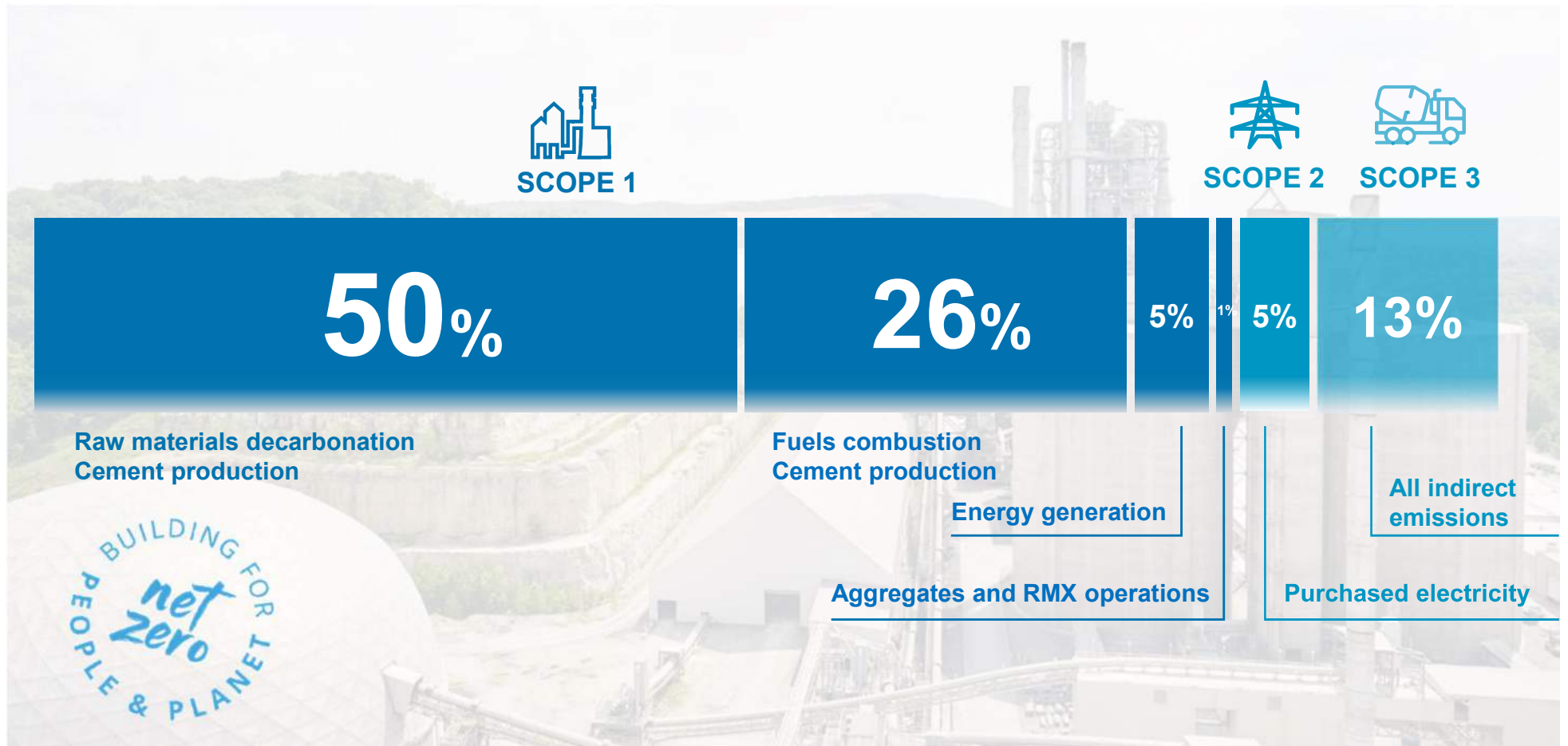


## Concrete production

- Industrial Mineral Components
- Recycled Aggregates (CDW)



# LafargeHolcim CO2 footprint



## Building a net zero world

Since 1990, the company has **reduced CO2 emissions** per ton of cementitious by **27%**

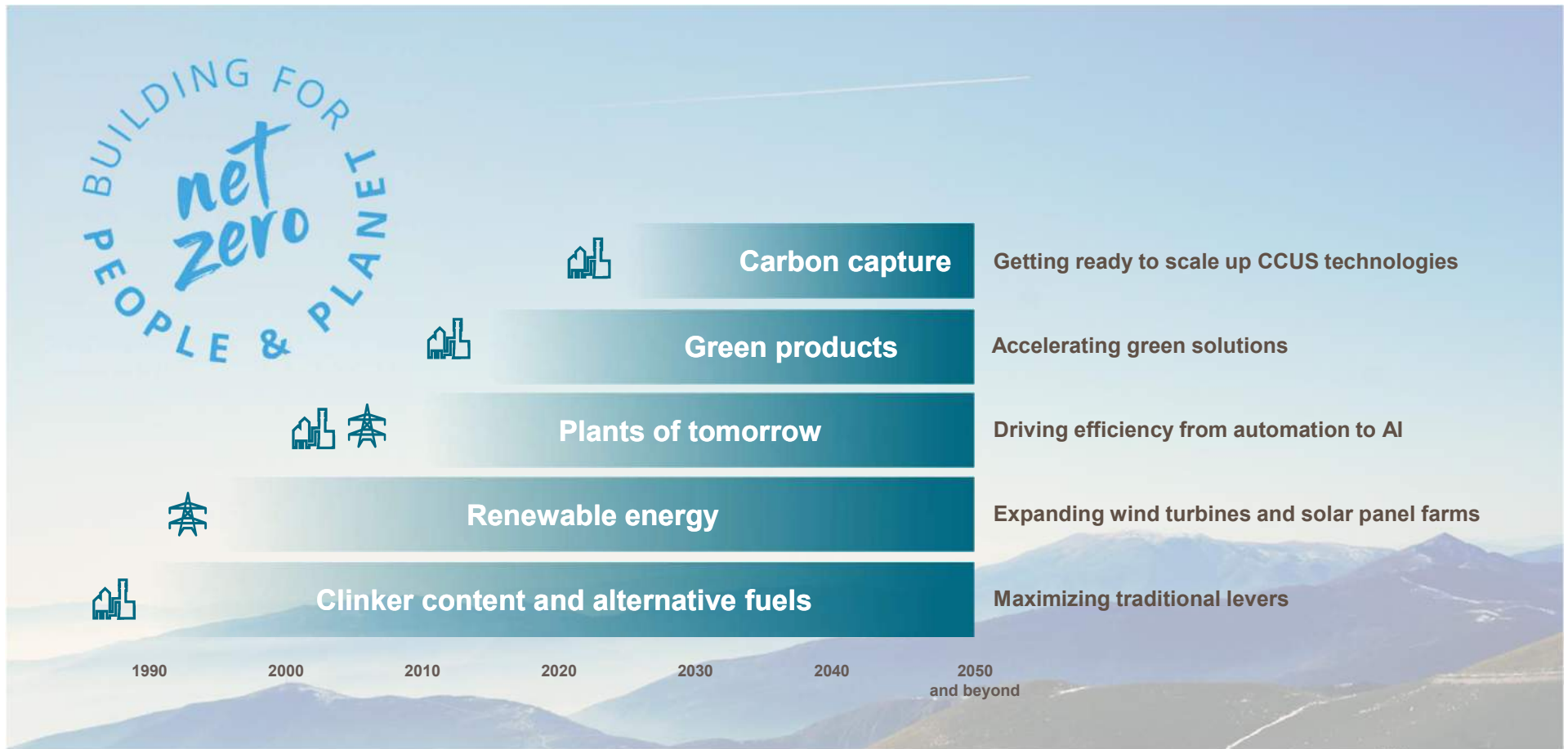
**40%** **less CO2 emissions** per ton of cementitious **by 2030** validated by **SBTi**<sup>1</sup>

**Pledge to net zero** aligned with **1.5°C**

BUILDING FOR  
**net zero**  
PEOPLE & PLANET



# Our building blocks to net zero



# Building a net zero future with science-based targets

As the global leader in the industry **key role to play to address today's climate crisis**

**1<sup>st</sup> global building materials company to sign the Business Ambition for 1.5°C pledge** with science-based approved intermediate targets aligned with a net zero pathway

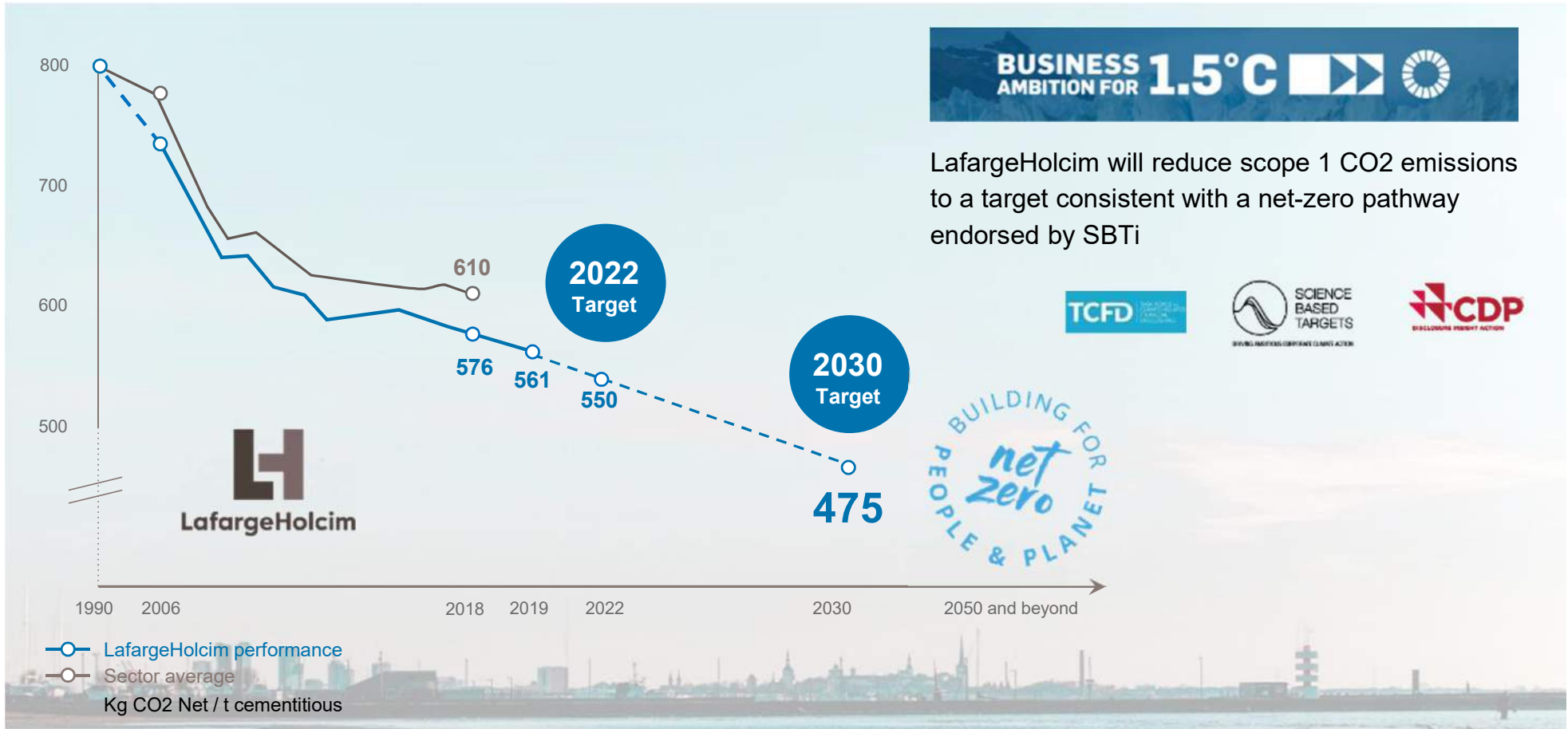
**2030 targets accelerate reduction** of CO2 intensity to exceed 20%<sup>1</sup>

**Partnership signed** with **Science Based Target initiative** (SBTi) to develop a roadmap for a 1.5°C future in the cement sector

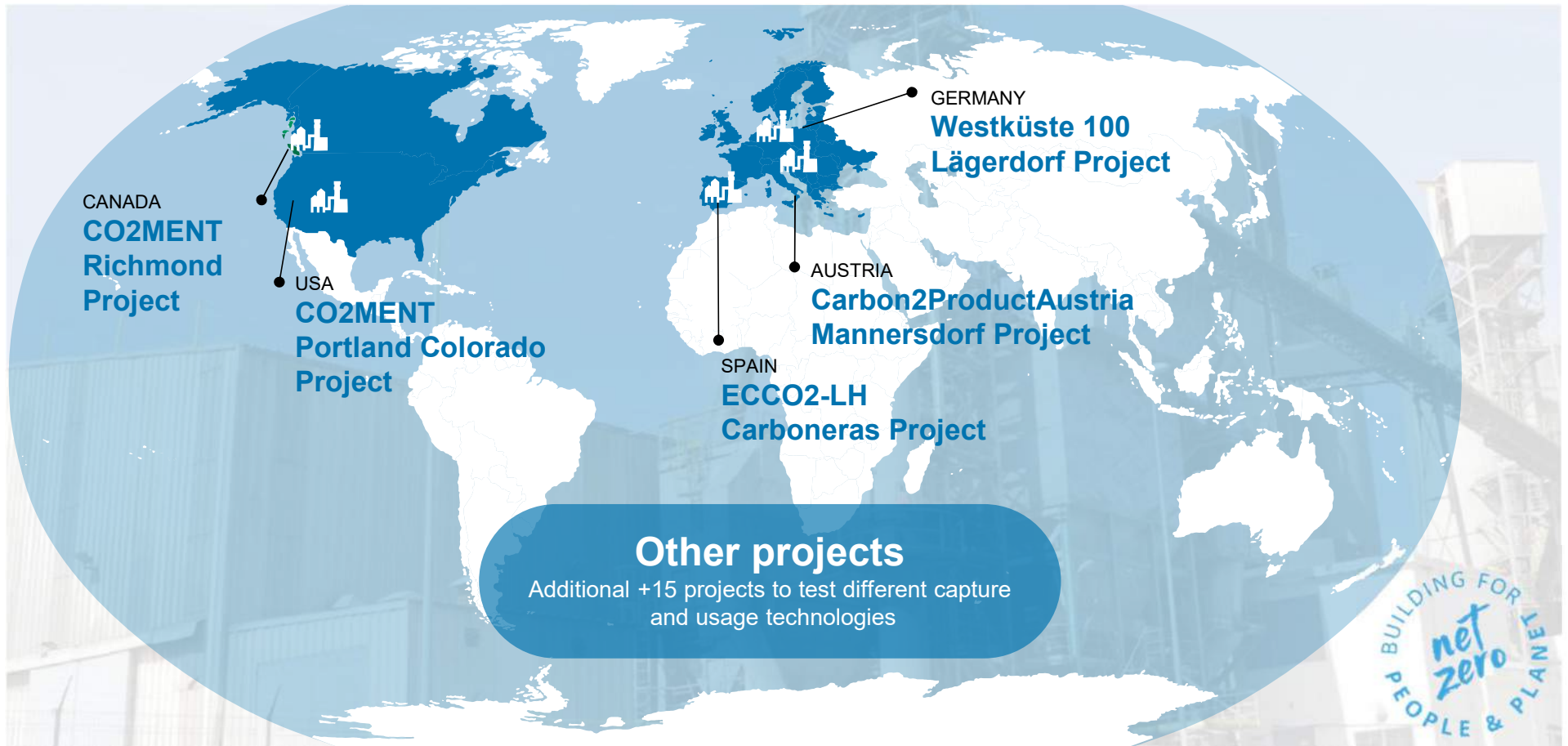
**Expansion of actions** to full value chain that includes scope 3 emissions

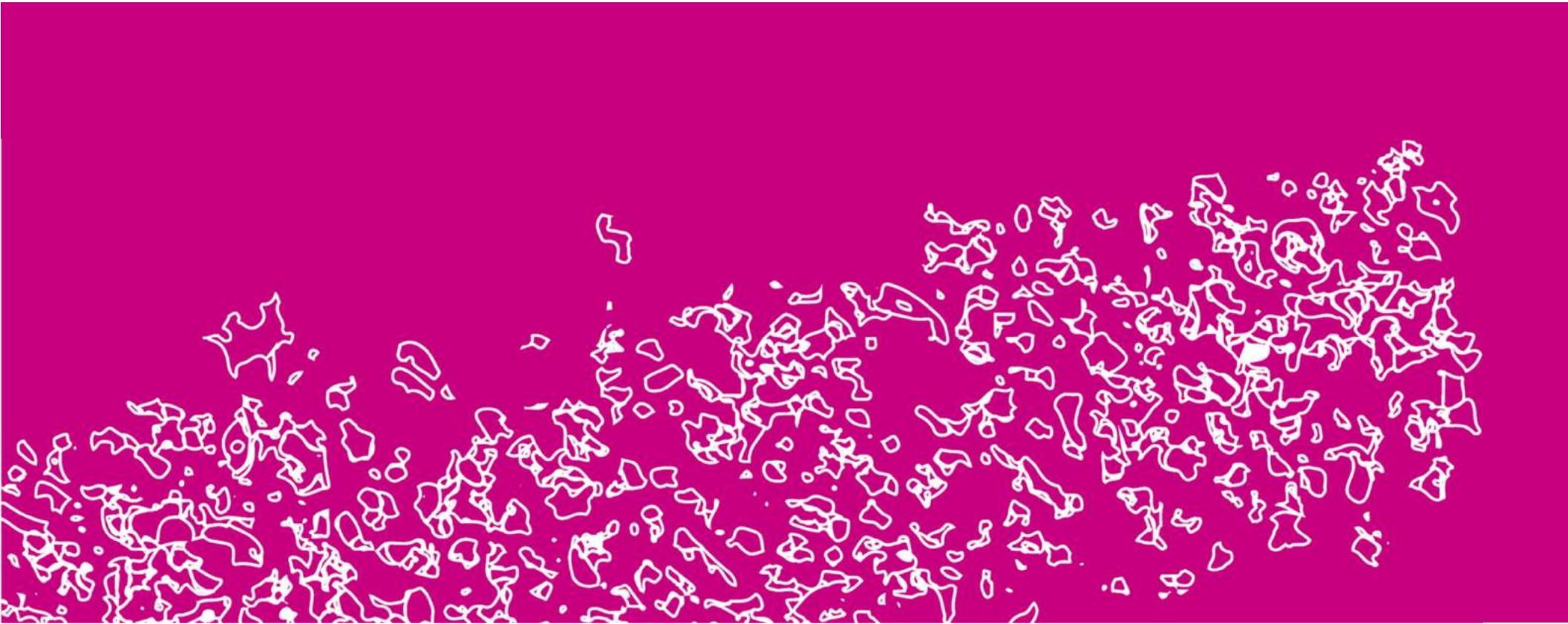


# Our pathway to net zero



# Getting ready for carbon capture: 20 pilot projects ongoing





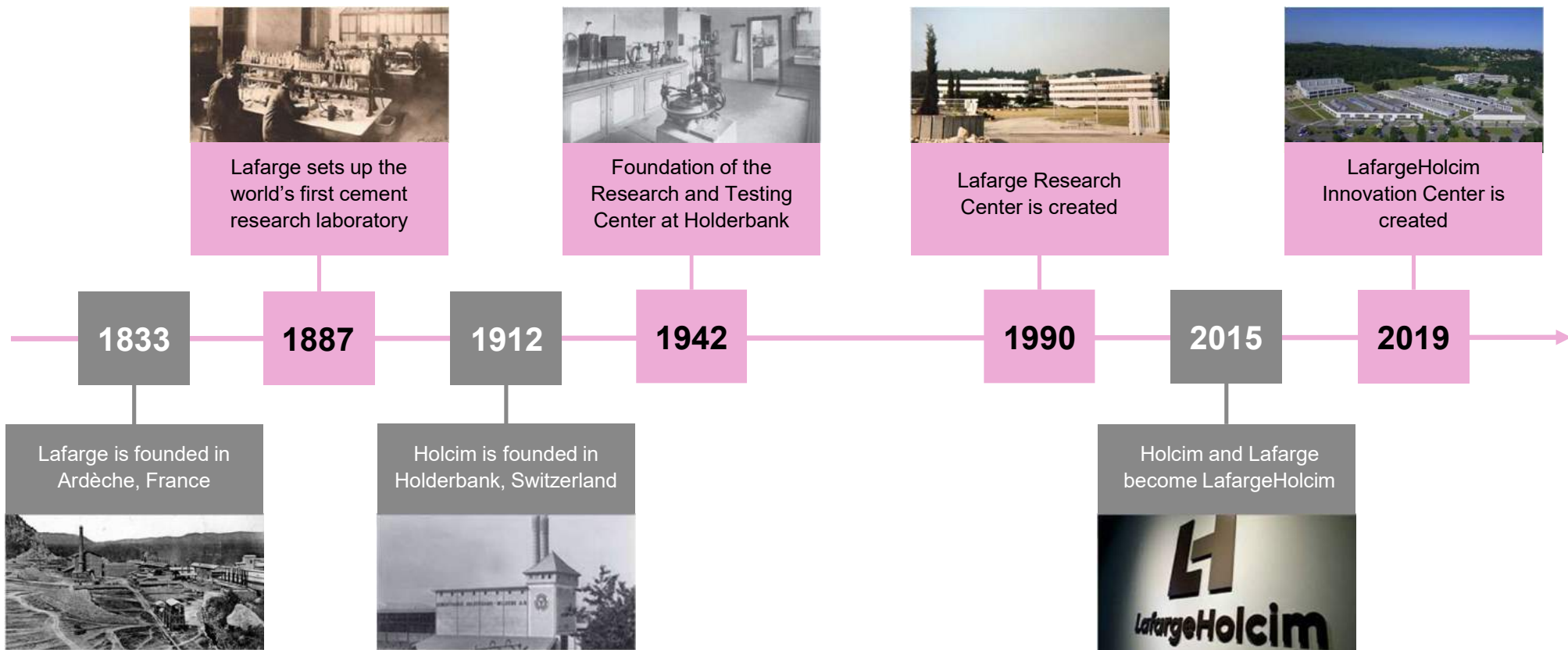
# Innovation at LafargeHolcim

Building the Future Today



# A legacy of researchers

A leadership based on more than 187 years of experience ...over 133 years in R&D



# LafargeHolcim Innovation at a glance

The strongest innovation capabilities in the industry

~100

million€ invested in innovation each year

+300

researchers across the globe

170

patent families

6

R&D Centres of excellence worldwide

# LafargeHolcim Innovation Center

The first world's R&D centre in our business

**180**

researchers and technicians

**21**

nationalities

**15.000**

m<sup>2</sup> of facilities

**3.000**

R&D & testing equipments



# Diversified Team Work

From microscopic scale to full systems

Microscopy



Concrete Technology

Chemical Analysis



Concrete Scale up

Thermal Simulation



Building Information Modeling

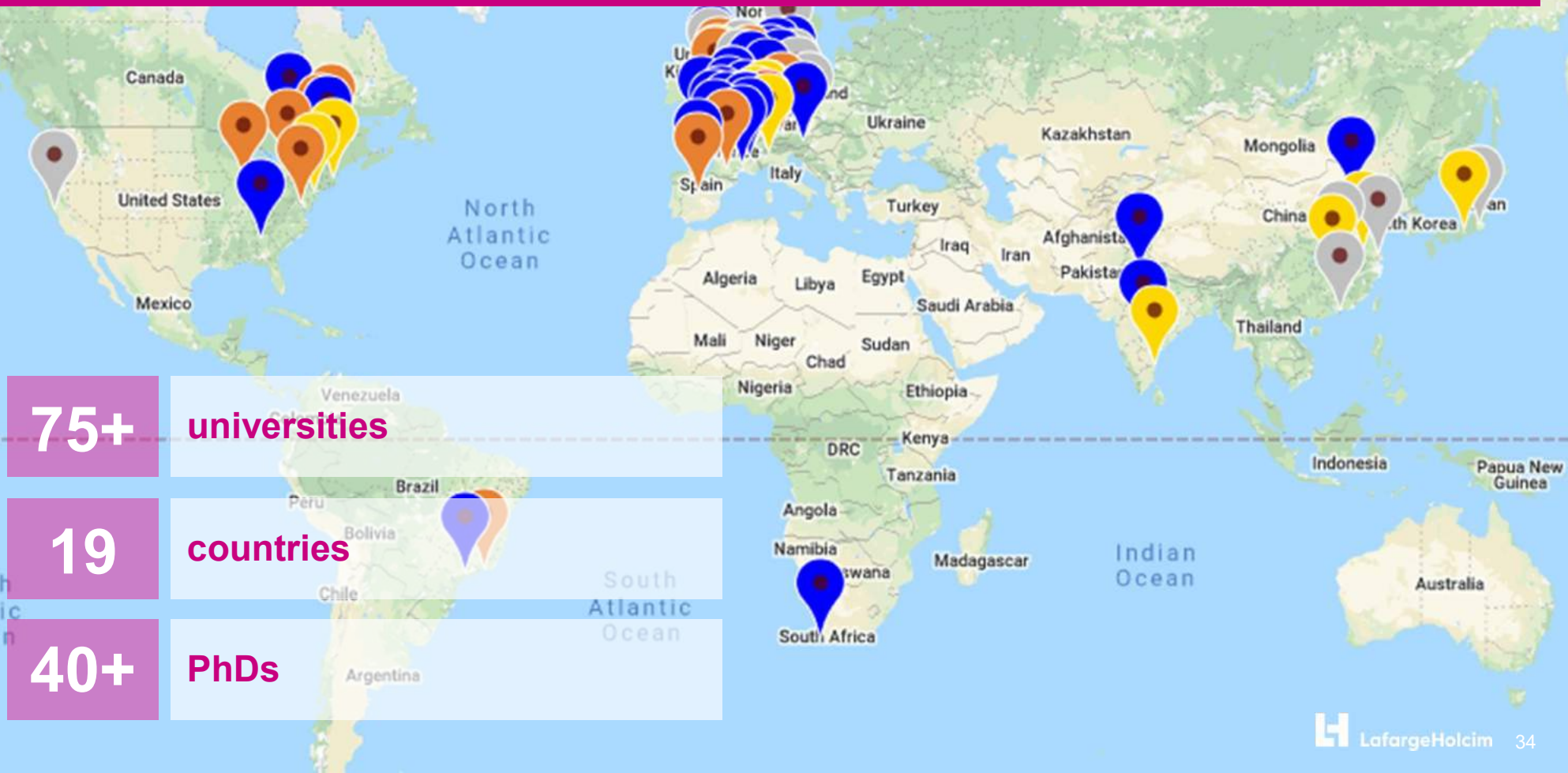
Precast



Systems Technology

# Our Academic partnerships

Fruitful relationships with academics have been established and nurtured



75+

universities

19

countries

40+

PhDs

# Five megatrends driving our market

Five challenges we are addressing



## Global population growth

*Population expected to grow 22% by 2050 from 7.6 billion to 9.7 billion*



## Urbanization and megacities

*Approx. 2.5 billion more people are expected to live in cities by 2050*



## Increased demand for better living standards

*Need for better and more efficient infrastructure*



## Digitalization

*Transforming the value chain of building materials*



## Increased demand for sustainable construction solutions

*Reduction of carbon footprint*

# Our Manifesto

LH Innovation's vision for the construction of tomorrow

 [Watch the video](#)

## Building the Future Today

The quest for new building solutions has always been at the heart of our culture. **Today** more than ever, not only does R&D drive our competitiveness but we believe that innovation is the very foundation **for the construction of tomorrow**. While urban areas will add 2 billion people in the next 25 years, and as 60% of the infrastructure needed by 2050 is not yet built, we have no other choice than **to reinvent the building industry** and come up with **a better way of doing what we do**.

Our team of chemists, physicists, engineers, architects, masons, and many more experts across the globe are **inventing the cement and concrete of tomorrow**, hand-in-hand with partners throughout our ecosystem. We aim at developing and leveraging on **innovations along our entire value chain, from processes to products and services, from quarry to job sites**.

As a leader in our industry, we believe it is our responsibility **to embrace the environmental and societal challenges** ahead and differentiate our offer, staying one step ahead of the game and **setting tomorrow's standards in the building materials industry**.

### Limiting the carbon footprint

of our products and **reducing CO2 emissions from manufacturing** is the only way to innovate. We do not believe in a miracle solution – what we believe in is a collective effort to invent and implement the array of solutions that will drive the transition that is now upon us.

### As we build the future today

**These ambitions are what drive our research and innovation.**

# Innovating for growth

A strategy based on 3 pillars



## Sustainability

coming up with low CO<sub>2</sub> and circular solutions for a safer and healthier world



## Differentiation

answering customer pain points, with an unprecedented volume of innovative products



## Smart Construction

designing the construction of tomorrow by drawing new connections between physical and digital systems

# Sustainability

For enhanced performance

**55%**

% of R&D projects focused on CO<sub>2</sub> reduction

**25%**

of the Group's net sales coming from green products

**72**

patented inventions low CO<sub>2</sub> solutions  
accounting for 45% of our product portfolio

**150**

million€ invested to reduce our environmental footprint  
of our production sites in Europe over the next 3 years

## Research fields

CO<sub>2</sub> reduction

Alternate / Recycled materials

Cleaner air

Energy efficiency

Plastic use reduction



## 5 action levers

To minimize our carbon footprint



**Clinker**

CO<sub>2</sub> Capture  
Alternative fuels

**Cement**

Calcined clays, Pozzolans

**Concrete**

Low CO<sub>2</sub> concrete  
Recycled aggregates

**Construction**

Insulation, Modular construction,  
3D printing

**Carbonation**

Accelerated concrete  
carbonation

# Differentiation

For accelerated growth

## Research fields

Dampness & seepage

Speed of construction

Water efficiency

Soils remediation

Ease of application

**300**

**new products per year by 2022**

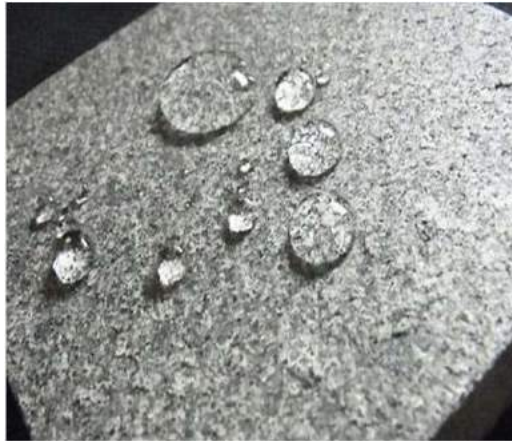
**210**

**new types of cement per year  
on average for the past 3 years**



# Differentiation

To decommo-ditize our cement and our concrete



# Smart Construction

For increased efficiency

 [GE Renewable Energy.mp4](#)

 [Malawi](#)

25

**pilots of smart construction**  
rolled out in local markets

up to

50%

**material savings per functional unit**

## Research fields

Advanced Mix Design tools

Life Cycle Analysis

3D printing

Smart technical Services

Material intelligence platform

# Smart Construction

In order to increase productivity



# Open Innovation

Innovating together to build the future today

50+

Start-ups already involved in Innovation initiatives



Because we believe in a collective effort, we are fostering collaboration with players of our ecosystem throughout several initiatives, working hand in hand with startups, academics, specifiers, research labs, etc.



**This is the only way to innovate!**



#OpenInnovation



**HARNESS 3D PRINTING  
TO REVOLUTIONIZE  
HOUSING CONSTRUCTION**

**November 2020**  
Virtual Ideathon  
**March 2021**  
Final Hack @LHIC

**PRINTING  
HOUSING  
HACK**

  
**LafargeHolcim**  
with its partners

Engineering Mentorship  
provided by

  
**Witteveen**

Ideathon VideoConferences  
organized with

  
Fondation des Ponts

3D Printer for live demo  
supplied by

 **COBOD**

# TOGETHER WE BUILD THE FUTURE

**LH**  
ACCELERATOR

LH ACCELERATOR SEASON #2

APPLY BEFORE SEPTEMBER 15th



**#LafargeHolcimInnovation**



**LafargeHolcim**