IIGCC Real Estate Roundtable

Driving net zero real estate through the value chain

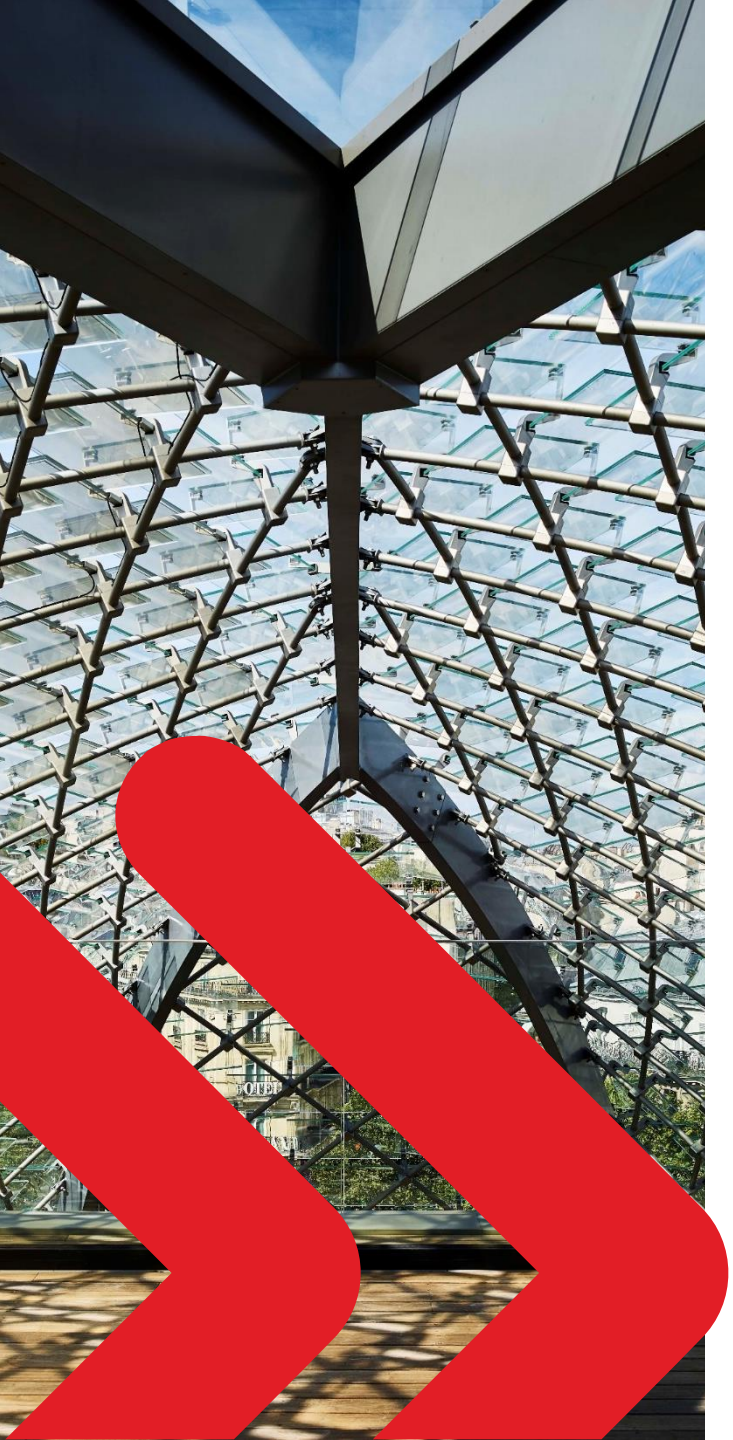
02 November 2022

Agenda

5 mins	Welcome and introduction	Aleksandra Njagulj, DWS & IIGCC Real Estate Working Group Co-lead
15 mins	Advances in reducing embodied carbon in buildings – the developer perspective	Walid Goudiard, JLL
20 mins	Opportunities and barriers for construction materials	Nicola Davidson, Arcelor Mittal
		Emmanuel Normant, Saint-Gobain
45 mins	Panel discussion: • Walid Goudiard, JLL • Nicola Davidson, Arcelor Mittal • Emmanuel Normant, Saint-Gobain • Alexander Neumann, Hochtief • Katerina Papavasileiou, Federated Hermes • Victoria Burrow, World Green Building Council	Moderated by Peter Sweatman, Climate Strategy & Partners
5 mins	Close	Hugh Garnett, IIGCC

Advances in reducing embodied carbon in buildings – the developer persepective

Walid Goudiard, JLL



Road to NZC: a new value paradigm

Walid Goudiard | Head of EMEA Project & Development Services, JLL

Project & Development Services

Your world-class development partner in value creation

PDS is your global partner for projects and development services from the smallest space to the most complex and iconic scheme to future proof real estate vs. trends at work : ESG, people and future of work, future cities.

- **Development Advisory**
- **Building Consultancy**
- **Project Management**
- **Cost Management**
- **Engineering Design & Sustainability**

PDS EMEA in figures 2022

20+	1300	1000+	75
countries	people	projects/year	years of experience

4 forces are driving changes in Real Estate value chain

Stakeholders

Global warming

Regulation

Financial

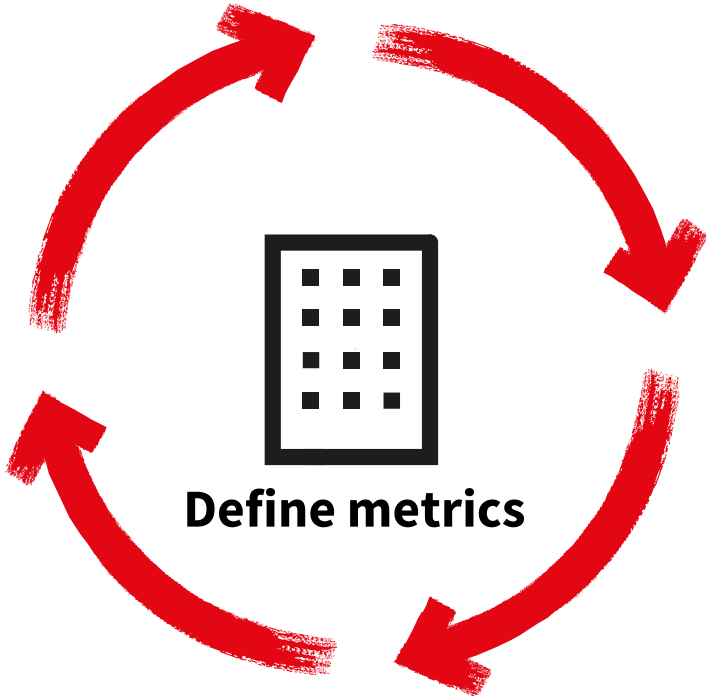
Sustainable asset development roadmap

LOW CARBON CONSTRUCTION

Embodied carbon
kgCO2eq/ sqm

Whole life carbon
kgCO2eq/ sqm

Circular economy
kgCO2eq/ sqm



RISK & RESILIENCY

Biodiversity
Ecological potential

Climate
< 2°C

Adaptability
Against heavy rain, storm wind, rising sea level, soil movement, etc

OPERATIONS & ENERGY

Energy
kWhEF/sqm.yr

Operational Carbon
kgCO2eq/ sqm

Water
m3/sqm.yr

SOCIAL VALUE

Well-being

User consumption
kgCO2eq/ sqm

Communities

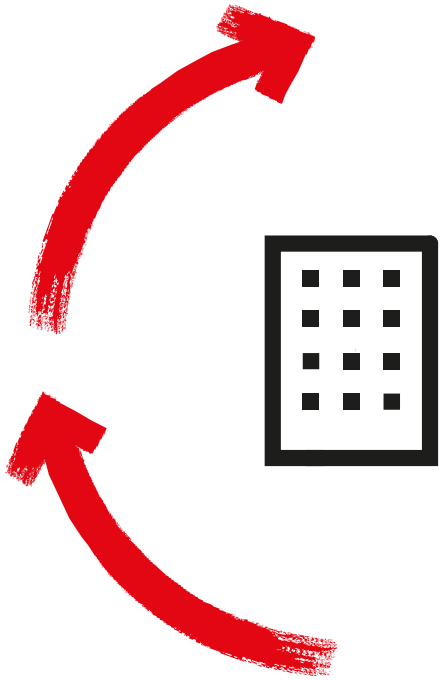
Sustainable asset development roadmap

LOW CARBON CONSTRUCTION

Carbon smart monitoring (embodied)

Construction waste management

Reuse, recycle & local distribution channels



OPERATIONS & ENERGY

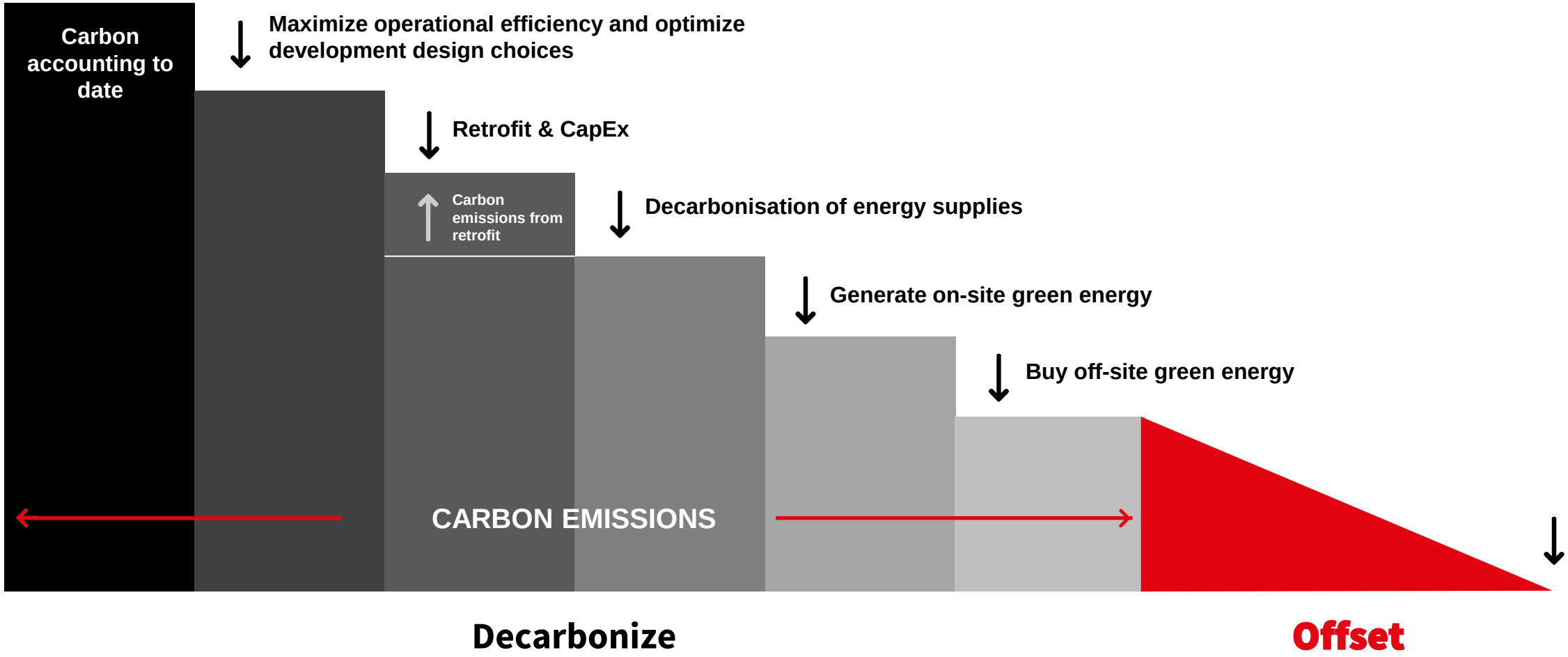
Carbon smart monitoring (operational)

Efficient isolation systems & MEP equipment

Operational waste reduction

FOCUS ON
NET ZERO CARBON
DEVELOPMENT

Net Zero Carbon = Decarbonize + Offset



Decarbonization

Experience feedbacks rising from the projects we develop

EMBODIED CARBON
kgCO2eq / sqm

OPERATIONAL CARBON
kgCO2eq / sqm

WHOLE LIFE CARBON
kgCO2eq / sqm

Embodied carbon

Retrofit is the new normal

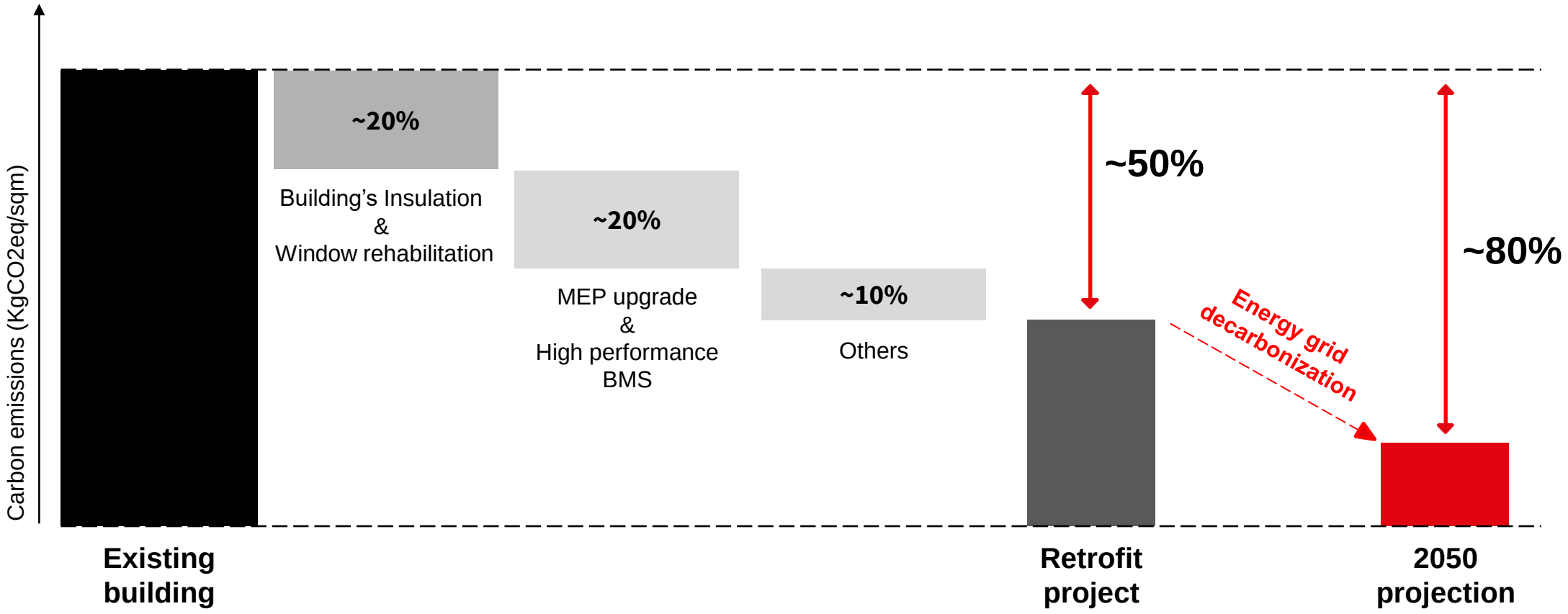
- Limited demolitions
- Low Carbon construction materials (timber, low-carbon concrete, etc.)
- Frugal interior design
- Onsite + Offsite reuse & recycle
- Biobased & local materials

NZC refurbishment

>25% footprint reduction
vs. traditional refurbishment

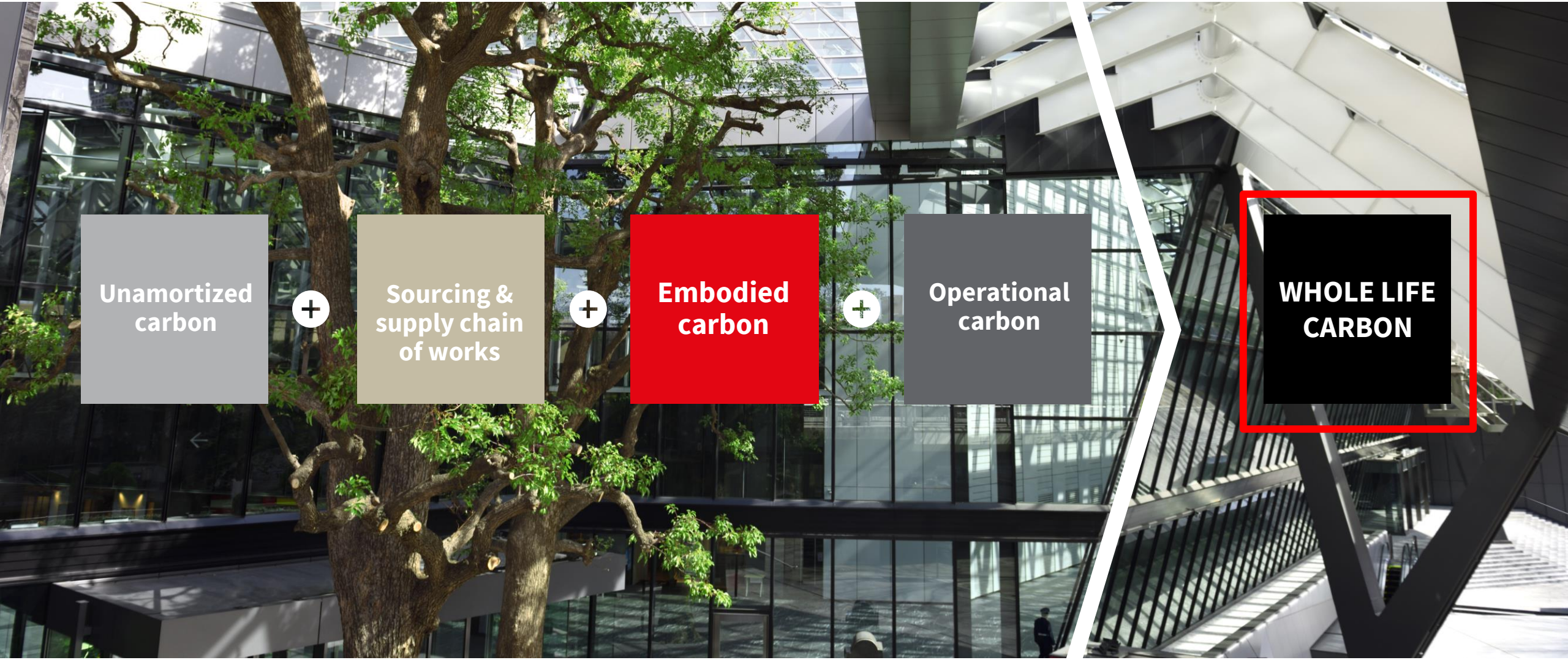
>50% footprint reduction
vs. demolish and new build

Operational carbon : asset + energy grid



2050 horizon = CRREM Curve, still lot to do (embodied and energy mix)

Whole life carbon



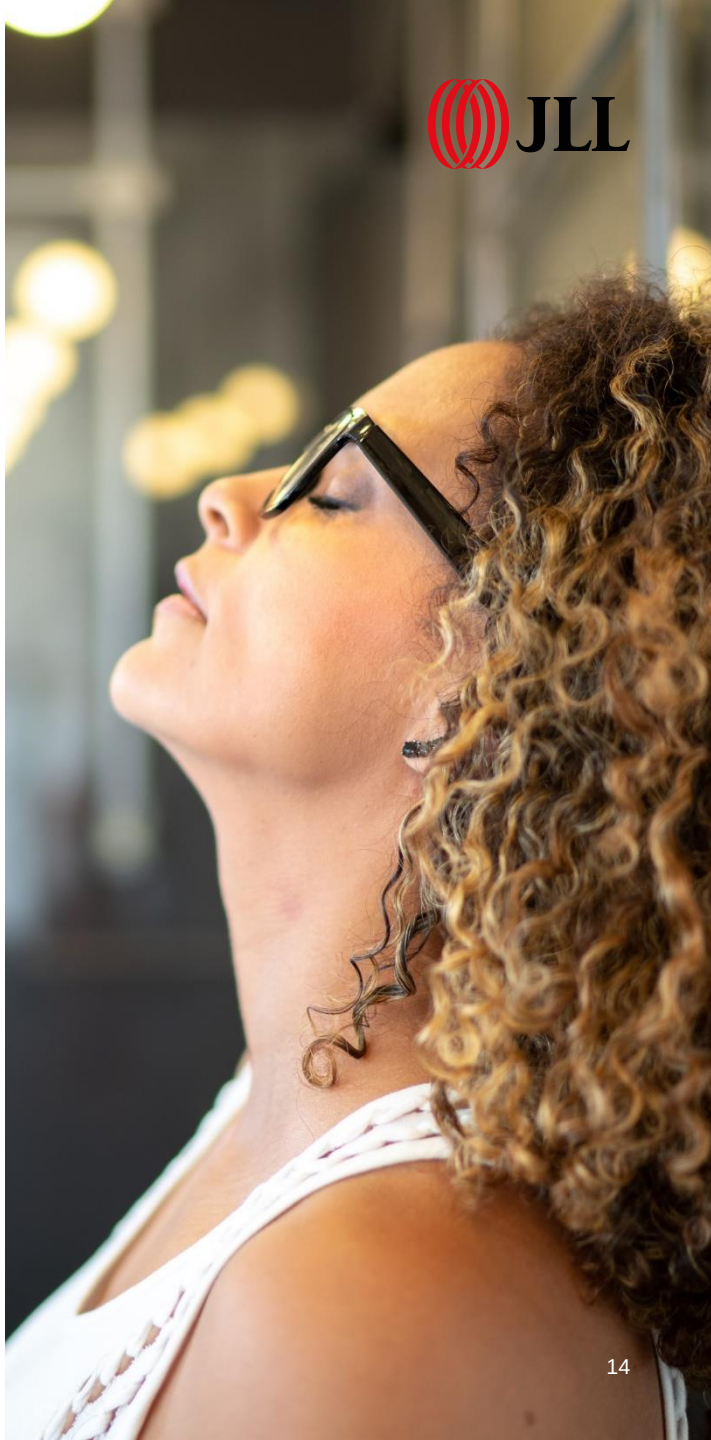
NZC projects development challenges

REGULATION

EMBODIED VS. OPERATIONAL

SELECT THE RIGHT TEAM

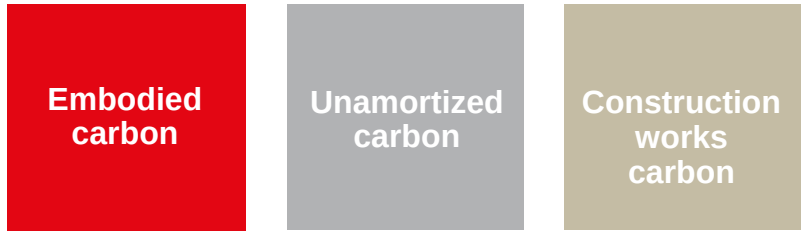
FUTURE OF WORK




Going Beyond

NZC Offset: New World, New Market

Design & Construction Stage



CARBON “BALANCE SHEET”

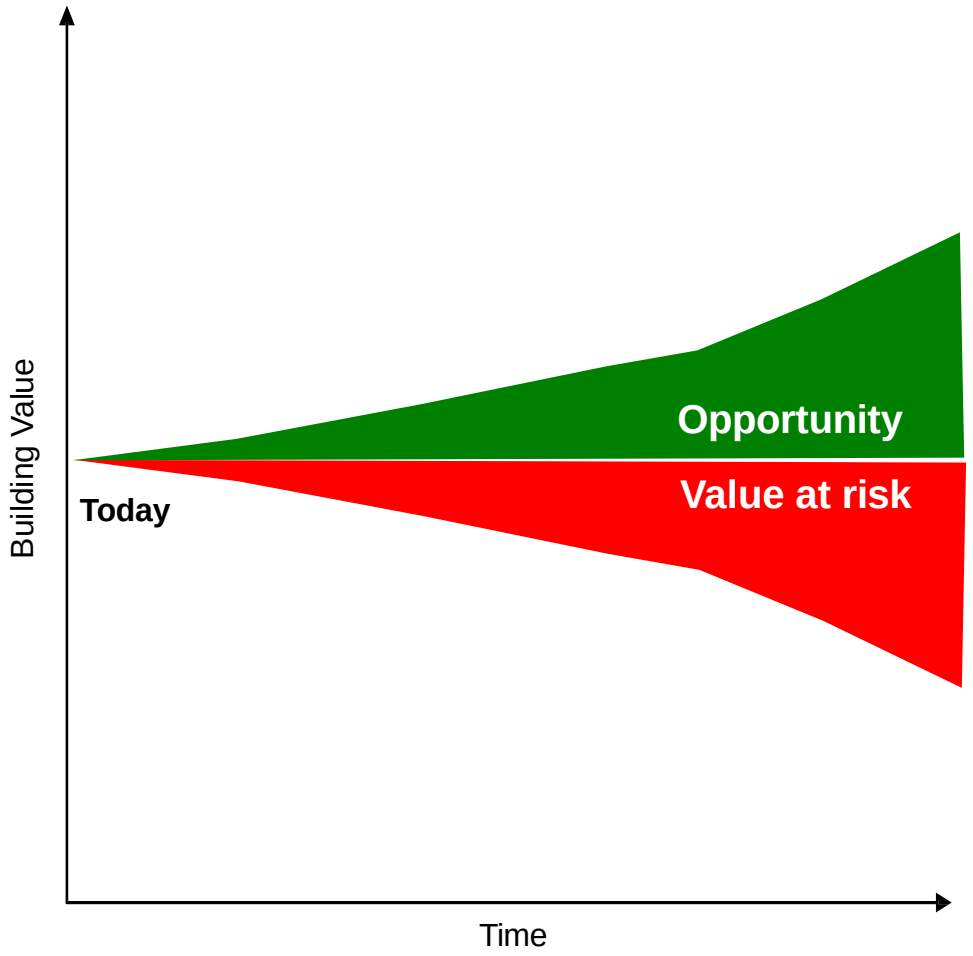
One - off

Project Occupation Stage

CARBON “P&L”

Annually

Green Premium or Brown Discount?



VALUE DRIVERS

- Reduce carbon emissions
- Reduce waste
- Reduce water
- Lower operating costs
- Improve occupancy rates
- Increase tenant satisfaction
- Reduce financing costs
- Reduce risk / increase resilience

BUILDING ATTRIBUTES

- Building Quality
- Maintenance Status
- Surround & Accessibility
- Certifications
- Environmental
- Governance
- Social
- Tenant

Opportunities for shared value

INVESTOR
VALUE DRIVERS

Reduce carbon emissions

Reduce waste

Reduce water

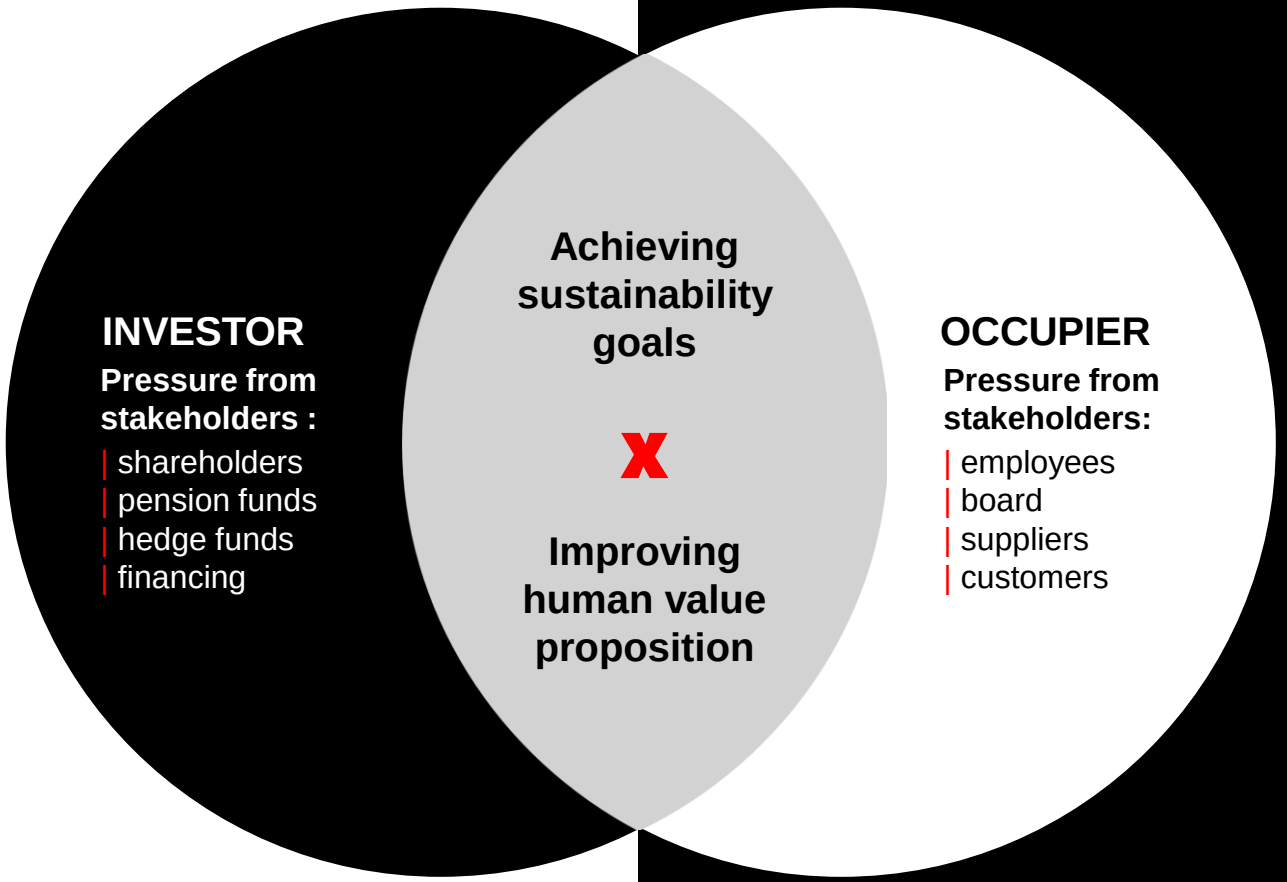
Lower operating costs

Improve occupancy rates

Increase tenant satisfaction

Reduce financing costs

Reduce risk/increase resilience



OCCUPIER
VALUE DRIVERS

Reduce carbon emissions

Reduce waste

Reduce water

Lower operating costs

Employee retention

Improve productivity, engagement, collaboration & well-being

Reduce risk/increase resilience

Climate commitments and human experiences increasingly lend themselves **to shared incentives between investors and occupiers**

Thank you

JLL

Opportunities and barriers for construction materials - Steel

Nicola Davidson, Arcelor Mittal

Decarbonization challenge for steel: the value chain perspective.

IIGCC Real Estate roundtable

02 November 2022

Smarter steels for
people and planet

Leading the global steel sector on decarbonisation

ArcelorMittal has adopted an ambitious set of carbon targets* that will lead the sector in reaching net-zero by 2050

Steel has the potential to be the backbone of the net-zero economy.

To capture this opportunity steel must also decarbonize, achieving net zero by 2050 and offering low-carbon and ultimately near-zero products to its customers

Commitment to reaching net zero across our value chain by 2050

* Group target of a 25% reduction in CO_2e emissions intensity (per tonne crude steel) by 2030. Europe target increased to 35% (from 30%) reduction in CO_2e emissions intensity (per tonne crude steel) by 2030. Targets refer to scopes 1+2 CO_2e emissions, steel + mining.

ArcelorMittal

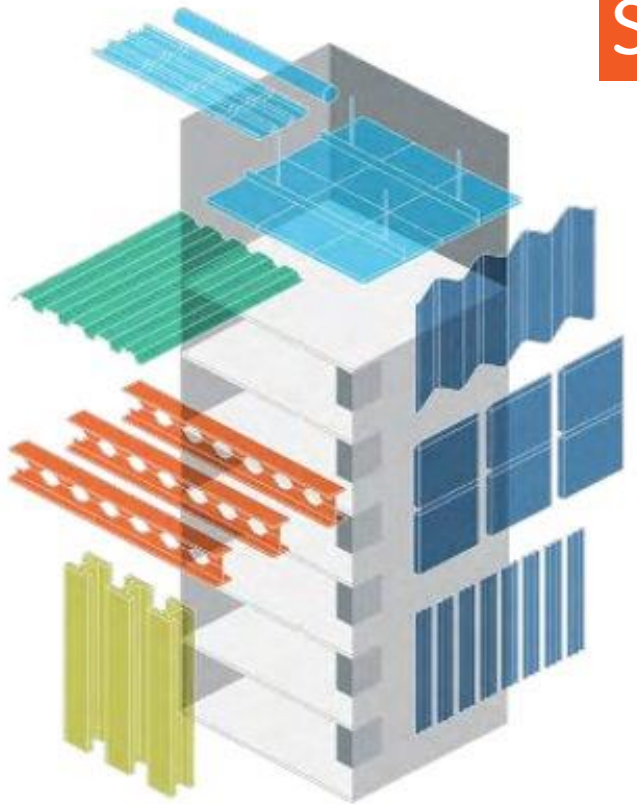

The built environment is responsible for approximately 40% of global carbon emissions.

Designing a building in the right way can already decrease its carbon content by 35-40%.

Steligence® - driving material efficiency and longevity with innovative steel solutions

Steligence® offers our customers solutions to enhance their contribution to a low carbon and circular economy

- Steligence® is an innovative and science-based concept developed to help architects, engineers and property developers to collaborate to build more sustainable, cost-effective buildings.
- It enables solutions that minimise material use while maximising space, flexibility and end of life recyclability.
- As a result, buildings can become more modular and quicker to construct, leading to significant efficiencies, cost savings and carbon reductions, while also creating the potential for reuse and recycling.
- Amid rising global prices of construction materials, customers have expressed greater interest in using Steligence® to reduce costs and optimise the carbon footprint of buildings.



The intelligent construction choice
Steligence®

ArcelorMittal

ArcelorMittal Grade 80 steel columns reduce structural steel use, enhance floor space

First ever use in the US at Chicago's Union Station Tower, 2020

Union Station Tower, Chicago, US

- Grade 80ksi* steels developed by Global R&D and Long Products, and produced at Differdange, Luxembourg
- Superior strength of Grade 80 steel enables building design to use nearly 20% less structural steel, reducing costs and embodied CO_2 of the building

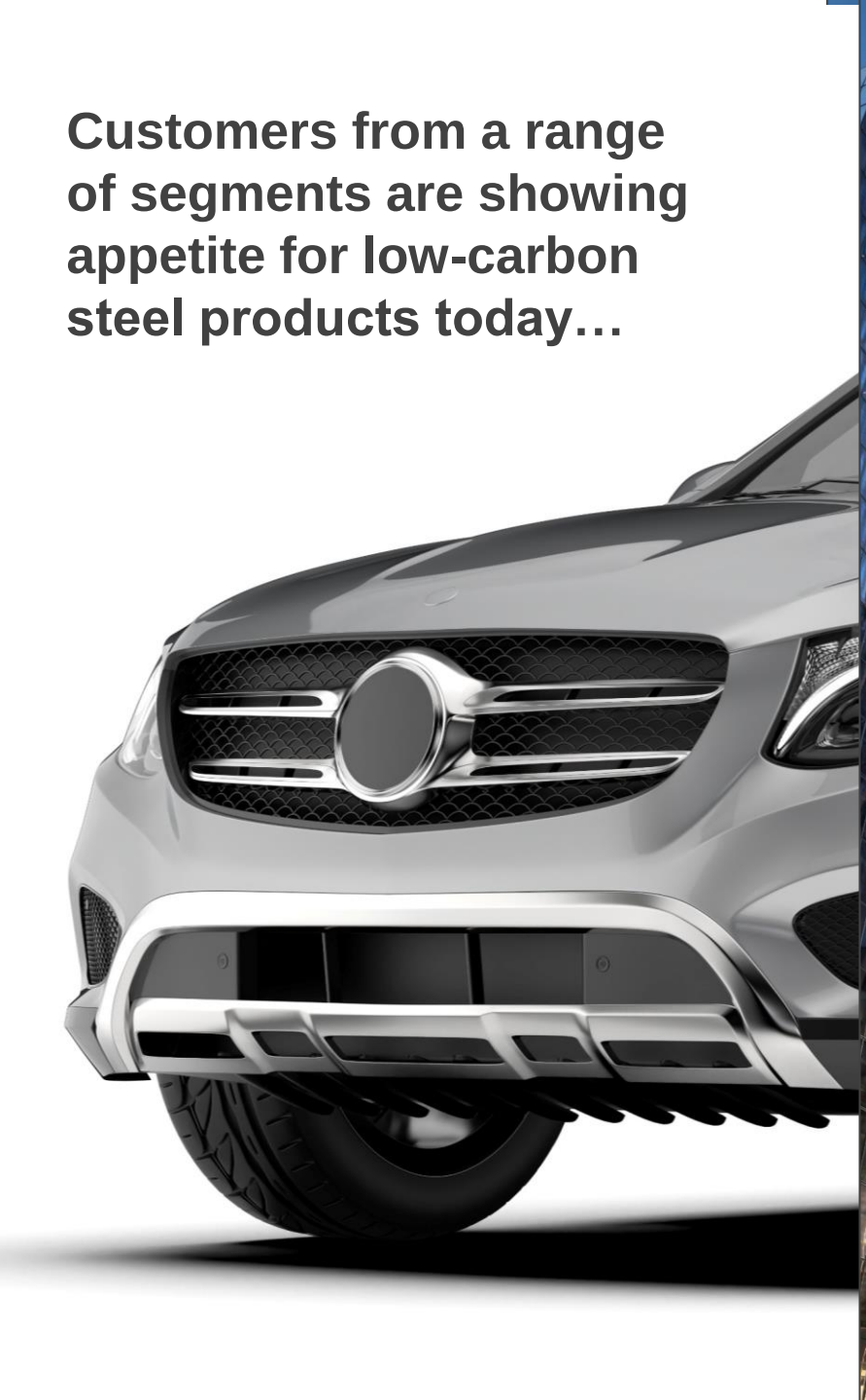
CO_2 ↓ 38% Due to 20% reduction in structural steel as well as strong CO2 performance

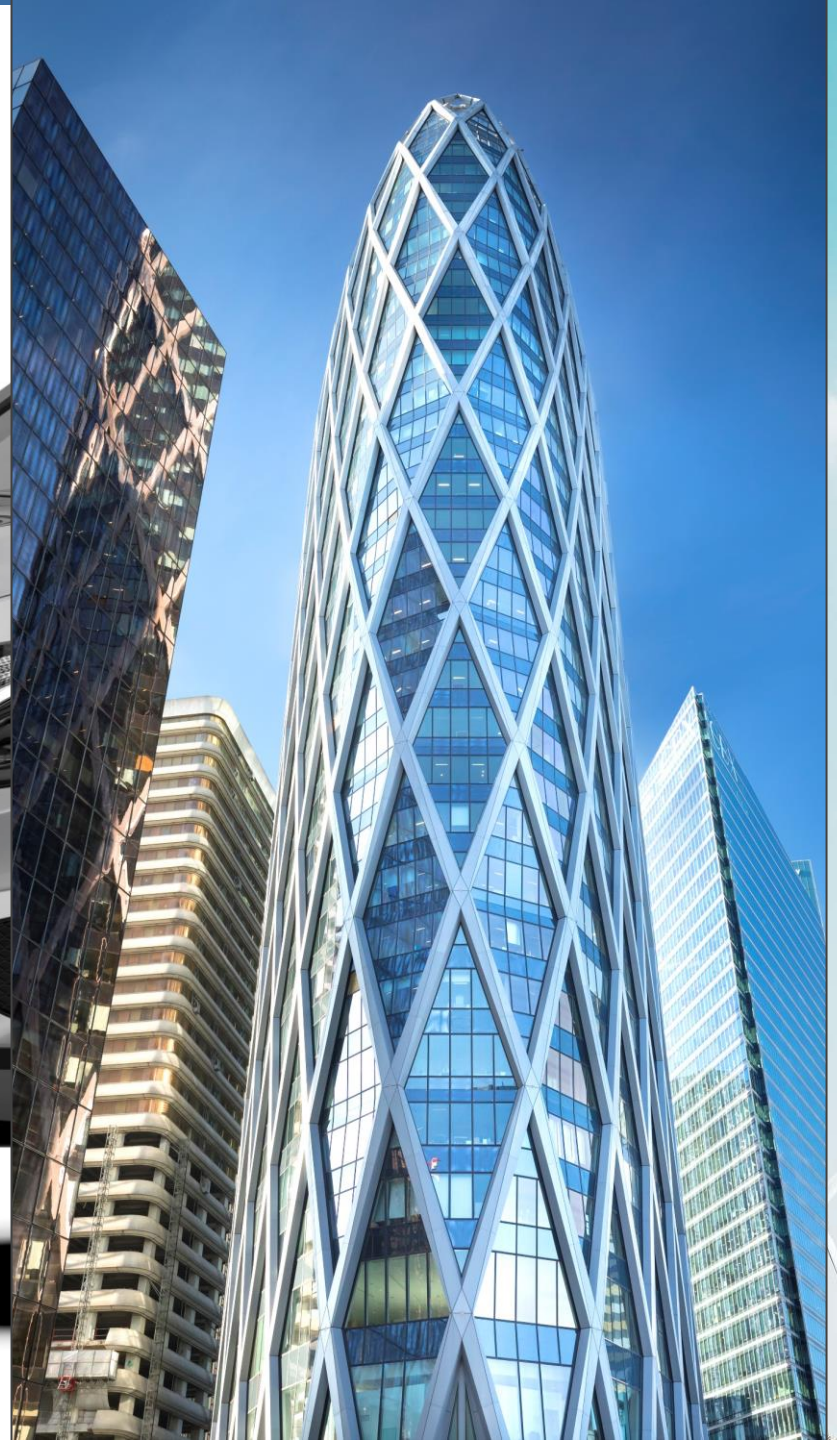
ArcelorMittal solutions bringing cost and sustainability value to the construction industry

* ksi = kilogrammes per square inch

ArcelorMittal

Customers from a range of segments are showing appetite for low-carbon steel products today…





So we launched XCarb™

XCarb™ brings together all of ArcelorMittal's reduced, low and zero-carbon projects and steelmaking activities, as well as wider initiatives and green innovation projects, into a single effort focussed on achieving carbon-neutral steel.

As part of the new XCarb™ brand, ArcelorMittal has launched XCarb™ green steel certificates for our customers.

We also offer certified XCarb™ 'recycled and renewably produced' steel products

XCarb™
Green steel certificate

XCarb™
Innovation fund

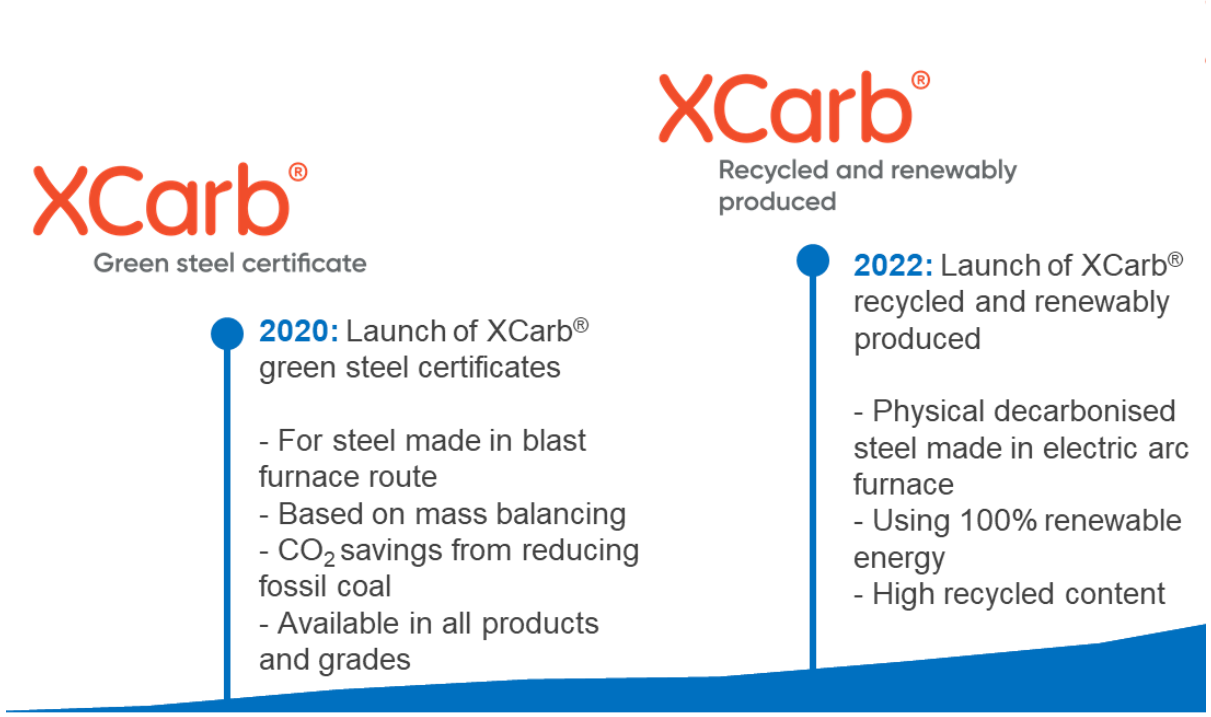
XCarb™
Recycled and renewably produced

ArcelorMittal

XCarb™ brings together all of ArcelorMittal's reduced CO_2 products into a single effort focused on achieving demonstrable progress towards low carbon emissions steel

XCarb™: credibility is our highest priority

- **Legitimate and tangible –** Claims are substantiated by actualised CO_2 reductions, as a result of investment efforts in our sites
- **Transparent –** Fully transparent about the benefits, and limitations, of each XCarb™ solution
- **Science-based –** Applies life-cycle assessment principles by considering the direct and indirect CO_2 emissions
- **Third-party verified –** Involves rigorous third-party audit and verification process, instead of relying on self-declarations
- **Stakeholder involvement –** External stakeholders are consulted and involved in the development of every XCarb™ solution



ArcelorMittal aims to be the most trusted supplier of low-carbon emissions steel solutions

ArcelorMittal

- Adding in XCarb® recycled and renewably produced steel products can further increase embedded carbon in the building up to 55%.

Customers see the value in XCarb® recycled and renewably produced – this low CO_2 emissions structure in Switzerland is just one of many examples

Quote

“We discovered XCarb® recycled and renewably produced, ArcelorMittal’s low-carbon emissions offer, a little over a year ago," explains **Jean-François Suchet**, Managing Director of Morand Constructions Métalliques. “Offering it to our customers was an obvious choice and is part of our **environmental and sustainable development policy**. Indeed, even if it has a slight extra cost of 2 to 4%, we want to **introduce this product which has the same properties as traditional steel but is made from 100% of steel scrap, using 100% renewable electricity.”**

Project:
The future Dimab car dealership will be the biggest BMW and MINI showroom in Switzerland and the country’s first steel structure to use low CO_2 emissions steel.

ArcelorMittal

The real estate investor has the power to drive and accelerate progress.

- On average an office building uses 50kg/m² of steel
- By selling low carbon steel with a premium of, for example, €100/tonne, the total cost increase is only €5/m²
- In other words, that's a cost of only €5/m² for a 50% reduction in CO2
- So many actors are included in the construction process the standards must be set at the start by the investor

Regulation can help drive progress

- Beginning this year, French regulations require a CO_2/m^2 budget for all new buildings, including the private sector
- The budget dramatically increases every year up to 2030
- This means that by 2026, the design approach to buildings will have to change

Low carbon steel needs renewable electricity – and a lot of it!

- Two thirds of the investment required for near-zero steel is in the enabling infrastructure
- Transforming 100 million tonnes of primary steel-making to near-zero would require half of Europe’s current installed renewable capacity

ArcelorMittal

Smarter steels for
people and planet

Opportunities and barriers for construction materials

Emmanuel Normant, Saint-Gobain

SAINT-GOBAIN CLIMATE STRATEGY

IIGCC ROUNDTABLE – NOVEMBER 2ND 2022

Emmanuel NORMANT
VP Sustainable Development

SAINT-GOBAIN

MAKING THE WORLD A BETTER HOME

Making the World a Better Home

BE THE WORLDWIDE LEADER IN LIGHT & SUSTAINABLE CONSTRUCTION

GROW & IMPACT

2021-2025

SAINT-GOBAIN

MAXIMIZE OUR IMPACT & MINIMIZE OUR FOOTPRINT

GROW & IMPACT

Build a decarbonated home

Climate change

Drive circularity into our markets

Circular economy

Pioneer the highest standards

Health & safety across the value chain

Empower our local ecosystems

Inclusive growth

Foster an open & engaging work environment

Employee engagement & diversity

Act without any compromise

Business ethics

SAINT-GOBAIN BUSINESS MODEL DIRECTLY CONTRIBUTES TO ESG OUTCOMES

GROW & IMPACT

Maximize our impact

&

Minimize our footprint

Avoided emissions: **40x our footprint[1]**

from our solutions sold in 1 year

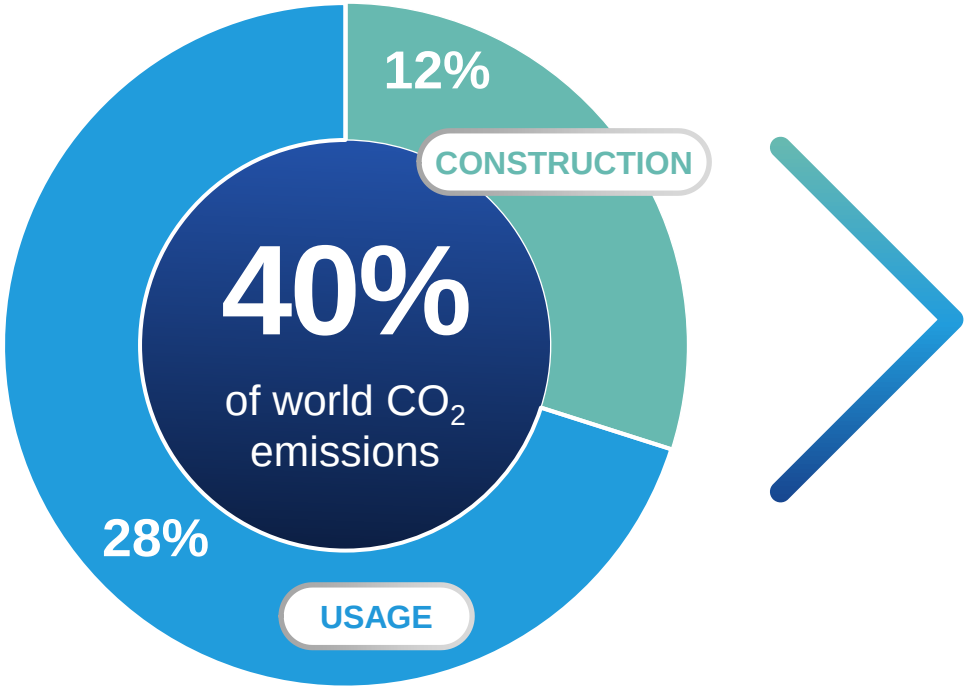
2050 NET ZERO CARBON

1.~ 1,300 Mt all 3 scopes, >100x on scope 1 & 2

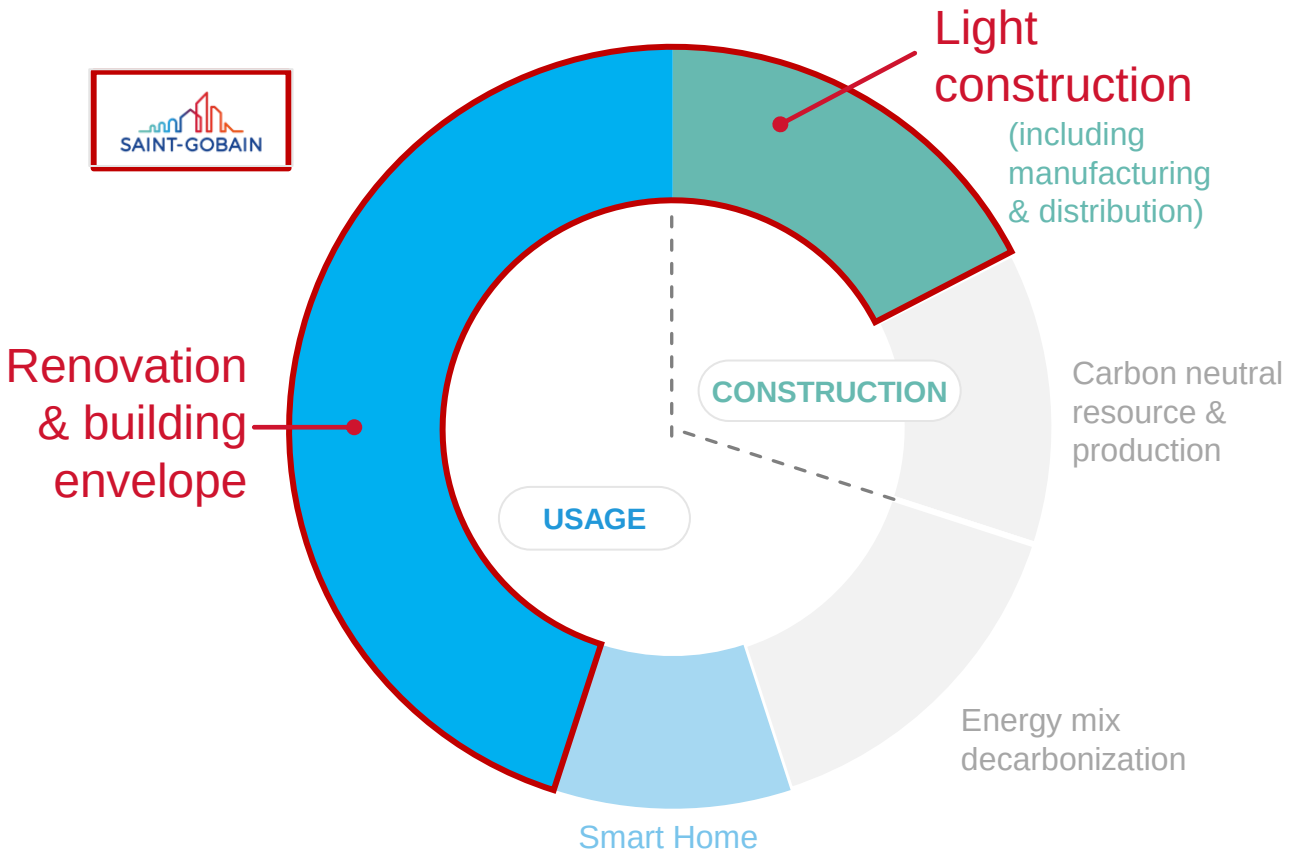
SAINT-GOBAIN SOLUTIONS CAN DECARBONIZE 2/3 OF BUILDING-RELATED EMISSIONS

GROW & IMPACT

Building-related CO_2 emissions



Available decarbonization levers



Sources: World Green Building Council, UNEP, CDP, Material Economics, ADEME

CARBON NEUTRALITY ? WHAT DOES IT MEAN ?

DIRECT EMISSIONS

SCOPE 1

8.4 Mt

INDIRECT EMISSIONS

SCOPE 2

1.9 Mt

Electricity

DIRECT ACTIONS

VALUE CHAIN*

SCOPE 3

>23 Mt

9 Mt **>5 Mt** **>9 Mt**

ACTIONS IN RELATION WITH OUR SUPPLIERS

1. **Reduce as much as possible** our emissions
2. **Capture, use and storage** of our residual emissions

** Sc1+2 : 2021 numbers, sc3 : 2017 numbers*
** Relevant categories within the scope of our SBT targets*

SAINT-GOBAIN

ON OUR WAY TO CARBON NEUTRALITY, 2030 IS OUR NEXT MILESTONE

In our processes

2030 → **2050**

Science-Based Targets

Scope 1 + 2 (Direct + Indirect)	**-33%**
Scope 3 (Value chain)	**-16%**

Absolute emission reduction vs. 2017

Objective 2050
ZERO CARBON

In our solutions offering

- Offer the best low-CO_2 and **sustainable solutions in our markets**
- Enable our customers to **decarbonize their processes**

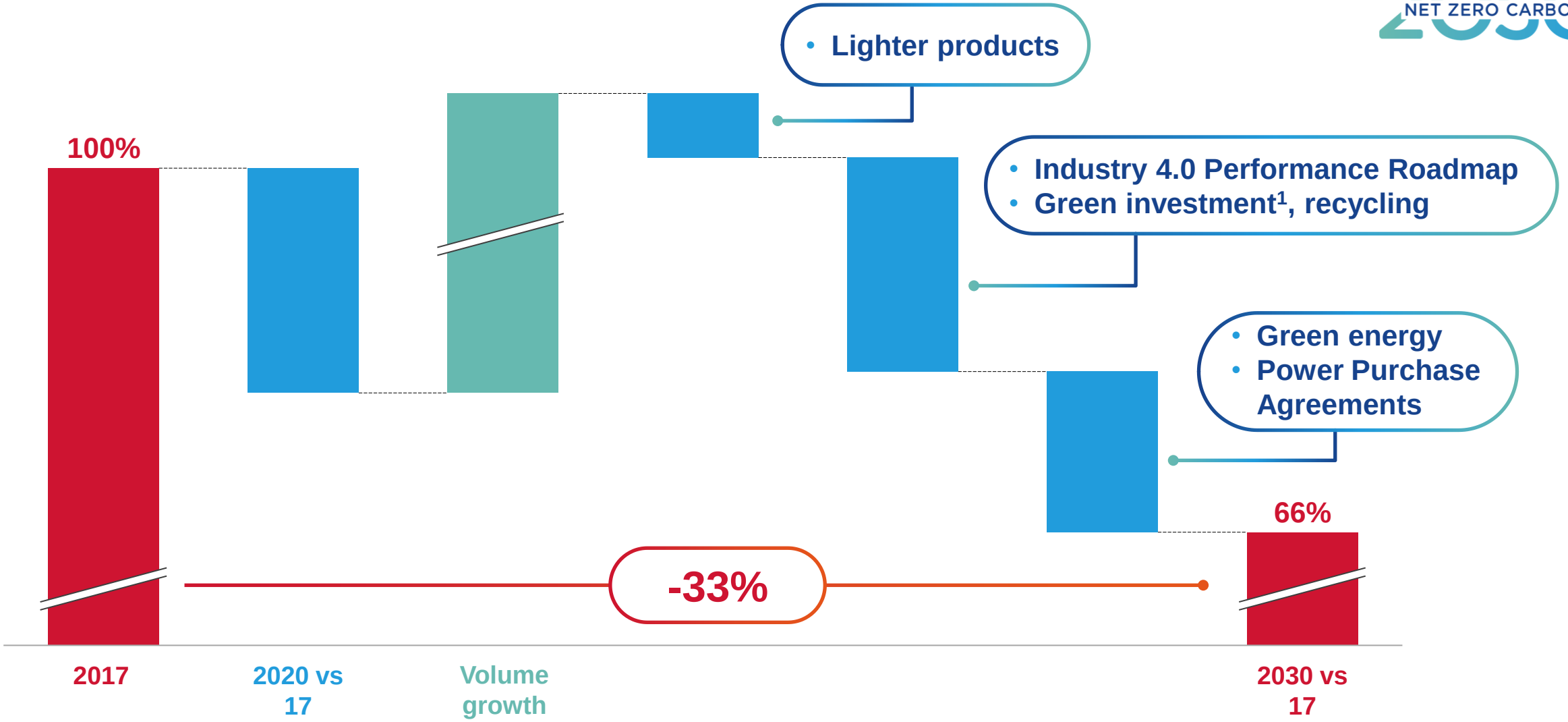
A roadmap for each BU – a dynamic approach

SAINT-GOBAIN

WE HAVE ALL LEVERS NEEDED TO ACHIEVE -33% SCOPE 1+2 EMISSIONS BY 2030

GROW & IMPACT

2050 NET ZERO CARBON

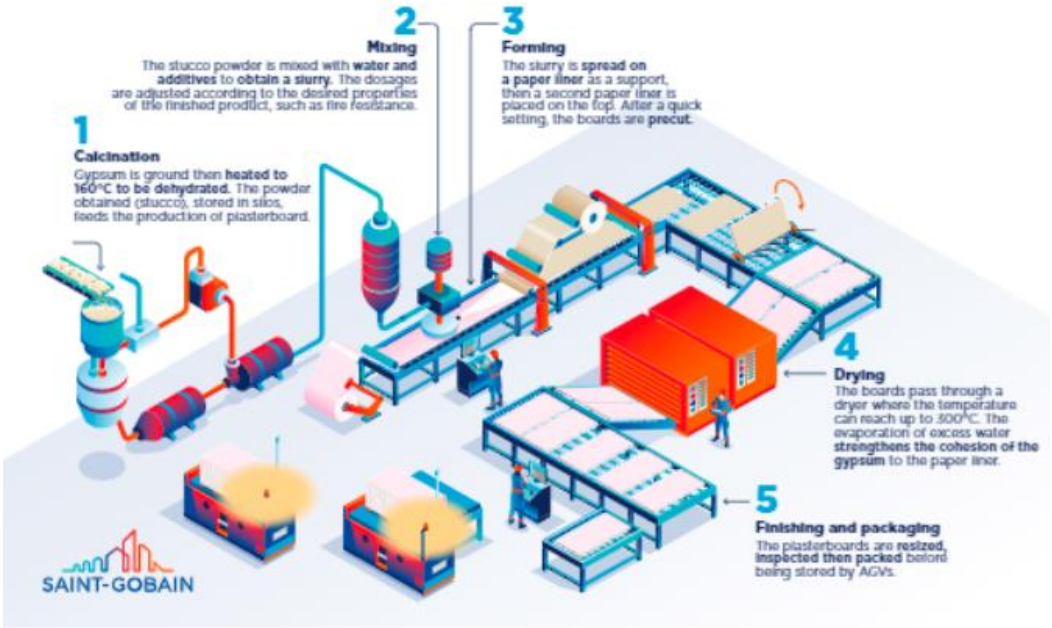


1. Enhanced by our 75€/t internal CO2 price for CapEx, 150€/t for R&D

WE PIONEER NET-ZERO CARBON FACTORIES

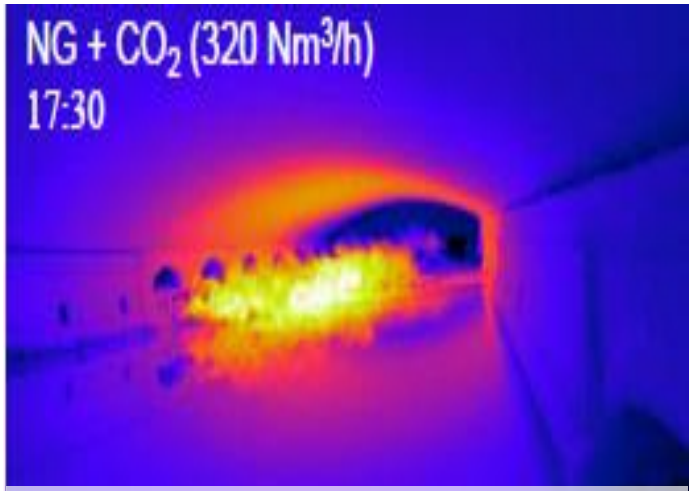
GROW & IMPACT

Net-Zero Carbon gypsum



First Net-Zero Carbon gypsum plasterboard factory in Norway: 2023

Net-Zero Carbon glass



Industrial test on a Saint-Gobain float line

Close **collaboration** with our ecosystems through partnerships

Advanced industrial trials with biomass and hydrogen in flat glass factories

SUPPLIERS & LOGISTICS: TACKLE EMISSIONS IN SUPPLIERS & TRANSPORT

Scope 3

Engage all our suppliers

Levers

- **Responsible purchasing charter**
- **SBT approach adoption**
- **Data transparency**
- **Benchmarking, selection criteria**

Key actions

Benchmark suppliers, select them taking into account CO_2 emissions

89% of non-trade suppliers & **86%** of trade suppliers covered by Supplier charter

Gather detailed CO_2 emissions and other sustainability **data**
(questionnaires, common approach + testing)

Engage large emitters to adopt **SBT** approach
(focus on cement, soda ash, paper, distribution suppliers)

Reduce emissions from transport

Levers

- **Optimize logistics**
- **Improve fuel efficiency**
- **Use decarbonized fuels**
- **Replace road by rail & water**

Examples of key actions

Fret21: part of COP21, to push carriers to cut CO_2 emissions

Evoluvert: NGV[1]-fueled trucks in Point.P distribution centers

Control Tower: truck filling rate monitor, route optimization in LATAM

Leverage our impact on the value chain

1. Natural Gas Vehicle

SAINT-GOBAIN

LEADERSHIP & ACCOUNTABILITY ACROSS SAINT-GOBAIN ON ESG

GROW & IMPACT

Embed

ESG into management processes

- ESG = 10% in STI[1] for all executives, 20% for all 2,300 beneficiaries of LTI[2]
- ESG part of all capex validation
- Board + ExCo ESG Committees

SAINT-GOBAIN UNIVERSITY CLIMATE ACADEMY

Orchestrate the

Local ESG roadmaps acceleration

- >22K employees in 41 ESG-linked communities
- 75€/t CO_2 price in capex, 150€/t in R&D decisions
- €100m annual capex & R&D budget on CO_2

Shape the

Industry's ESG agenda

- EFRAG — Collaborate with governmental organizations and NGOs
- WORLD GREEN BUILDING COUNCIL — Partner with the ecosystem
- Nurture & exchange with start-ups

1. Short Term incentives 2. Long Term Incentives

MAKING THE WORLD A BETTER HOME

Panel discussion

Moderated by Peter Sweatman, Climate Strategy and Partners

- Walid Goudiard, JLL
- Nicola Davidson, Arcelor Mittal
- Emmanuel Normant, Saint-Gobain
- Alexander Neumann, Hochtief
- Katerina Papavasileiou, Federated Hermes
- Victoria Burrow, World Green Building Council

Thank you

info@iigcc.org

www.iigcc.org

Pennine Place
2a Charing Cross Road
London
WC2H 0HF