



CLIMATE TURNAROUND ALSO MEANS A TURNAROUND IN BUILDING MATERIALS

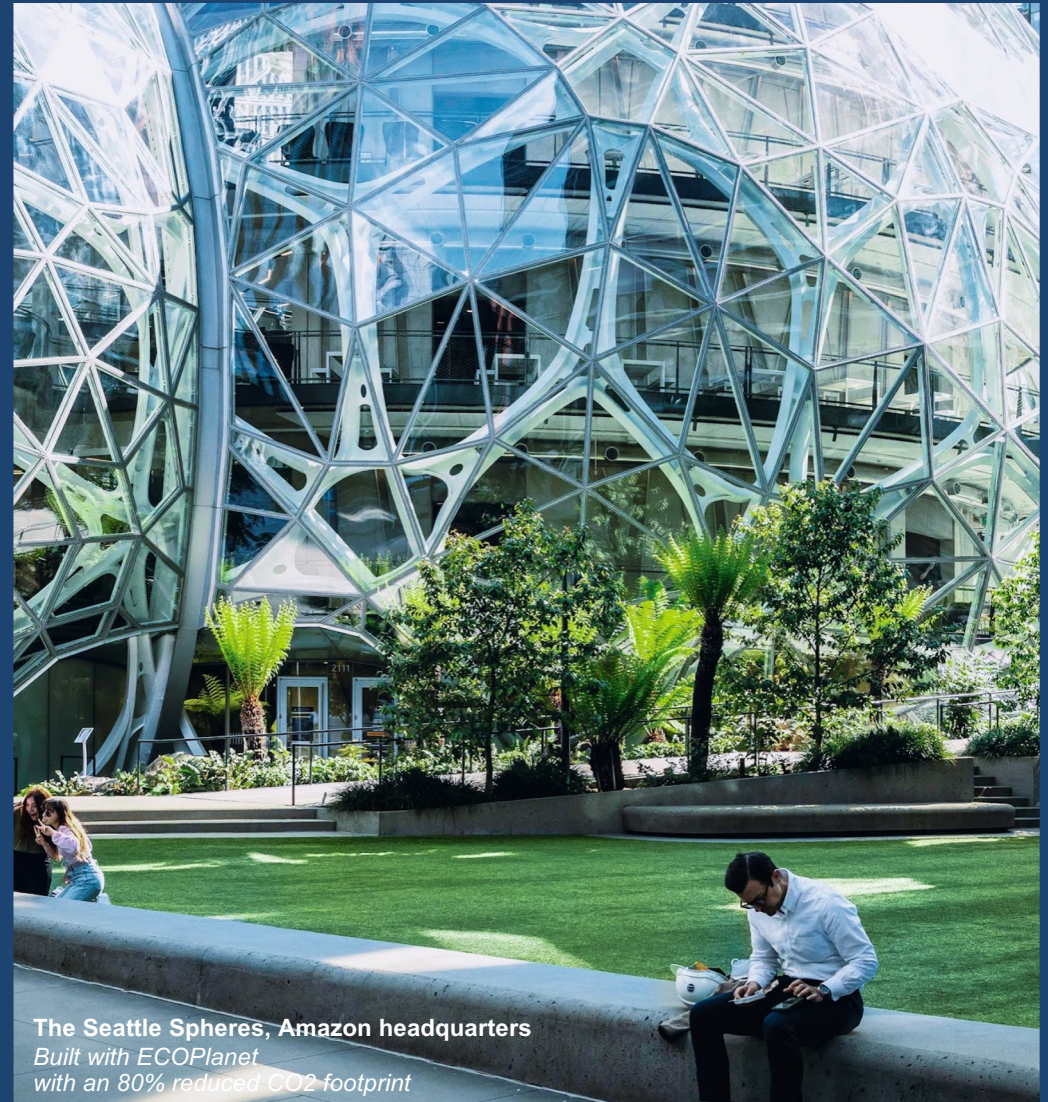
Thorsten Hahn, CEO Holcim Deutschland

Decarb Connect Europe 2024 - CO₂ as a valuable resource

19 June 2024



HOLCIM GROUP: WORLD LEADER IN SOLUTIONS FOR SUSTAINABLE CONSTRUCTION



The Seattle Spheres, Amazon headquarters
Built with ECOPlanet
with an 80% reduced CO2 footprint

HOLCIM GROUP BUILDING PROGRESS

GREENER CITIES

from the foundation to the roof with
climate-friendly solutions



SMART INFRASTRUCTURE

from green mobility and renewable
energies to basic sanitation

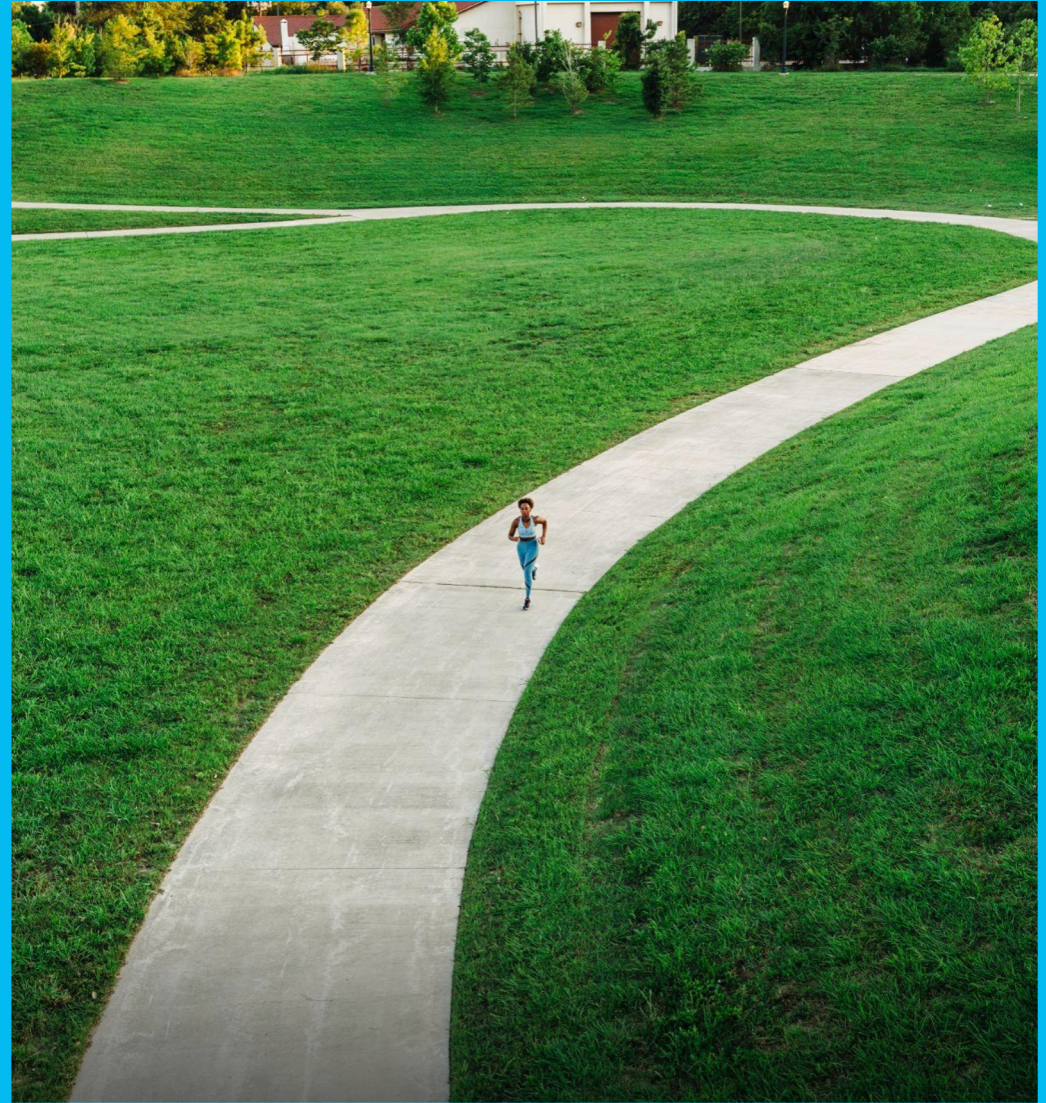


HIGHER LIVING STANDARDS

with affordable sustainable solutions




HOLCIM GERMANY: PIONEER IN SUSTAINABLE CONSTRUCTION




HOLCIM

GLOBAL LEADER IN INNOVATIVE AND SUSTAINABLE BUILDING SOLUTIONS


~60K 
Employees


2030 & 2050
1.5 degree aligned net-zero targets, validated by SBTi 


300 
Patents in green construction

100+ 
Start ups
in our open innovation ecosystem

29^B 
CHF
Net Sales

21% 
reduction in our CO₂ per net sales by 21%

40+ 
University collaborations

#1 
R&D organization
in our industry

5 
worldwide R&D hubs

HOLCIM IN GERMANY: PART OF THE HOLCIM GROUP – A LEADER IN SUSTAINABLE AND INNOVATIVE SOLUTIONS



Leader in innovative and digital building products

Part of the Holcim Group:
Leading the way to sustainability

SOCIAL CHALLENGES IN GERMANY WE ARE PART OF THE SOLUTION



1.5°

DECARBONISATION NOW



Building new from old

MANAGING IN CYCLES



Building climate transition

CHANGE IN BUILDING MATERIALS



400,000 APARTMENTS (p.a.)

Affordable housing

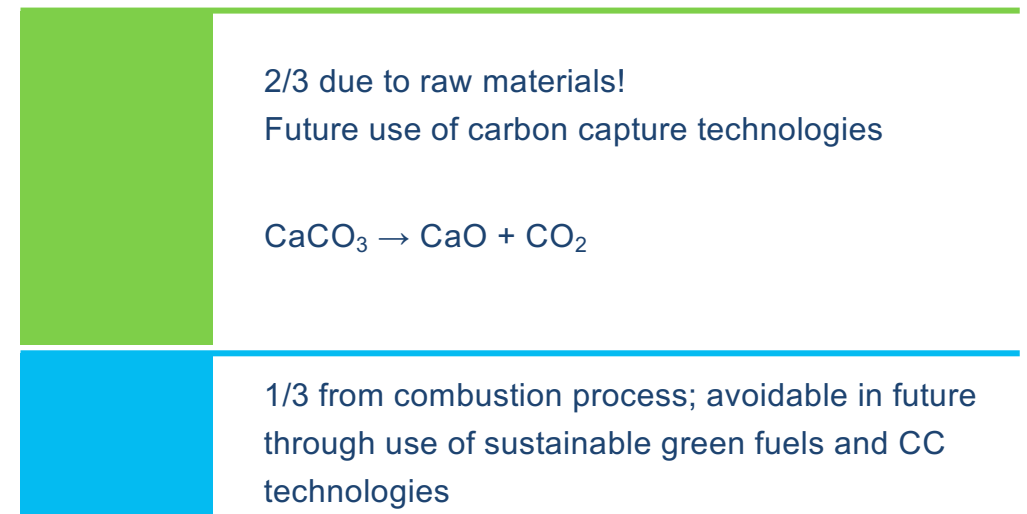
TRANSFORMATION OF AN INDUSTRY

WHY CLIMATE-FRIENDLY CEMENT IS SO IMPORTANT

Cement industry as an unavoidable industrial CO₂ source.

The German cement industry emits 20 million tonnes of CO₂ per year; this corresponds to 3 % of total emissions in Germany.

CO₂-emissions in cement production:



DECARBONISATION

CLIMATE TURNAROUND ALSO MEANS CEMENT TURNAROUND

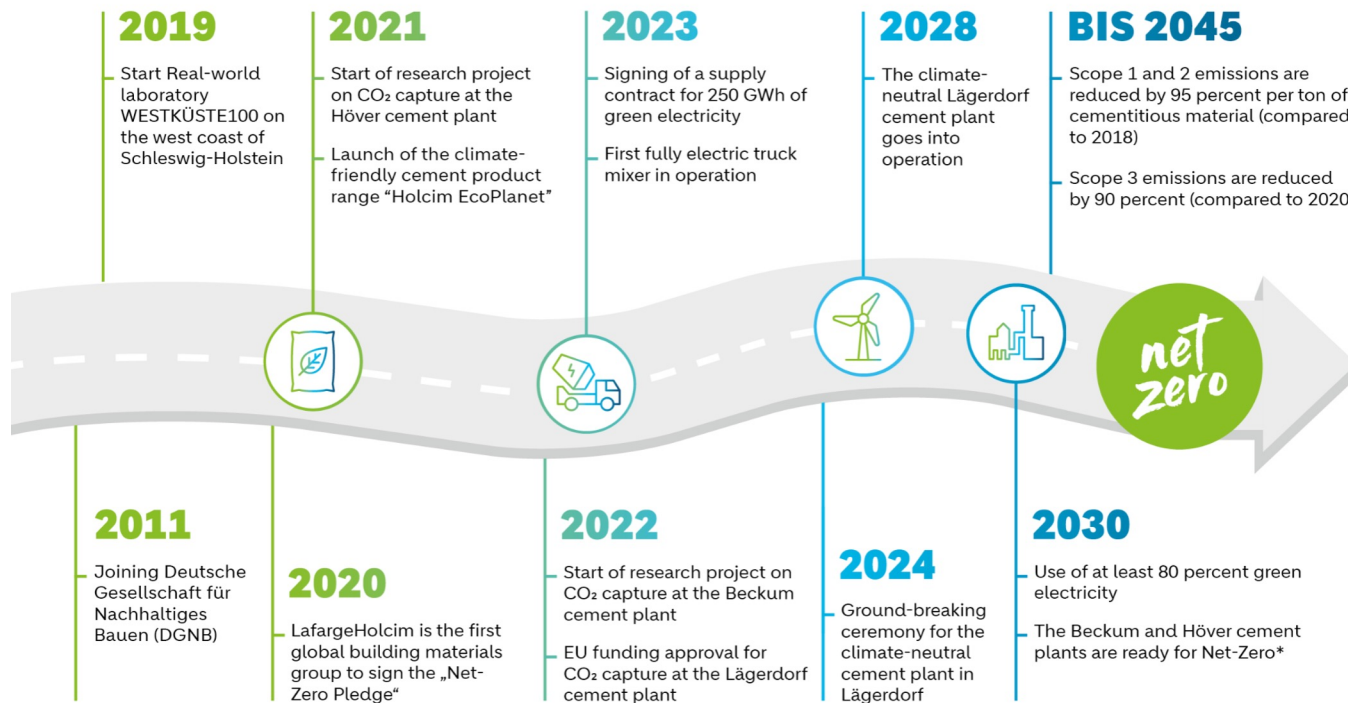
The cement industry has a special obligation in terms of climate-friendly conversion due to unavoidable CO₂-emissions caused by the process

- Building more with less: Conserving resources through smarter construction methods
- Reduction of the clinker in cement through the use of clinker substitutes such as granulated blast furnace slag
- Decarbonisation of production through carbon capture processes (projects in all cement plants)



ROADMAP TO DECARBONISATION HOLCIM GERMANY

ROADMAP FOR DECARBONIZATION HOLCIM GERMANY



*Plants to be converted by 2030. Net-Zero operation is dependent on external infrastructure and legislation.

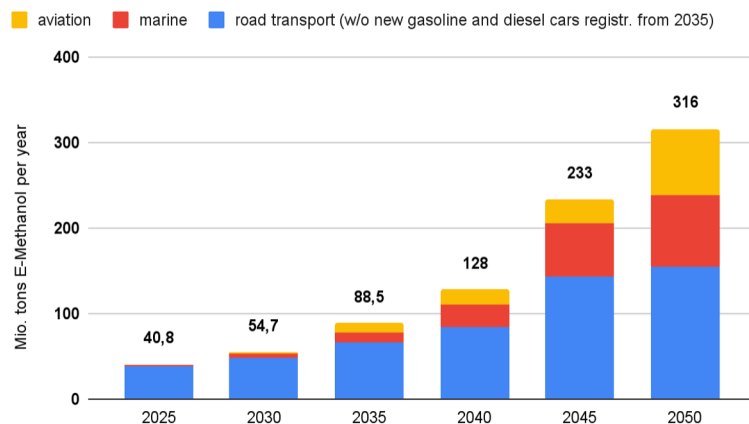
CO₂ is in Future a raw material



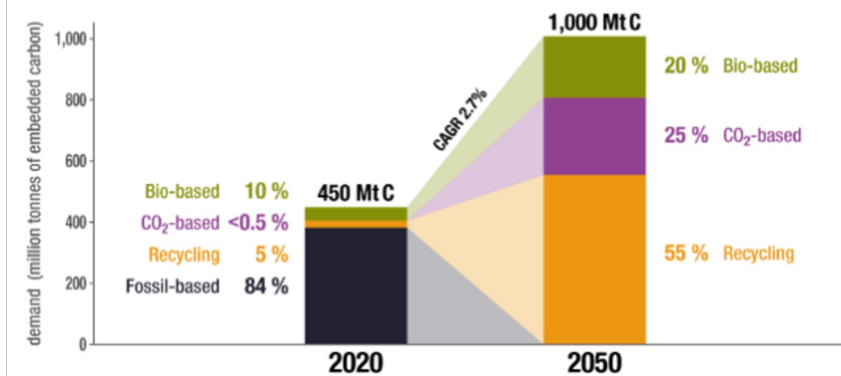
CCU - WHY A CO₂-MARKET?

DEMAND FOR ALTERNATIVE CARBON SOURCES WILL INCREASE

European synthetic fuels / e-methanol Demand by sector



Global carbon demand for chemicals and downstream products in 2020 & 2050 scenario (in million tonnes of embedded carbon)





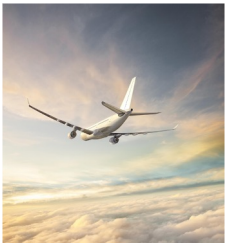





Synthetic fuel / e-methanol (base case)

- European demand for e-methanol in 2050 is estimated at 316 million tonnes per year
- CO₂ from cement plants is an excellent resource

Chemical industry (target case)

- The global carbon demand of the chemical industry is estimated at 1,000 million tonnes per year for 2050

CO2 ECONOMY FROM CLIMATE TOXIN TO IMPORTANT RAW MATERIAL

Fuels			Basic chemical industry			Building materials	
E-Methane	E-Methanol	E-Kerosene	E-Methanol Chemical industry	Polyurethane	Urea	Concrete Precast Elements	Aggregates
							
Production of e-CH ₄ from CO ₂ and H ₂ , which is mainly used as a fuel in transport and industry	Production of e-methanol from CO ₂ and H ₂ for use as a green fuel in maritime transport	Production of e-kerosene from CO ₂ and H ₂ for use as green fuel in the aviation sector	Production of e-methanol from CO ₂ and H ₂ to replace the use of fossil methanol in the chemical industry	Addition of CO ₂ as a raw material in the production process of polyurethane (PU) as a substitute for fossil CO ₂	Production of urea from CO ₂ and low-carbon ammonia (e.g. green ammonia)	Curing of cement by injecting CO ₂ into concrete to accelerate curing through mineralisation	Carbonisation of natural, manufactured and recycled concrete aggregates (RCA)

LÄGERDORF CEMENT PLANT

CARBON 2 BUSINESS - MILESTONE FOR DECARBONISATION



CLIMATE-NEUTRAL CEMENT PLANT

A VISION BECOMES REALITY

funded by EU Innovation Fund



- One of the world's first climate-neutral cement plants by the end of the decade
- Prerequisite: Construction of a new kiln line and conversion of the plant to the second-generation oxyfuel process
- EU funding of EUR 110 million from the 'Innovation Fund'. Total investment costs: several hundred million euros
- Capture almost 100% of CO₂ emissions and avoid over one million tonnes of CO₂ annually
- Processing into high-purity CO₂ as a raw material for other industries (CCU project)



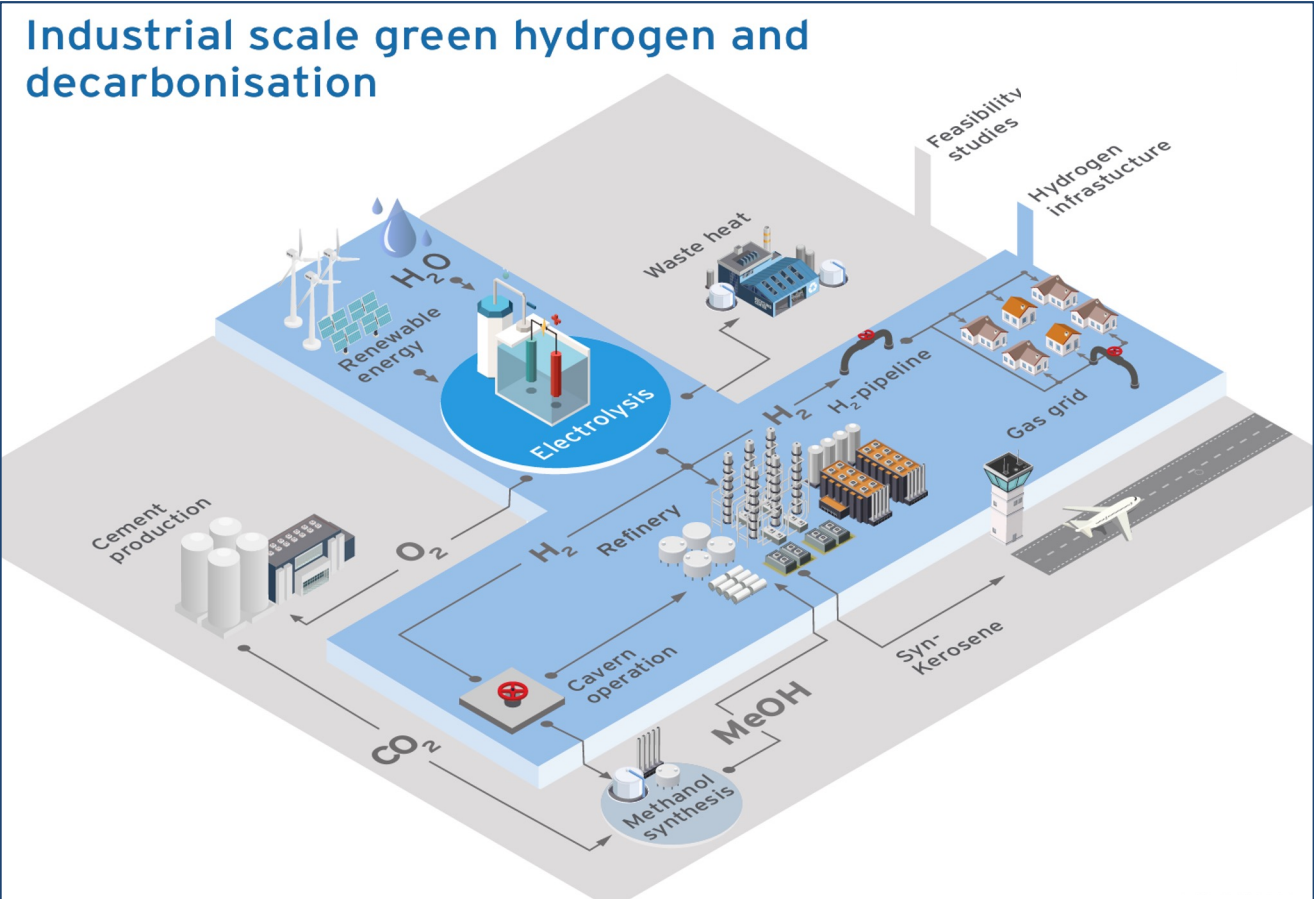
CEREMONY FOR THE CLIMATE-NEUTRAL CEMENT PLANT WE MAKE CONCRETE THE FOUNDATION OF A SUSTAINABLE FUTURE

- Vice Chancellor and Federal Minister of Economics **Robert Habeck** and Schleswig-Holstein's Prime Minister **Daniel Günther**, together with **Thorsten Hahn** broke ground for the climate-neutral cement plant in Lägerdorf on 22 April 2024
- Habeck described the project as “a **prime example of the green transformation.**”
- Prime Minister Günther highlighted Holcim`s role as a pioneer: “The **prototype for the decarbonisation** of the cement industry is being built on an industrial scale in Lägerdorf.”

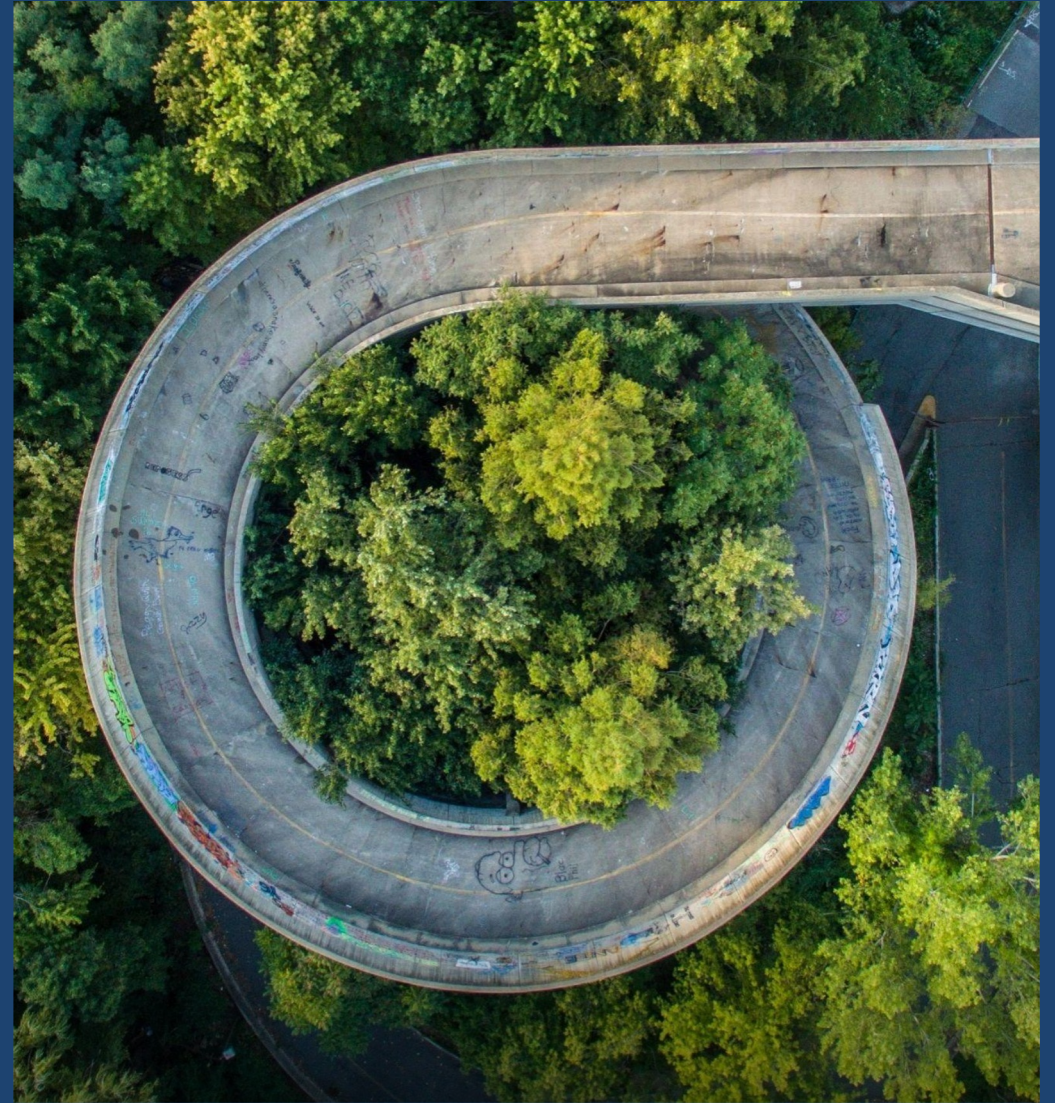


CLIMATE TURNAROUND ALSO MEANS CEMENT TURNAROUND

REGIONAL SECTOR COUPLING & DEVELOPMENT OF THE HYDROGEN ECONOMY



**CONSISTENTLY
CIRCULAR:
TIME FOR
SOMETHING TO
TURN**



CIRCULAR ECONOMY

CONCRETE MUST BECOME CONCRETE AGAIN

BUILD NEW FROM OLD

ECOCycle.
The Circular Technology

Recycling old
buildings into new
materials for reuse



 **HOLCIM**

The construction industry is responsible for more than 50% of the total waste generated in Germany.

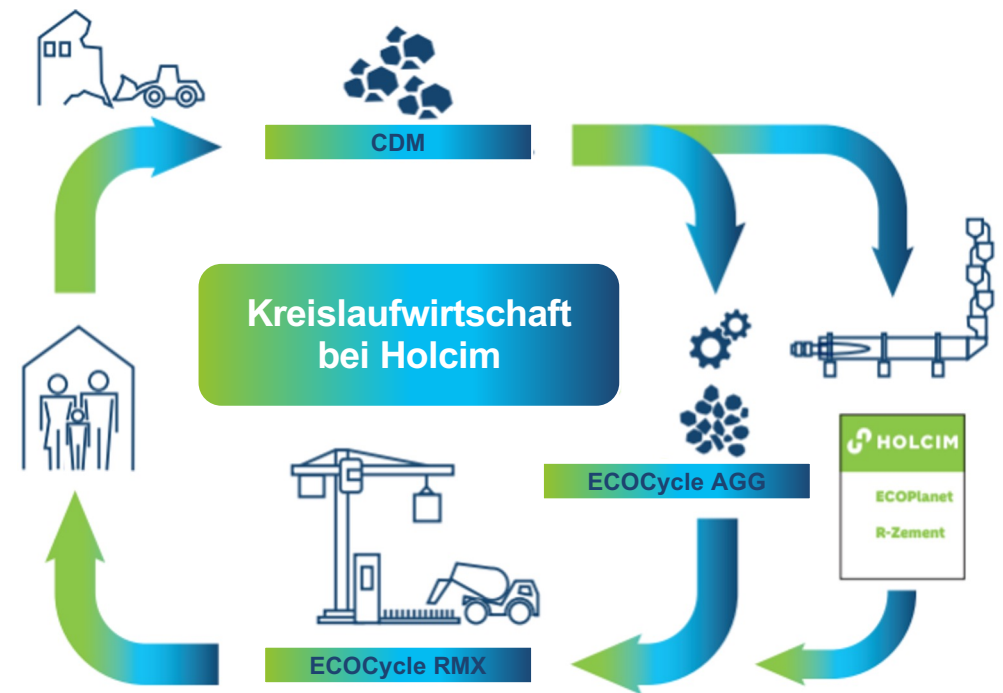
- A world without waste
Our goal is to utilise all by-products of our production - including CO₂!
- Consistently cycle-orientated product cycles
Already constructed buildings and roads as raw material sources of the future
- Digitalisation
Material flow management made possible by digital documentation and coordination

CIRCULAR ECONOMY IN PRACTICE

OUR APPROACH, OUR GOALS

Cities as raw material depots: Concrete Demolition Management (CDM)

- Target by 2025: Multiply the proportion of recycled content in our products
- Opening of ECOCycle Hubs throughout our market area
- Material flow management via digital platform Site Depot (participation in start-up N1)
- Successive expansion of the market share of our R-Pact concrete, introduction of Susteno recycled cement in 2024



TOGETHER FOR THE BUILDING MATERIAL TURNAROUND



WE ARE READY TOGETHER FOR THE BUILDING MATERIAL TURNAROUND



Broad support noticeable - what we need specifically for the building materials turnaround:

- Establish a CO₂-cycle (licences, infrastructure, CO₂ as a substitute for fossil raw materials)
- Establish sustainable building materials as standard in public tenders
- Speed up authorisation procedures
- Adapt standards and guidelines to promote recycling rates



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