“CO_2 re-use and energy-efficient processes in the hard-to-abate sector”

Holcim Germany, Thorsten Hahn, CEO; 19th of Jan. EU / Brussels

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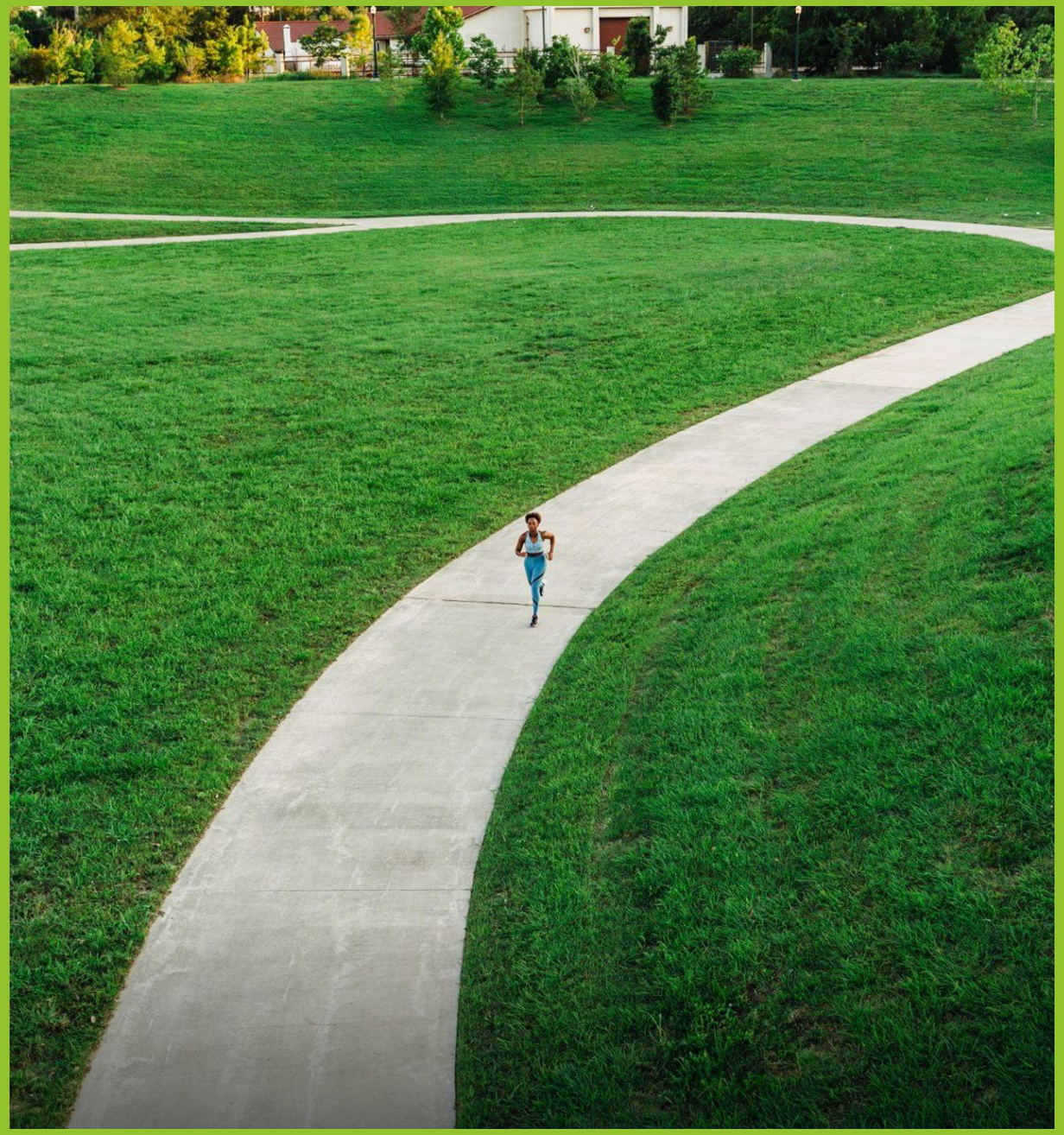
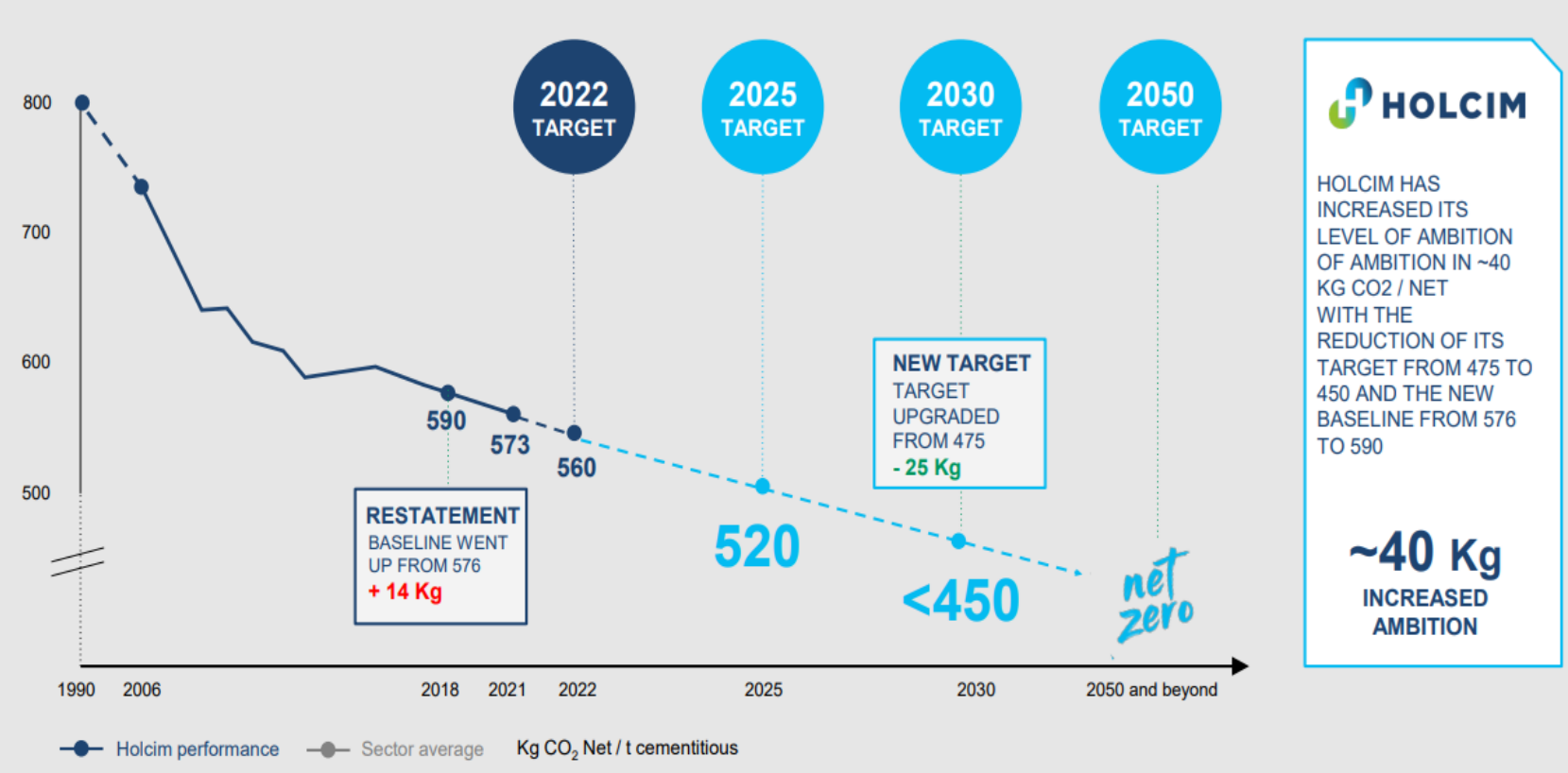
HOLCIM GERMANY: FIRST MOVER IN SUSTAINABLE CONSTRUCTION



BECOMING A NET ZERO COMPANY
CLIMATE TARGETS VALIDATED BY SCIENCE-BASED TARGETS INITIATIVE (SBTI)



- Ambitious 2030 climate targets validated by the Science-Based Targets initiative (SBTi)
- Accelerating our reduction in CO_2 intensity to exceed 20% (compared to our 2018 baseline)
- Partnering with SBTi beyond 2030, to set the first climate targets for a 1.5°C future in the cement sector

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION
CDP
DISCLOSURE INSIGHT ACTION

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HOLCIM IN GERMANY: PART OF THE HOLCIM GROUP
LEADING IN INNOVATIVE AND SUSTAINABLE BUILDING SOLUTIONS

Holcim
Germany

~180
operating sites

~2.300
employees (2021)

833
million EUR net sales (2021)

Leading in innovative and digital building products

Net Zero
pledge

SBTi
validated 2030 targets

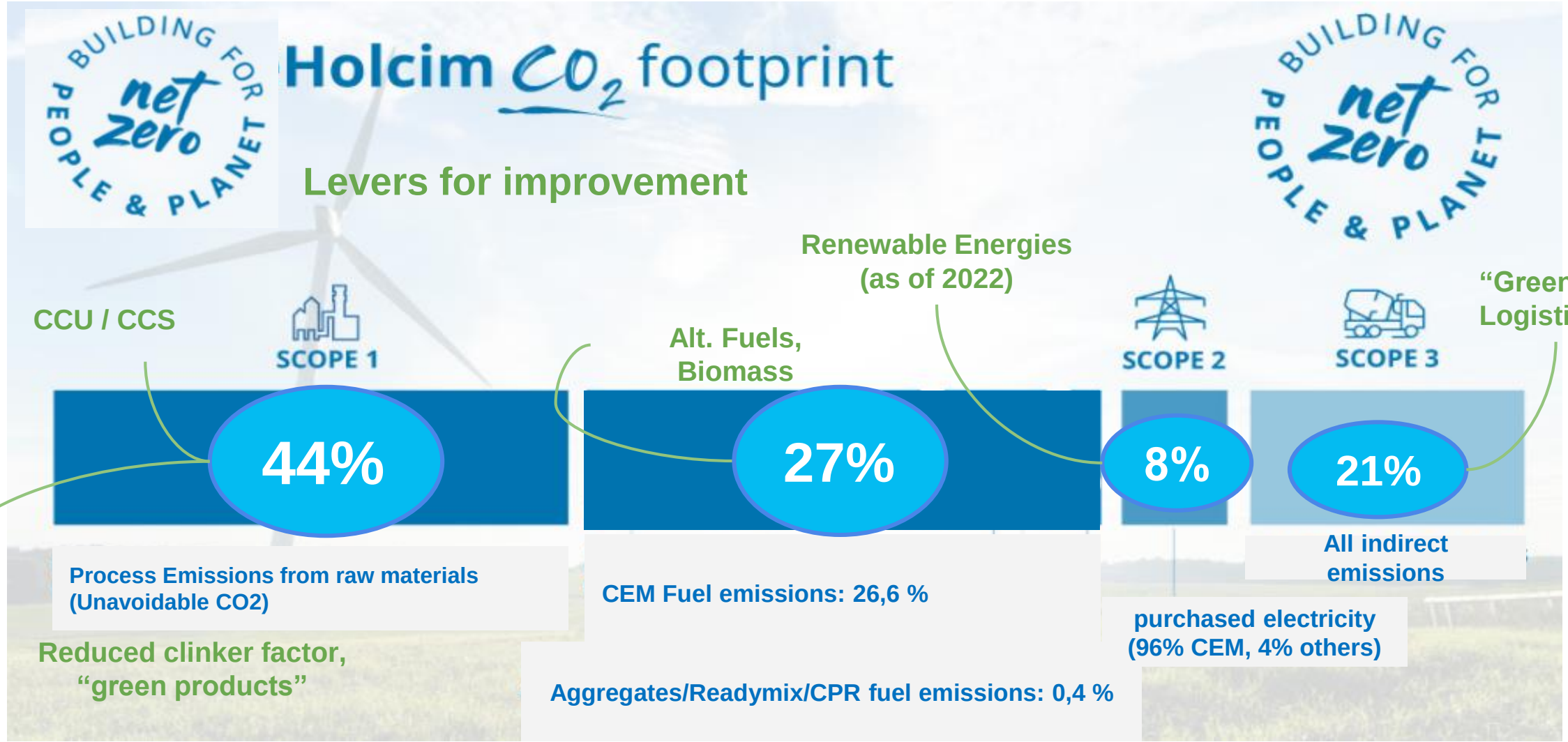
ESG Rankings
from MSCI to Sustainalytics

Green Solutions
1/3 of our sales

Part of Holcim Group:
The world's global leader in building solutions

CO_2 Footprint Holcim Germany, 2021

Distribution of emissions by Scope with 71 % Scope 1 emissions



DECARBONIZATION OF CEMENT PLANT LÄGERDORF; PROJECT “C2B”

Existing cement plant „Lägerdorf“, Northern Germany

CO_2 emissions per year: 1.2 million ton

New kiln line 12

Due to its unavoidable process-related CO_2 emissions, the cement industry has a special obligation in the climate-friendly transformation of society.

Our approach:

Build more with less material: **Conserving resources** through smarter building methods

Reduction of the clinker factor in the cement by use of clinker substitutes such as granulated blast furnace slag

Decarbonisation of production through **carbon capture technology** (projects underway in all cement plants)

C2B Lägerdorf -Project overview

Capture 1.1 mt of CO_2 to supply as raw material to chemical industry

funded by EU Innovation Fund

European Commission

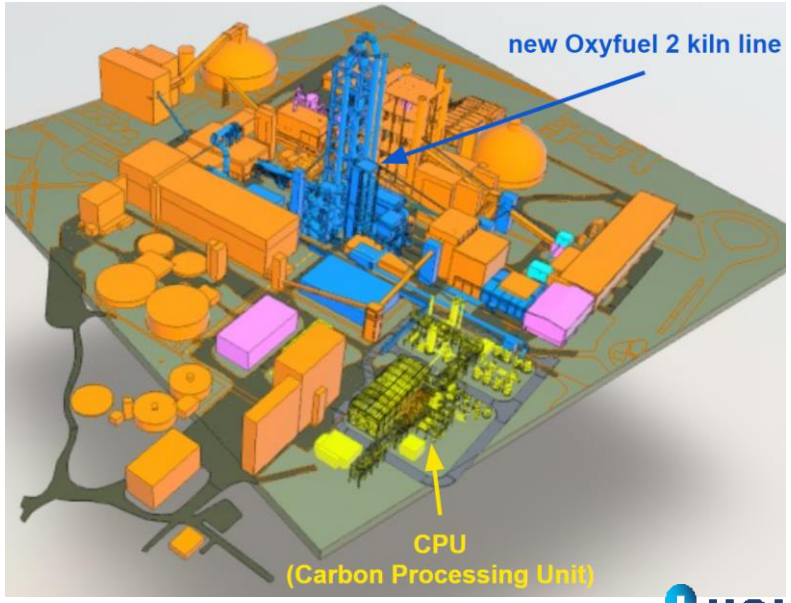
Objective

- ➔ **avoid CO2 emission in clinker production**
- ➔ **supply liquid high purity CO2 (99.9%, food grade) as raw material**

To decarbonize the cement plant a new kiln 12 with oxyfuel technology and subsequent carbon purification unit will be build. The carbon will supplied to chemical industry for methanol production.

Key figures / Business Case

- CAPEX ~ 500 Mio€ // 110 Mio€ funding
- clinker = 1,48 Mio t/a // CO_2 = 1,2 Mio t/a
- free CO_2 allowances till 2035 (10% to 25%)
- CO_2 purc. price 2022 = 95€/t up to 154€/t in '40
- CO_2 sales price equals CO_2 purchase price
- O2 price = 52 €/t (Linde study)
- electrical energy ~ 100 MW vs. actual 28 MW, (106 €/MWh)



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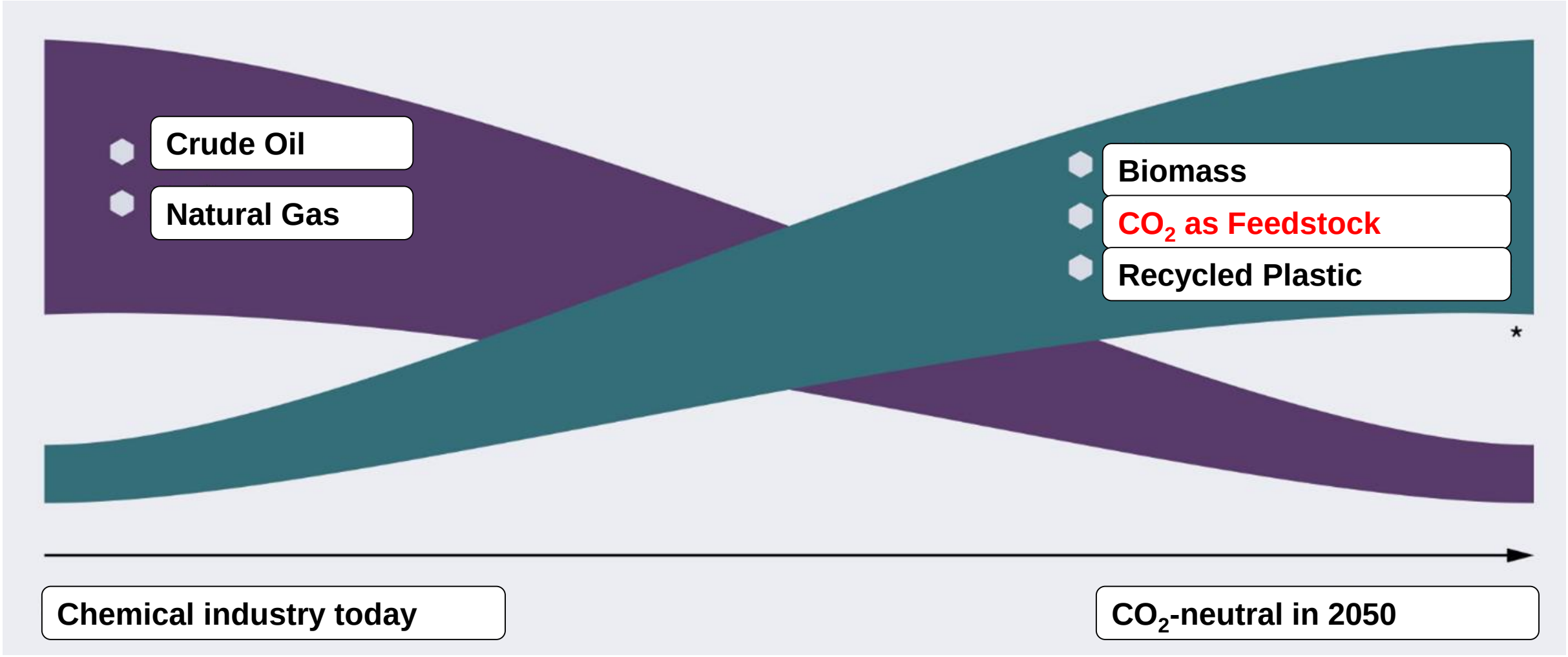
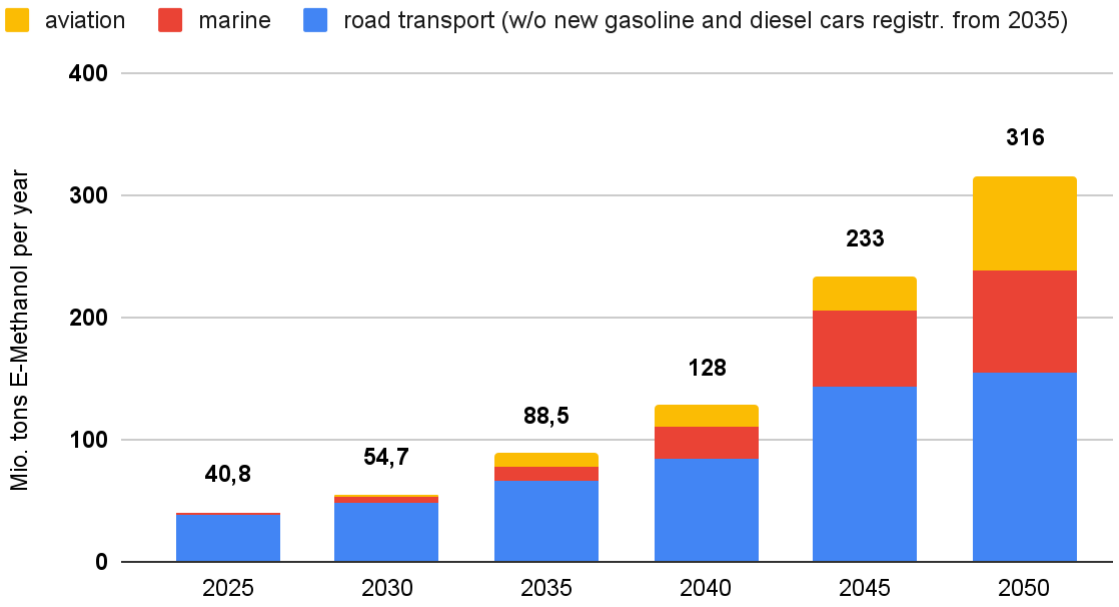
CO_2 WILL BE A FEEDSTOCK IN THE FUTURE

Feedstock of tomorrow



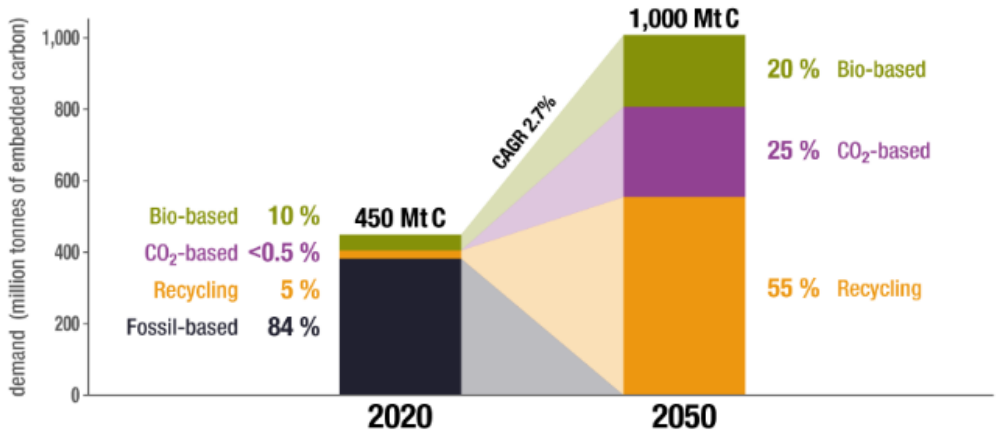
The emerging CO_2 Market
The demand for alternative carbon sources will increase significantly!

Global E-Methanol demand by sector



Global Carbon Demand for Chemicals and Derived Materials

in 2020 and Scenario for 2050 (in million tonnes of embedded carbon)



available at www.renewable-carbon.eu/graphics

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Synfuel/ E-Methanol (Base Case)

- The european demand for **e-methanol is estimated at 316 mio tons per year in 2050**
- Regionally captured CO_2 provides an excellent resource to provide e-fuels for the nearby airport and harbor, as planned in the government projects Westküste100 and HySCALE100

Chemical Industry (Target Case)

- The global carbon demand for the **chemical industry is estimated at 1 bn tons per year in 2050**
- The chemical industry agglomeration at nearby ChemCoast Park in Brunsbüttel provides perfect conditions for usage of regionally captured CO_2

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New sustainable value chains

European goals

Decarbonisation: CO_2 neutrality

Energy Independency

Creation of new fossil- free, local & european value chains !

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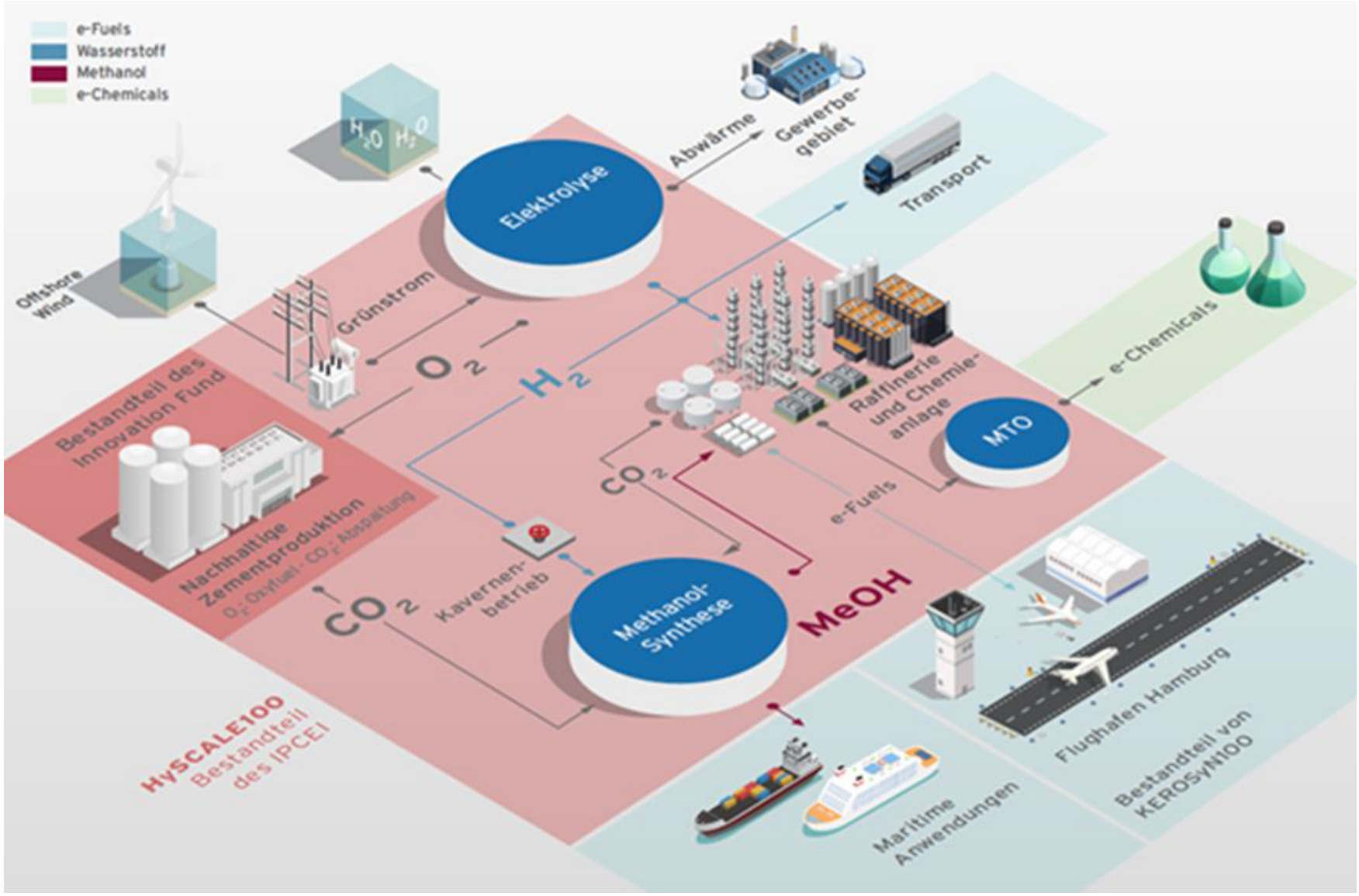
C2B embedded in HyScale100
IPCEI application / EU Innovation Fund



1.2 M tons of CO2

900 K tons of e-methanol !

SUMMARY

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Business

Holcim selected for 2 EU Innovation Fund grants for Clean Tech projects decarbonizing Europe

July 18, 2022 at 7:00 AM GMT+2

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Holcim Group Services Ltd / Key word(s): Miscellaneous
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Thank You !!!

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