



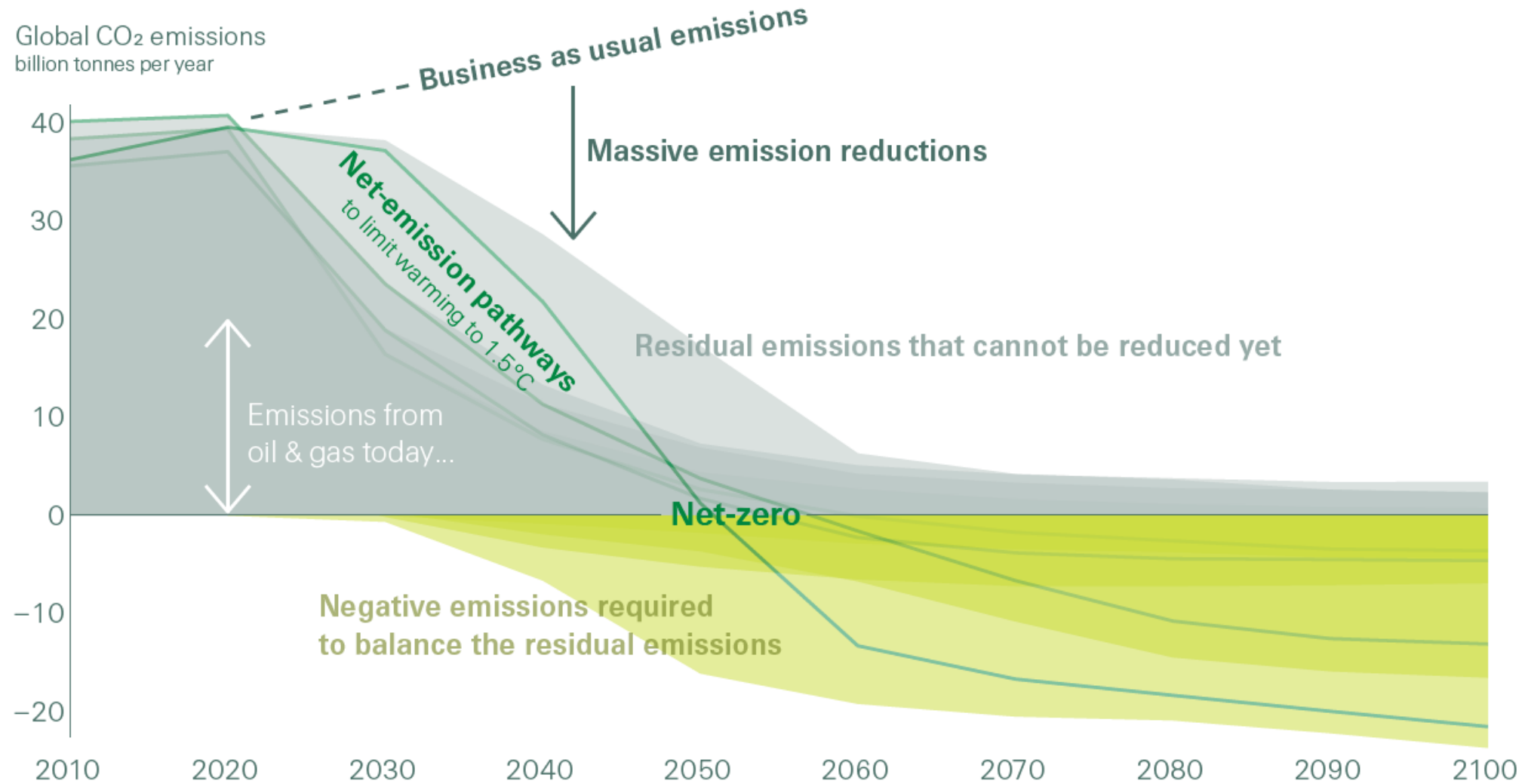
neustark™



[lisa.braune@neustark.com](mailto:lisa.braune@neustark.com)

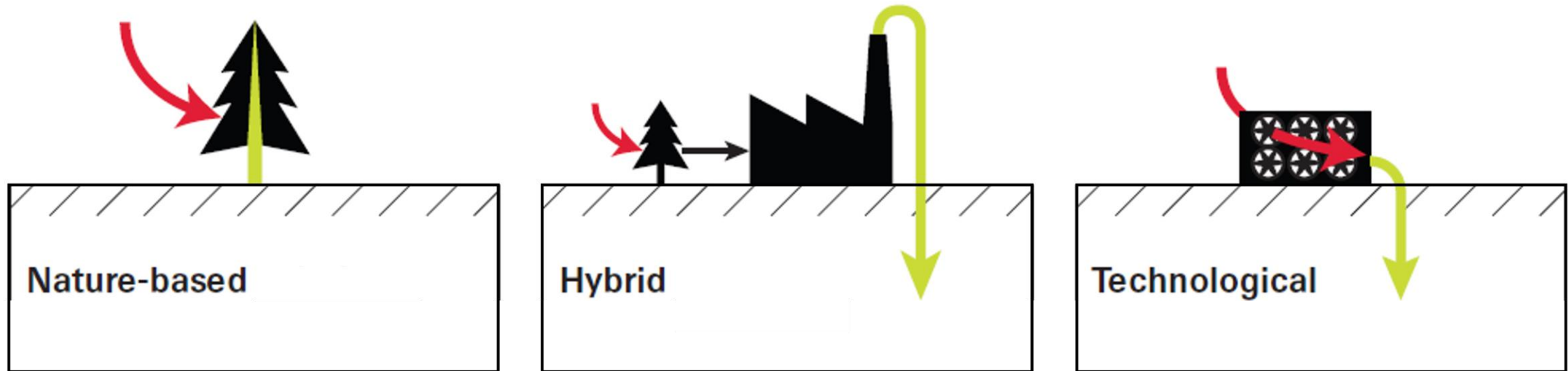


# WE NEED NEGATIVE EMISSIONS



Source: SwissRe, based on Global Warming of 1.5°C, IPCC, 2018 (overlap of the scenarios P1-4).

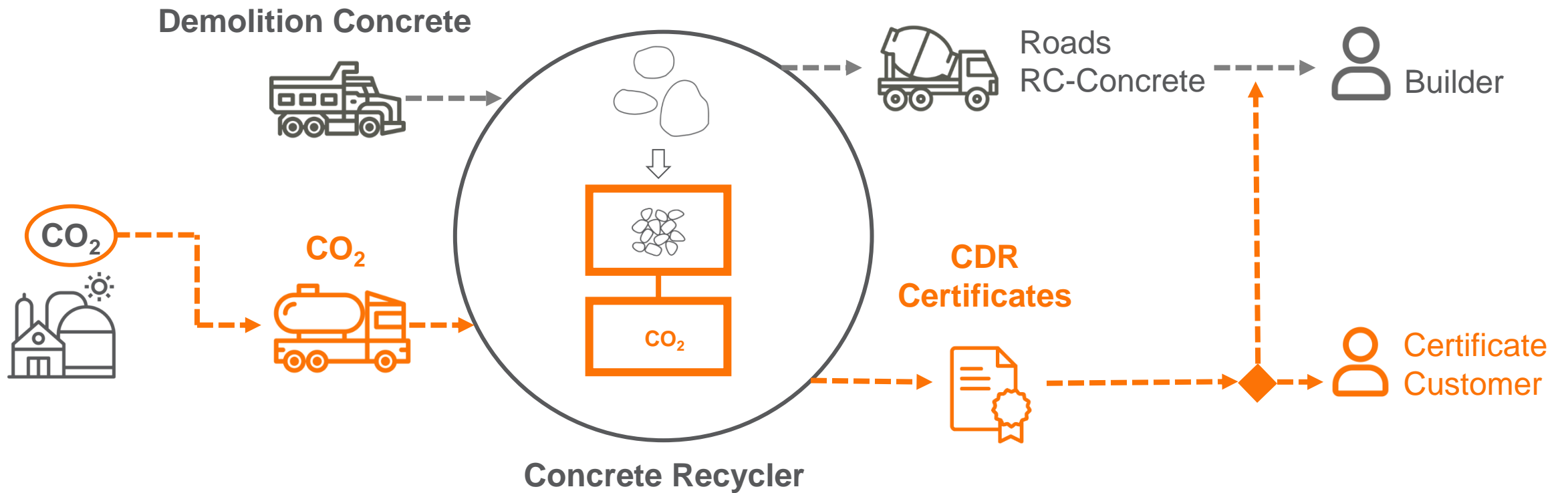
# THERE ARE MANY DIFFERENT CDR SOLUTIONS



# CONCRETE - THE BIGGEST MATERIAL STREAM



# NEUSTARK STORES CO<sub>2</sub> IN CONCRETE



# THE NEUSTARK PROCESS BLENDS INTO THE EXISTING VALUE CHAIN



# THE PROCESS WAS SUCCESSFULLY TESTED



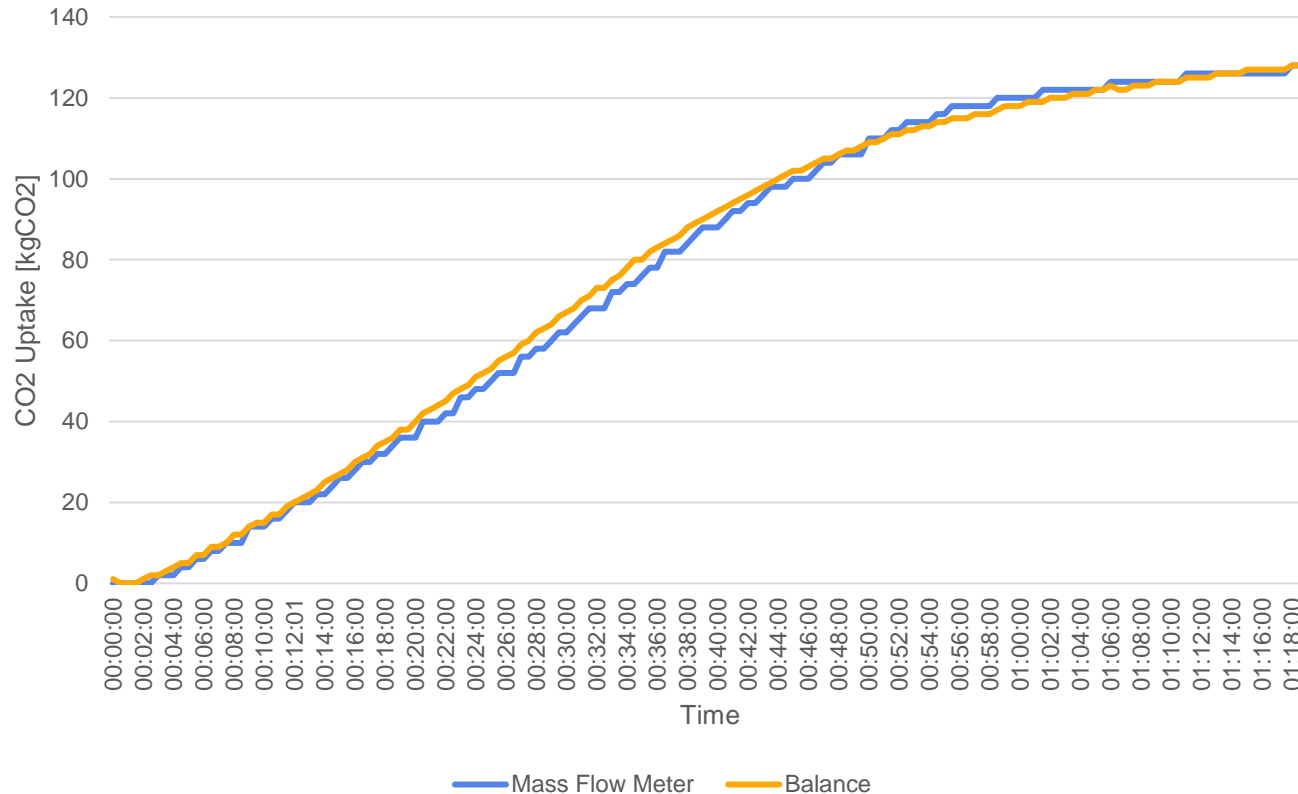
RENTED BY 25 CONCRETE RECYCLERS



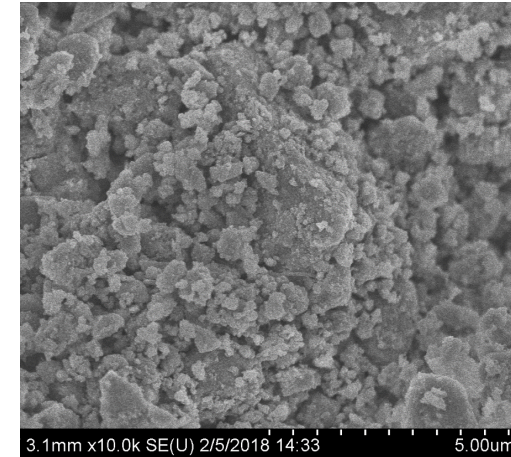
# THE CO<sub>2</sub> UPTAKE IS MEASURABLE



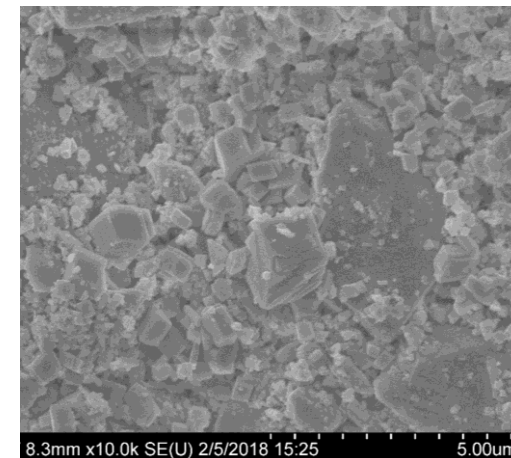
### Online measurements



### Surface before treatment

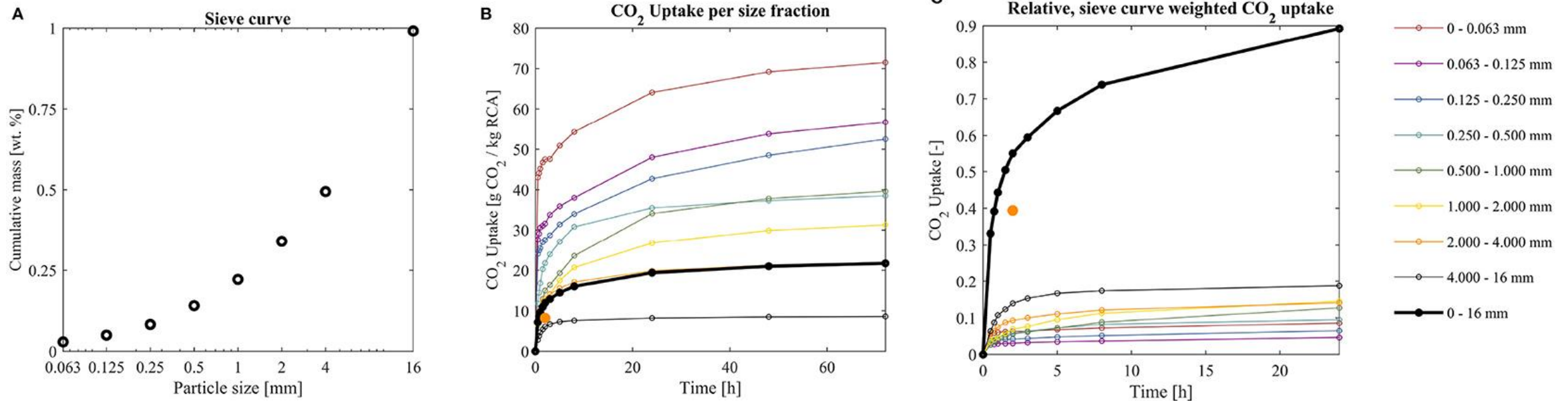


### Surface after treatment





# CO<sub>2</sub> UPTAKE DEPENDS ON GRAIN SIZE DISTRIBUTION AND TIME



Source: Johannes Tiefenthaler et al. "Technological Demonstration and life cycle assessment of a negative emission value chain in the Swiss concrete sector". In: *Frontiers in Climate* 3 (2021). doi: 10.3389/fclim.2021.729259.

# FIRST STATIONARY SOLUTION WENT INTO OPERATION IN MARCH AT KÄSTLI BERN



# WE OFFER DIFFERENT STATIONARY PLANT CONCEPTS



## SILOS



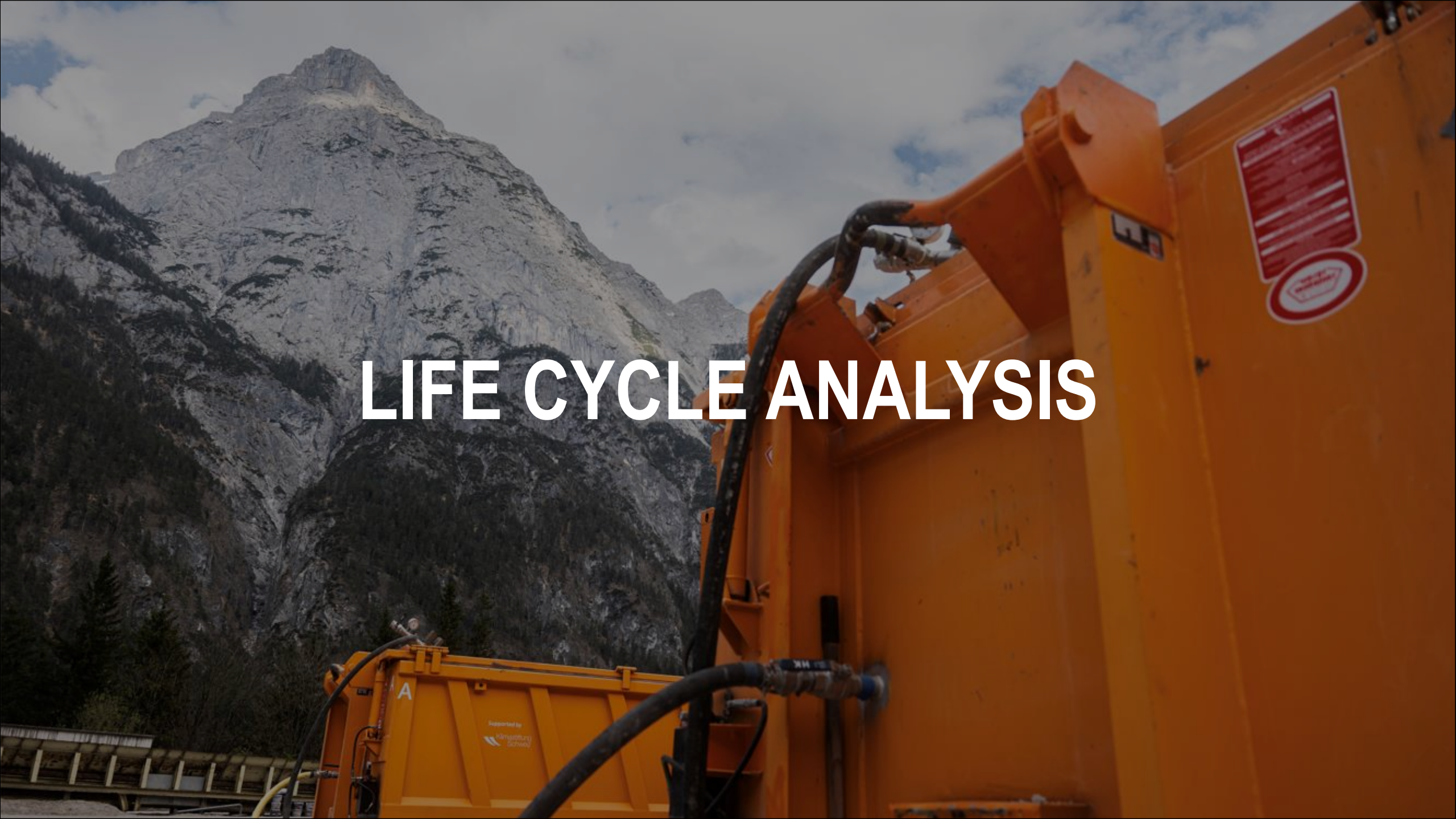
## DOSING UNITS



## MATERIAL BOXES



# LIFE CYCLE ANALYSIS

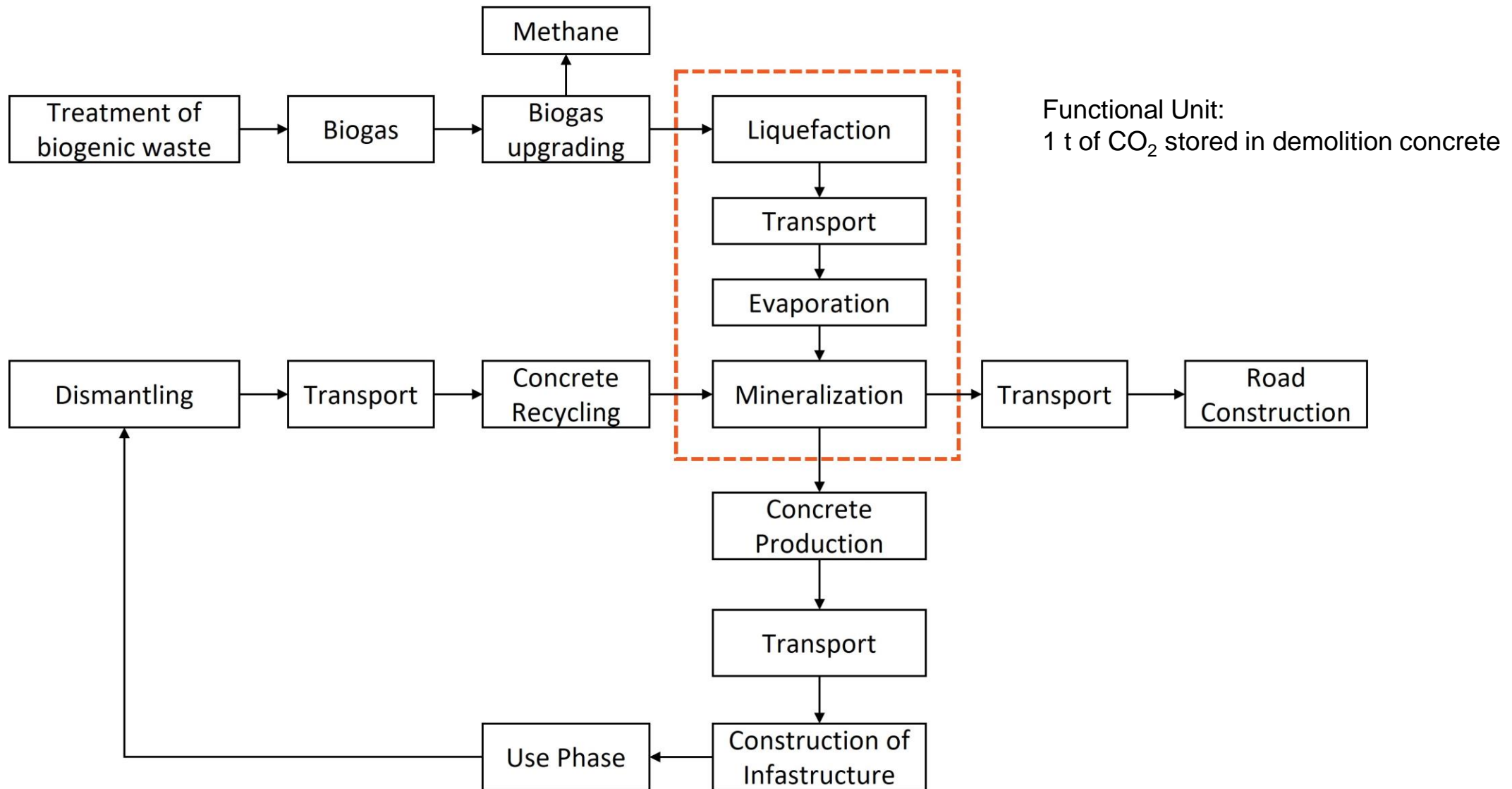


# GOAL: IDENTIFY THE ENVIRONMENTAL FOOTPRINT OF THE TECHNOLOGY

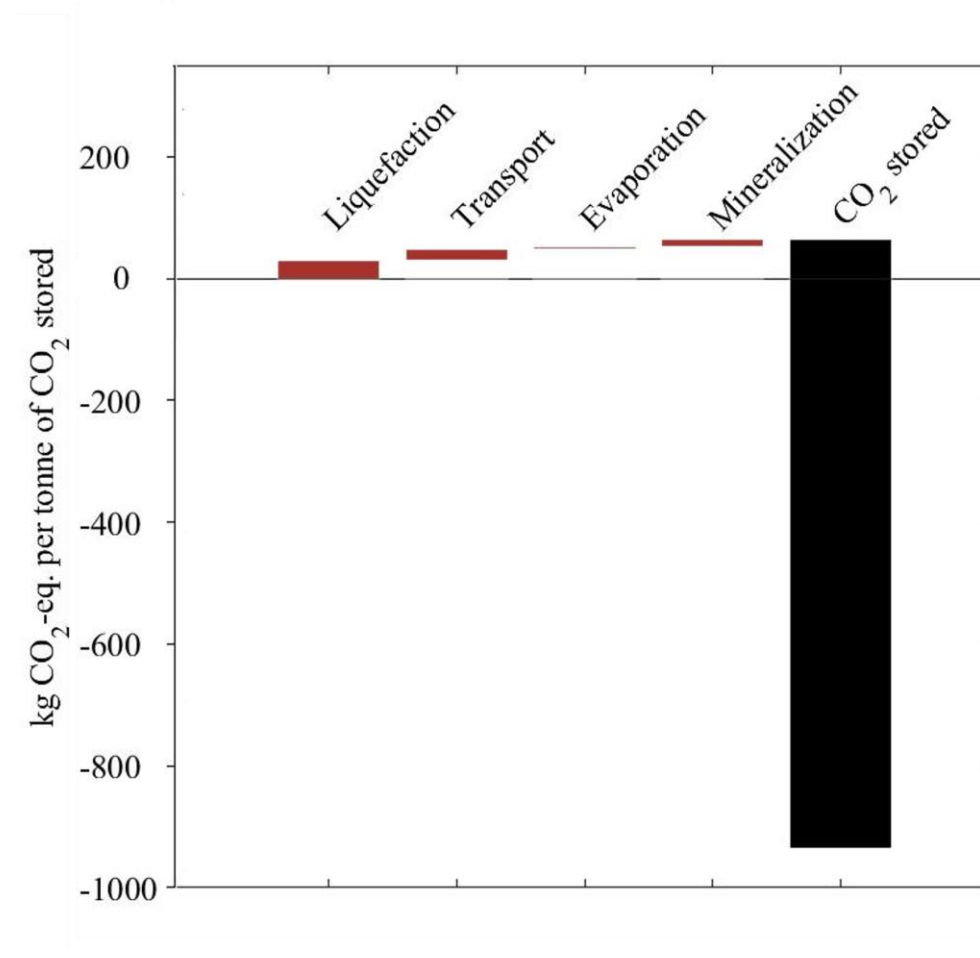
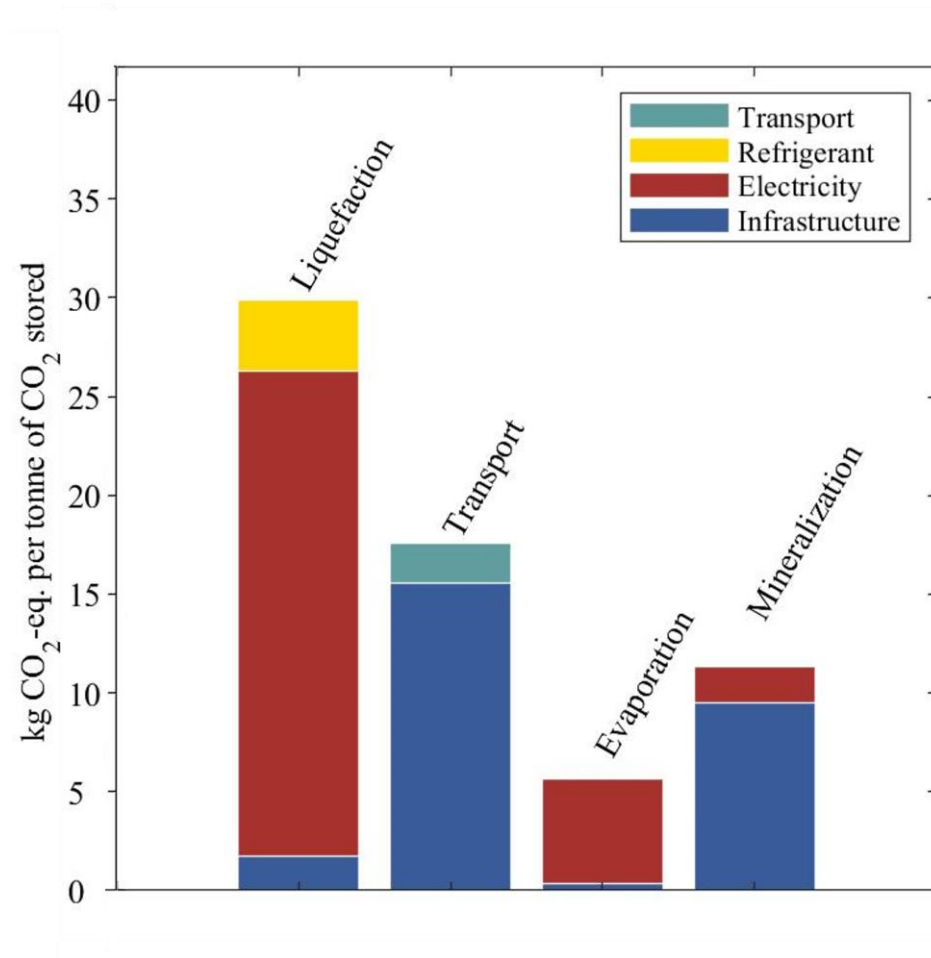


- 1) Definition of the system boundary and the functional unit
- 2) Life cycle Inventory: collect all mass and energy balances
- 3) Life Cycle Impact Assessment: compute the environmental impact
- 4) Sensitivity Analysis and interpretation of the results

# SYSTEM BOUNDARIES AND FUNCTIONAL UNIT

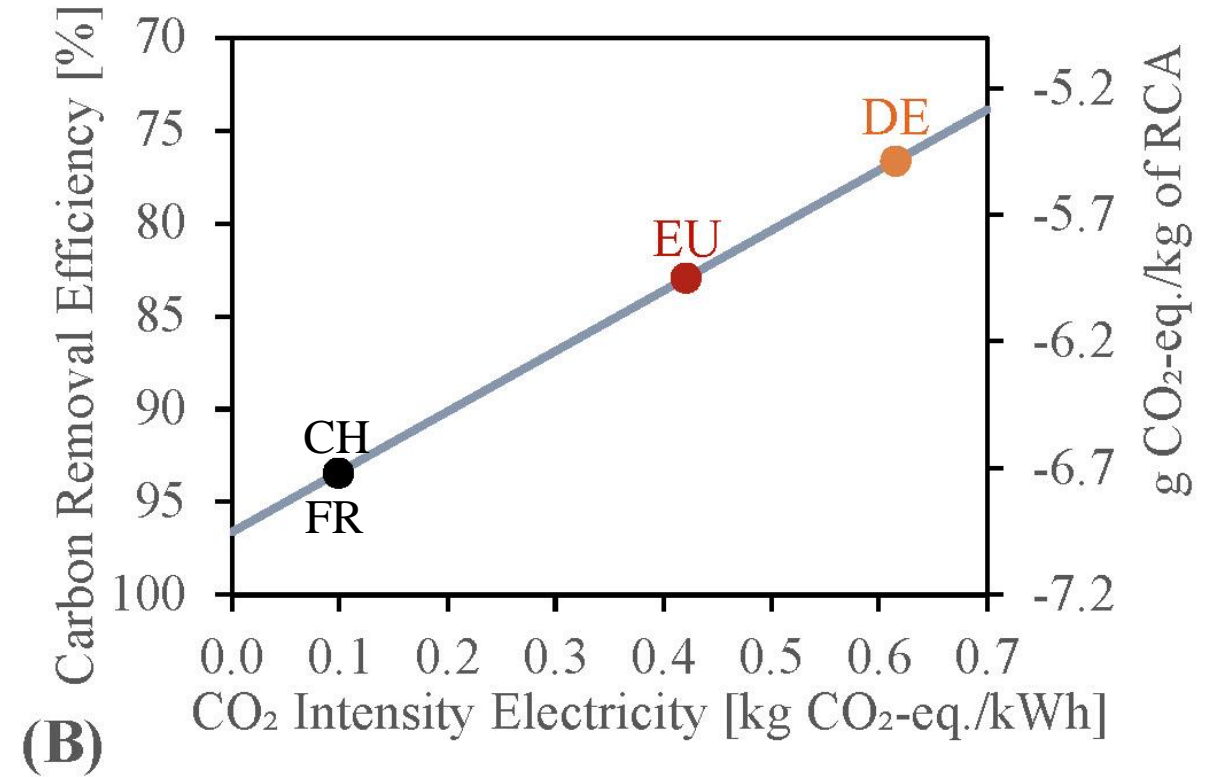
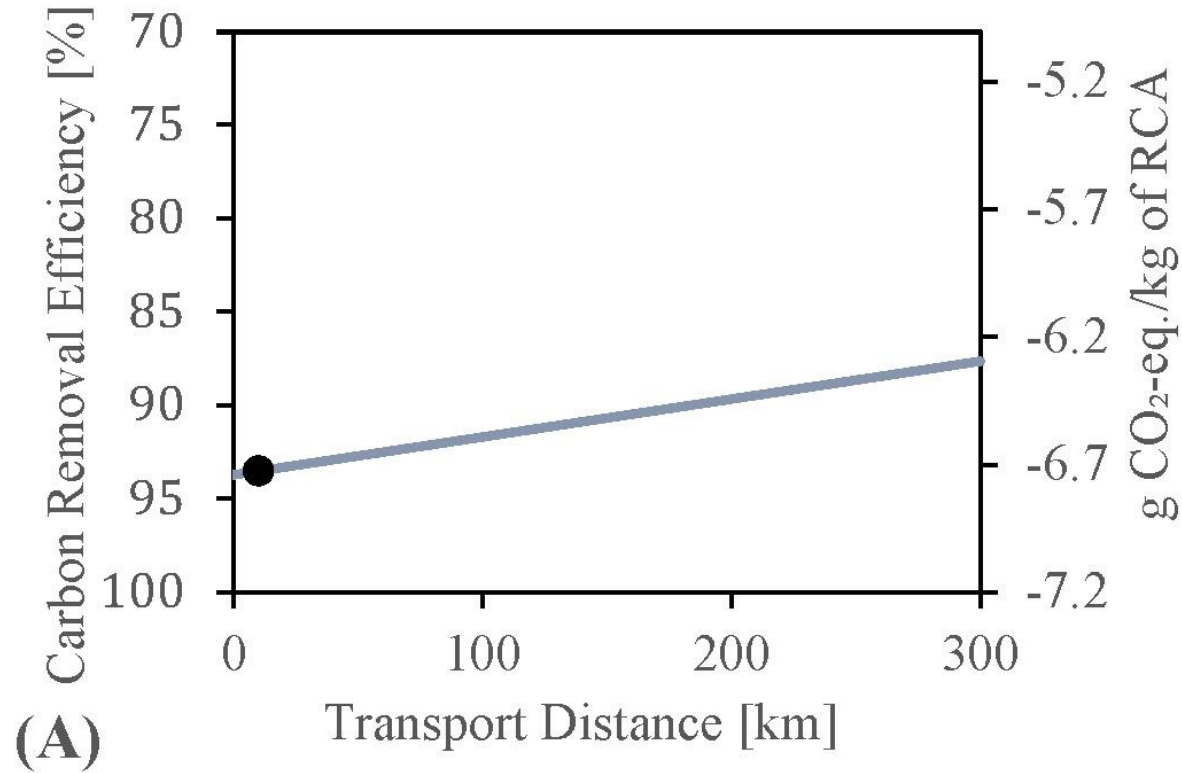


# OUR VALUE CHAIN IS HIGHLY NEGATIVE



Source: Johannes Tiefenthaler et al. "Technological Demonstration and life cycle assessment of a negative emission value chain in the Swiss concrete sector". In: *Frontiers in Climate* 3 (2021). doi: 10.3389/fclim.2021.729259.

# SENSITIVITY ANALYSIS



Source: Johannes Tiefenthaler et al. "Technological Demonstration and life cycle assessment of a negative emission value chain in the Swiss concrete sector". In: *Frontiers in Climate* 3 (2021). doi: 10.3389/fclim.2021.729259.





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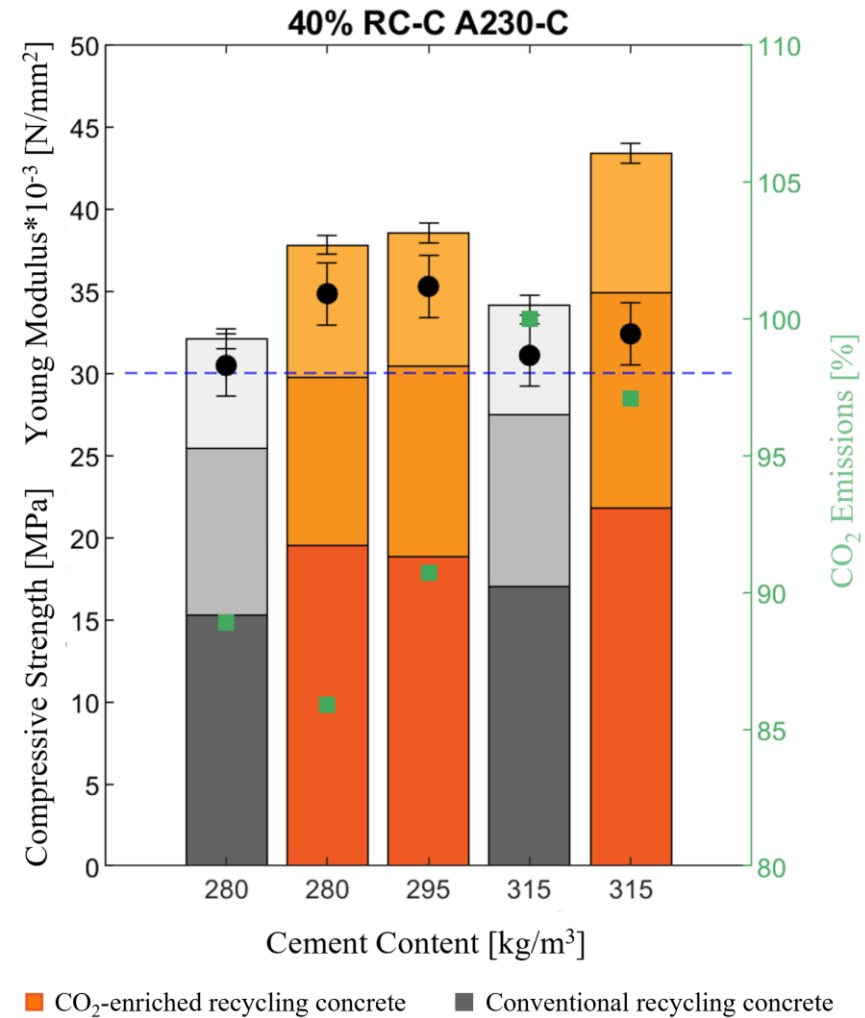
***“What enabled neustark’s methodology to become the first-ever tech-based carbon dioxide removal solution to join our methodology portfolio was its environmental integrity, permanence and measurability of the solution...”***

Vikash Talyan, Technical Director

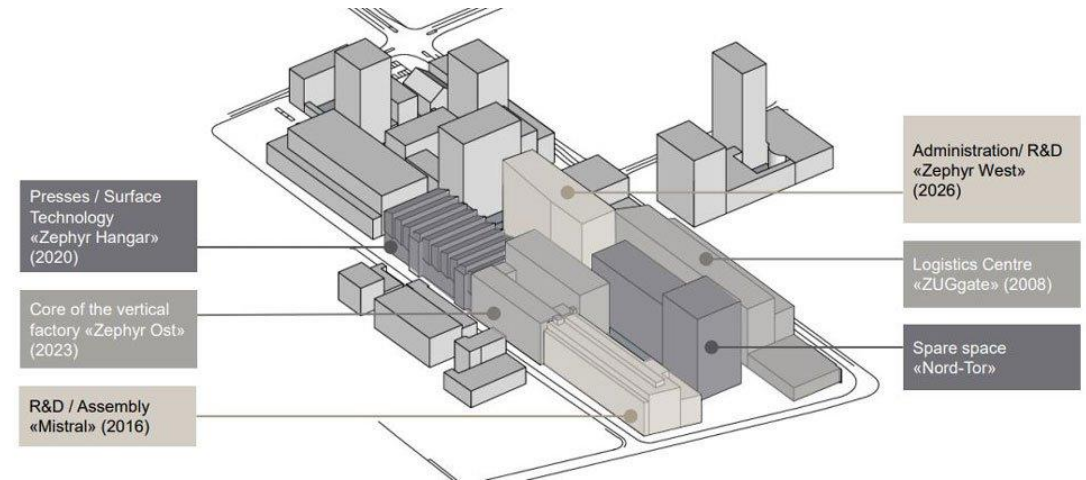
A worker wearing an orange hard hat and a high-visibility orange vest with the 'neustark' logo is walking away from the camera between two large orange metal containers. The scene is outdoors, with a fence and hills in the background. The text 'CO<sub>2</sub>-ENRICHED CONCRETE' is overlaid in white on the image.

# CO<sub>2</sub>-ENRICHED CONCRETE

# MATERIAL PROPERTIES



# REFERENCE ZEPHYR OST ZUG



# REFERENCE DUTCH CENTRAL BANK



DeNederlandscheBank

EUROSYSTEEM

NewHorizon



RUTTE | CIRCULAIR

# PILOT PROJECT BERLIN




# NEUSTARK TEAM



**Spinoff** **ETH zürich**

 **Climate-KIC**  
Climate-KIC is supported by the  
EIT, a body of the European Union 

 **Klimastiftung  
Schweiz**

 **Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra**