

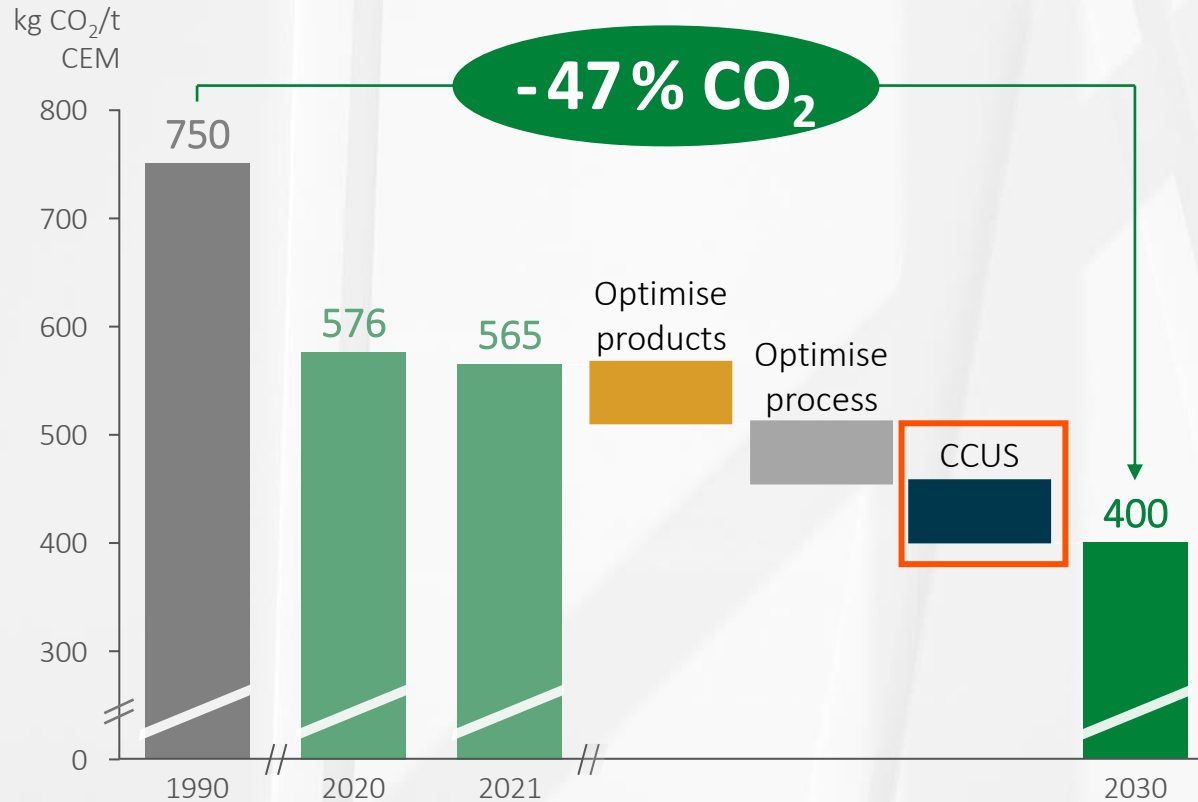
# We drive deep decarbonisation

2022 Capital Markets Day – 24 May

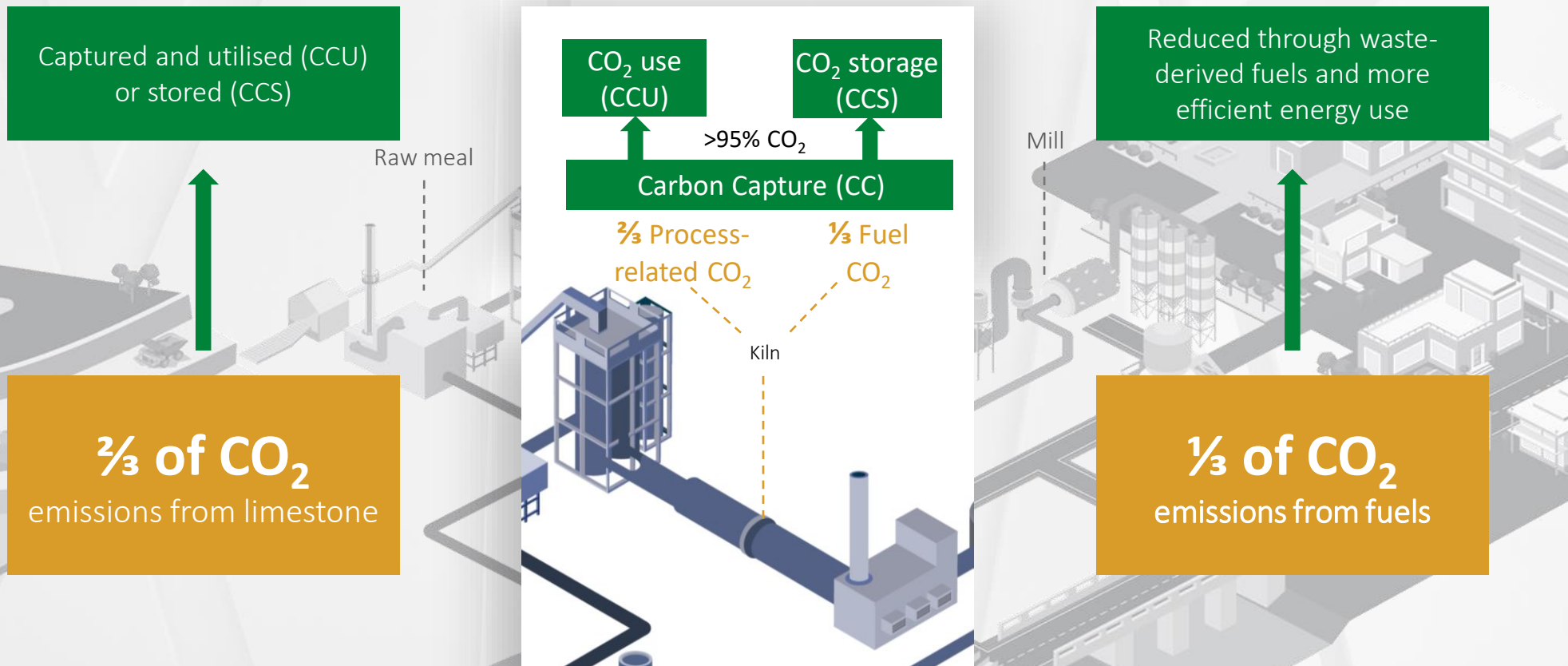
Jan Theulen

Director Technologies & Partnerships

# Accelerating carbon capture is a key lever of driving decarbonisation



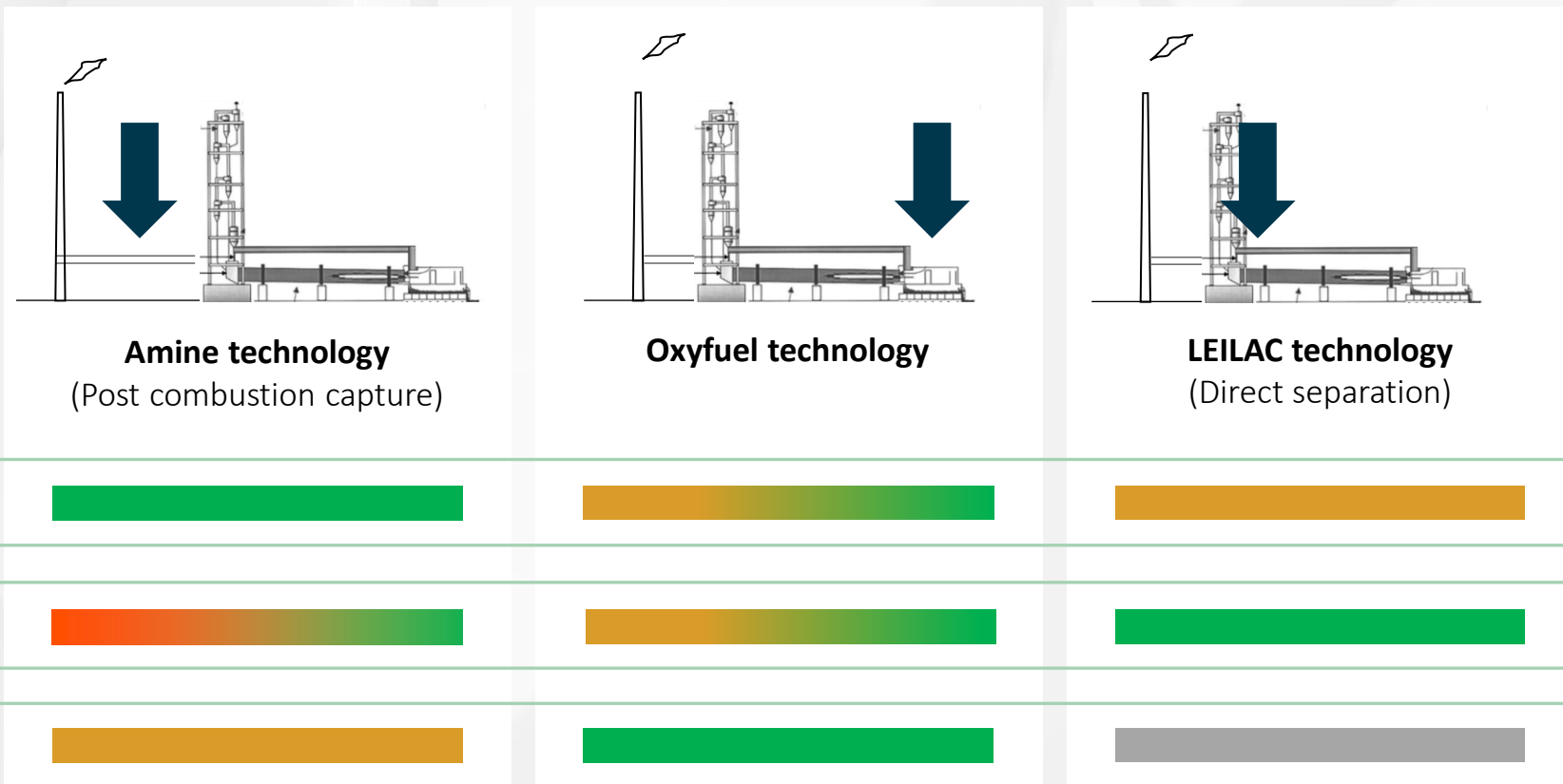
# The unavoidable process emissions of our clinker manufacturing require CCUS



We have a large portfolio of **new technologies** and are **scaling them up fast.**



# We focus on resource- and cost-efficient capture technologies



# We are an early mover and scaling up fast

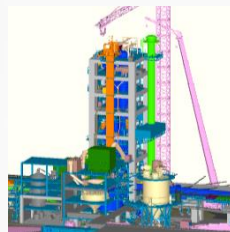
Demo



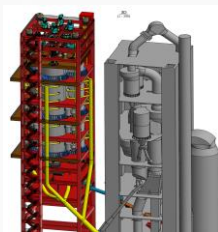
Amine  
Brevik, Norway



LEILAC 1  
Belgium



Oxyfuel  
Germany

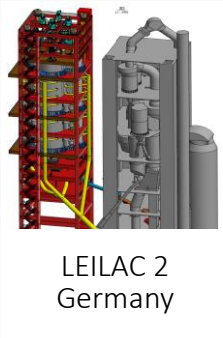


LEILAC 2  
Germany



# We are an early mover and scaling up fast

Demo



2014

2018

2024

~ 2028

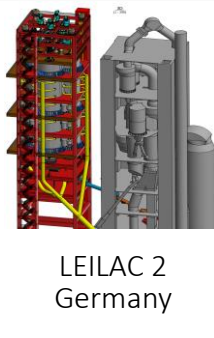
?

Full Scale



# We are an early mover and scaling up fast

Demo



2014

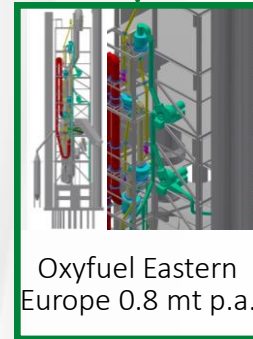
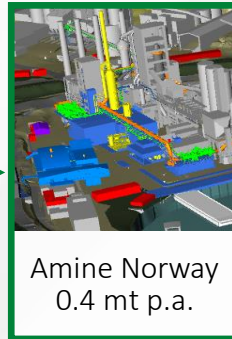
2018

2024

~ 2028

?

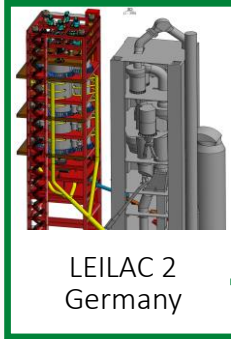
Full Scale





# We are an early mover and scaling up fast

Demo



2014

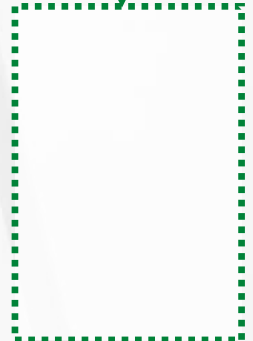
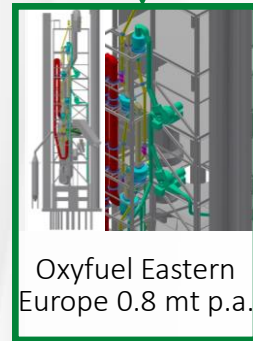
2018

2024

~ 2028

?

Full Scale





## Brevik CCS, Norway

In Brevik we are building the **world's first CCS plant in the cement sector on an industrial scale.**

**Timeline:** Capture unit operational in 2024

**Storage:** Northern Lights

# 400,000t

CO<sub>2</sub> reduction p.a.

We are rapidly progressing on many **large-scale CCUS projects globally.**



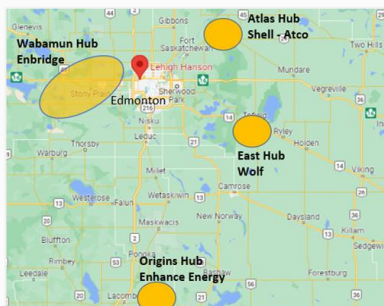
# We are developing CCUS projects with solid technologies and leading partners (I)

Case study

Alberta

## Scanning

- Accessible CO<sub>2</sub> storage
- Stakeholder acceptance
- Governmental support



## Initiation

- Team up with partners
- Check techno-economics
- Building up local capacity

LEHIGH CEMENT AND THE INTERNATIONAL KNOWLEDGE CENTRE PIONEERING A FEASIBILITY STUDY OF FULL-SCALE CARBON CAPTURE STORAGE (CCS) ON CEMENT



## Feasibility

- Executing Pre-FEED
- Secure storage
- Create business case

Lehigh Cement and Enbridge to collaborate on North American carbon sequestering solution

By Heavy Equipment Guide Staff - January 27, 2022



## Realisation

- FEED and construction CCUS chain
- Prepare operational team
- Realise customer value

2026  
**800,000t**  
CO<sub>2</sub> reduction p.a.

Edmonton-Alberta CCUS has been developed over the last 4 years and is on track to be the first NAM CCS plant

# We are developing CCUS projects with solid technologies and leading partners (II)

Case study

Bulgaria

## Scanning

- Accessible CO<sub>2</sub> storage
- Stakeholder acceptance
- Governmental support



## Initiation

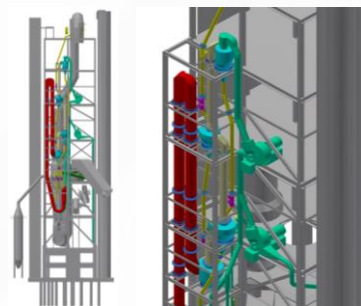
- Team up with partners
- Check techno-economics
- Building up local capacity

petroceltic



## Feasibility

- Executing Pre-FEED
- Secure storage
- Create business case



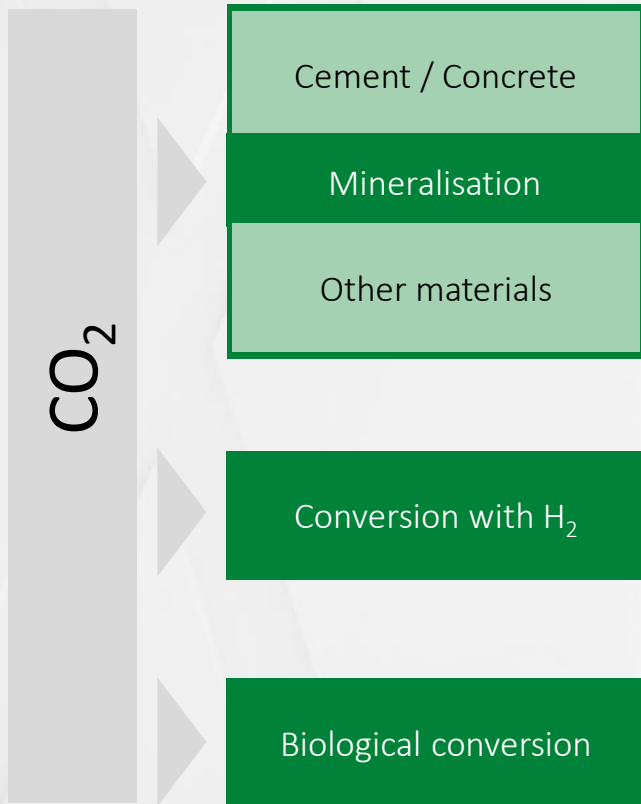
## Realisation

- FEED and construction CCUS chain
- Prepare operational team
- Realise customer value

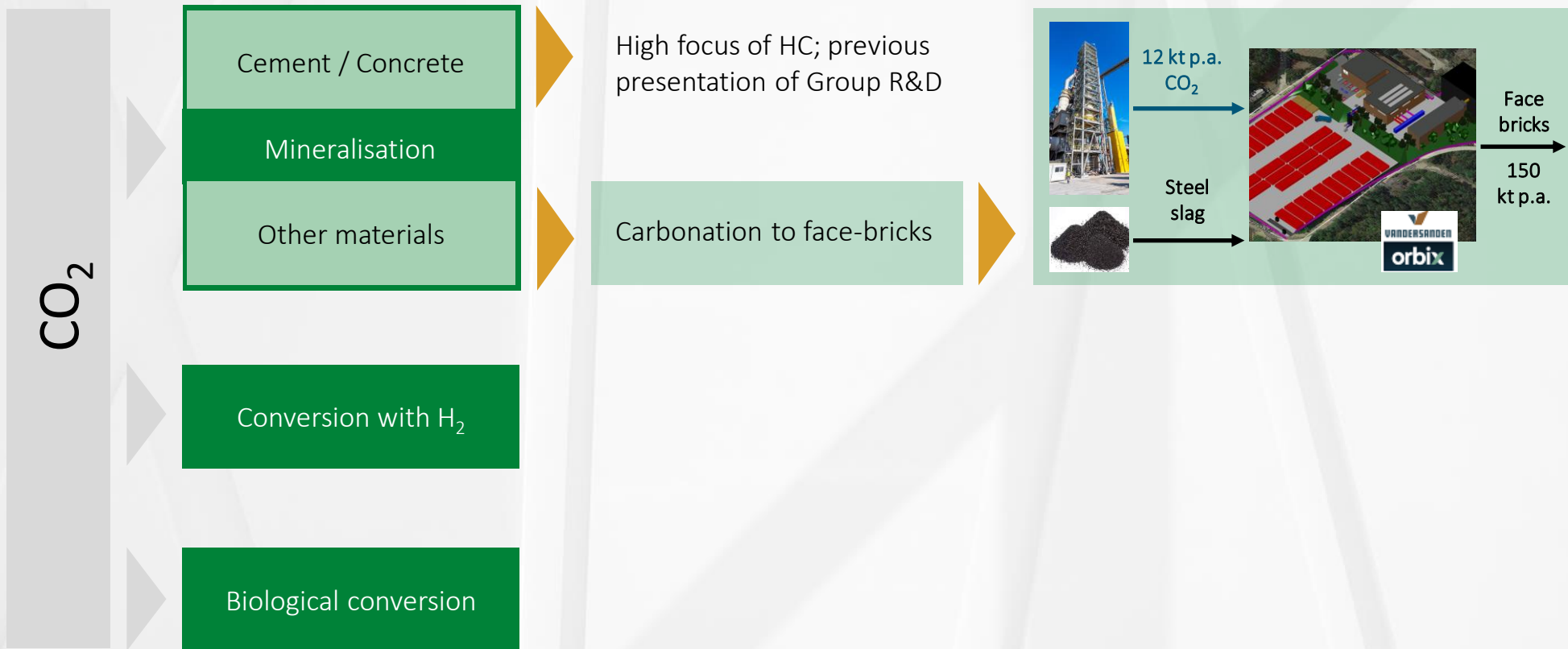
2028  
**800,000t**  
CO<sub>2</sub> reduction p.a.

Devnya-Bulgaria CCUS fast-tracked with only 2 years development and will be the first CCUS plant in Eastern Europe

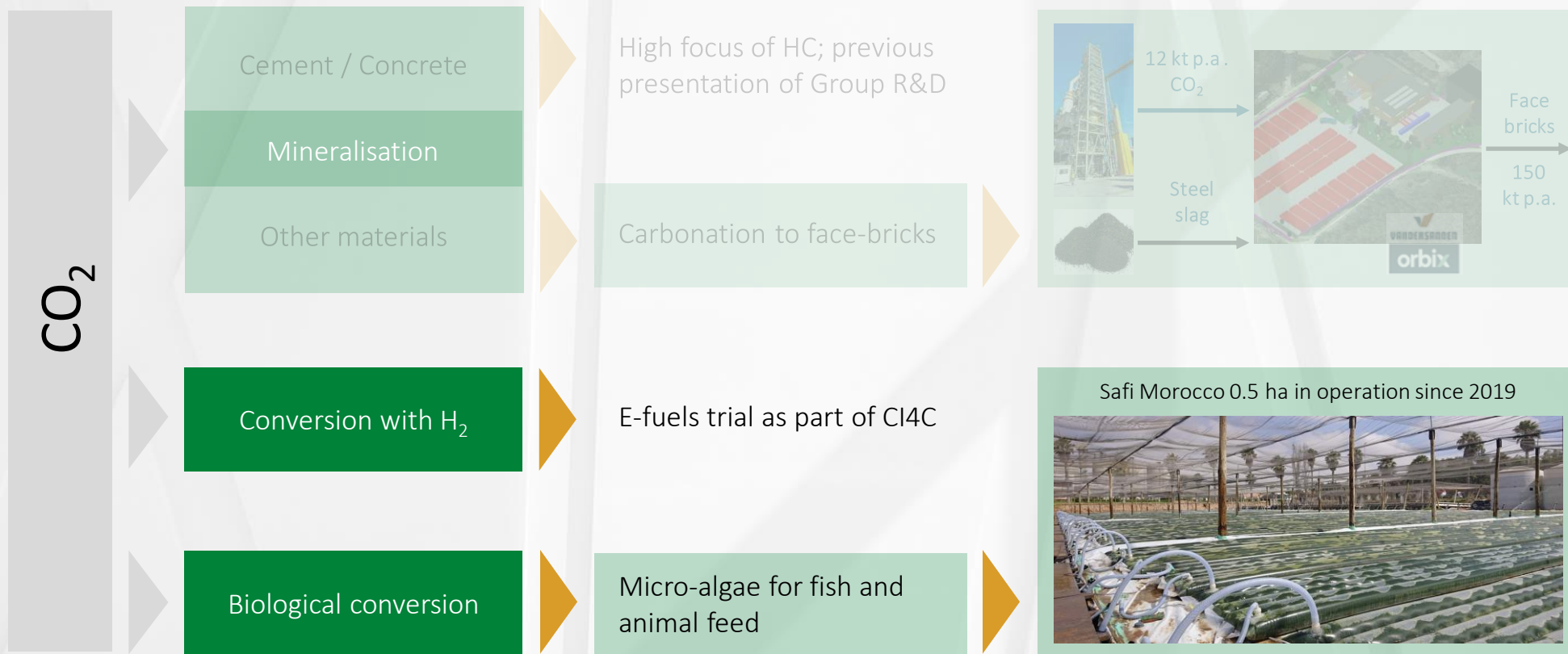
## First projects where we utilise the CO<sub>2</sub> captured in our plants (CCU)



# First projects where we utilise the CO<sub>2</sub> captured in our plants (CCU)

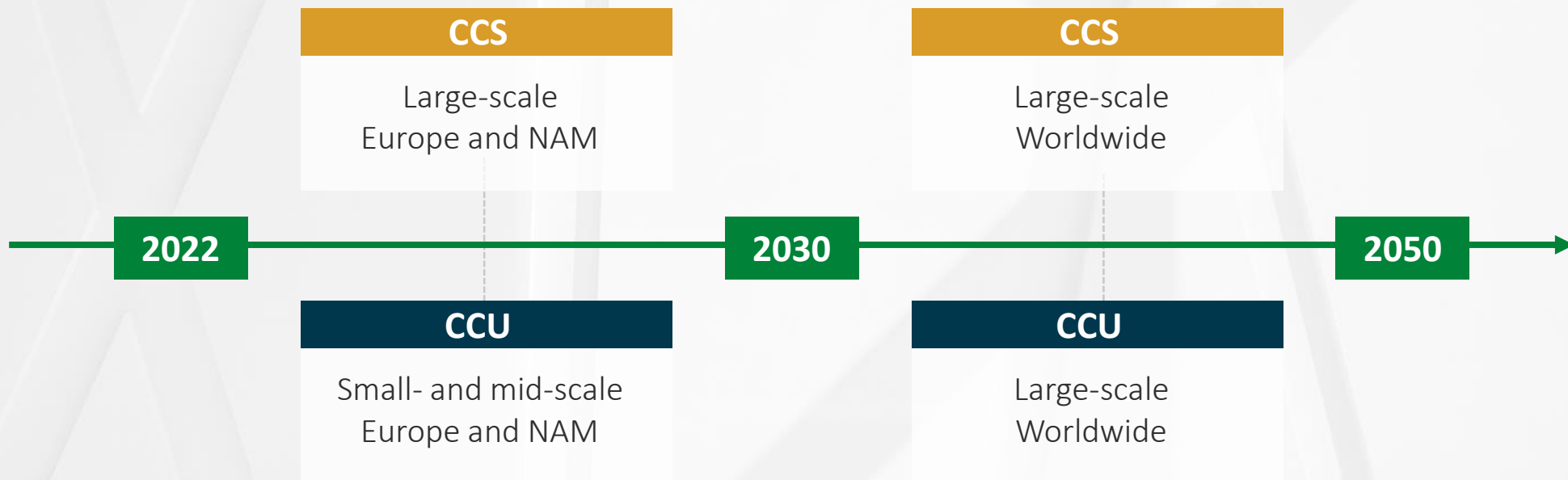


# First projects where we utilise the CO<sub>2</sub> captured in our plants (CCU)





# CCU and CCS are complementary – we need both to reach net zero

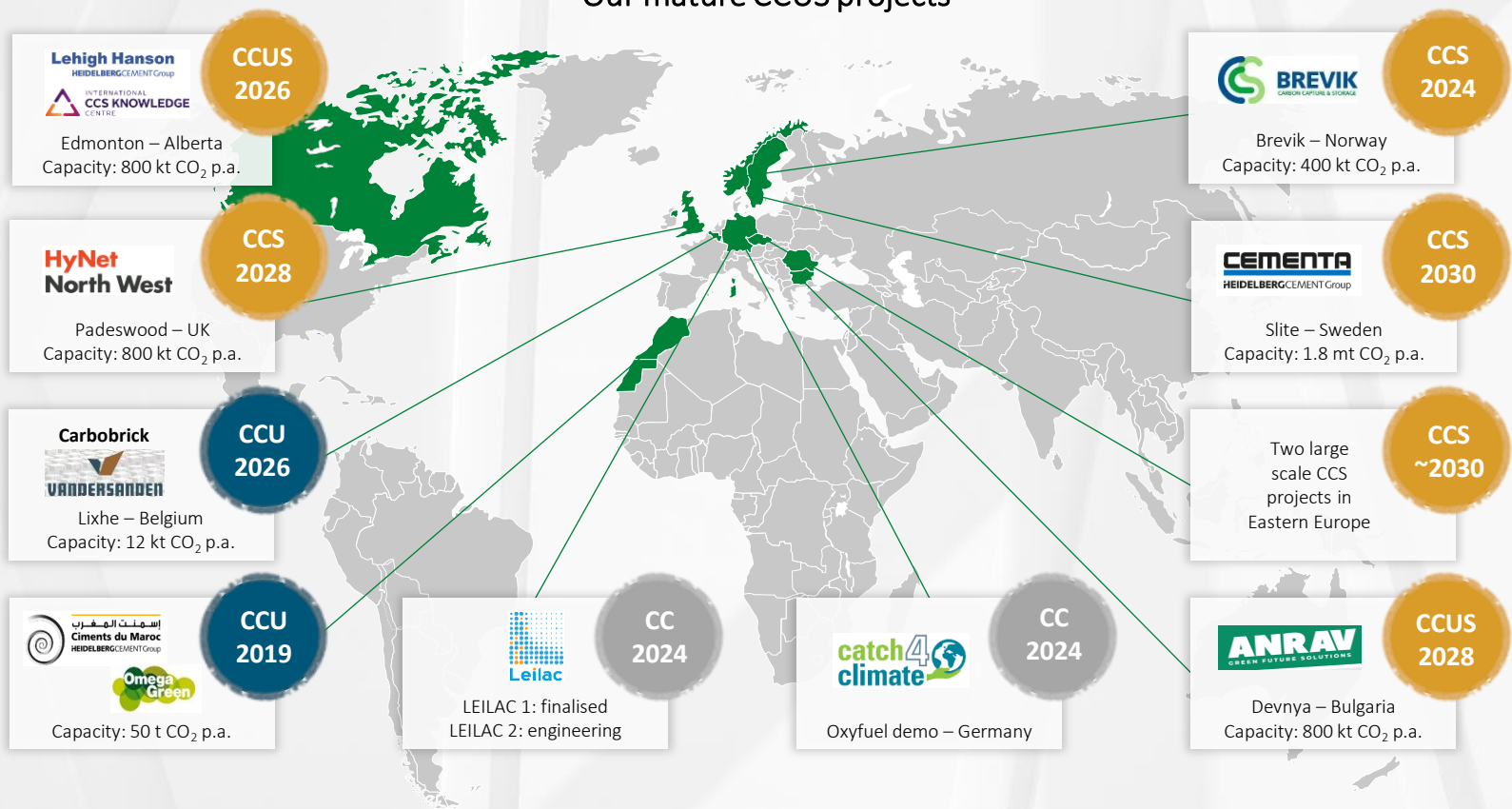


As the early mover, we will capture **10 mt of CO<sub>2</sub>** with our already started CCUS projects **by 2030.**



# Driving CCUS with extensive and most advanced project portfolio in the sector

## Our mature CCUS projects





1.

We have a large portfolio of new technologies and are scaling them up fast.

2.

We are rapidly progressing on many large-scale CCUS projects globally.

3.

As the early mover, we will capture 10 mt of CO<sub>2</sub> with our already started CCUS projects by 2030.



**We are HeidelbergCement.**  
Leader in deep decarbonisation.