

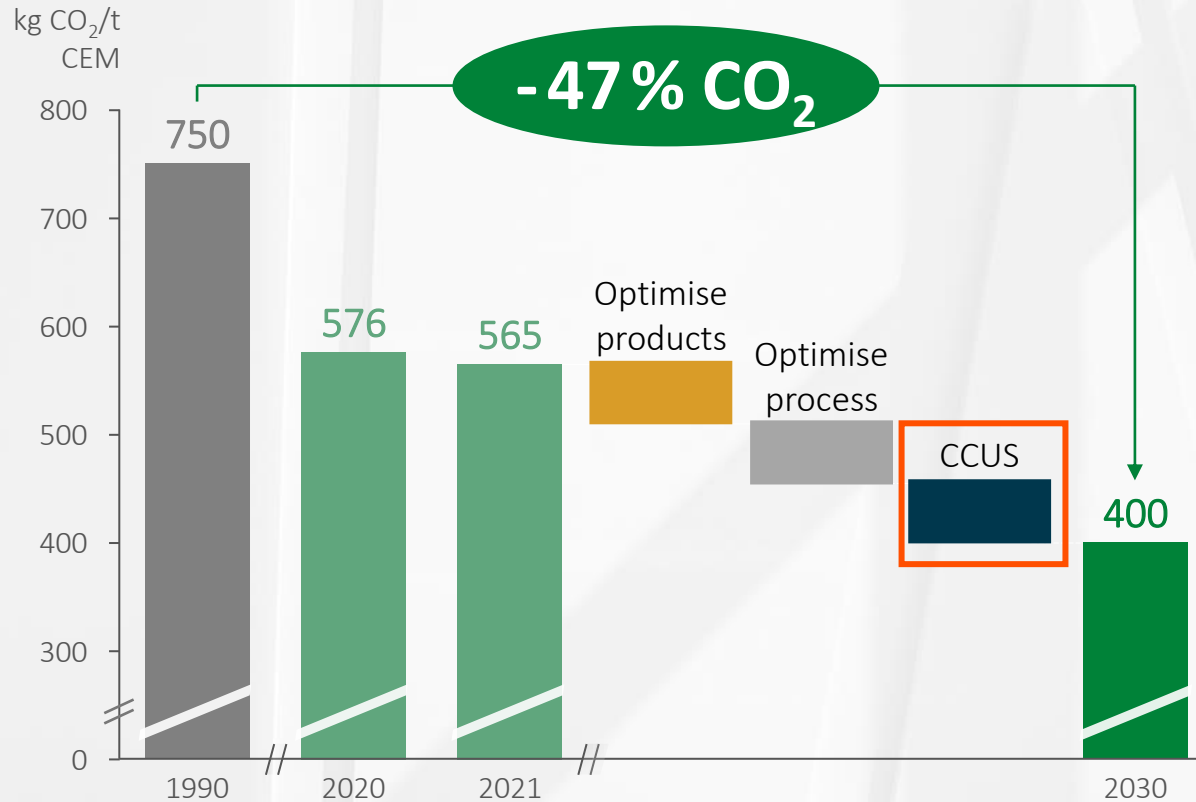
We drive deep decarbonisation

2022 Capital Markets Day – 24 May

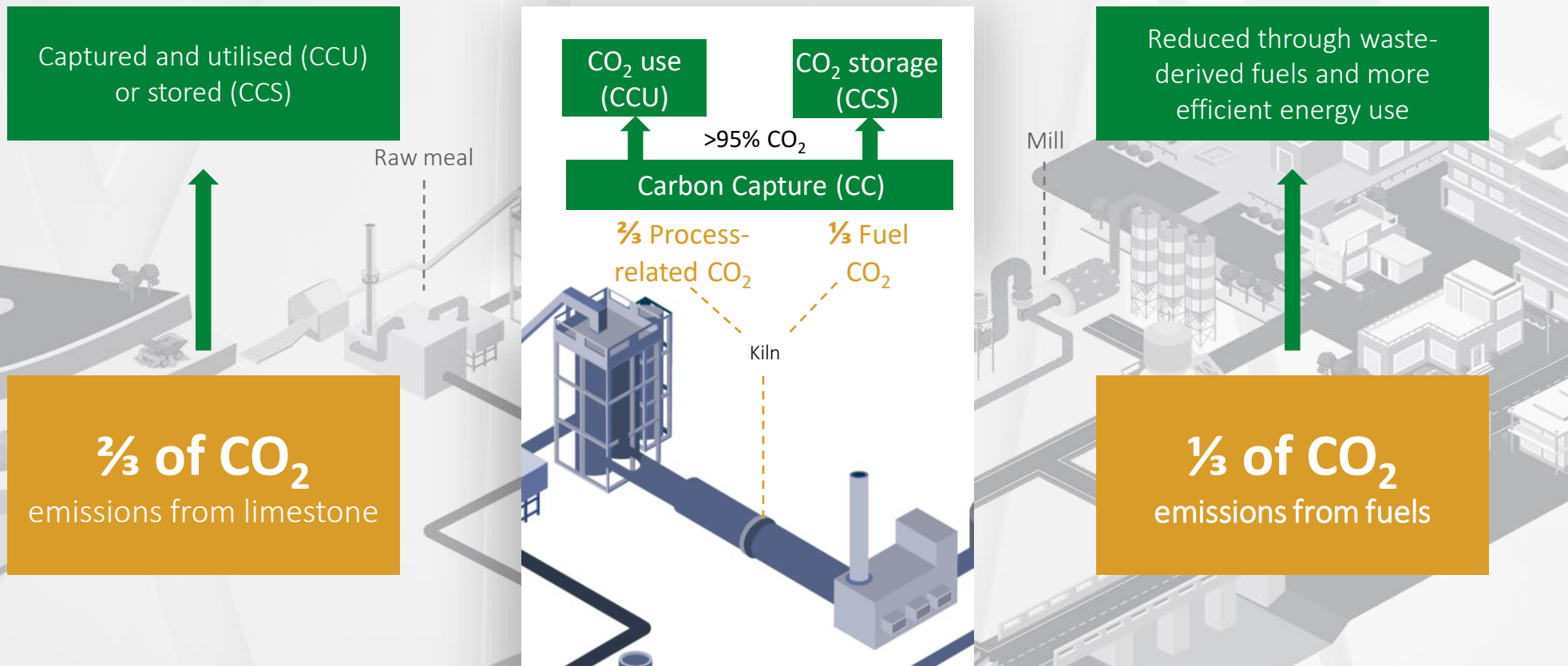
Jan Theulen

Director Technologies & Partnerships

Accelerating carbon capture is a key lever of driving decarbonisation



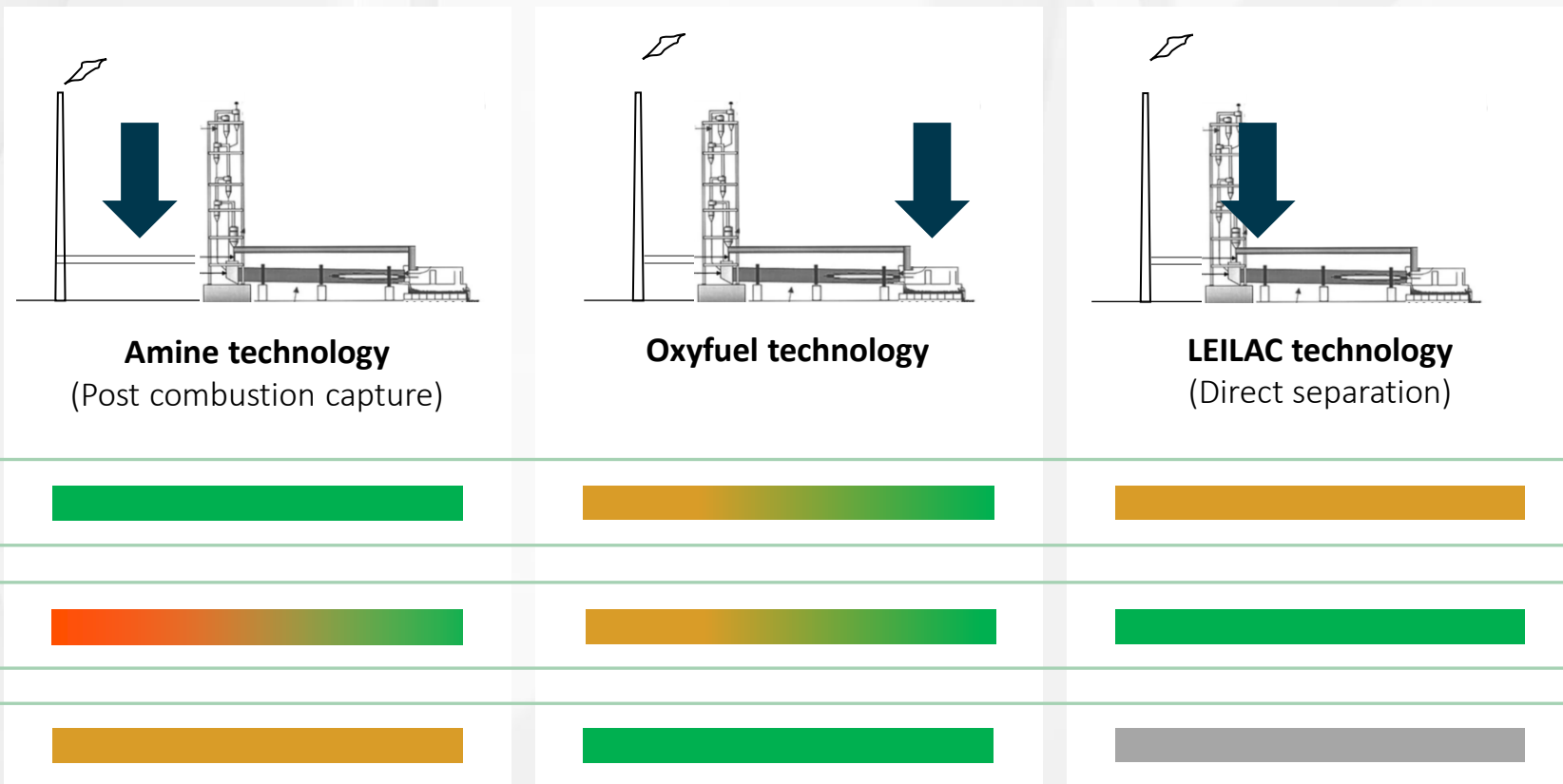
The unavoidable process emissions of our clinker manufacturing require CCUS



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

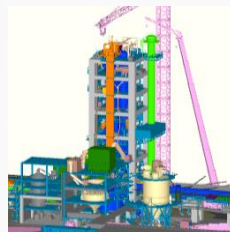
Demo



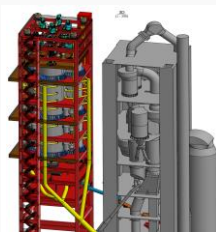
Amine
Brevik, Norway



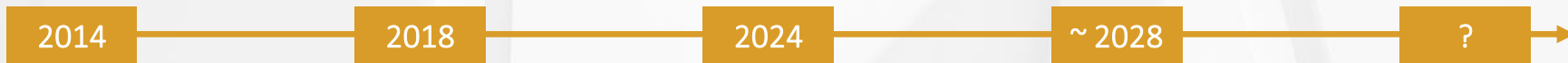
LEILAC 1
Belgium



Oxyfuel
Germany



LEILAC 2
Germany



We are an early mover and scaling up fast

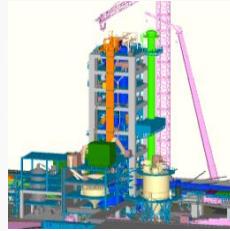
Demo



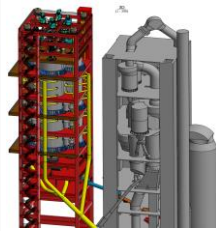
Amine
Brevik, Norway



LEILAC 1
Belgium



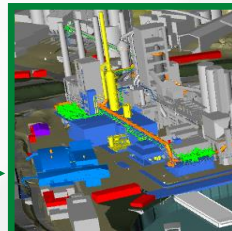
Oxyfuel
Germany



LEILAC 2
Germany



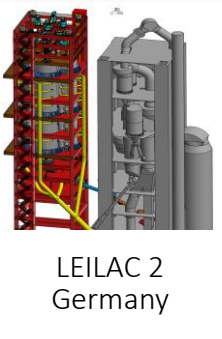
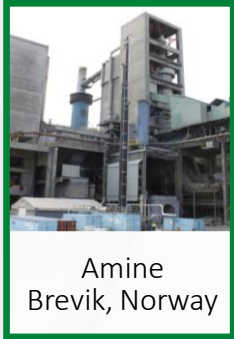
Full Scale



Amine Norway
0.4 mt p.a.

We are an early mover and scaling up fast

Demo



2014

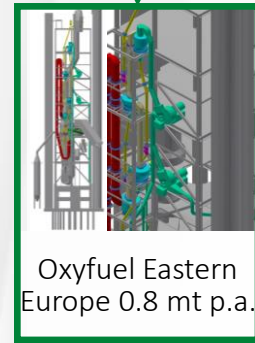
2018

2024

~ 2028

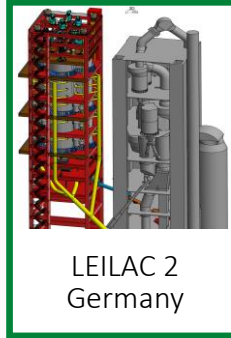
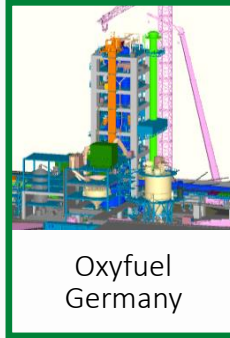
?

Full Scale



We are an early mover and scaling up fast

Demo



2014

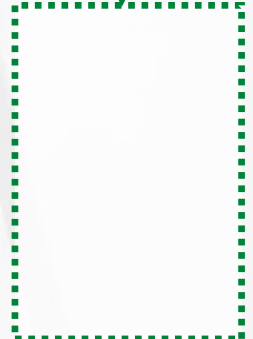
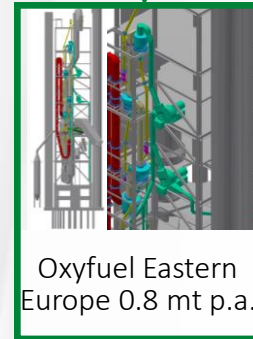
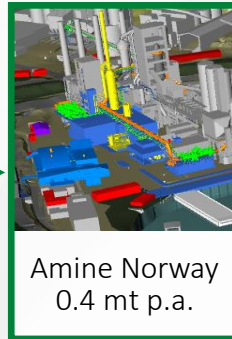
2018

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

CO₂ reduction p.a.

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



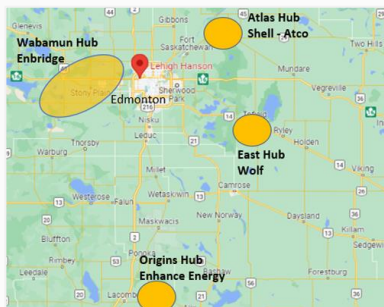
We are developing CCUS projects with solid technologies and leading partners (I)

Case study

Alberta

Scanning

- Accessible CO₂ 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

CO₂ 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 CO₂ storage
- Stakeholder acceptance
- Governmental support



Initiation

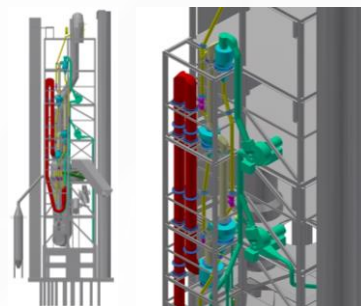
- Team up with partners
- Check techno-economics
- Building up local capacity

petroceltic



Feasibility

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



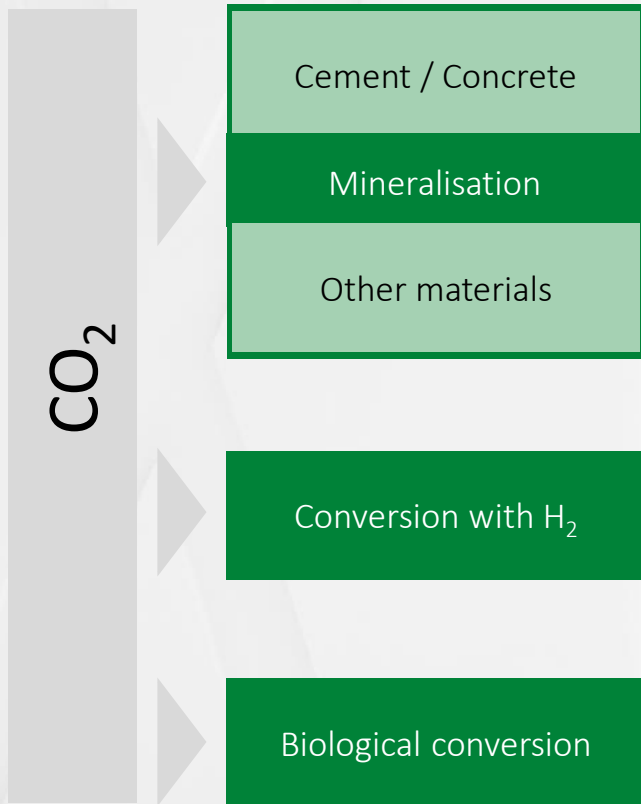
Realisation

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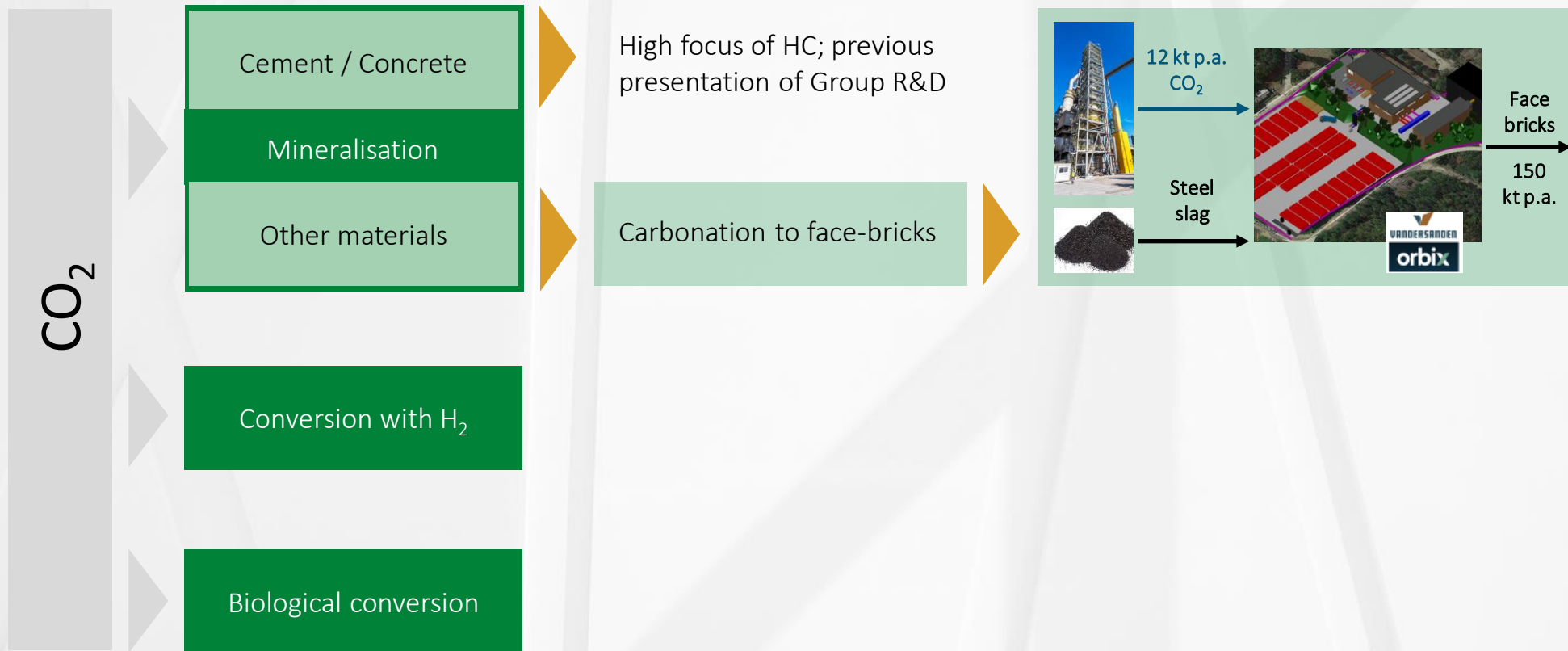
2028
800,000t
CO₂ reduction p.a.

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

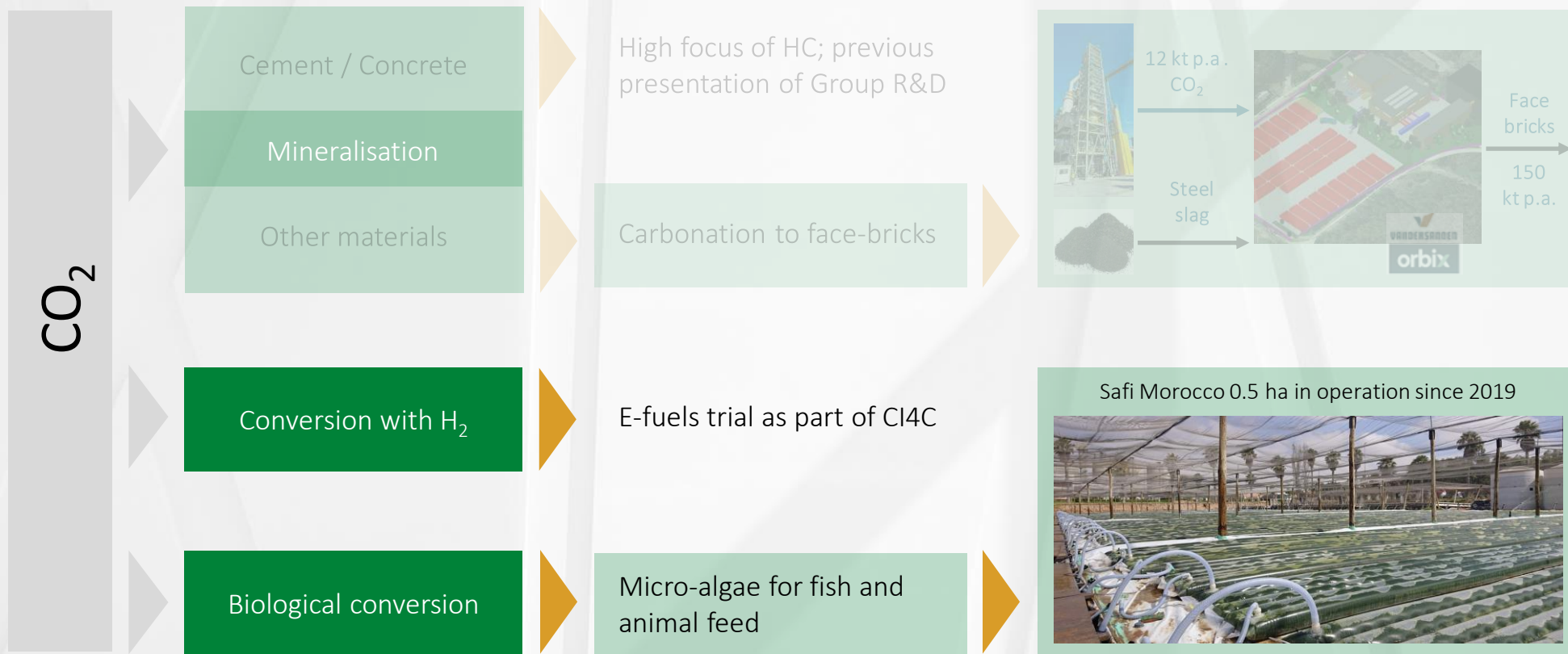
First projects where we utilise the CO₂ captured in our plants (CCU)



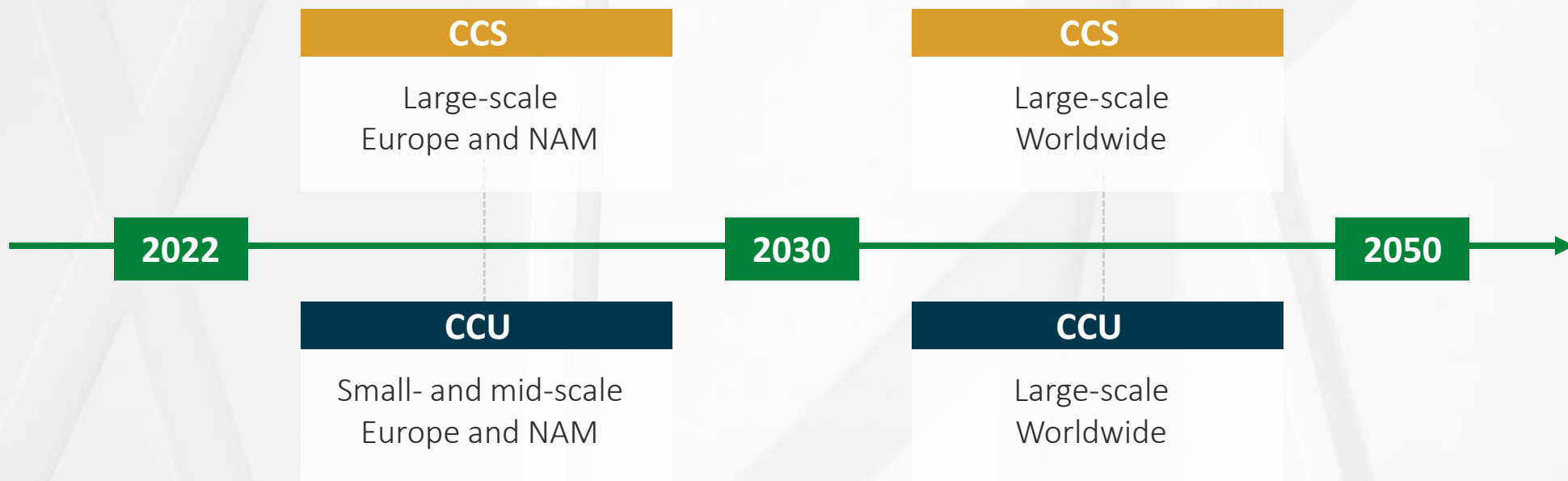
First projects where we utilise the CO₂ captured in our plants (CCU)



First projects where we utilise the CO₂ captured in our plants (CCU)



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

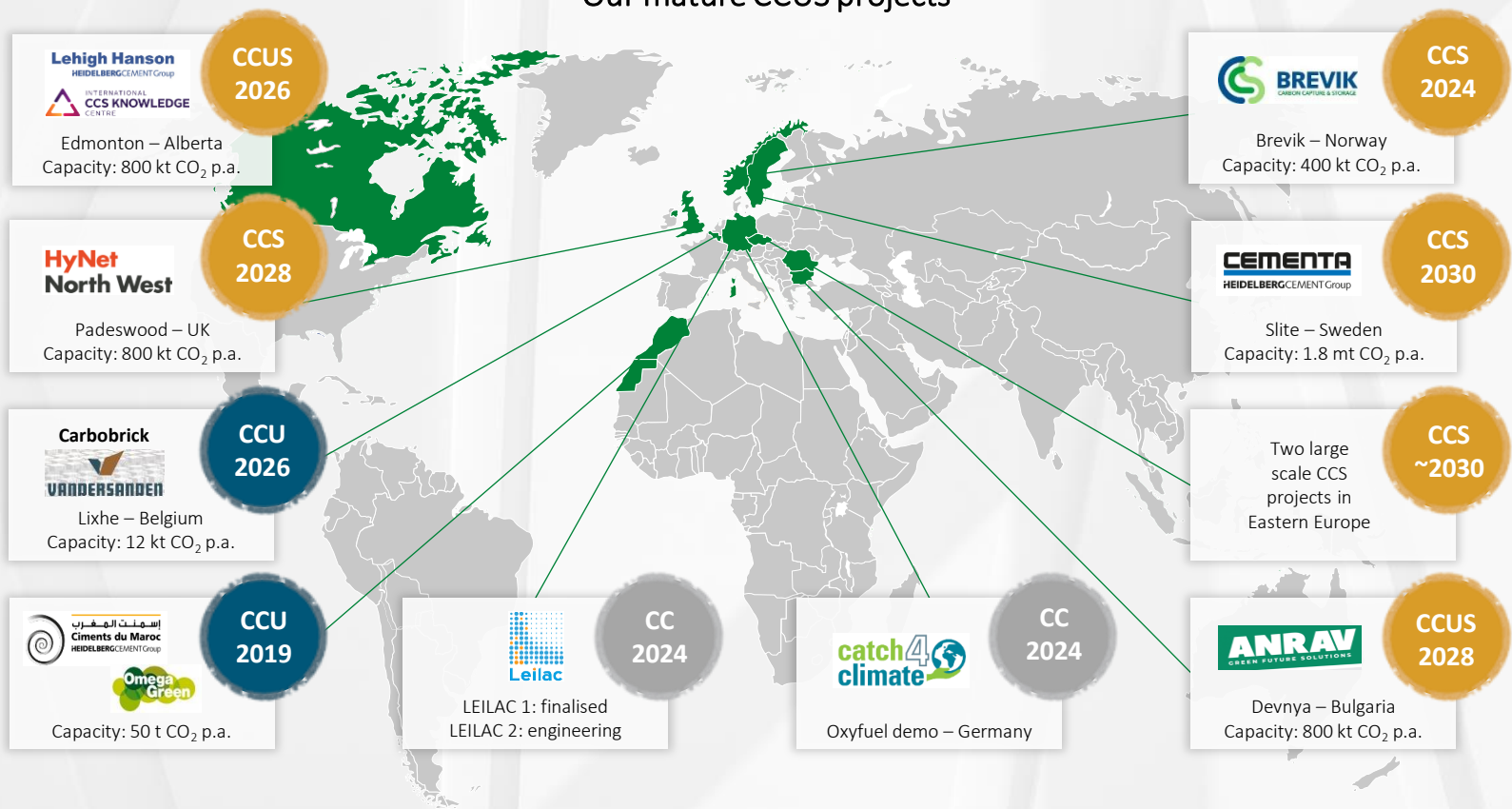


As the early mover, we will capture **10 mt of CO₂** with our already started CCUS projects **by 2030.**



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 CO₂ with our already started CCUS projects by 2030.



We are HeidelbergCement.
Leader in deep decarbonisation.