



CCUS, DACCS 기반 지속가능한 탄소중립 종합 솔루션



Climate Technology First Mover

A background image on the right side of the slide showing a pair of hands holding a globe. The globe is semi-transparent and shows a reflection of a forest with tall trees. The overall background is a light blue gradient.

Introduction of LowCarbon's DACCUS Technology

GCCUS Winter Meeting & International Symposium

December 1, 2023

BongKwan Song, Director of Climate Technology Research Institute, LowCarbon

MISSION

“We make the world’s sky blue again”



EARTHCARE
탄소중립 실현



HYDROGEN SOCIETY
수소 에너지 대전환



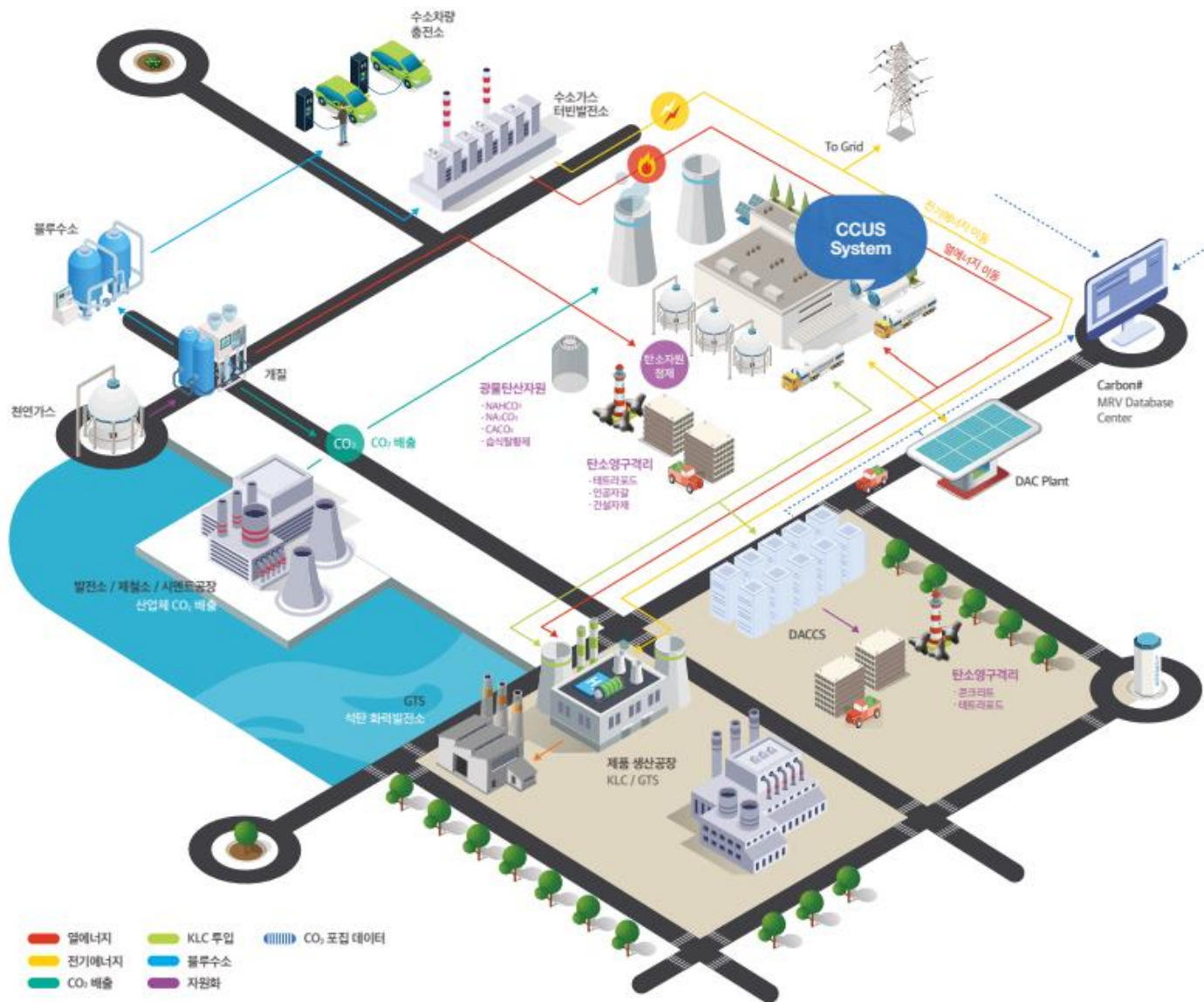
BlueHynus



Uranus Project

로우카본의 사업 핵심은 더 나은 지구환경을 만들어 인류 행복을 추구하는 것입니다.
환경을 최우선의 가치로 삼고, 사회적 책임을 다하는 투명한 경영으로
미래가치를 만들어가는 글로벌 기후테크 기업으로 성장해 나갈 것입니다.

VISION



LowCarbon URANUS
Energy paradigm shift with Clean Hydrogen



Carbon Free Energy



Carbon Negative Energy

Overview

LowCarbon Business Model

CCUS와 DACCS는 모두 이산화탄소를 포집, 활용, 저장하는 기술을 중점적으로 다루고 있으며, 지구 온실가스 감축을 위한 혁신적인 솔루션과 지속 가능한 환경에 대한 대응책으로 주목받고 있습니다.



CCUS

(Carbon Capture, Utilization, Sequestration)

온실가스 이산화탄소를
포집, 활용, 격리하는 기술



DACCS

(Direct Air Carbon Capture Sequestration)

대기 중의 이산화탄소를 포집,
활용하거나 지하에 저장하는 기술

LOWCARBON



기후 환경 기술 1



기후 환경 기술 2



CO₂ 포집 전환 촉매

CO₂를 포집 및 자원으로 전환할 수 있는 촉매



CCUS SYSTEM

CCUS 시스템

직접배출원 CO₂ 포집솔루션



ZeroC

공기중 CO₂ 포집설비

소나무 100그루 이상 효율의 공기중 CO₂ 직접 포집 설비



기후 환경 기술 3



대기 환경 기술



MRV 기술



새로운 에너지전환
Carbon Free Energy(CFE)



CCUS 기술로 생산한 청정수소

CCUS 기술 기반 저탄소 청정수소(H₂)



전처리 탈황제

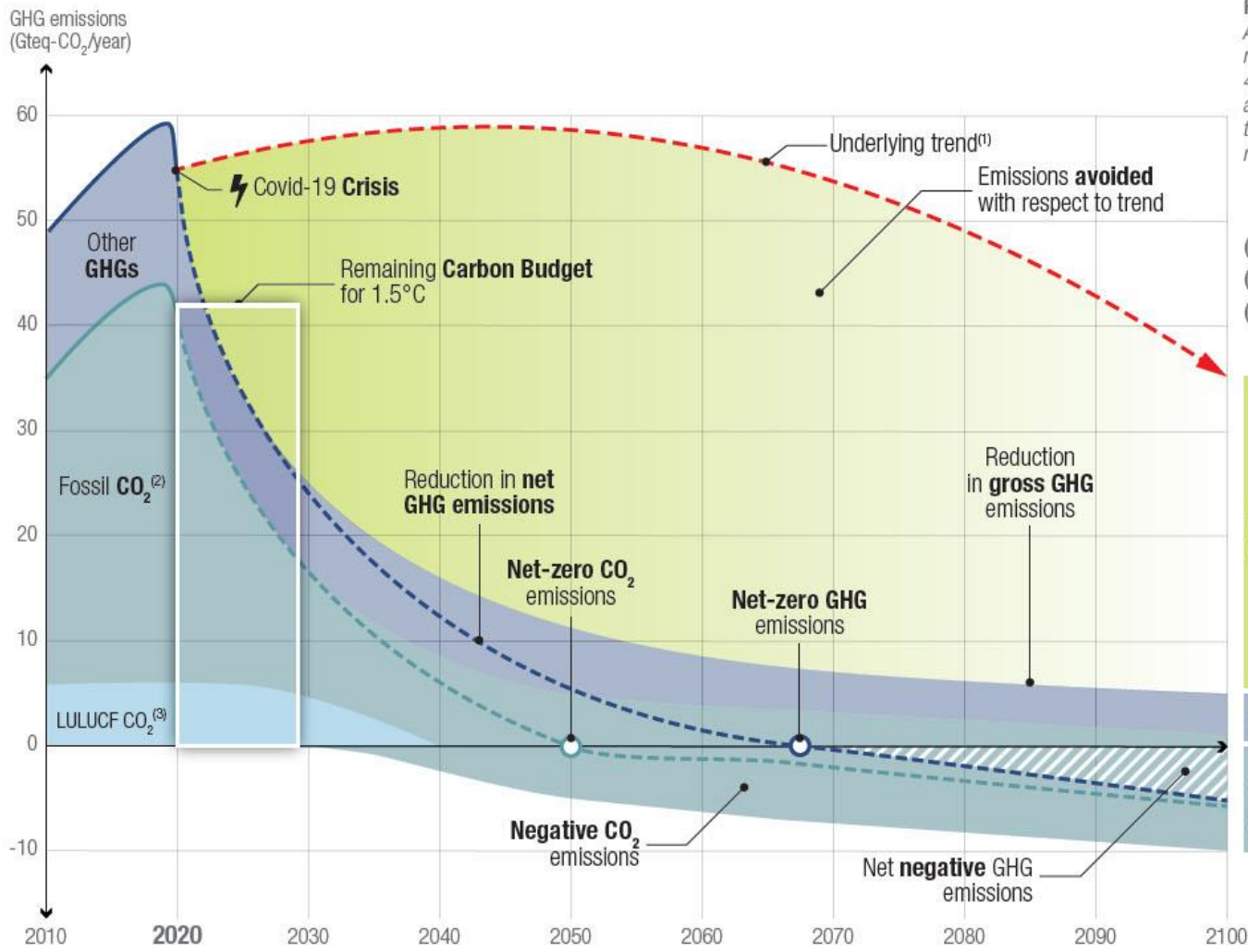
화석연료의 강력한 탈황제 FGD 동시운영이 가능



카본샵

MRV를 위한 최적의 솔루션

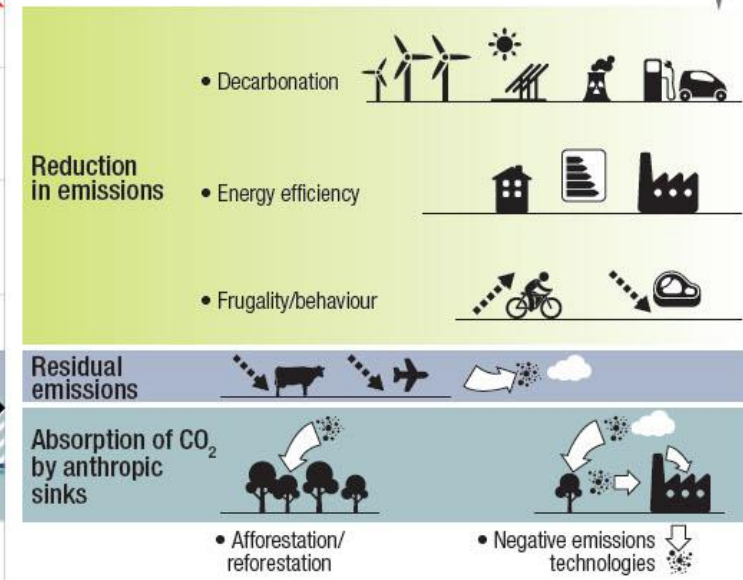




How to interpret the graph:

According to the IPCC, to limit warming to 1,5°C, global emissions must fall rapidly and reach net-zero by around 2050 for CO₂ and 2067 for all GHGs. In 2019, they reached 44 Gt for CO₂ and 59 Gteq-CO₂ for all GHGs. In 2020, they should fall by 7% for CO₂ and a little less for all GHGs. In the coming decades, a similar rate of reduction will have to occur every year, but this time thanks to deliberate and planned GHG emission reduction strategies (see below).

- (1) Underlying trend: emissions forecast if no new policy is enacted.
- (2) Fossil CO₂: CO₂ emissions from fossil fuels and cement.
- (3) CO₂ LULUCF: CO₂ emissions from land use, land use change and forestry.

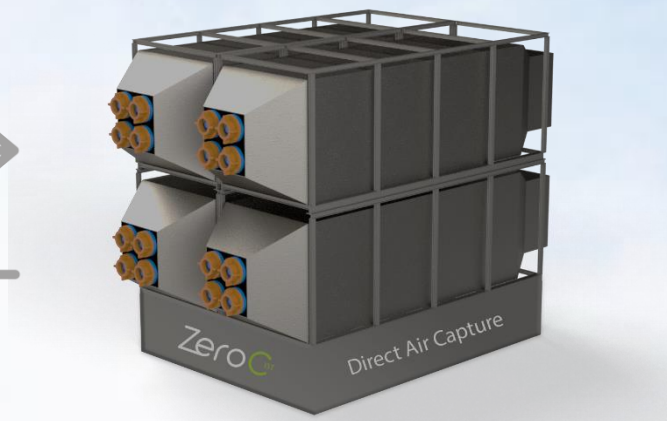


© L'INSTITUT PARIS REGION 2020 – pictogrammes © 123rf / Jeremy

Sources: L'Institut Paris Region, based on the IPCC special report on 1.5°C, October 2018; UNEP, Emissions Gap Reports 2017, 2019 and 2020; Climate Action Tracker, December 2020.



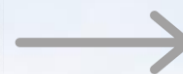
KLC
*LowCarbon CO₂ Capturing agent,
Catalyst*



Zero C
LowCarbon DAC Facility



DACCS
*DAC and Sequestration Model
For Carbon Negative & CFE*



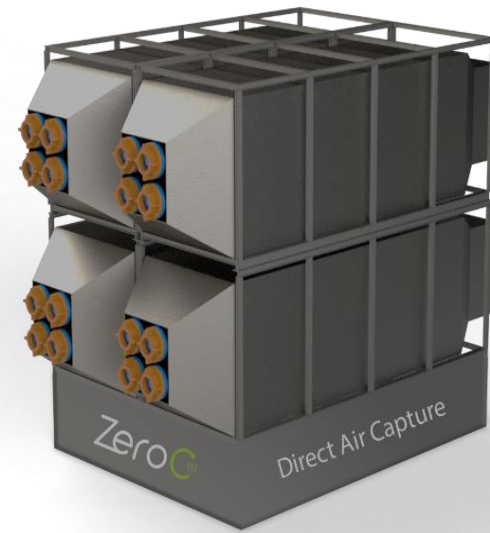
DACCU
*High Purity Carbon Dioxide
(more than 99.9%)*

Zero C : LowCarbon DAC Technology

분산형 Zero C 모델

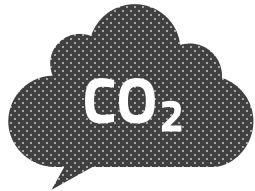


집중형 (DACCS) 모델

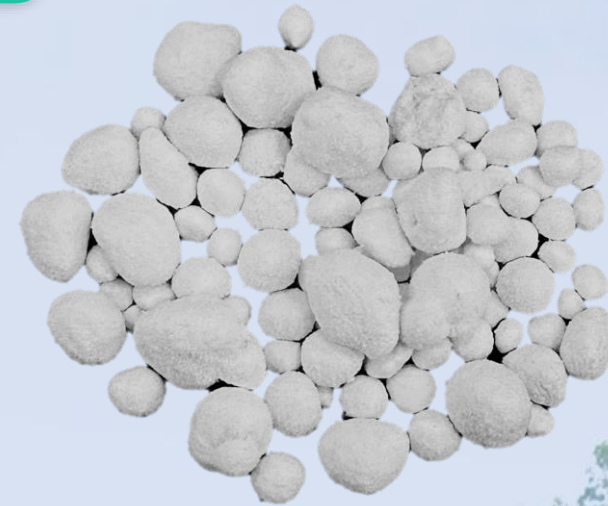


LowCarbon DACCUS

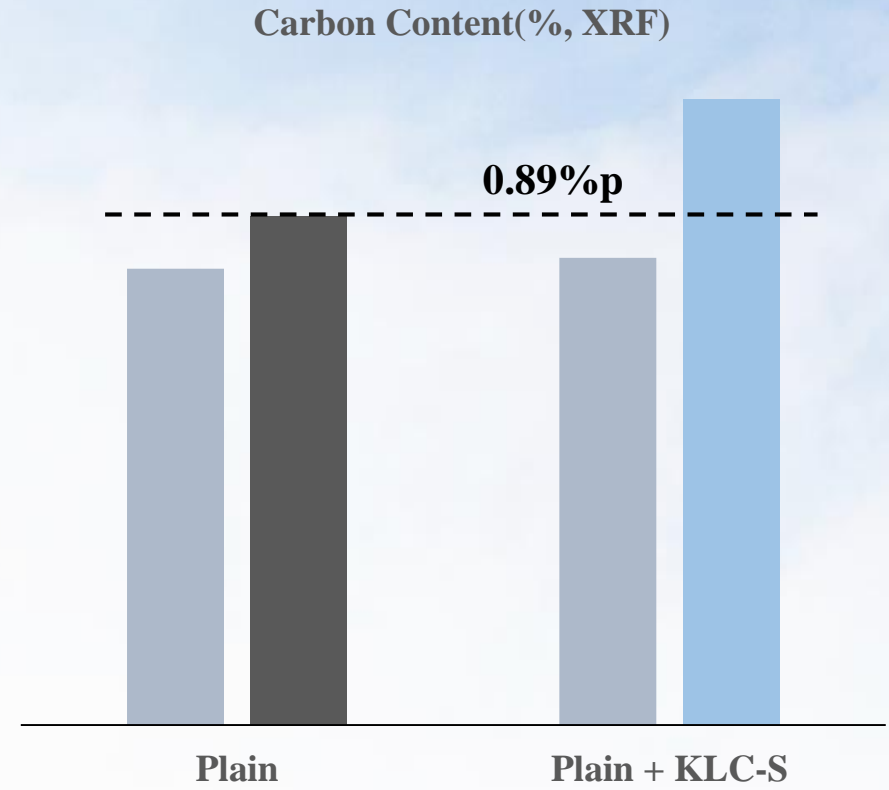
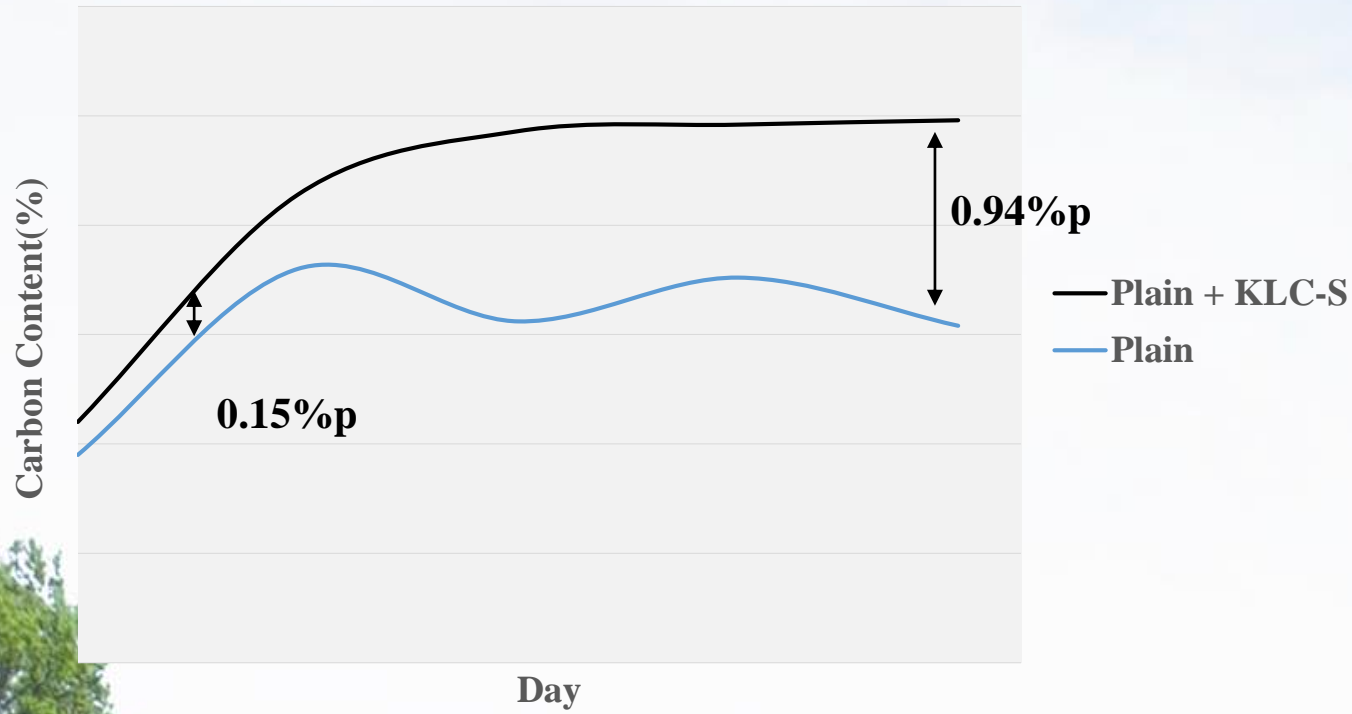
 LowCarbon



- ✓ *LowCarbon CCS Model*
- ✓ *CO₂ Mineral Carbonation*
- ✓ *Concrete, Artificial Aggregate, Tetrapod*
- ✓ *No restrictions on location*

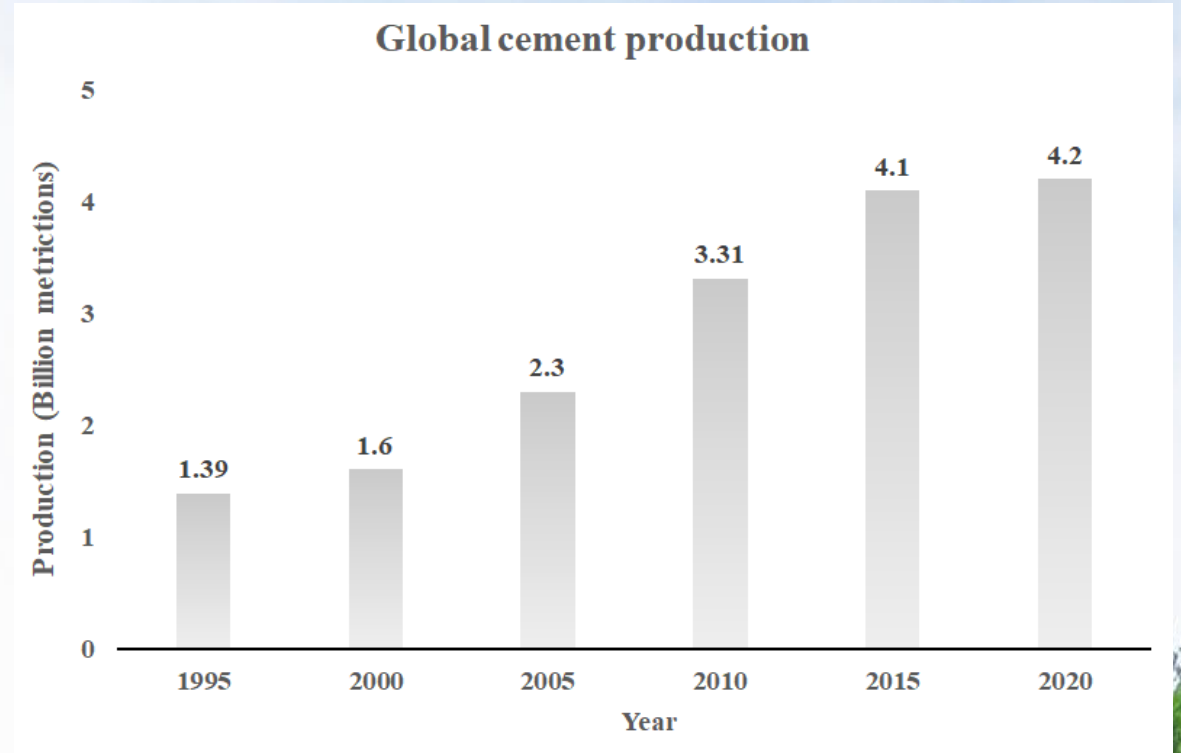
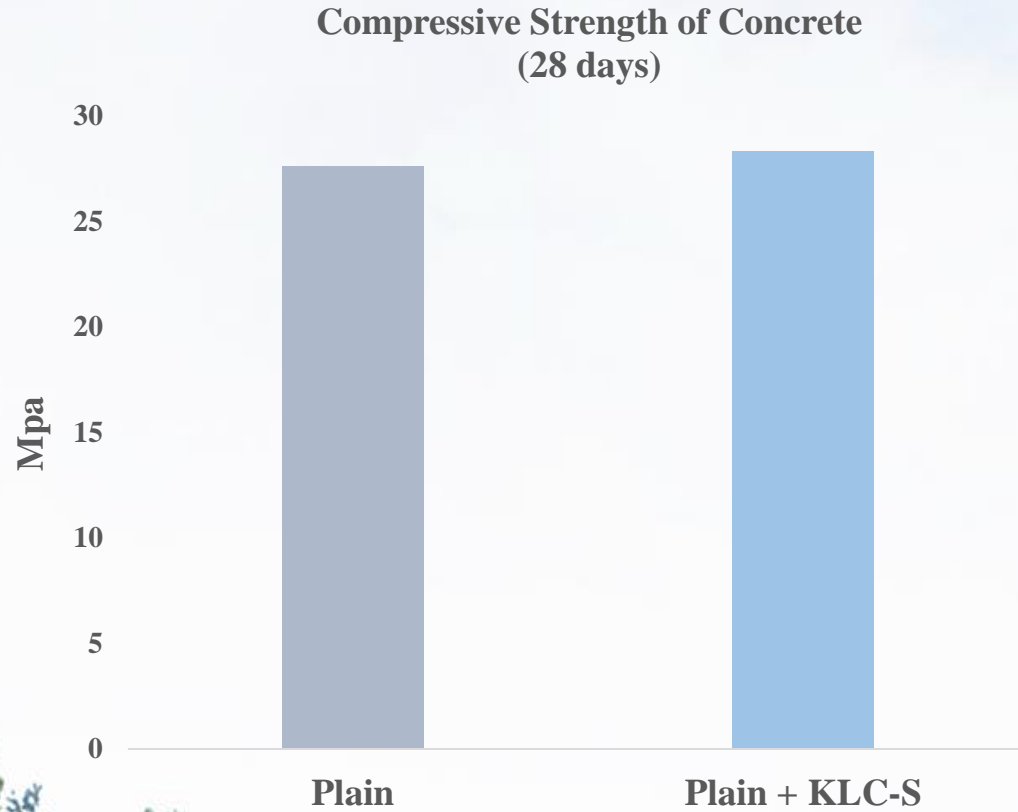


CO₂ Sequestration in Concrete(Mortar)



CO₂ Sequestration in Concrete(Mortar)

*Capable of 20 million MT of DACCS per year
(when applied 10% of global cement production)*



CO₂ Sequestration in Artificial Aggregates

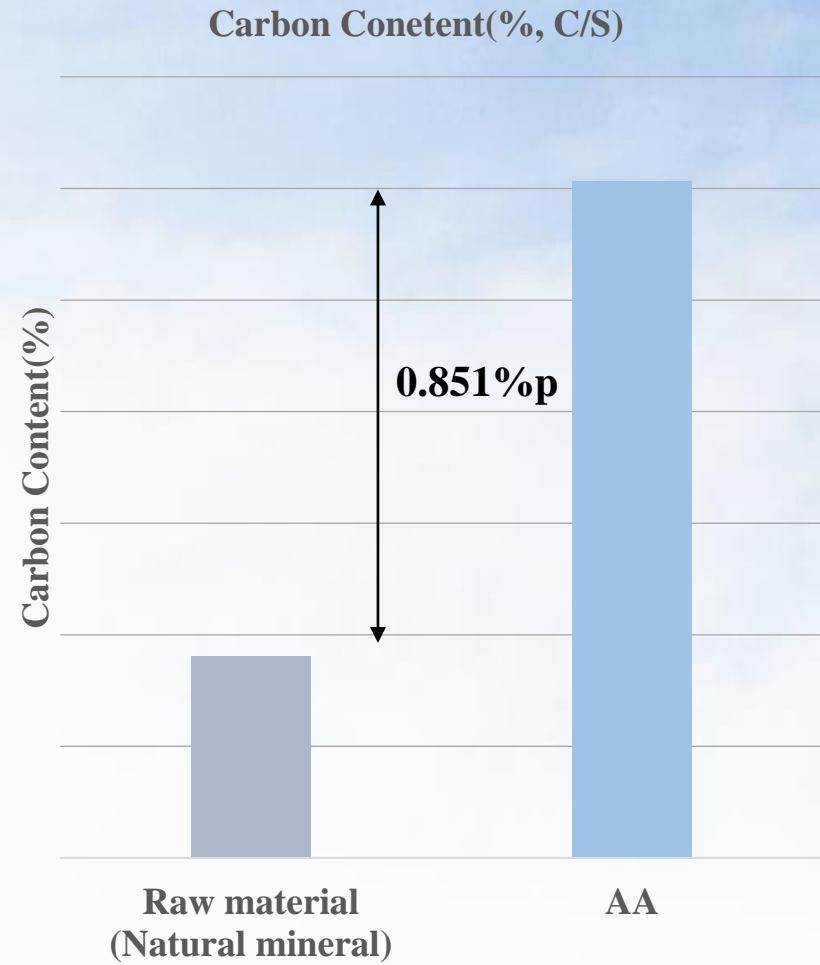


Raw material



AA with DACCS

Capable of 10 million MT of DACCS per year



탄소중립과 탄소네거티브는

미래세대를 위한 중요한 과제로, 지금 당장
실천하고 개선해야 할 중요한 사명이 되었습니다

우리의 기후기술은 앞으로 자라나는

미래세대에게 건강하고 안전한 보금자리를
물려주는 **주춧돌**이 될 것입니다

