

Illustration 3.6 - Low carbon concrete

ILLUSTRATION 3.5

ONE BRIGHT THING — TURNING CO₂ INTO SOMETHING USEFUL

People are finding smart ways to capture CO₂ and put it to work.



These ideas are still developing.
They do not replace cutting fossil fuel use.
But they show what is possible.

1. LOCKING CO₂ AWAY IN CONCRETE

CO₂ can be captured and injected into fresh concrete. It reacts with the calcium in the concrete and turns into solid minerals, locking the CO₂ away permanently.

1 Capture

CO₂ is captured from industrial emissions.

2 Inject

The CO₂ is injected into fresh concrete.

3 React

The CO₂ reacts with calcium to form stable minerals.

4 Lock away

CO₂ becomes part of the concrete, permanently.



This can reduce the amount of cement needed, which helps lower emissions.



Stronger concrete



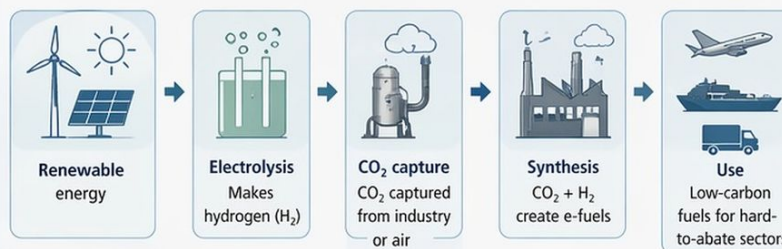
Uses less cement (lower emissions)



CO₂ locked away for good

2. TURNING CO₂ INTO FUELS

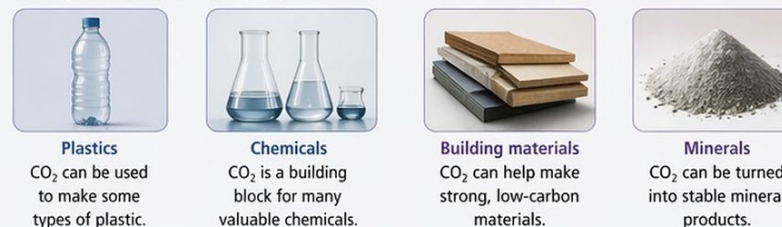
Using renewable energy, CO₂ can be combined with hydrogen to make synthetic fuels. These fuels can power planes, ships and heavy industry.



These fuels can replace fossil fuels in sectors where clean options are limited today.

3. MAKING OTHER USEFUL PRODUCTS

CO₂ can also be used to make everyday products and important industrial materials.



THE BIG IDEA

CO₂ does not have to be only a waste gas. With new technology and smart thinking, it can become part of the solution.

THE BOTTOM LINE

Using CO₂ in useful ways cannot solve climate change by itself. But every tonne captured and used — or locked away — keeps it out of the atmosphere and helps build a better future.



Understanding carbon gives us more choices. More choices help us build a cleaner, safer, more resilient world. That is something to feel hopeful about.



Note: Carbon capture and utilisation (CCU) technologies are developing rapidly. Commercial deployment is growing but still limited at global scale.

Sources: Global Carbon Project (2025); IEA (2025); GCCSI (2024); McKinsey (2024)