

Carbon Capture Method 1: Revegetation

Revegetation means replanting areas where plants have been removed or destroyed. Common revegetation sites include disused farm land, damaged natural spaces, parks, and closed landfills. By planting new plants and trees there, we help nature "trap" carbon dioxide. Plants "breathe in" this gas, use it to grow, and "breathe out" oxygen. When this happens they are acting like nature's vacuum cleaners for our air.

Pros (good things!)	Cons (Bad things)

Carbon Capture Method 2: Direct Air Capture (DAC)

Direct Air Capture, known as DAC, is a technology that draws in large amounts of air and selectively captures the CO₂ molecules from it. This process reduces the concentration of CO₂ in the air. Once captured, the CO₂ needs to be dealt with. One common approach is to store it underground in geological formations (caves). Here, it's safely sealed away, preventing it from re-entering the atmosphere. Another method involves converting the captured CO₂ into solid minerals or using it to produce synthetic fuels.

Pros (good things!)	Cons (Bad things)

Carbon Capture Method 3: Post-combustion Capture

When we burn fossil fuels like coal or gas in power plants, they release smoke filled with CO₂. After the fuel has burned, the smoke, which we call "flue gases," gets directed through a special liquid solvent. This solvent dissolves the CO₂ and absorbs it like a sponge. Once the solvent is filled with CO₂ it is heated to release a clean stream of CO₂ that can be stored elsewhere. Most commonly it is pumped underground and stored in geological formations (caves). This process is called Carbon Capture and Storage (CCS).

Pros (good things!)	Cons (Bad things)

Carbon Capture Method 4: Microalgae

Microalgae are super small, plant-like organisms that live in water. As they grow, they absorb large amounts of CO₂ from the atmosphere, far more efficiently than land plants. After these microalgae have done their job we can harvest them. Scientists can turn this microalgae biomass into useful things like fuels for cars or even special chemicals that usually come from oil.

Pros (good things!)	Cons (Bad things)

Carbon Capture Method 5: Concrete

Making concrete traditionally releases significant CO₂ into the atmosphere. This is because producing cement involves heating limestone and clay in a kiln, which consumes a lot of energy. Once poured into the form, cement needs to cure to be strong and last a long time. Traditionally this is where it reacts with water, in a process called hydration. If the concrete isn't kept wet during this time it will be weaker. In a new method of curing, concrete undergoes carbonation instead of hydration, and absorbs CO₂ which causes it to cure.

Pros (good things!)	Cons (Bad things)