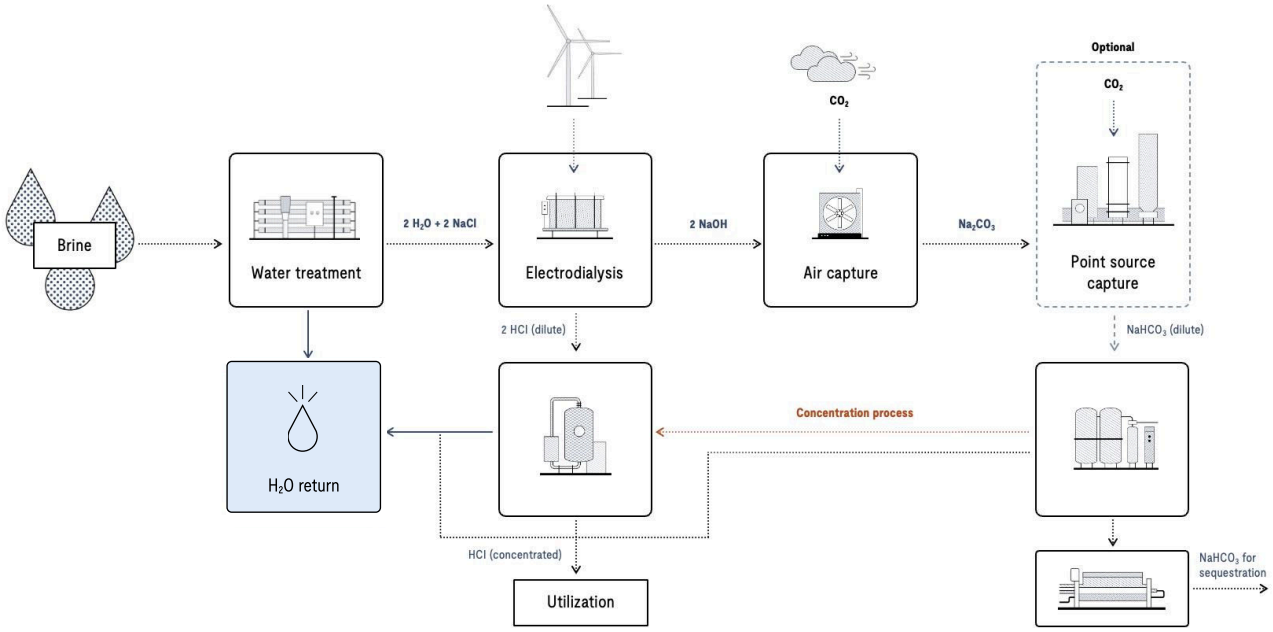
1. How do you capture carbon and produce water at the same time?

Capture6 will intake saltwater to create 1) Carbonates for storage and 2) Freshwater for local consumption. To generate these product streams, Capture6's process is split into two key stages: Water purification and Carbon capture with key stages outlined below:

1. Waste brines undergoes water treatment to produce H_2O and NaCl (Water and salt).
2. A salt solution then pass through electrochemical conversion where the capture solvent is created (NaOH) alongside an acid stream (HCl).
3. The HCl is concentrated, creating H_2O and HCl – both commercial byproducts. The HCl is diverted for commercial offtake or neutralisation.
4. Separately, the (NaOH) solvent captures atmospheric CO_2 via air contactor creating Sodium Carbonate (Na_2CO_3).
5. (Optional) This Sodium Carbonate further binds with CO_2 at the next stage of Point Source Capture to form sodium bicarbonate ($NaHCO_3$).
6. This final carbonate product can either be stored, sequestered or sold for commercial use.

Detailed process flow

Our process utilizes well-known technologies to deliver carbon and water benefits from a single facility.

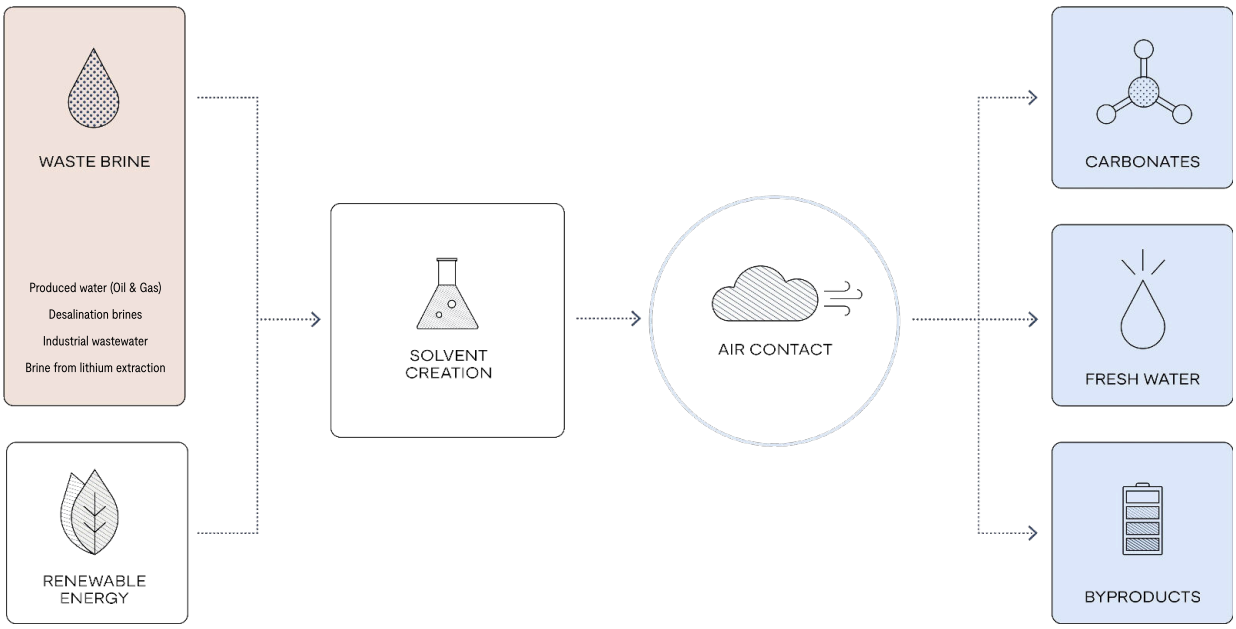


2. What are the inputs and outputs of your process?

The main mineral constituent in brine, NaCl, can be chemically transformed into a carbon capture solvent. This simultaneously enables atmospheric carbon removal, additional water recovery and brine management. Capture6 can work with multiple input water sources which contain NaCl. These include but are not limited to: Desalination brines, produced water (oil and gas), industrial waste brines.

Waste to value

Capture6 can work with multiple input water sources which contain NaCl.

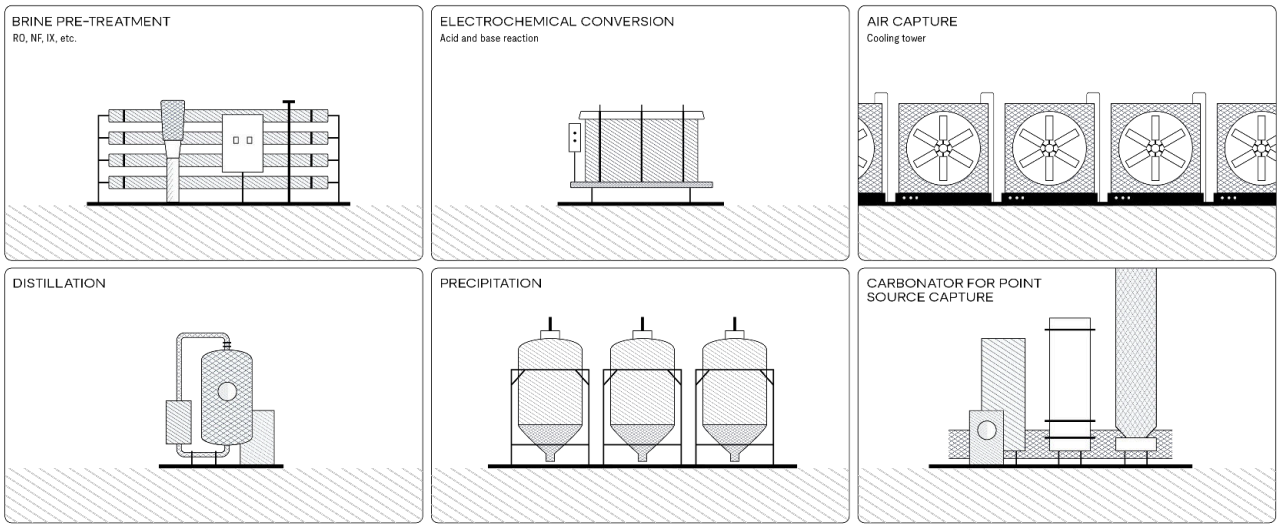


3. Do you develop your own technology?

Capture6's CO_2 removal process relies on well-understood components that individually are in use around the world at scale and in commercial environments. These components and technologies have high TRLs (8+), mature supply chains, and benefit from decades of engineering refinements to deliver consistent, forecastable performance. Capture6 leverages these sector-wide resources to the benefit of our projects.

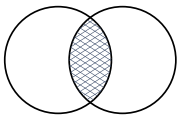
The technologies

We deploy proven technologies into existing facilities, scaling reliability and scalability from day one.



4. How are you different from other DAC providers?

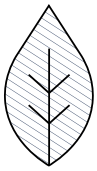
Integrated approach vs stand-alone



Capture6 takes an integrated approach, co-locating with industrial partners. This approach delivers multiple streams of value, enabling Capture6 to significantly lower the cost of CO_2 capture.

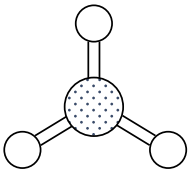
- Sequestration partners: Capture6 can serve as the freshwater producer for sequestration . projects that consume water in locations with only saltwater availability
- Water partners: providing brine management services and increasing water efficiencies
- Industrial emitters: Provide cost-effective point-source capture and sequestration
- Industrial processes: Deliver localized, affordable supply of green industrial chemicals

100% renewable powered



Unlike other DAC technologies on the market, Capture6 uses a zero-heat desorption process at ambient temperature and therefore does not require any thermal energy inputs. As such, 100% renewable energy input is a viable option and our systems can viably embed demand-response mechanisms to manage site-level, idiosyncratic intermittent availability.

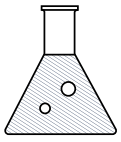
Multiple Storage pathways



Capture6 outputs can be stored through multiple durable pathways:

- Solid Carbonates: Where appropriate, our carbonate output can be fully dried to precipitate minerals to be stored in surface or sub-surface mines
- Liquid Carbonates: Capture6's alkaline streams can be injected into basalt formations, stored in the ocean (potentially enabling mCDR), and deep subsurface wells
- Gaseous / Supercritical CO_2: We can re-release CO_2 for injection into depleted oil & gas reservoirs and Class VI wells.

In Situ solvent creation



From the sodium chloride in this inlet stream, Capture6 generates its capture solvent creating supply chain resilience and flexibility to execute projects in remote locations with widely available inputs.