



# Distributed Carbon Capture

## An economically viable modular complete solution

# Large and diverse distributed emissions – >1 Gtpa



300,000

Industrial facilities



10,000

Utility and Distributed  
Energy Resources



440,000

Large mixed-use buildings

## **District Energy:**

- City District Energy
- University Campus
- Communities & Business Islands

## **Industrials:**

- Ethanol
- Manufacturing
- Food & Beverage
- Pulp & Paper
- Cement
- Waste to Energy

## **Distributed Gen:**

- Cogeneration
- Combined Heat and Power
- Fuel Cells
- Microgrids

## **Utilities:**

- Distributed Generation
- Compression Stations

## **Built Environment:**

- Hospitals
- Municipals
- Hard to abate large buildings

# CarbonQuest's Distributed CCUS Solution

## Carbon Control

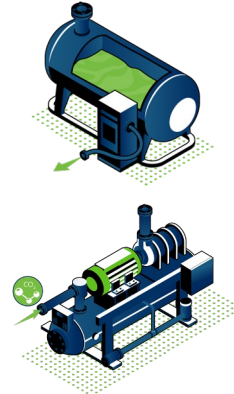
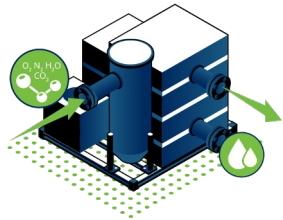


Unattended autonomous intelligent control

## Carbon Management



Lifetime system measurement, reporting and verification



### 1 | Extraction

Extract and pre-treat high CO<sub>2</sub> concentration mixed gas, removing water content and pressurizing gas for separation phase.

### 2 | Separation

Process dry gas through an innovative vacuum pressure swing adsorption system separating CO<sub>2</sub> for conversion phase.

### 3 | Conversion/Compression

CO<sub>2</sub> gas stream can be processed through proprietary liquefaction system removing impurities before being placed into a storage tank to await transfer OR recompressed for pipeline/well applications.

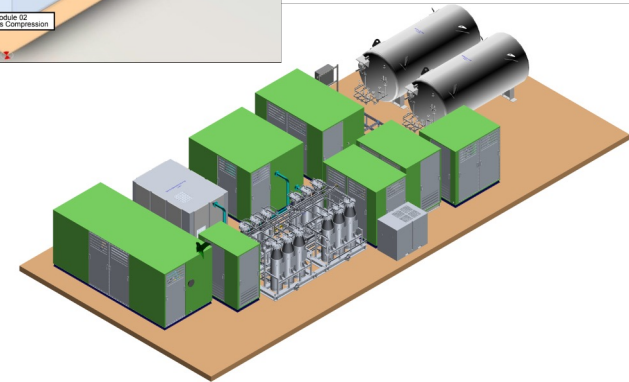
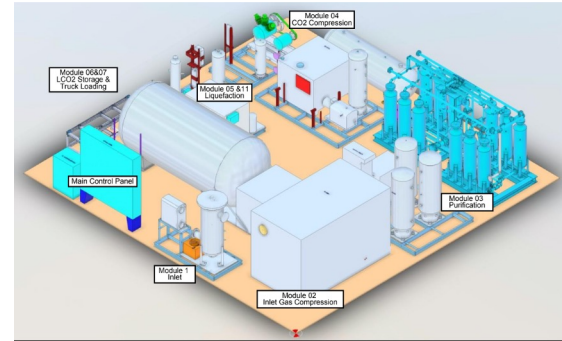
### 4 | Utilization/Sequestration

The liquid SustainableCO<sub>2</sub><sup>™</sup> is regularly transferred to customers who reduce emissions through utilization OR placed into wells for in-ground applications.

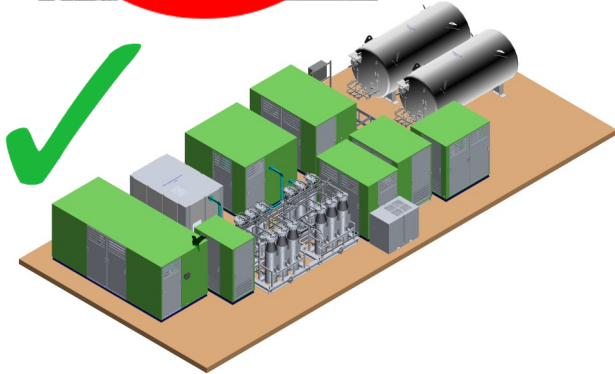
# Standardized Modular & Flexible Products Offerings

Combustion Product Size	Tons per Annum*	Site Location**
CCS-0400	1,000	Indoor/ Outdoor
CCS-0800	2,000	Indoor/ Outdoor
CCS-1600	4,000	Indoor/ Outdoor
CCS-3200	8,000	Outdoor
CCS-6400	16,000	Outdoor

Fuel Cell Product Size	Tons per Annum*	Site Location**
BFCC-0005	4,600	Outdoor
BFCC-0008	7,300	Outdoor
BFCC-0012	11,000	Outdoor
BFCC-0020	18,000	Outdoor

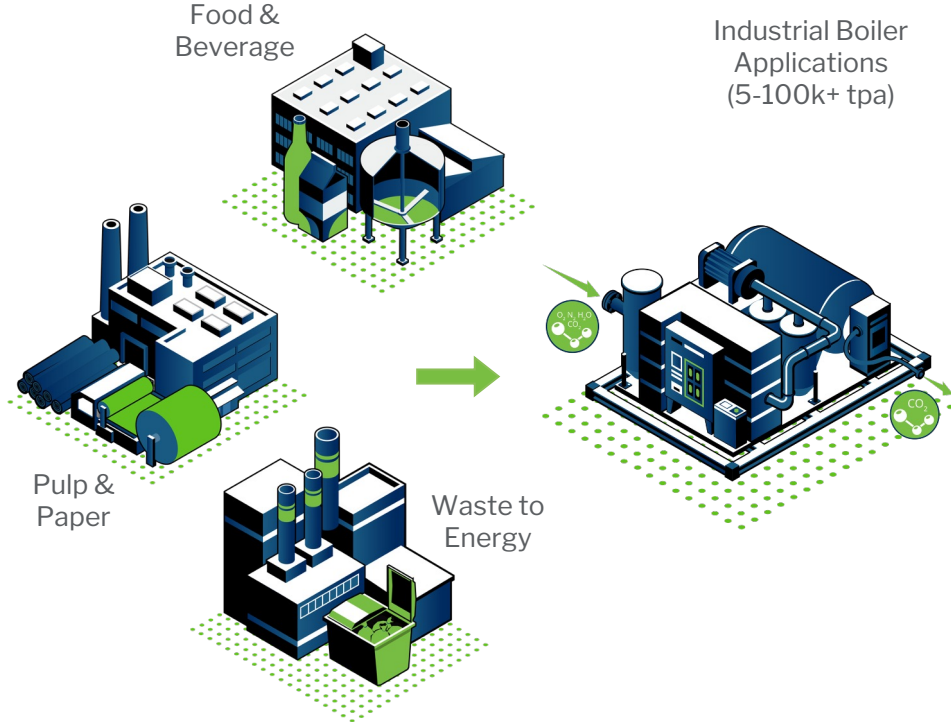


# Why is CarbonQuest's technology unique?

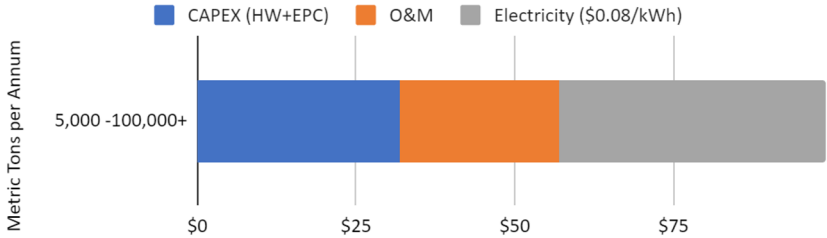


- No towers required
- No operators required
- No chemicals, uses non-toxic solid adsorbents
- No steam or thermal swings
- No water used in the process
- No natural gas required
- Electricity only energy source
- Starts/Stops/Ramps in seconds
- Unattended lights out operations
- Works in space constrained environments
- Modular skids, flexible site layouts, rapid installation, turn-up and commissioning
- Economically viable

# Diverse Industrial Boiler Examples



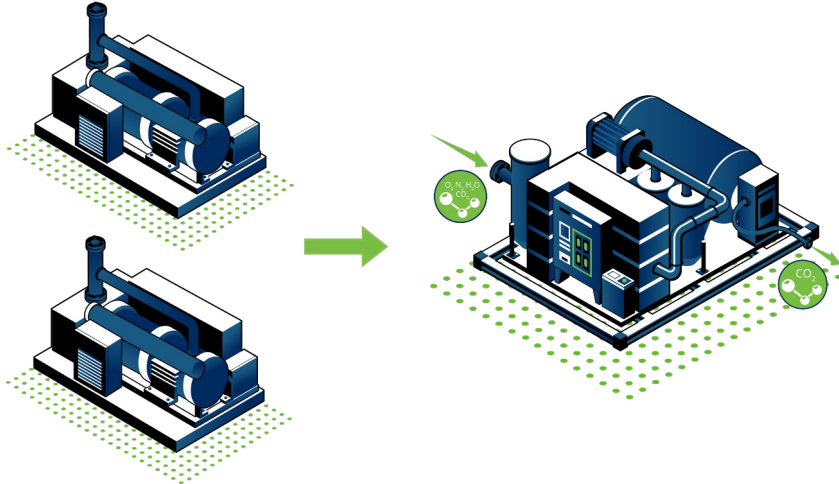
Industrial Boiler Applications (\$99/ton)



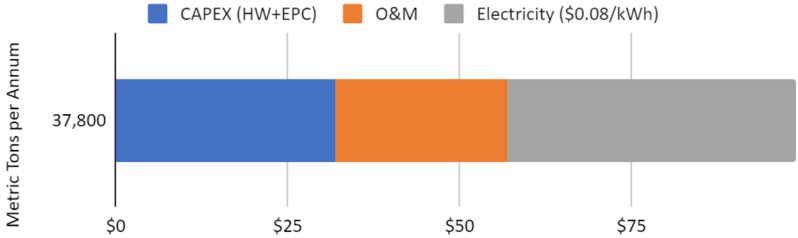
Note: actual project conditions will vary; above example uses 4% O2, 9.5% CO2 wet exhaust

# CHP Distributed Generation Example

5MW CHP - Internal Combustion Engine Plant (38k tpa)



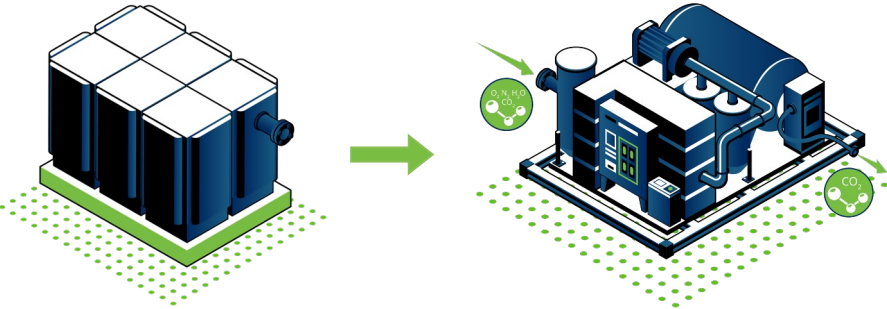
5MW CHP - Engine Application (\$99/ton)



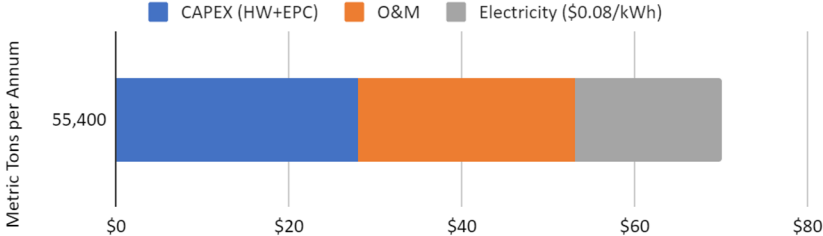
Note: actual project conditions will vary; above example uses 4% O2, 9.5% CO2 wet exhaust

# Fuel Cell Distributed Generation Example

19.5 MW Fuel Cell Plant (55k tpa)



19.5MW Fuel Cell - Bloom Application (\$70/ton)

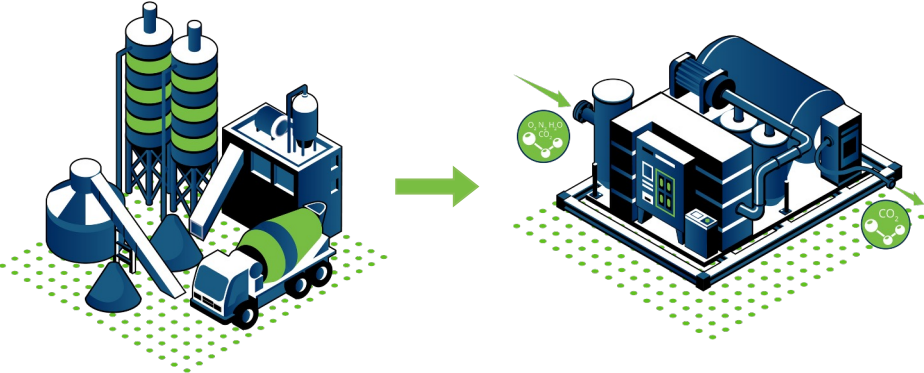


Note: actual project conditions will vary; above example uses a Bloom Energy fuel cell exhaust

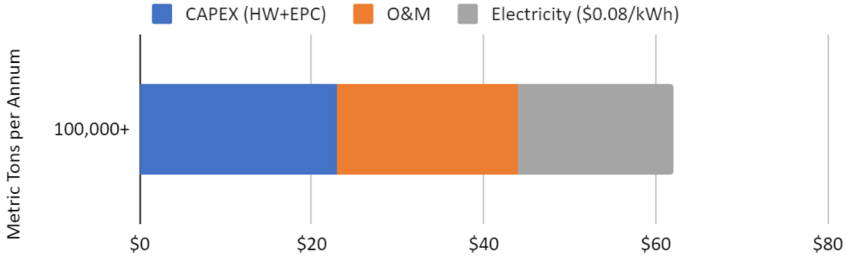


# Heavy Industry (Cement/Steel) High CO2% Example

Heavy Industry Plant  
(100k+ tpa)



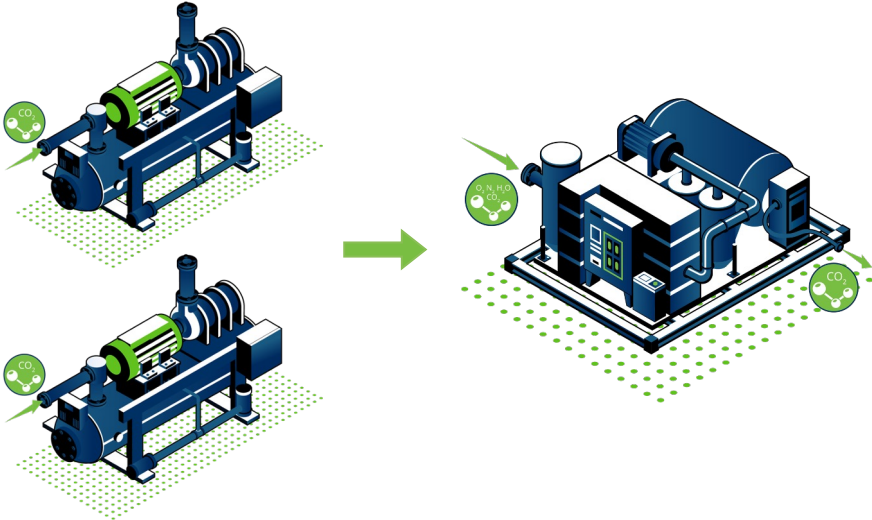
Cement/Steel - High CO2 Concentrations (\$62/ton)



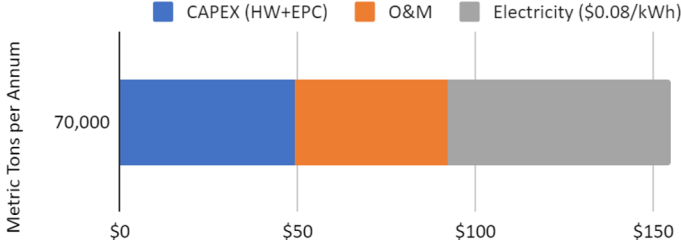
Note: actual project conditions will vary; above example uses 22% CO2 exhaust example

# Compression Station Low CO2% Example

NG Compression Station (30-70k+ tpa)



Compression Station Application (\$156/ton)



Note: actual project conditions will vary; above example uses 6.5% O2/CO2 wet exhaust

# Emerging Market Themes

- The CO<sub>2</sub> Molecule not the Fuel is the problem, need a tech neutral approach
- Growing realization of CCUS as key decarbonization technology
- Diverse “hard to abate” industry segments generally have broad support base
- Base Load, Reliable, Low Carbon power is critical to meet capacity growth
- Time to Carbon Reductions and Time Value of Carbon Reductions are critical
- Economically viable energy transition is the key to a flourishing economy



We would love to answer  
any questions you have

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