

Capso

Carbon Capture

Version 1.2



| Table of Contents

- [Introduction](#)
- [Our Company](#)
- [Our History](#)
- [Our Technology](#)
- [Our Process](#)
- [Our Systems](#)
- [Our Catalysts](#)



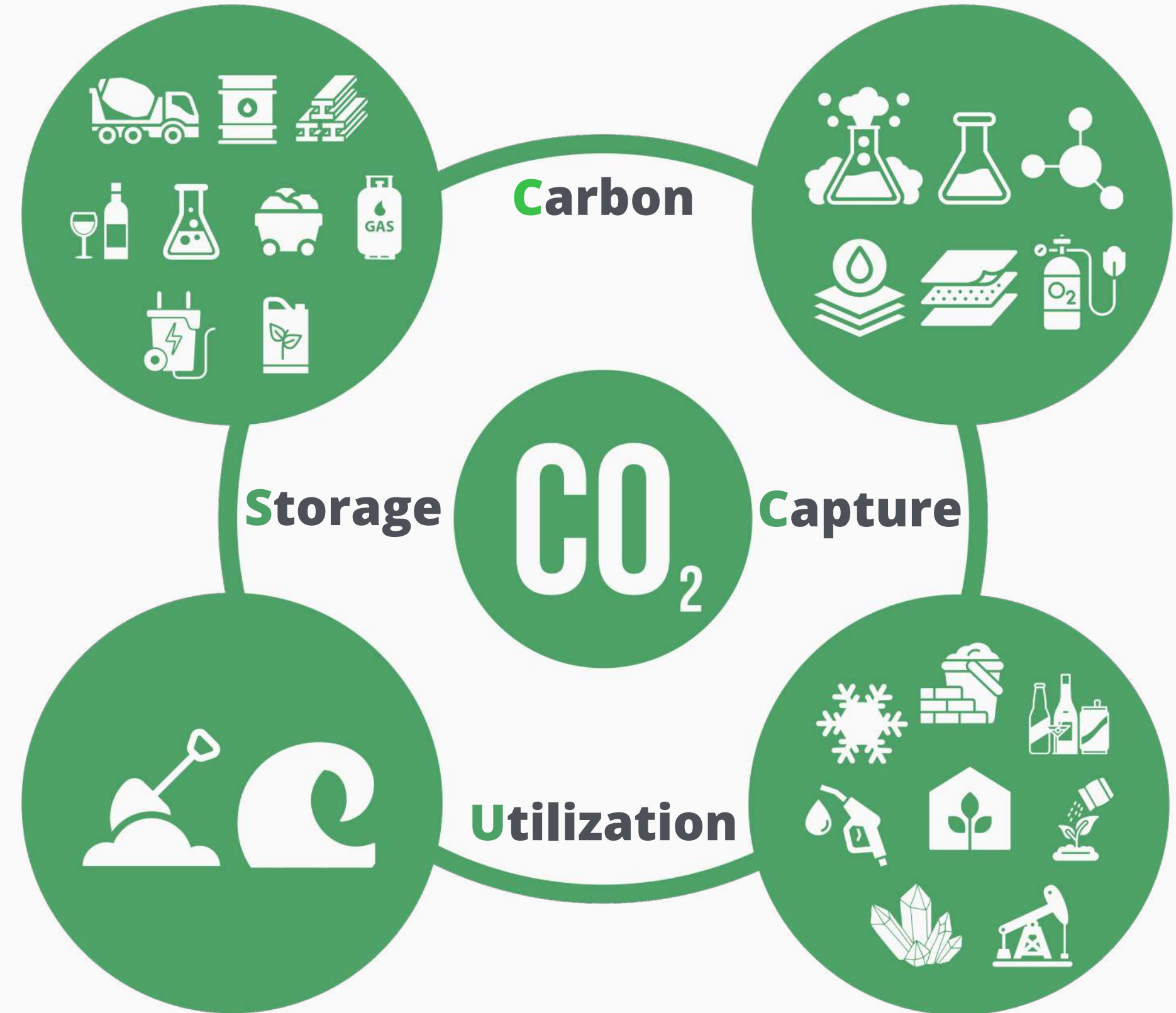
INTRODUCTION

Version 1.2



CCUS

- ✓ **Effective & Efficient**
Significantly Reduce CO₂ from Industrial Sources
- ✓ **Compatibility**
Retrofitted to Existing Infrastructure and Allowing Factories to Continue Operations
- ✓ **Versatility**
Available to Diverse Industries & Sectors
- ✓ **Economic**
Cost-effective and Practical Solution
- ✓ **Incentivized**
Generate Carbon Credits & CO₂ Products
- ✓ **Regenerative**
Carbon Neutral/Negative Circular Economy





OUR COMPANY

Version 1.2



Our Company

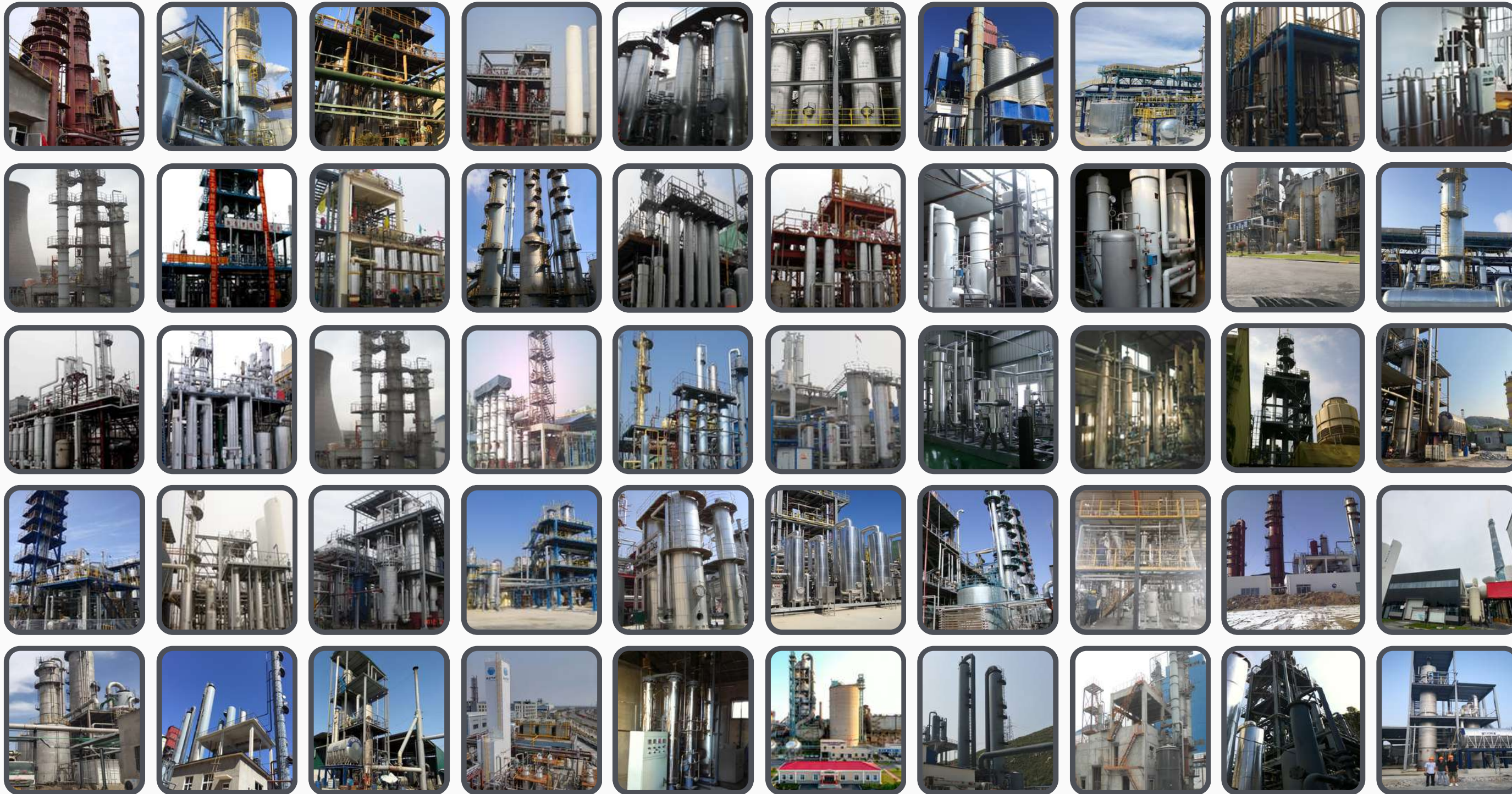
- Heritage since 1984
- Specialize in Post-Combustion CCUS Processes and solutions
- Completed over 90+ CCUS projects worldwide
- Clients across 23+ countries
- Collaborated in 3 European Union projects since 2007
- 27 Patented Technologies
- 20 Science Citation Index Journals
- Partnership with Dalian University of Technology
- Collaboration with UNIDO



Capso



Our Projects



97+

Projects Worldwide

67

End-to-End Projects

30

Refurbished Projects

3.9m tons

CO2 Captured Annually

Our Projects



 Achievements

 Carbon Capture

 Dry Ice









Click to enter/exit full screen

OUR HISTORY

Version 1.2



1984 - Founding & Early Concepts



1984

Innovation Heritage

23

University Professors & PhDs

40

Years of R&D in CCUS

30

Years of CO₂ Utilization
Equipment Manufacturing

Reference: 1984 Beijing Yanshan Petrochemical 1000 tpy CO₂

1997 - Dry Ice Equipment Manufacturing



1st

Dry Ice Company in China

21

Invention & Utility Patents

23+

Countries Exported

28+

Years of Experience

Supplied To

SIEMENS

SAMSUNG



HITACHI



FESTO

ABB



BOSCH

Haier

VOITH

Goertek



MESSER



BRIDGESTONE



3M



Iwatani



2001 - Coca-Cola Food Grade CO2



Reference: 2001 Liaoning Jinzhou Liulu Petrochemical Company 30,000 tpy CO2

Achievement

1st Food Grade

CO2 in China

CO2 Purity

>99.9%

Utilization

Beverage Industry

Supplied To

Coca-Cola

2007 - EU Industrial Scale Supercritical CO2 Pipeline Test



Institutions



Achievement

1st in the World

Official Partnership

European Union

2010 - Capso CCUS Research Center



2013 - TSMC Ultra High Purity CO2 Project



Achievement

1st 6N CO2 in the World

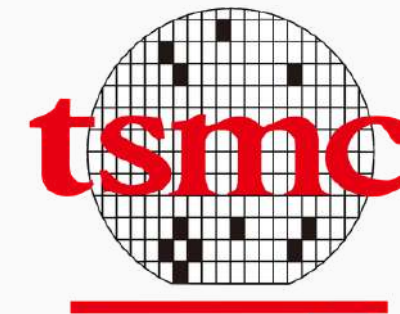
CO2 Purity

99.9999%

Utilization

Electronics Industry

Supplied To



Verified By



Reference: 2013 Taiwan Liangxin Gas Company 1314 tpy CO2

2015 - Geneva Inventions Gold Medal



2016 - PetroChina Petrochemical Hydrogen Project



Reference: 2016 PetroChina Karamay Petrochemical Hydrogen 100,000 tpy CO2

Achievement

1st Deployment New CapsoC™

<0.16kg/tCO2 Solvent Loss

>10 Years Continuous Operation

CO2 Purity

99.96% Food Grade

Utilization

Enhanced Oil Recovery

Supplied To



PetroChina

2017 - Conch Cement Purification Project



Achievement

**1st Cement Kiln Food
Grade CO₂ in the World**

CO₂ Purity

99.9% - 99.99%

Utilization

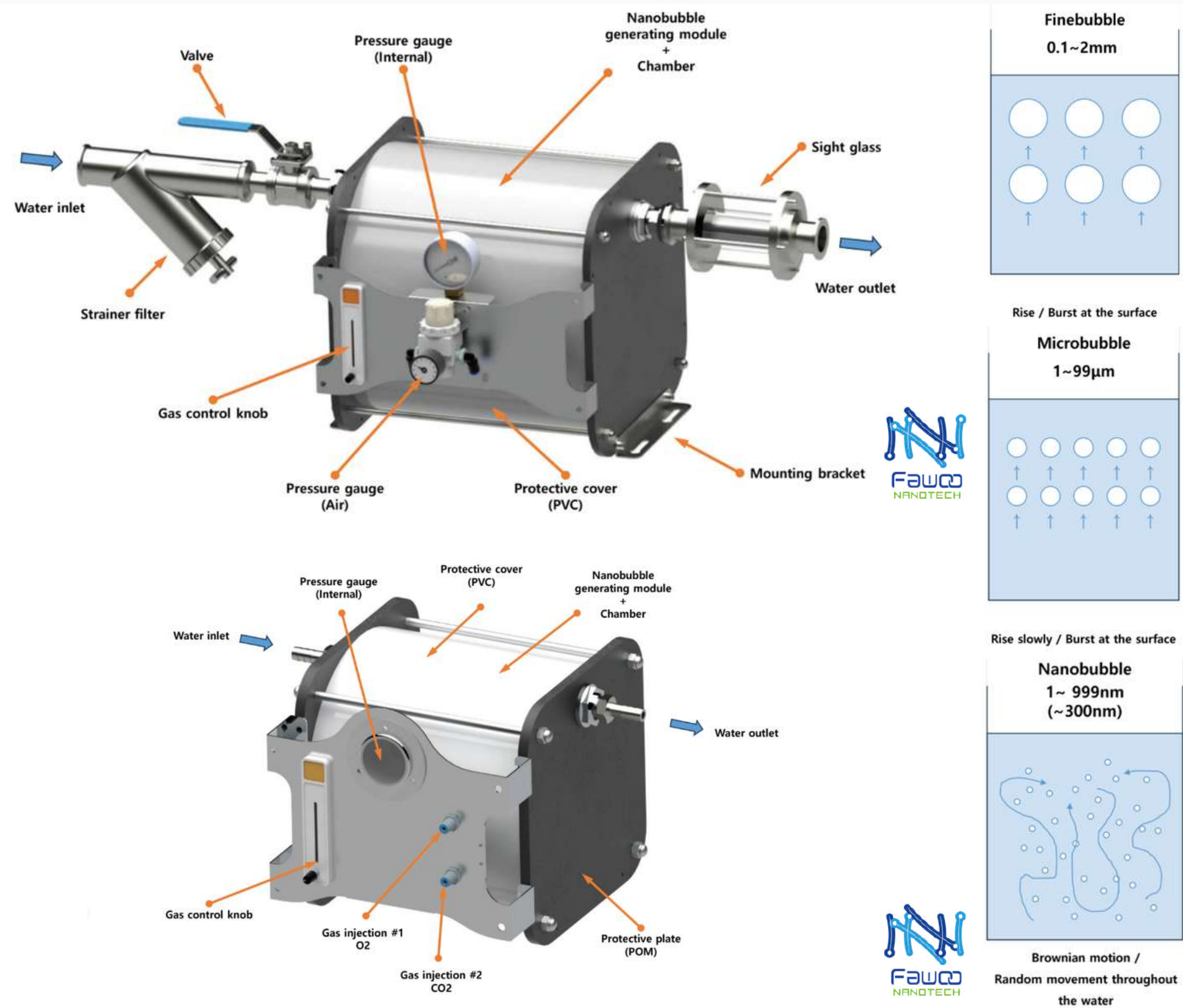
**Cement Mineralization &
Dry Ice Production**

Supplied To

COINCH

Reference: 2017 Conch Group Baimashan Cement Plant 50,000 tpy CO₂

2020 - Nanobubble Generator



| 2022 - Shuncheng CO₂-to-Methanol Project



Achievement

**1st and Largest CO₂ to
Methanol Plant in the World**

CO₂ Purity

99.9% - 99.99%

Utilization

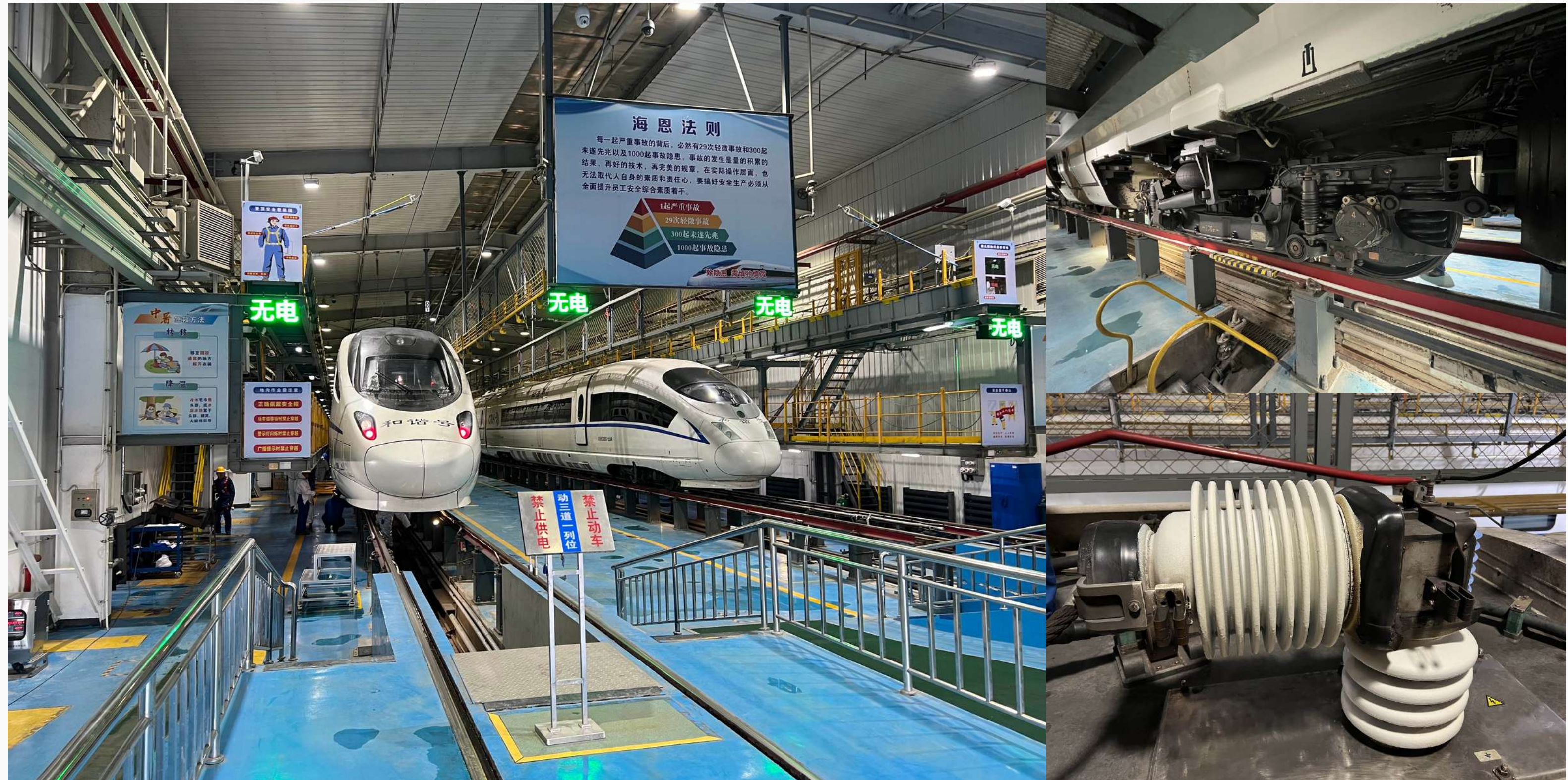
Methanol Production

Supplied To



Reference: 2022 Henan Shuncheng Group Steel Plant Lime Kiln 160,000 tpy CO₂

2023 - National Railway Contracts



2024 - Canada Carbon Capture Conference



2024 - Vale Green Innovation Initiative 1st place



| 2025 - Global Industrie France



2025 - Carbon Capture Expo Houston



| 2025 - Canadian Government Consulate Event



2025 - UNIDO Carbon-Neutral Technologies 1st Place



2025 - China International Import Expo



| 2026 - Basque Green Tech Spain

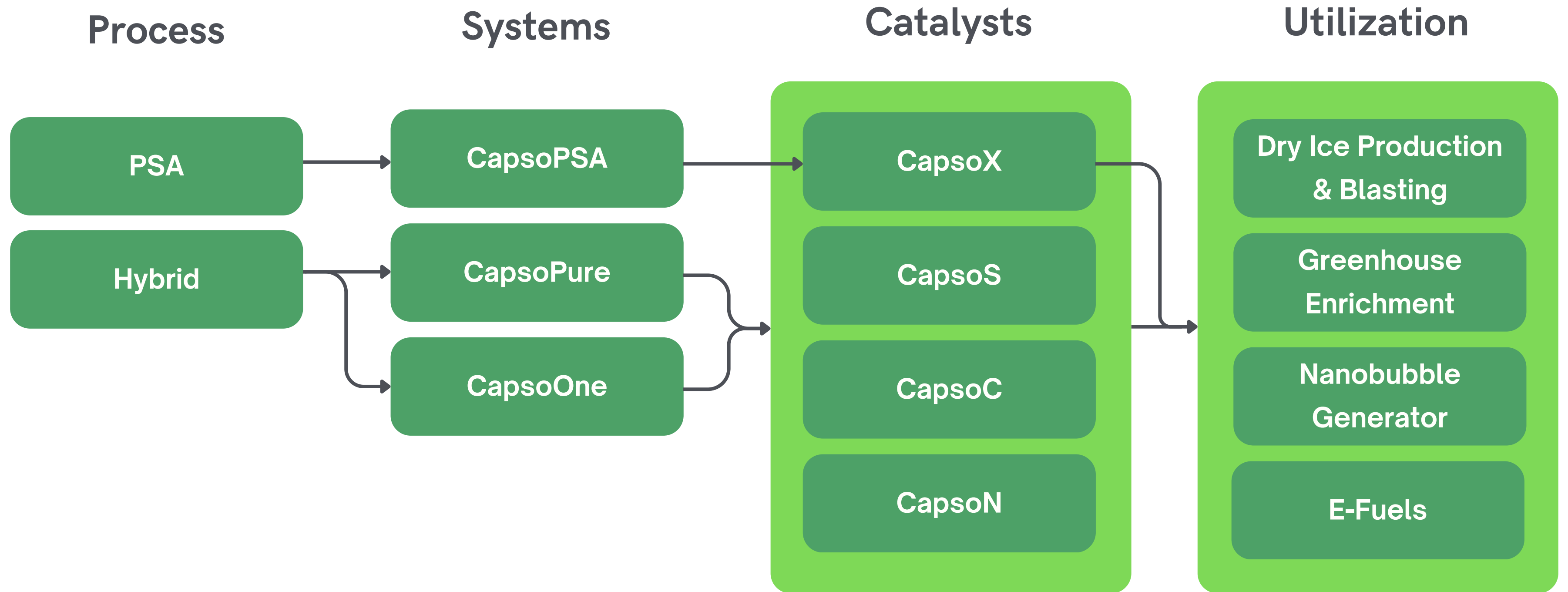


OUR TECHNOLOGY

Version 1.2



Our Technology

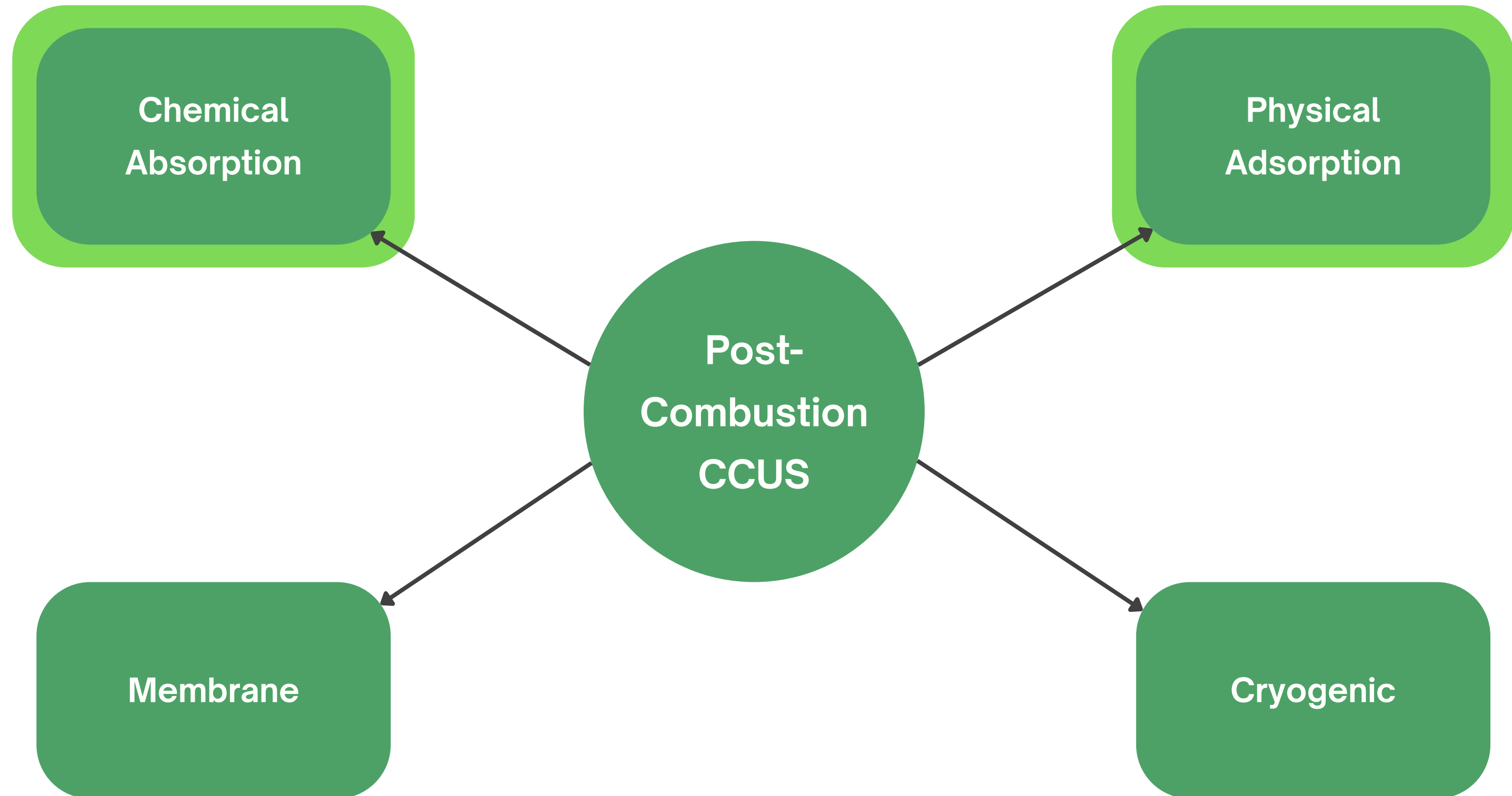


OUR PROCESS

Version 1.2



I Types of Post-Combustion Carbon Capture



Our Process

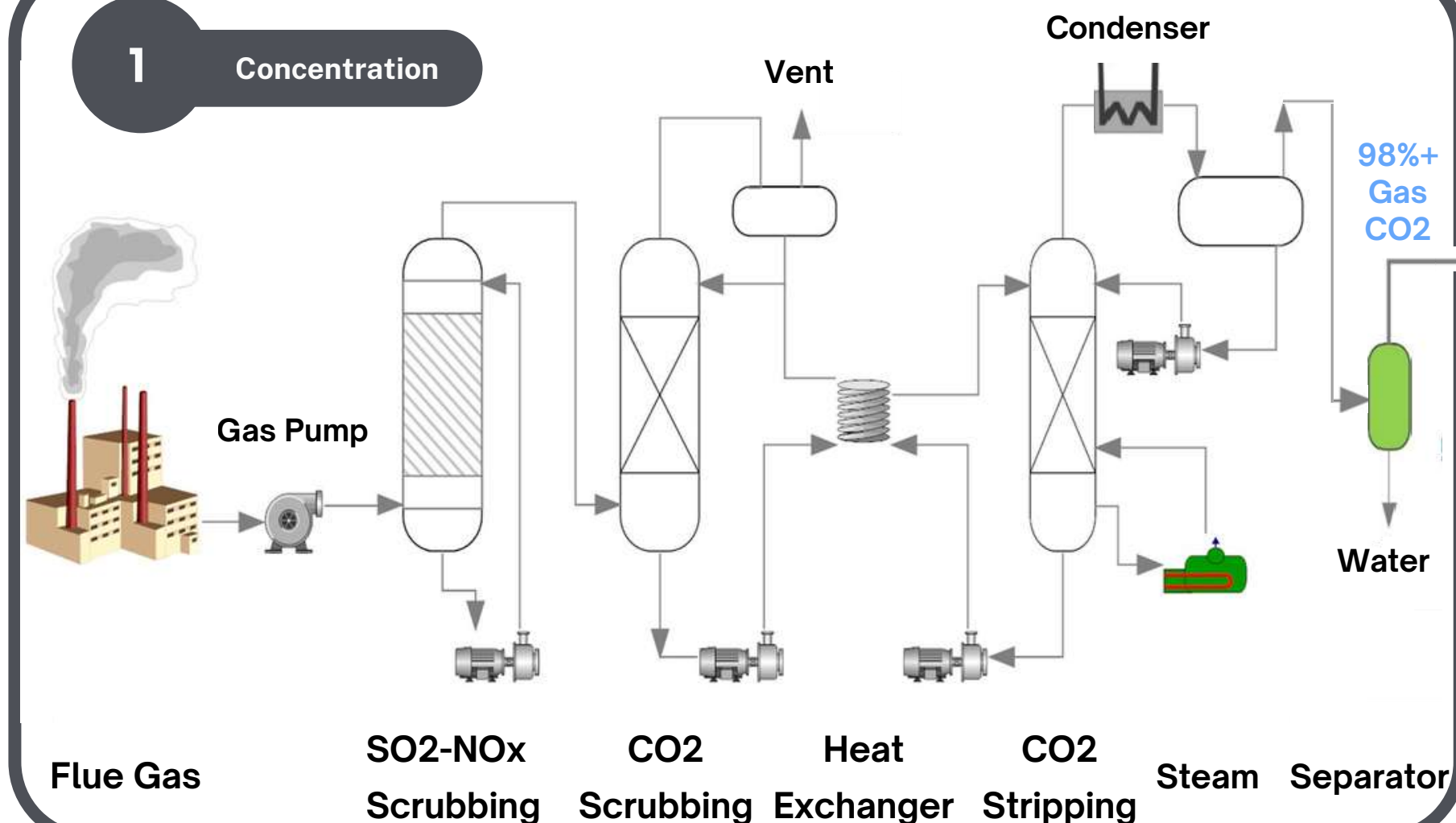
- ✓ **Capture Efficiency**
Up to 58.3% more efficient
- ✓ **CAPEX**
Up to 45% Lower CAPEX
- ✓ **OPEX**
Up to 35% Lower OPEX
- ✓ **Energy Consumption**
Up to 62% energy savings
- ✓ **Solvent & Sorbent**
Low Catalyst Make-Up
- ✓ **Modular & Flexible**
Compact, skid-mounted, low-visibility design

Details	Amine	Adsorption	Membrane	Cryogenic	Capso
CO ₂ Inlet Concentration	3% – 20%	10% – 50%	10% – 30%	40%+	<1% – 60%+
CO ₂ Capture Efficiency	90%	90%	80%	90%	90% – 95%
CO ₂ Purity	99%	95%	60%	99.9%	>99.9999%
Energy Consumption	3.5+ GJ/ton CO ₂	2.3+ GJ/ton CO ₂	2.5+ GJ/ton CO ₂	5.5+ GJ/ton CO ₂	<2.1 GJ/ton CO ₂
Scale	1,000,000 tpy CO ₂	200,000 tpy CO ₂	55,000 tpy CO ₂	110,000 tpy CO ₂	1,000,000+ tpy CO ₂
Technology Readiness Level (TRL)	8 – 9	8	6	7	9

Our Process

1

Concentration



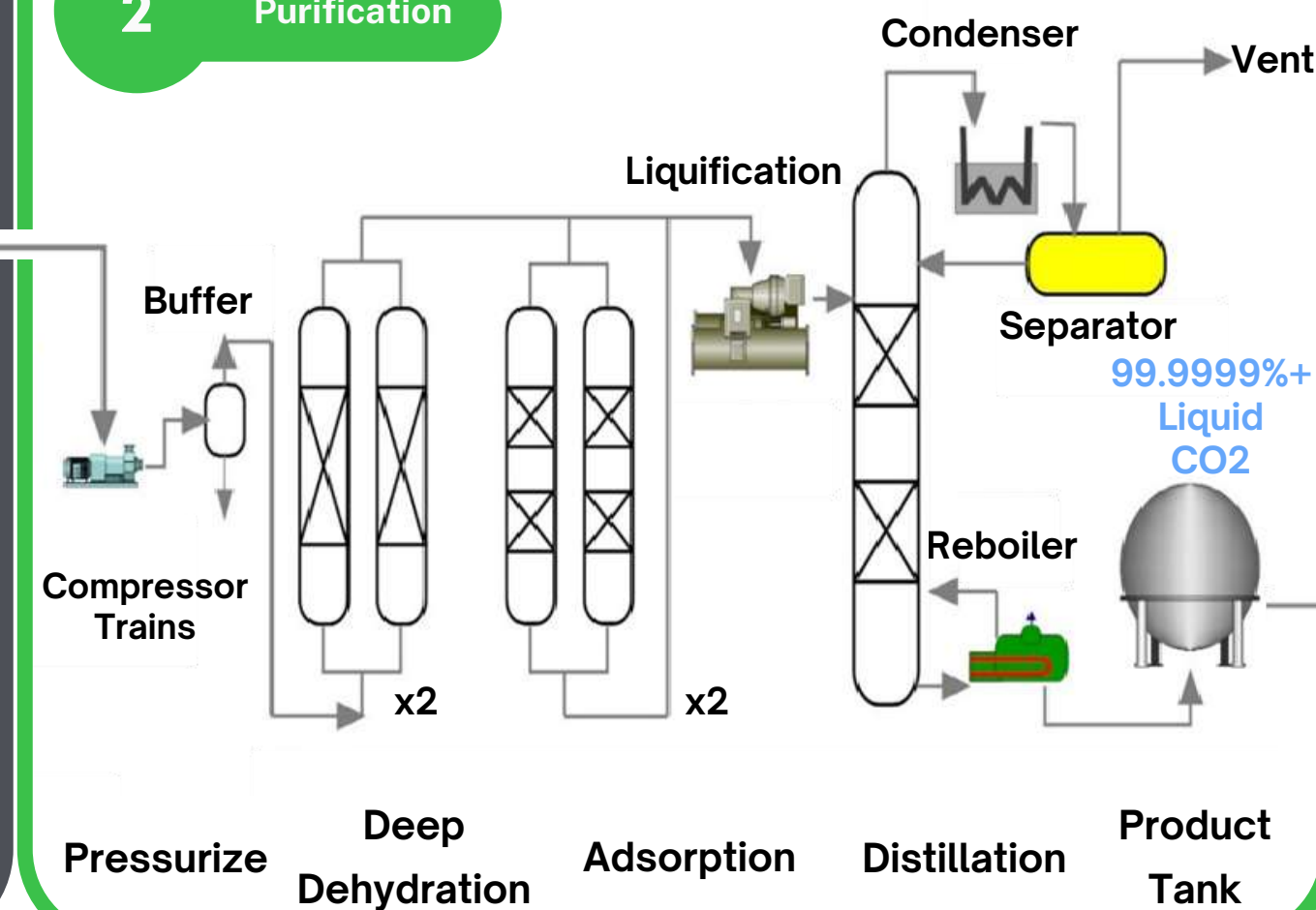
>98% CO₂ (g)

CapsoS™

CapsoC™

2

Purification

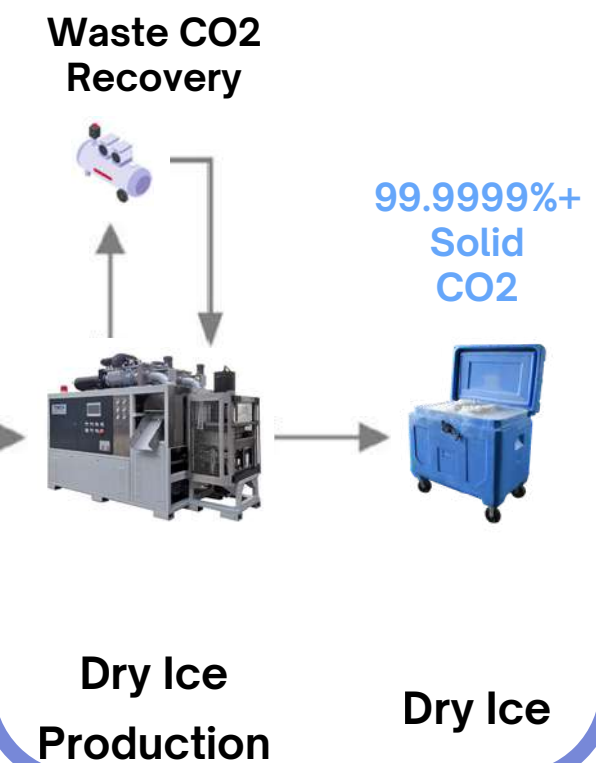


>99.9999% CO₂(l)

CapsoX™

3

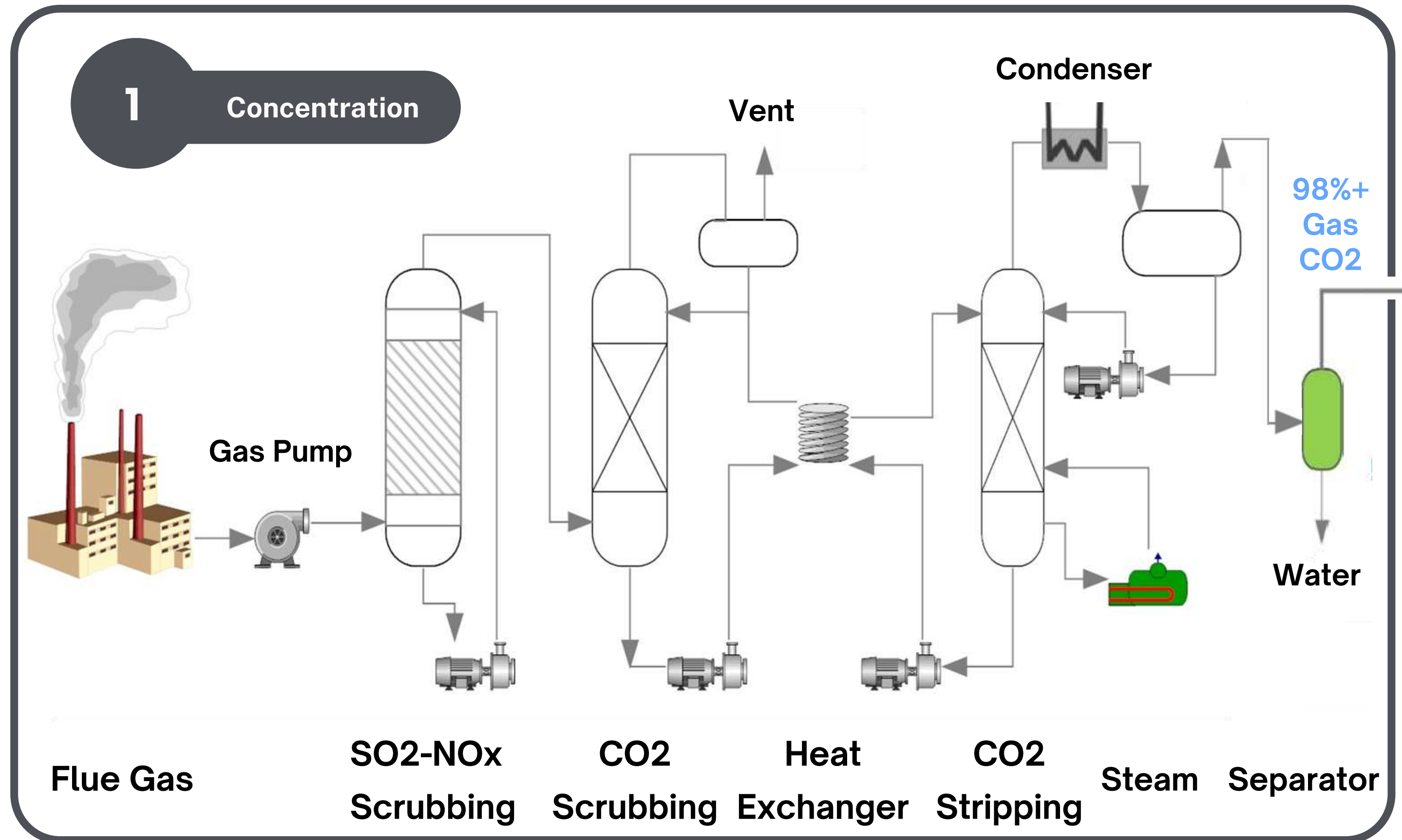
Utilization



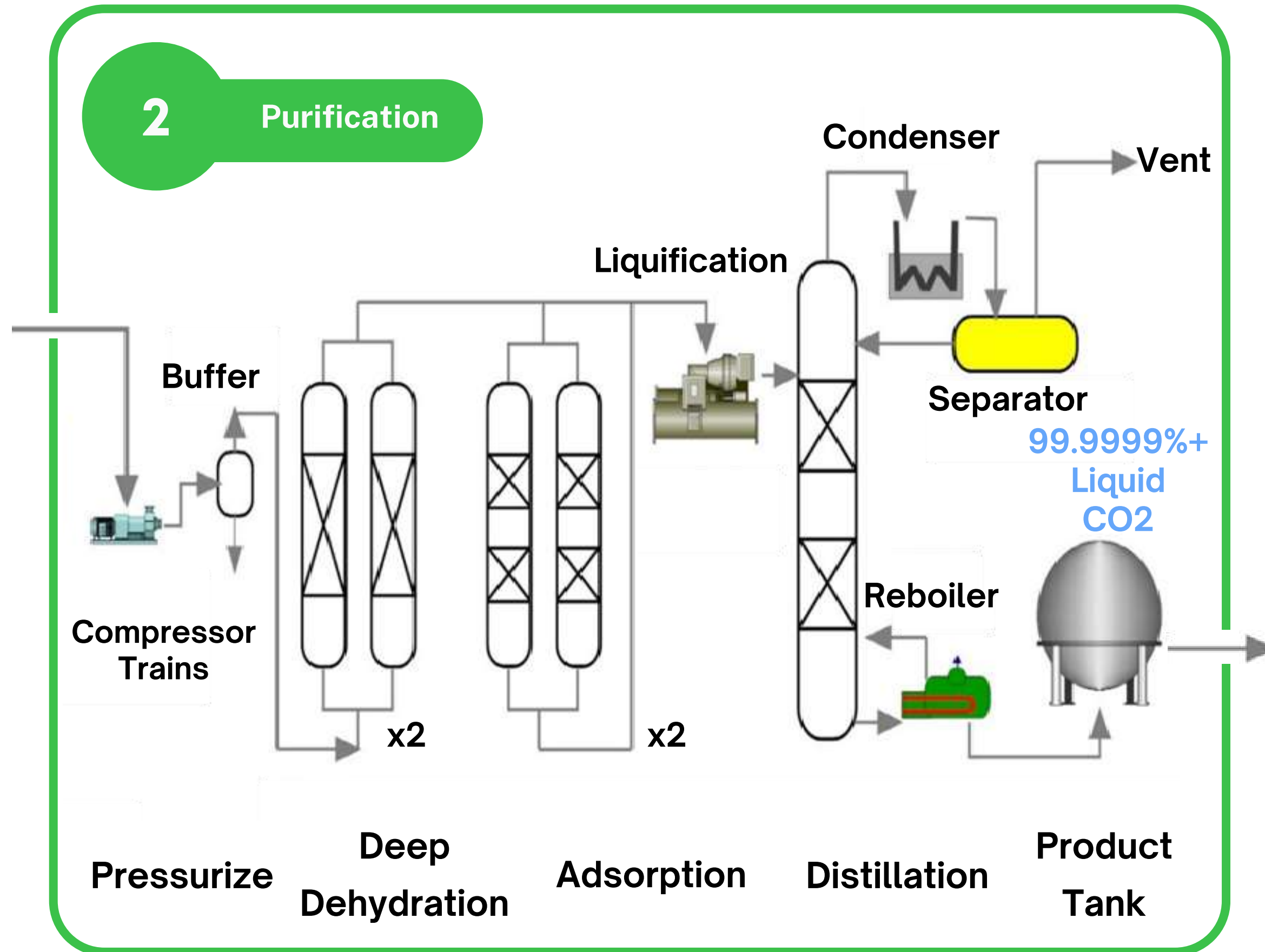
>99.9999% CO₂(s)

Capso Dry Ice
CapsoRe™

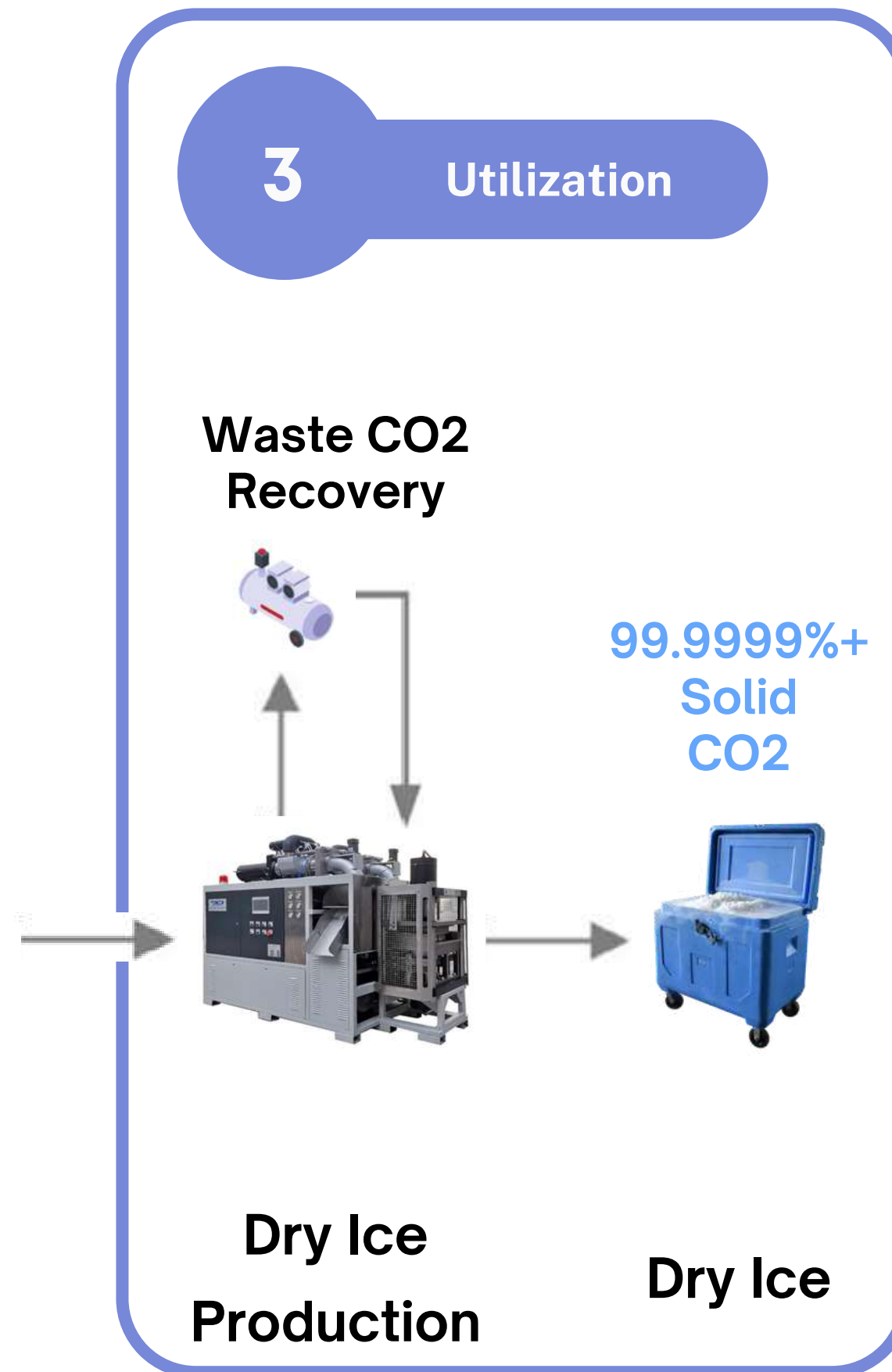
Our Process - Concentration



Our Process - Purification



Our Process - Utilization



OUR SYSTEMS

Version 1.2





Our Systems

	CapsoPure™ 	CapsoOne™ 	CapsoPSA™* 
Inlet CO2 Flue Gas Concentration	5% to 30%	1% to 40%	20% to 80%
Project Size	>1,000,000 tpy CO2	<150,000 tpy CO2	<100,000 tpy CO2
Capture Efficiency	90%	95%	90%
CO2 Purity	99.9999%	99.9999%	99.9999%
TRL	9	7-8	8-9



Our Systems - CapsoPure™

- ✓ Most Mature TRL9 Technology
- ✓ Scale to 1,000,000 tpy CO2 or More
- ✓ Lowest Cost per Ton at Large Scale
- ✓ Static Equipment & Low Mechanical Failure
- ✓ Very High Operator Familiarity
- ✓ Best Continuous Operation Performance
- ✓ Strongest Bankability & Low-Risk Financing





Our Systems - CapsoOne™

- ✓ Supports Sub-5% Inlet CO₂ Concentration
- ✓ Up to 90% Less Area & 95% Less Height
- ✓ Up to 80% Faster Startup & Shutdown
- ✓ Up to 45% Lower CAPEX & 35% Lower OPEX
- ✓ Low Visual Impact & Easier Permitting
- ✓ Excellent for Space-Constrained Projects
- ✓ Flexible Modular Skid-Mounted Design



OUR CATALYSTS

Version 1.2





| Our Catalysts



OXIDATIVE

Oxygen (O_2)



THERMAL

Temperature



ACID GAS

Sulfur (SO_x)



Oxidatively stable under standard conditions



Thermally stable under standard conditions



SO_x pre-treatment prevents sulfur-induced degradation



Synergistic solvent-sorbent pairing maximizes efficiency

Our Catalysts - CapsoS™



Patented Technology

Solvent for SO₂ & NO_x chemical absorption



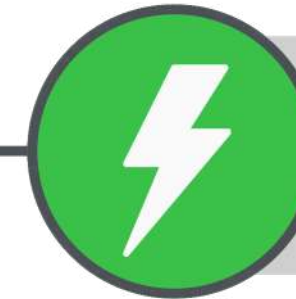
Dual Capture

Simultaneously captures SO₂ & NO_x on a ppm level



High Selectivity

No reactivity with CO₂



High Efficiency

95%+ SO₂ capture efficiency



Low Degradation & Volatility

Very minimal solvent make up



Our Catalysts - CapsoC™



Patented Technology

Solvent for CO₂ chemical absorption



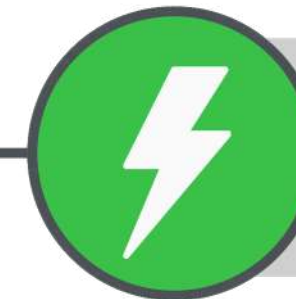
Efficient Regeneration

Regenerates at 85-96°C with fast desorption rate



High Selectivity

No reaction with oxygen and other compounds



High Efficiency

Captures <15% low purity CO₂ with 90%+ efficiency



Low Degradation & Volatility

Less than 0.2kg solvent is consumed per ton of CO₂



CapsoC v1



CapsoC v2

Our Catalysts - CapsoC™

	CapsoC™	PZAMP	PZMDEA	MEA
OXYGEN REACTIVITY	NONE	YES	YES	YES
SOLVENT LOSS	≤ 0.2 kg/tCO ₂	0.45 kg/tCO ₂	1 kg/tCO ₂	3–4 kg/tCO ₂
ABSORPTION RATE	≥ 0.0175 mol/min	0.012 mol/min	0.011 mol/min	0.01 mol/min
ABSORPTION CAPACITY	≥ 1 mol CO ₂ /mol CapsoC™	0.75 mol CO ₂ /mol PZAMP	0.7 mol CO ₂ /mol PZMDEA	0.6 mol CO ₂ /mol MEA
DESORPTION RATE	0.011 mol/min	0.008 mol/min	0.006 mol/min	0.005 mol/min
DESORPTION CAPACITY	90%+	80%	85%	60%
DESORPTION TEMPERATURE	83°C – 96°C	≥ 110°C	≥ 115°C	≥ 120°C
DESORPTION ENERGY CONSUMPTION	≤ 2.1 GJ/tCO ₂	2.5 GJ/tCO ₂	2.7 GJ/tCO ₂	3.5 GJ/tCO ₂

- ✓ **Solvent Loss**
Up to 95% less degradation
- ✓ **Absorption Rate**
Up to 250% faster absorption
- ✓ **Absorption Capacity**
Up to 233% higher capacity
- ✓ **Desorption Rate**
Up to 120% faster desorption
- ✓ **Desorption Capacity**
Up to 50% higher capacity
- ✓ **Desorption Temperature**
Up to 35% lower temperature
- ✓ **Energy Consumption**
Up to 40% lower consumption

Our Catalysts- CapsoX™



Patented Technology

20+ specialized sorbents for physical adsorption



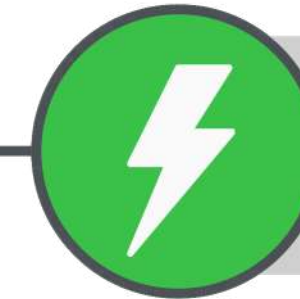
Flexible

Choose sorbents mix based on flue gas composition



High Selectivity

Each sorbent removes one compound at ppb level



High Efficiency

95%+ CO2 capture efficiency



Efficient Regeneration

Low regeneration temperature with no make up



Our Catalysts - CapsoN



Under Research & Development

Solvent for NO chemical absorption



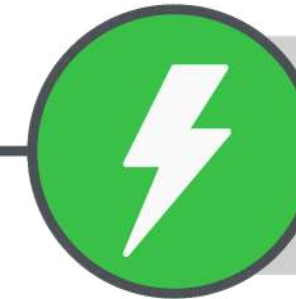
Efficient Regeneration

Can be recovered chemically or biologically



High Selectivity

Captures NO without reacting with other compounds



High Efficiency

Binds to NO quickly without needing oxidation



Low Degradation

Slow degradation from temperature & oxygen



THANK YOU

Capturing for Today, Solving for Tomorrow.

