

Cogen World Coalition Tech Talks: Quadgeneration and Carbon Capture Case Study: Liberty Coca Cola CO₂ Recovery

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3. Case study: Liberty Coca Cola, New York



Carbon
Utilisation



Introduction



Global

Operating in 27 countries with 8GW of power generation solutions deployed globally.



Supporting net-zero

Our projects support the transition to a net-zero carbon economy



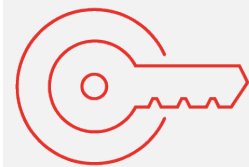
Resilience

Installations supporting local and grid-level resilience



Lower costs & carbon

Reduced operational costs and carbon emissions through fuel efficient power



Turnkey EPC

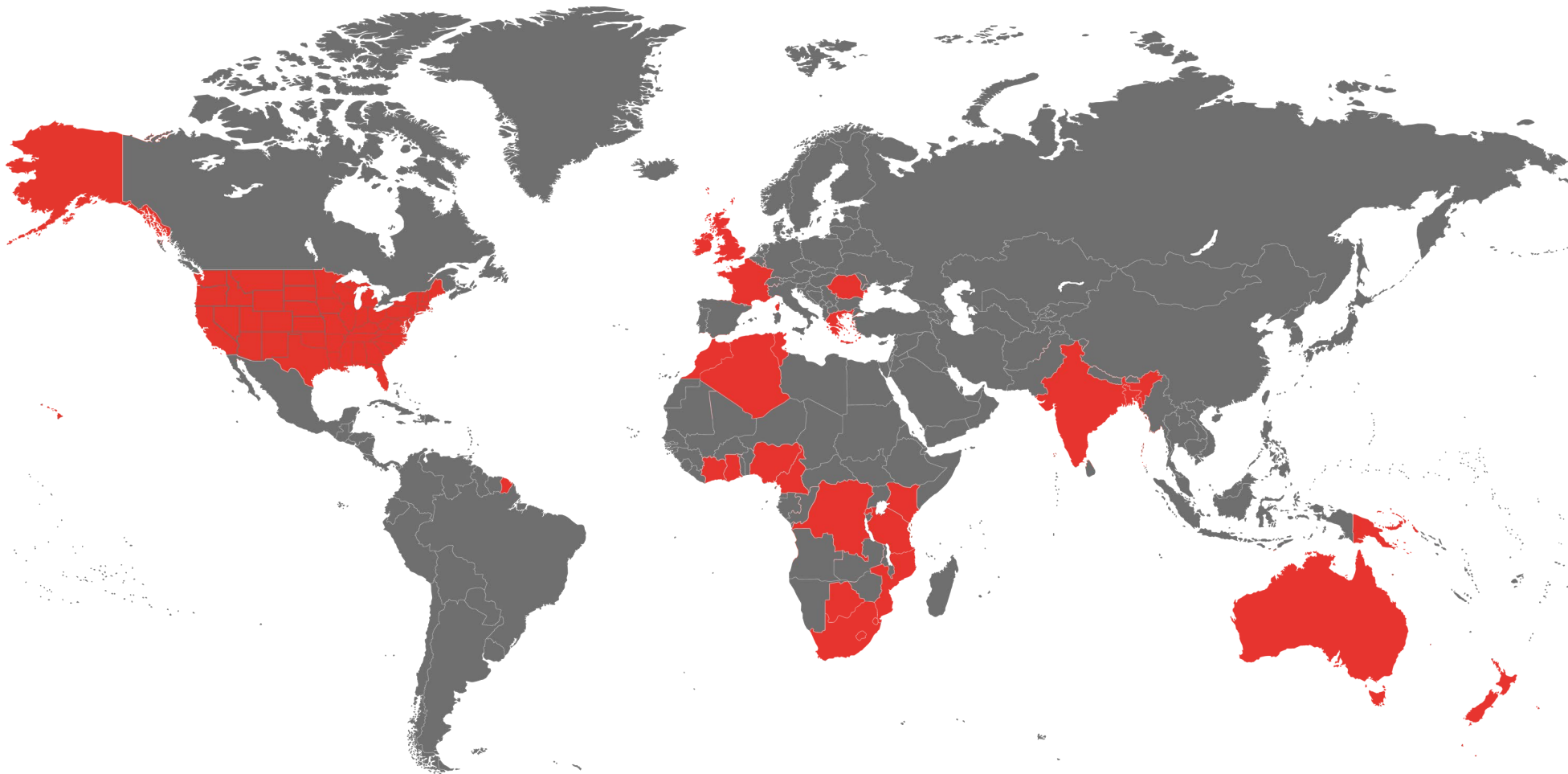
Single point of contact with, turnkey design, engineering, procurement and construction (EPC) services.



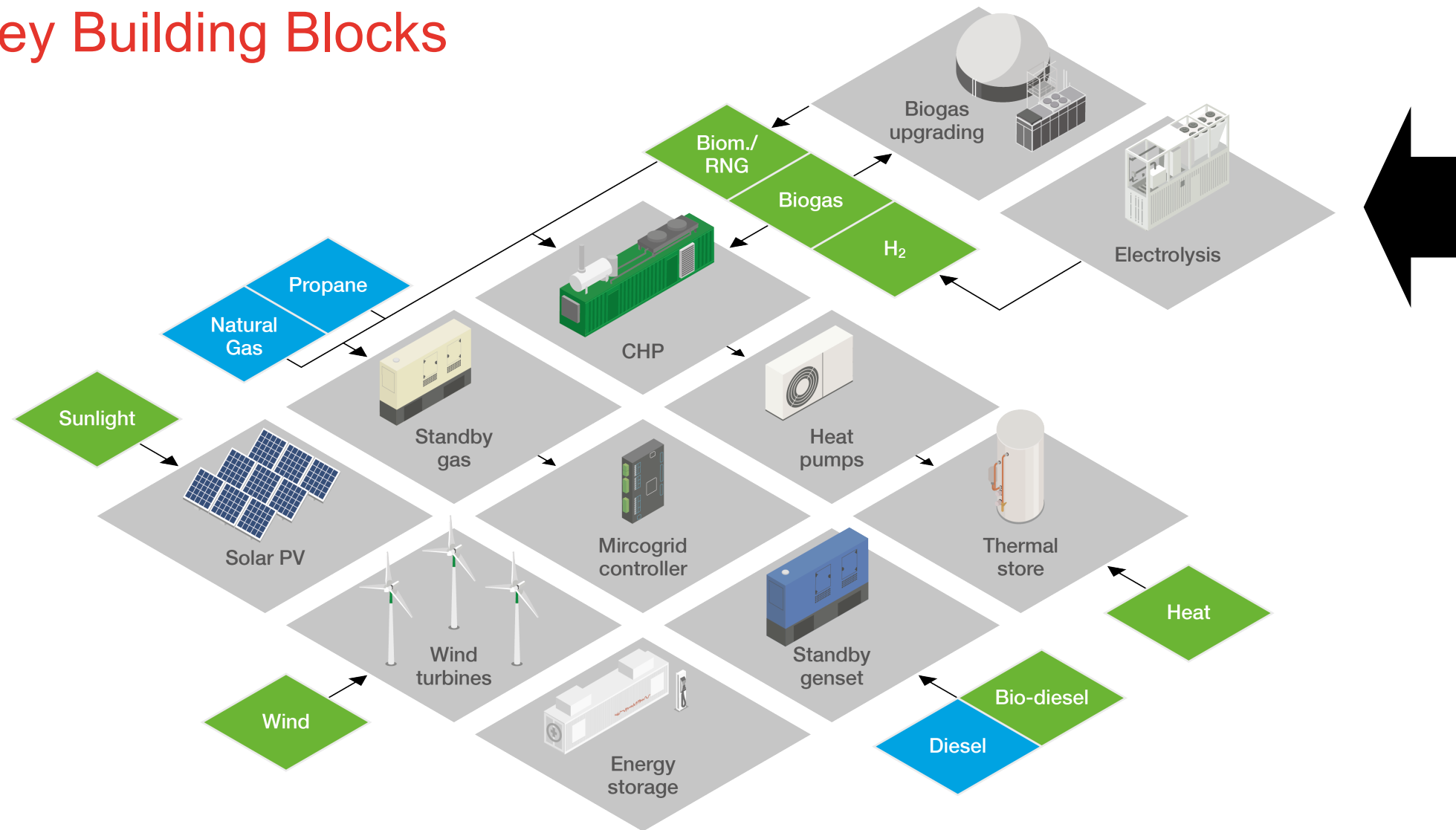
Maintenance

Full maintenance, operation and overhaul services maximising equipment run hours.

Global Reach, Local Focus



Key Building Blocks



Carbon Dioxide Capture and Conversion



Recovery and clean up of carbon dioxide from engine exhausts and separated biogas

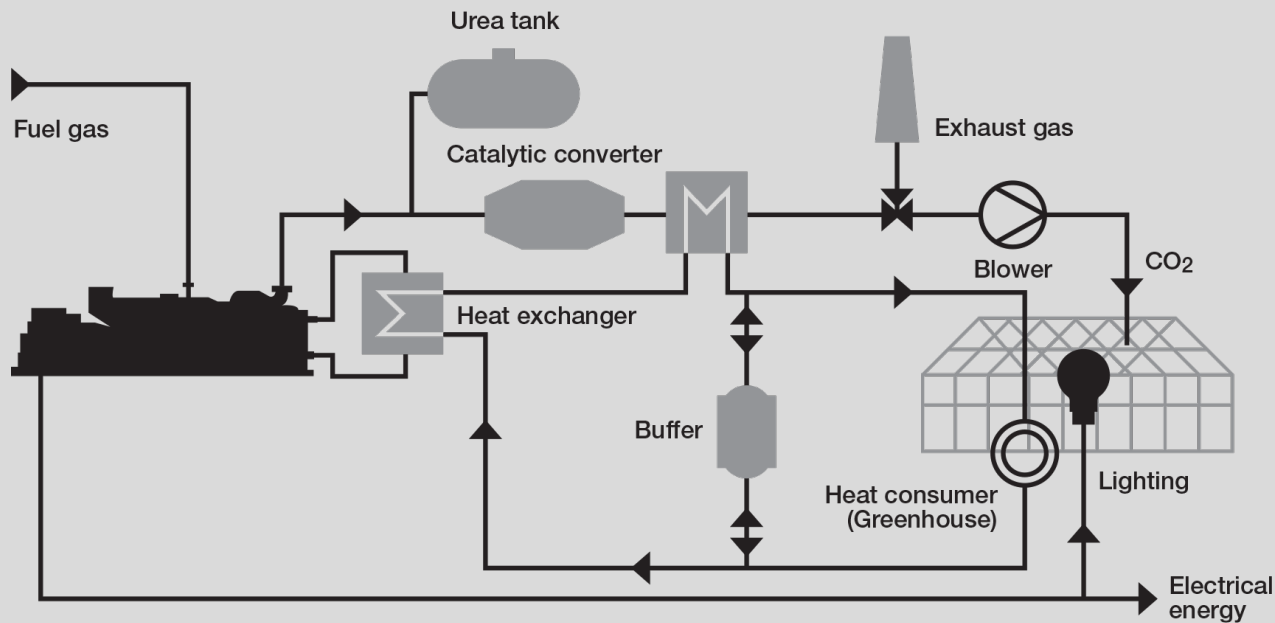


Carbon Utilisation



Supporting Net-Zero

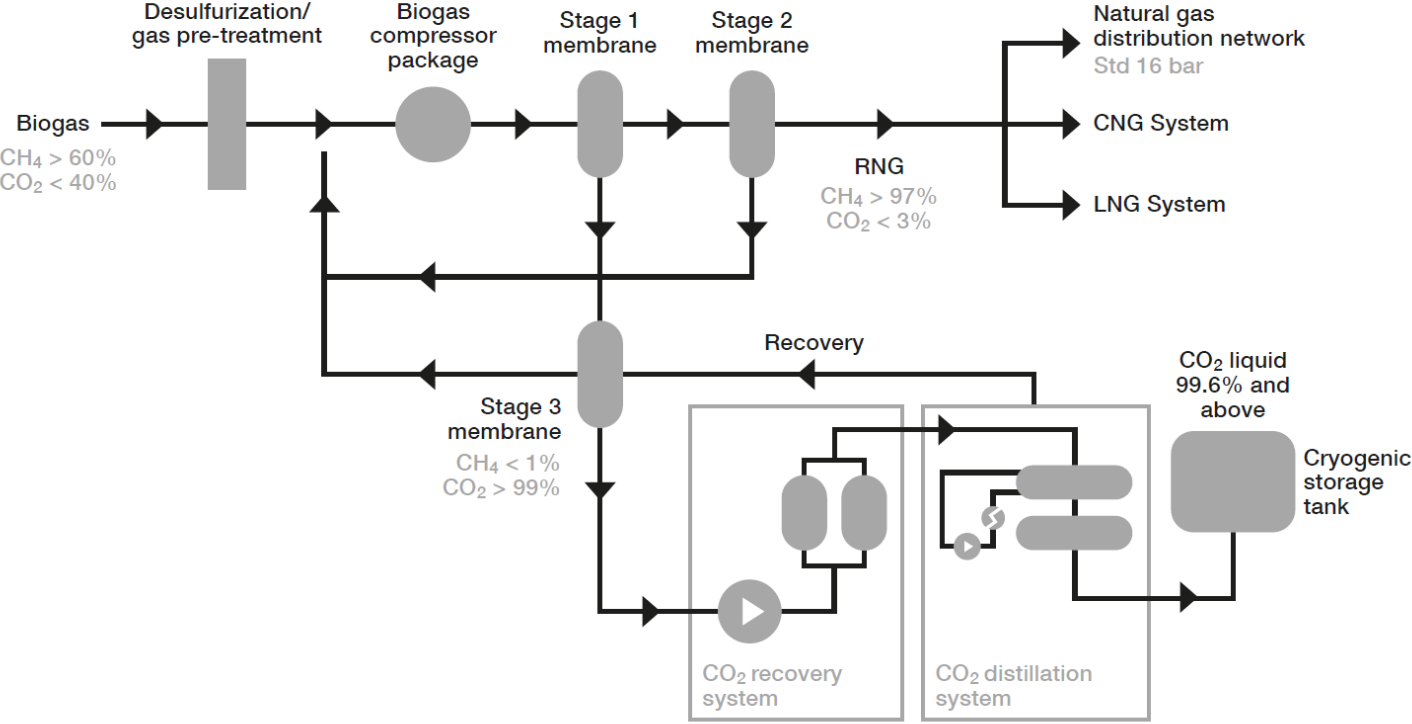
Combined Heat and Power with CO₂ Air Enrichment for Greenhouses (SCR)



Energy efficient
heating and
electricity for
greenhouses +
CO₂



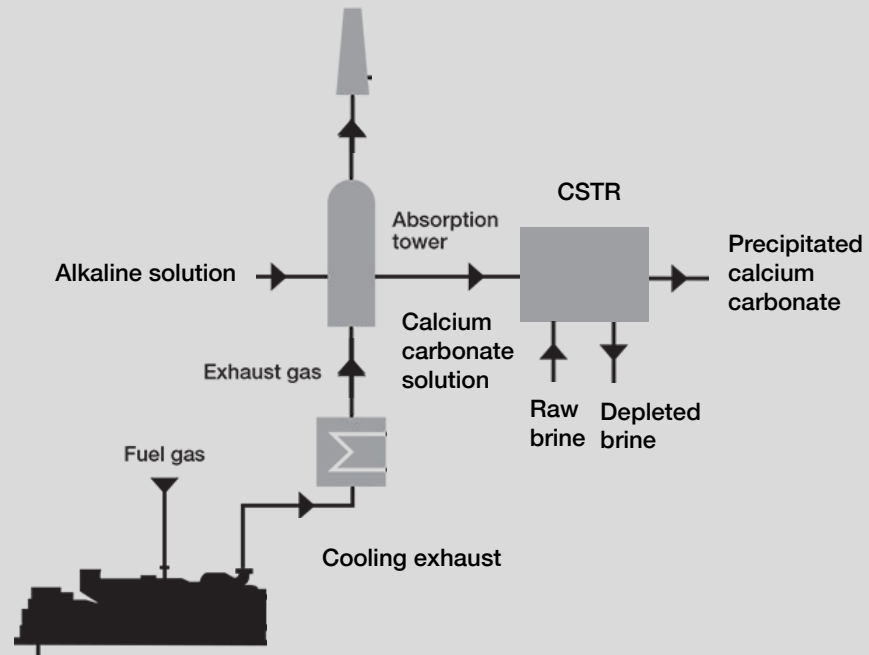
Biogas Upgrading with CO₂ Recovery Flow Chart



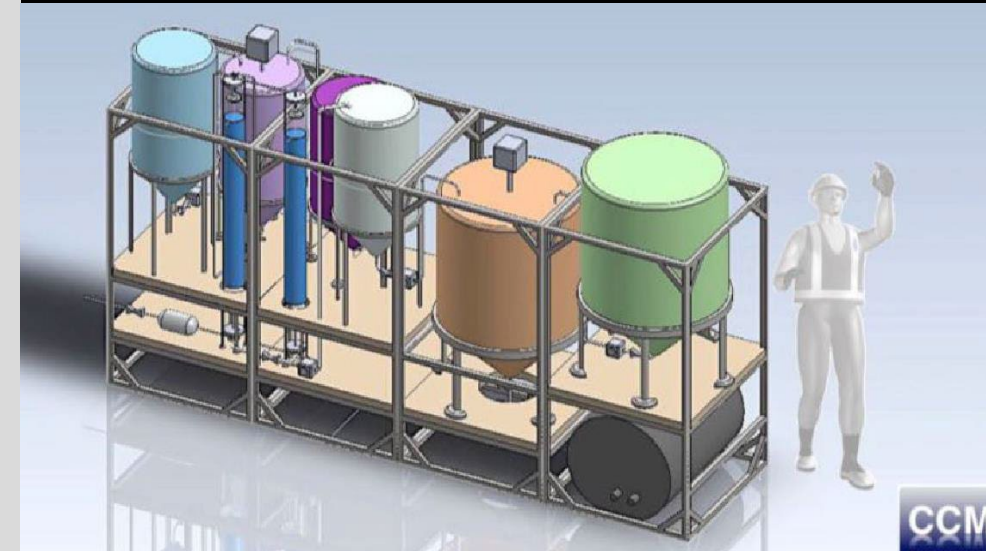
Pre-combustion
CO₂ recovery



Advanced Mineralisation [Proof of Concept]

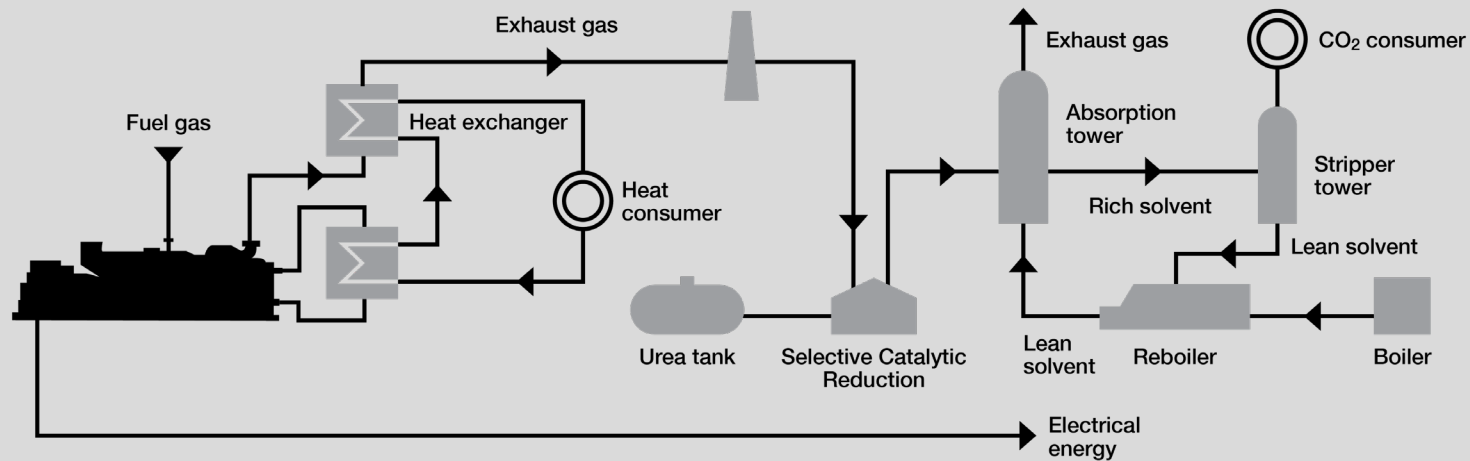


High grade
calcium carbonate



Combined cooling, heat, power and carbon dioxide recovery

Quadgeneration:
electricity, heat and
cooling and *CO₂ recovery*



What is Beverage Grade Quadgeneration?

1. Built using proven amine-based technology
2. Able to recover high purity CO₂
3. Able to recover gas with CO₂ sources >3%
4. Low footprint
5. Independent CO₂ plant
6. Onsite production
7. Reduced carbon dioxide emissions



Advantages of Amine Technology

1. High CO₂ reaction rate
2. Tolerant of high oxygen content (15%)
3. Lower circulation rates
4. Lower energy demand for regeneration
5. Low total energy demand
6. Useful by-product



Case Study: Liberty Coca Cola, New York



Recovery and clean up of carbon dioxide from
engine exhausts and separated biogas



**Carbon
Utilisation**



**Supporting
Net-Zero**



Site Location, Elmsford, New York, United States

2 x INNIO Jenbacher CHP engines

Scrubber tower

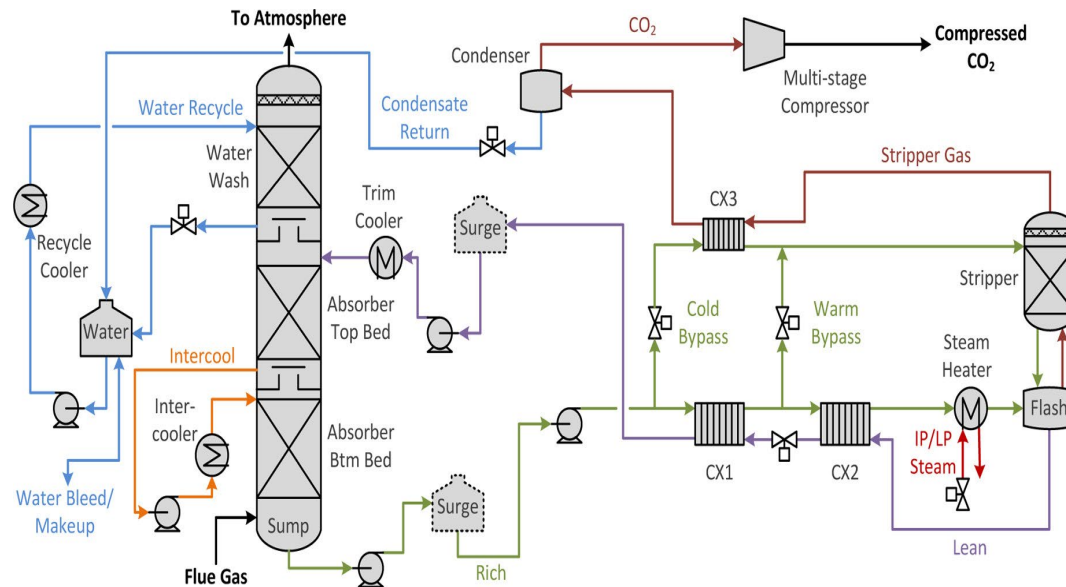
Stripper tower

Carbon dioxide storage tanks



Process Summary

1. Selective catalytic reduction (De-NO_x)
2. Exhaust feeds into top of CO₂ scrubbing tower
3. Scrubber contains amine and sodium hydroxide, using gravity filters through and is washed
4. Second stage scrubber gives a second wash
5. Solution passes through stripper tower, amine heated to release CO₂.
6. Activated carbon cleaning
7. Cleaned CO₂ is polished then sent to the storage tank



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Engineer - Install - Maintain



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