CRYOGENIC CARBON CAPTURE™ (CCC) TECHNOLOGY

CHART
Cooler By Design®

EAGLE MATERIALS
CENTRAL PLAINS CEMENT PLANT

Sugar Creek, Missouri

Project Benefits

"Engineering-scale testing of carbon capture technologies under continuous long-term operation with actual flue gas at an industrial facility will support the United States in achieving a carbon pollution-free power sector by 2035 and a net-zero carbon pollution economy by 2050 while promoting creation of jobs located in power plant or industrial communities."

-NETL/DOE

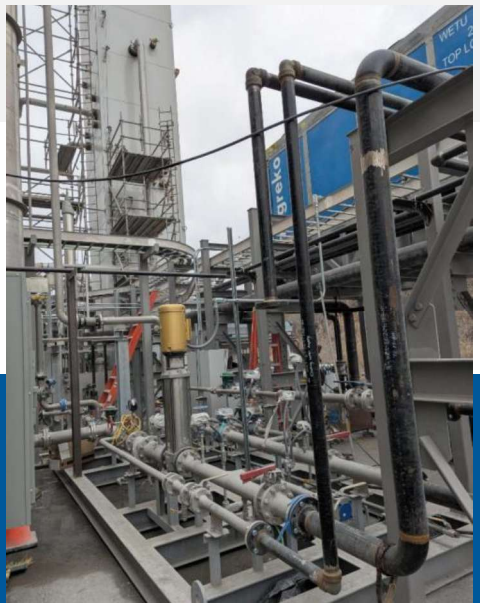
AT A GLANCE

Overview

- Modular 30 TPD Cryogenic Carbon Capture™ (CCC) demonstration plant
- Installed at Central Plains – Sugar Creek, MO in 2026

Installation

- Skid-built modular system enables rapid on-side assembly
- Minimal site disruption during installation
- Designed for easy demobilization and redeployment to future sites
- System integrates with existing flue gas handling infrastructure



Cold box and Brazed Aluminum Heat Exchanger (BAHX) integration

SUGAR CREEK CCC PLANT

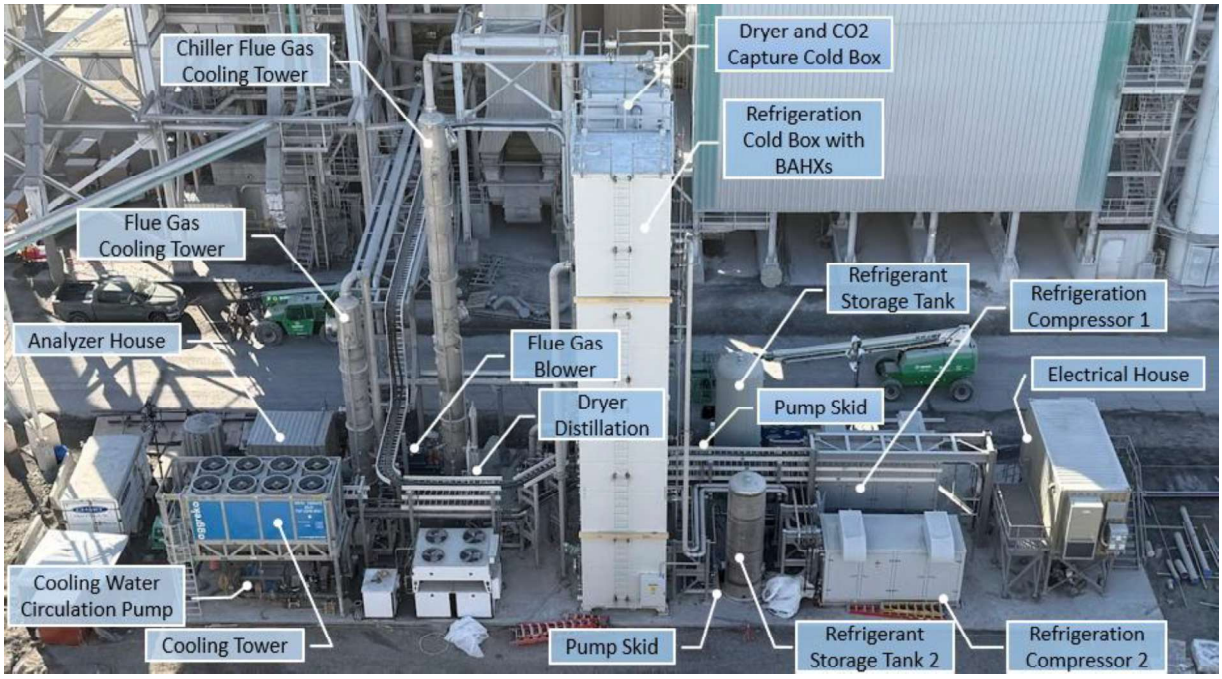
Sugar creek is home to a Central Plains Cement plant operated by Eagle Materials, a leading producer of cementitious materials that support essential infrastructure across the United States. Cement is critical to modern construction and economic development, and its production is inherently carbon intensive, accounting for the approximately 2.8 billion tons of CO_2 emissions globally each year and offering a few viable low-carbon alternatives. To address this challenge, Eagle Materials partnered with Chart Industries to deploy Chart's Cryogenic Carbon Capture™ (CCC) technology at the Sugar Creek facility. This demonstration project reflects a forward-looking approach to industrial decarbonization, a scalable and lower-cost method for capturing CO_2 generating performance insights to support future commercial deployment across all hard-to-abate industries.

RESULTS

- Demonstration of cryogenic CO_2 capture in real-world environment
- Monitoring of key performance indicators including:
  - Energy efficiency
  - CO_2 capture rate
- Supports industry-wide decarbonization efforts where alternatives are limited

CRYOGENIC CARBON CAPTURE™ (CCC) TECHNOLOGY

Cryogenic Carbon Capture™ (CCC) incorporates the same liquefaction products and technology that are proven in the facilities exporting North American LNG: cold boxes, brazed aluminum heat exchangers, modular air cooling, and cryogenic liquid gas storage and transportation.



CCC Technology is Ideal for Hard-To-Abate Industries

- Cryogenic Carbon Capture technology is amine free
- Cryogenic thermal separation – no solids produced and no mechanical separation required
- CO_2 capture efficiencies from 90 to 99%
- Captured liquid CO_2 purity > 99.99%
- Suitable for new plant builds and easy retrofit
- Minimal flue gas pre-treatment
- All electric, no steam needed
- Robust system design includes mature, industry standard equipment
- Utilizes efficient liquid CO_2 pumps vs. expensive CO_2 compressors

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