



# PATH TO CARBON NEUTRALITY



# Carbon Management

## Carbon Neutral By 2050

In October 2021, Continental Cement announced it was signing on to the Portland Cement Association's (PCA) Roadmap to Carbon Neutrality, with a goal of achieving carbon neutrality across the value chain by 2050.

Continental Cement and its subsidiary, Green America Recycling, are part of the Summit Materials' family of companies. Continental Cement owns and operates two cement manufacturing facilities, located in Hannibal, Missouri and Davenport, Iowa, and nine distribution terminals along the Mississippi River corridor.

Continental Cement is committed to providing customers with a quality cement product while also addressing climate change to create sustainable building solutions.



## Path to Carbon Neutrality

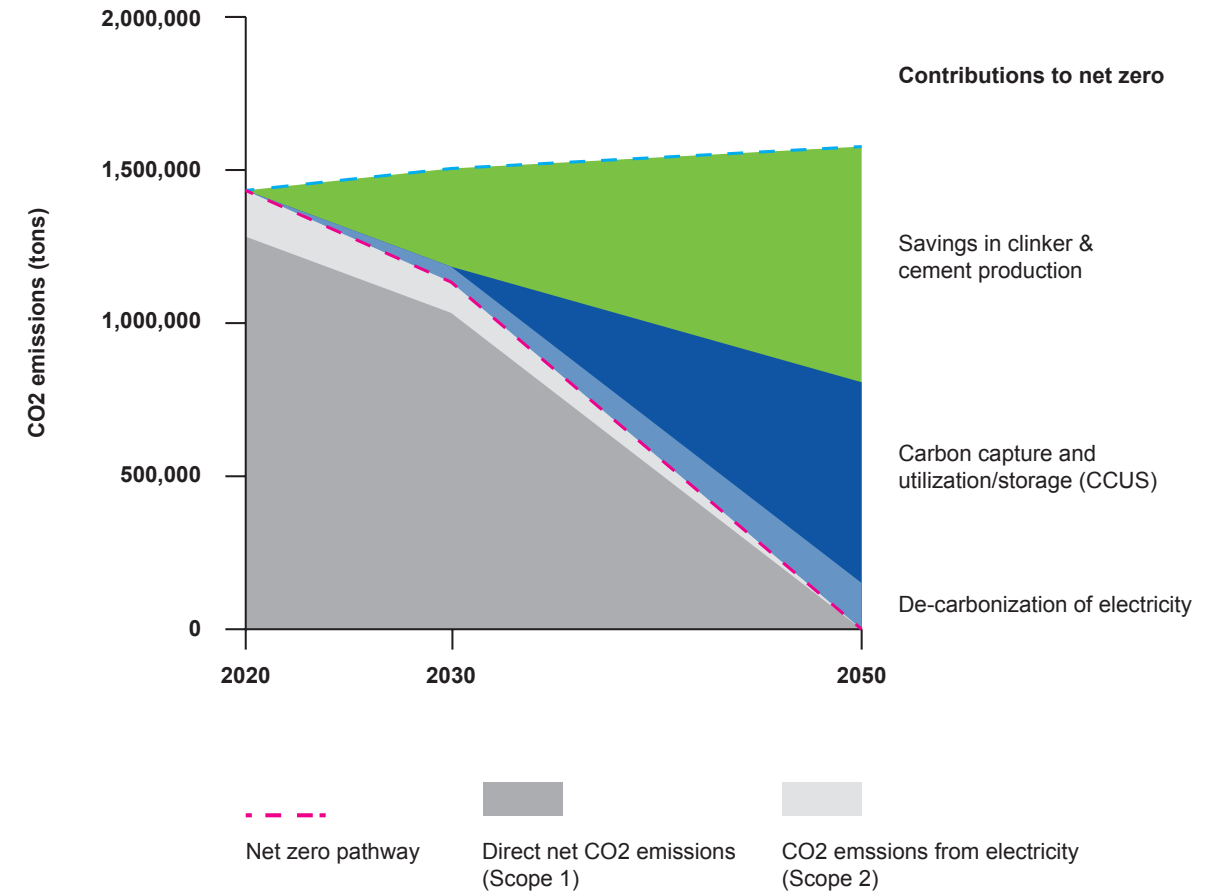
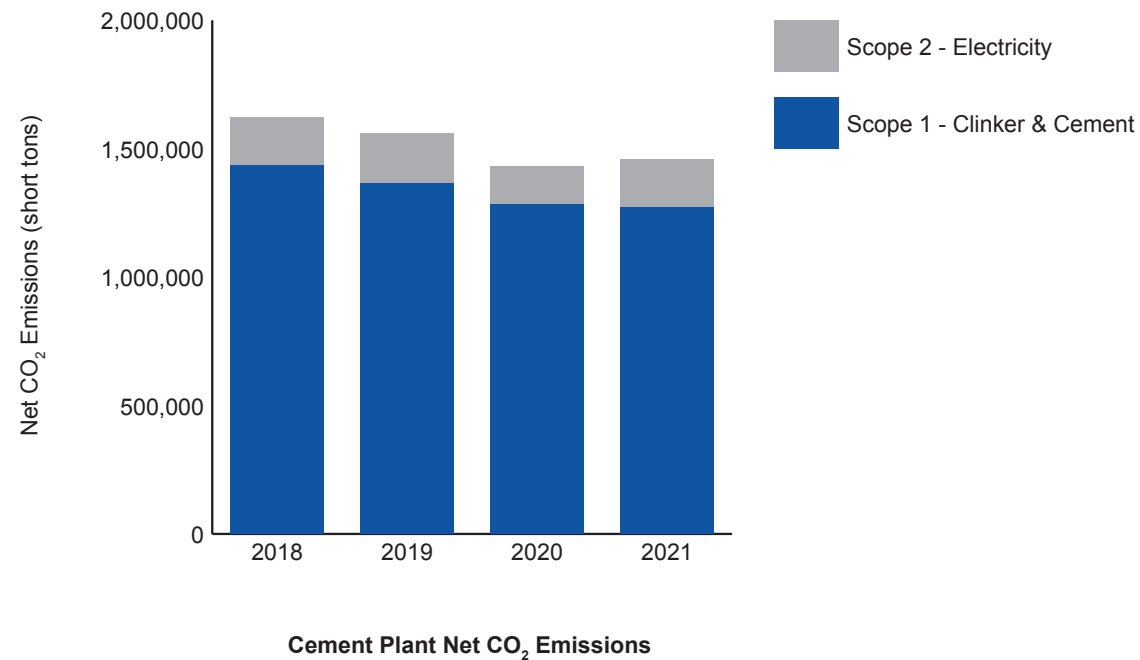


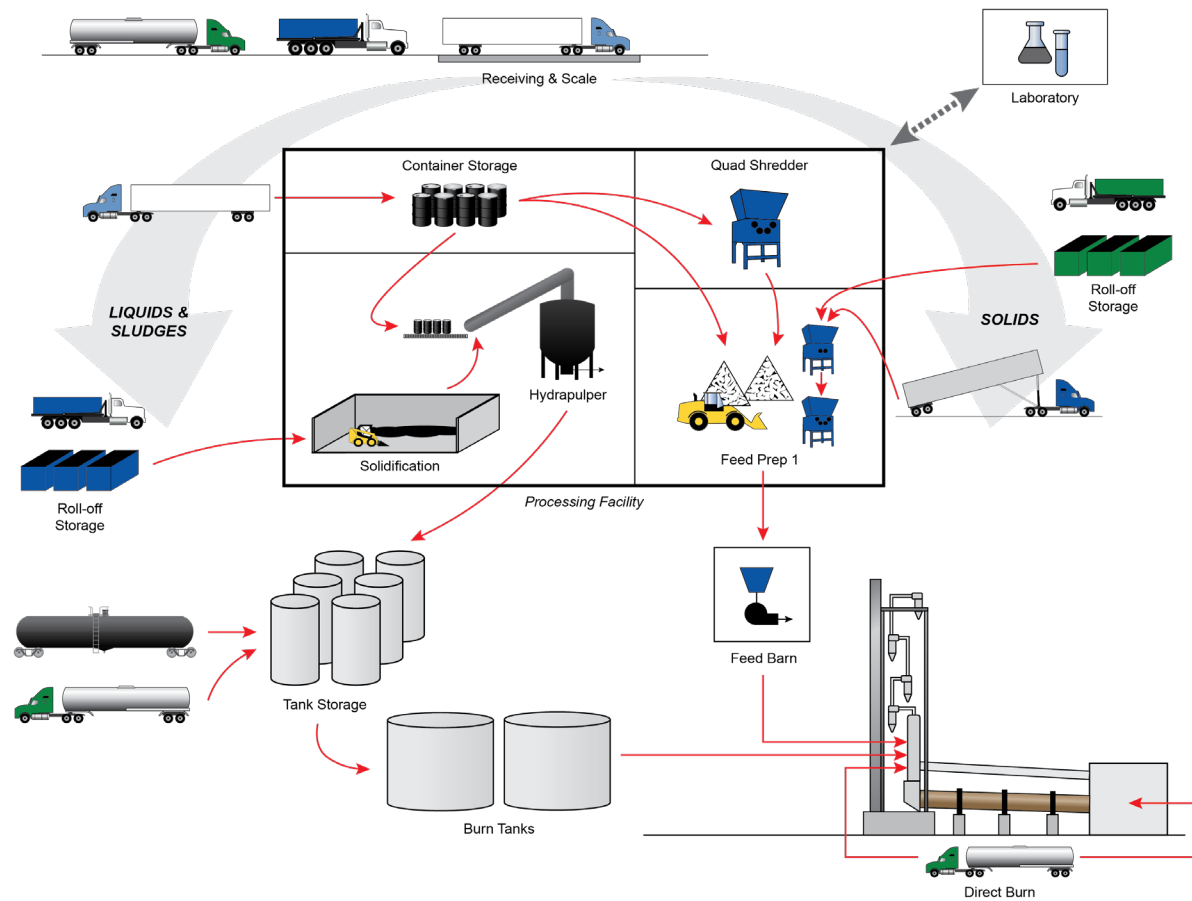
Chart is based on the Portland Cement Association's Roadmap to Carbon Neutrality. The increase in total CO<sub>2</sub> emissions shown allows for up to a 10% increase in production at the cement plants.



### SCOPE 1 EMISSIONS KG CO<sub>2</sub> PER MT CEMENTITIOUS MATERIAL



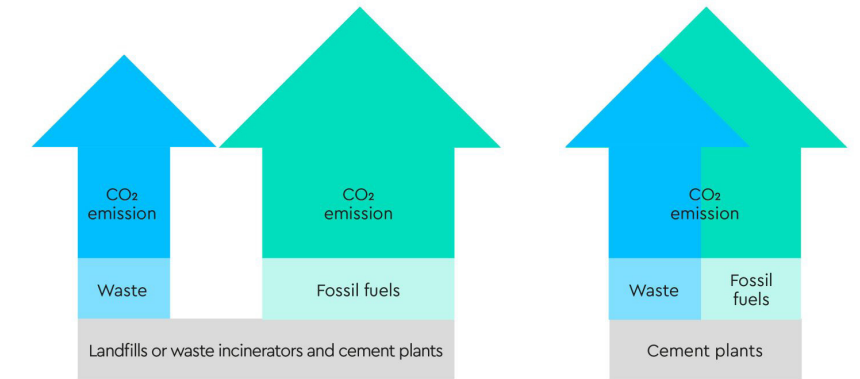
## GREEN AMERICA RECYCLING FLOW DIAGRAM



# Savings in Clinker & Cement Production

## Alternative Fuels

Green America Recycling has been sustainably using alternative fuels in the cement manufacturing process for over 30 years. Green America Recycling accepts a wide variety of waste materials ranging from pumpable and non-pumpable liquids to containerized and bulk solids. The materials are thoroughly tested and then processed and blended into a quality fuel that burns cleaner than the coal it replaces. Beneficially reusing waste as an alternative fuel avoids greenhouse gas emissions at landfills and incinerators.



Source: Global Cement and Concrete Association

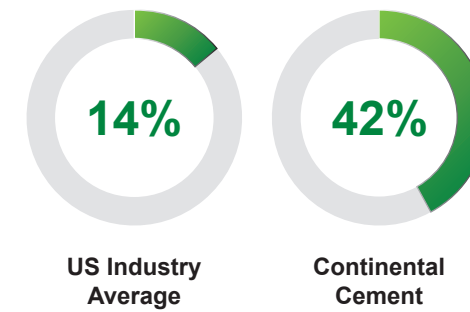
**136,236 short tons (ST)**

Alternative Fuels Utilized in 2021

**284,829 ST**  
2021 Net CO<sub>2</sub> Savings from Alternative Fuels

**18.3%**  
Reduction in 2021 Net CO<sub>2</sub> Emissions from Alt. Fuels

## Kiln Fuel Replacement



According to the Portland Cement Association, cement manufacturers in the U.S. use about 14% alternative fuels in their fuel mix. In 2021, through efforts by Green America Recycling, Continental Cement utilized 42% alternative fuels.

2021 CO <sub>2</sub> SAVINGS EQUIVALENT TO
Removing 56,290 cars from the road
Powering 31,197 homes per year
Eliminating 602,176 barrels of oil burned

## WIND BLADES AS AN ALTERNATIVE FUEL/RAW MATERIAL

Not only does Continental Cement provide cement for the base of a wind blade tower, but through Green America Recycling, the end-of-life wind blades are circularly reused as raw material and fuel in the cement production process.



## Alternative Raw Materials

**358,830 ST**

**Alternative Raw Materials Utilized in Past 4 Years**

Continental Cement utilizes alternative raw materials that include silica, alumina, iron, and calcium to replace natural raw materials that are mined. Materials such as flyash, slag, and catalyst provide a circular economy solution to beneficially reuse these materials instead of landfilling each as a waste. Carbon emissions from mining and offsite disposal are also reduced through use of alternative raw materials in the cement process.



## Portland-Limestone Cement (PLC)



Use of limestone and binder materials when grinding clinker into the cement product provides a direct savings in CO<sub>2</sub> emissions.

PLC cement is a new product that is being utilized by the cement industry to reduce CO<sub>2</sub> emissions. PLC cement includes up to 15% limestone in the finished product. The quality of the cement product is closely controlled to ensure that all quality standards are met.

For each ton of material that replaces a ton of clinker, Continental Cement saves nearly one ton of CO<sub>2</sub> emissions.

**56,765 ST**

**Limestone Addition in 2021**

**39,874 ST**

**2021 CO<sub>2</sub> Savings from Added Limestone**

## De-Carbonization of Electricity

Cement plants require large amounts of electricity to grind raw materials and clinker in the manufacturing process. Obtaining renewable electricity from the power provider results in significant reductions in CO<sub>2</sub> emissions for society.

In 2021, MidAmerican Energy provided 86% of the power for the Davenport plant from renewable electricity. MidAmerican Energy is further investing in renewable energy, such as wind and solar generation, forecasting to provide 100% renewable energy in 2024.

**159,821 ST**

**CO<sub>2</sub> Saved in 2021 Through Renewable Electricity**

**86%**

**Electricity at Davenport Plant from Renewable Energy**

**100%**

**Renewable Electricity at Davenport Plant by 2024**



## Carbon Capture and Utilization/Storage

Continental Cement has an array of strategies moving forward to attain carbon neutrality by 2050. One of the key items to meet the goal will be implementation of a carbon capture and sequestration system.

Continental Cement is exploring emerging technologies, with the goal to ultimately show a clear path towards a true net zero by 2050. This exploration includes the evaluation of new technologies, such as carbon capture, sequestration, and fuel switching.



**Continental Cement - Corporate Office**

16401 Swingley Ridge Road, Suite 610  
Chesterfield, MO

**Continental Cement - Davenport Plant**

301 E Front St  
Buffalo, IA

Green America Recycling - Davenport  
(573) 327-2577

**Continental Cement - Hannibal Plant**

10107 State Highway 79  
Hannibal, MO

Green America Recycling - Hannibal  
(573) 248-0730

**Summit Materials - Corporate Office**

1550 Wynkoop, Third Floor  
Denver, CO

