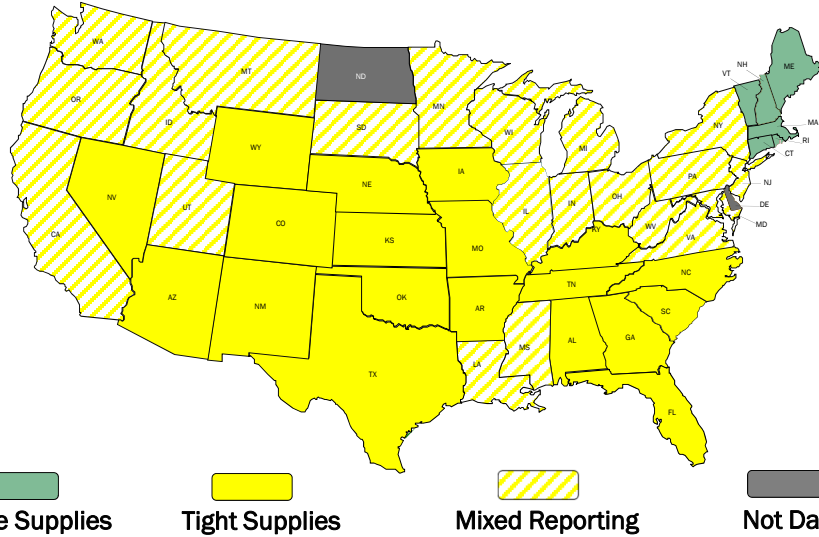






Spring 2023 Cement Supply Status

Supply Shortfall Based on Industry Survey



The Basics

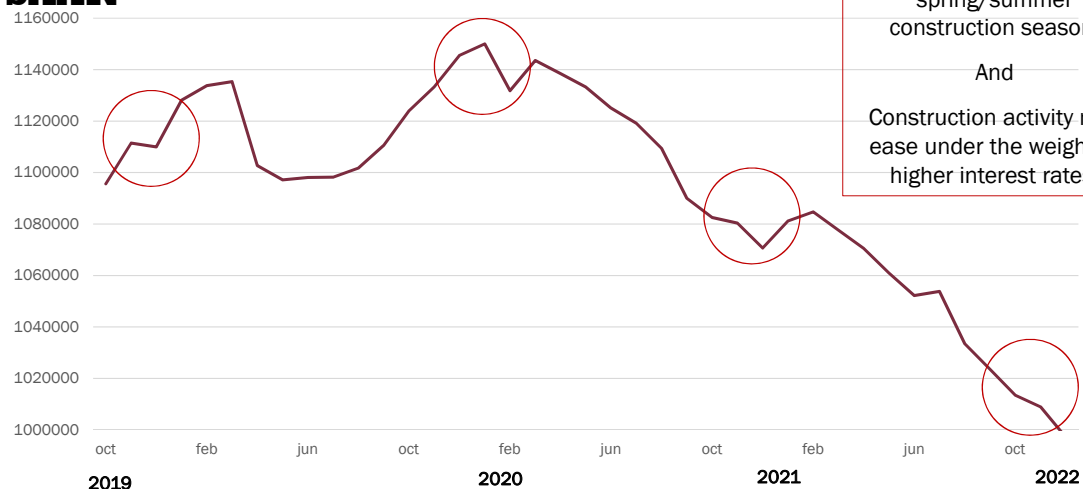
Where cement is in short supply, the reasons are typically fourfold:

- Strong cement demand
- Labor shortages
- Weather conditions that led to a disruption of production,
- Logistic hinderances

Demand & Weather: Inventory Impact

- Some cement companies build inventory during the winter months in preparation peak summer construction season.
- Favorable winter weather conditions translated into strong cement consumption during this period, hindering the ability to build inventories during the past two years.
- Harsh weather conditions this past winter hurt selling rates and may mean better inventory building going into construction season.

Harsh Winter: Selling Rates Slide SAAR

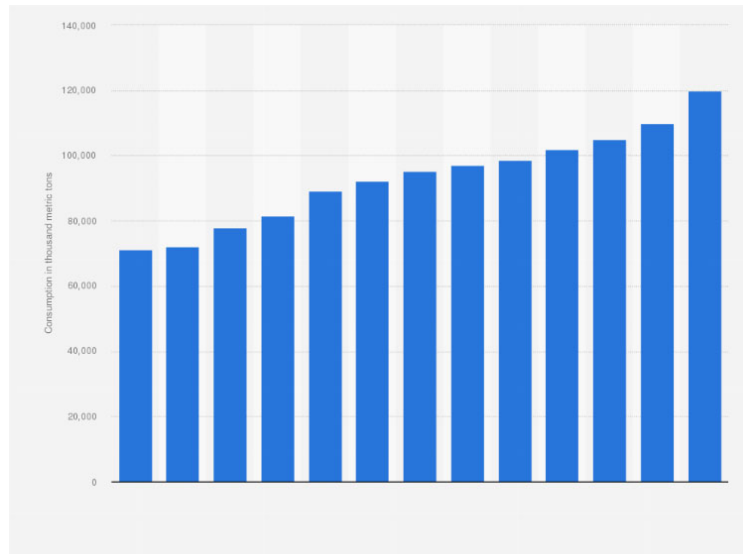


Slower selling rates better enable producers to build inventories needed for spring/summer construction season.

And

Construction activity may ease under the weight of higher interest rates.

Cement Consumption at highest level in 14 years



Other Concerns Remain

- Capacity utilization can force unexpected shutdowns
- Import supply picked up but flows can be disrupted
 - Turkey is largest cement exporter to US. Earthquake and domestic rebuilding may disrupt this flow to the US. While other import sources may be tapped, it may cause temporary import flow disruptions.
- The harsh weather that swept across the United States, reduced the flow of railcars. In many areas railcar availability slowed the delivery of cement.
- Port congestion has improved but remains a source of shipment delays.
- The delivery of cement to the end consumer is heavily reliant on trucks and their drivers. Drivers are in short supply. This results in a slowing in cement deliveries - nearly all of the movement from terminal to final customer moves via truck.

Our Ability to Feed Biden's Infrastructure

PCA expects the Biden infrastructure plan (current face value) could add 88 MMT to cement consumption distributed over five years. The US Cement Industry is more than capable of meeting these needs

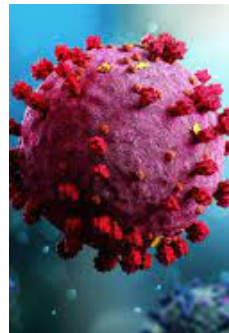
- Domestic Cement Capacity totals 106 MMT.
 - Through existing plant expansions and planned new greenfield plants this capacity will grow.
- Increases in the usage of SCMs and PLC will eventually expand the domestic supply potential of cementitious materials further.
- Import terminal capacity totals 42 MMT.
- Combined, these structural supply realities suggest the industry's ability to meet even the most ambitious infrastructure programs



Strong Demand



Warm Winter



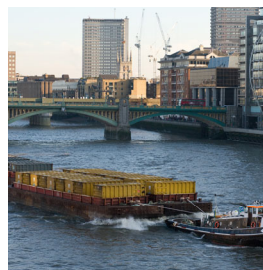
Covid



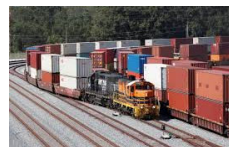
Ports



Driver Shortage



Barges



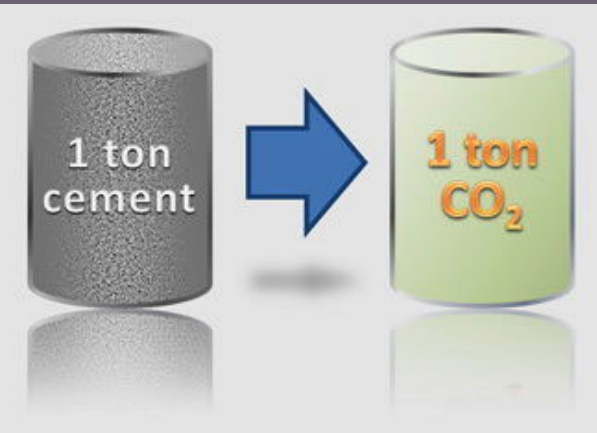
Rail



Strike



Increasing Capacity to
150 million Metric Tons and PLC

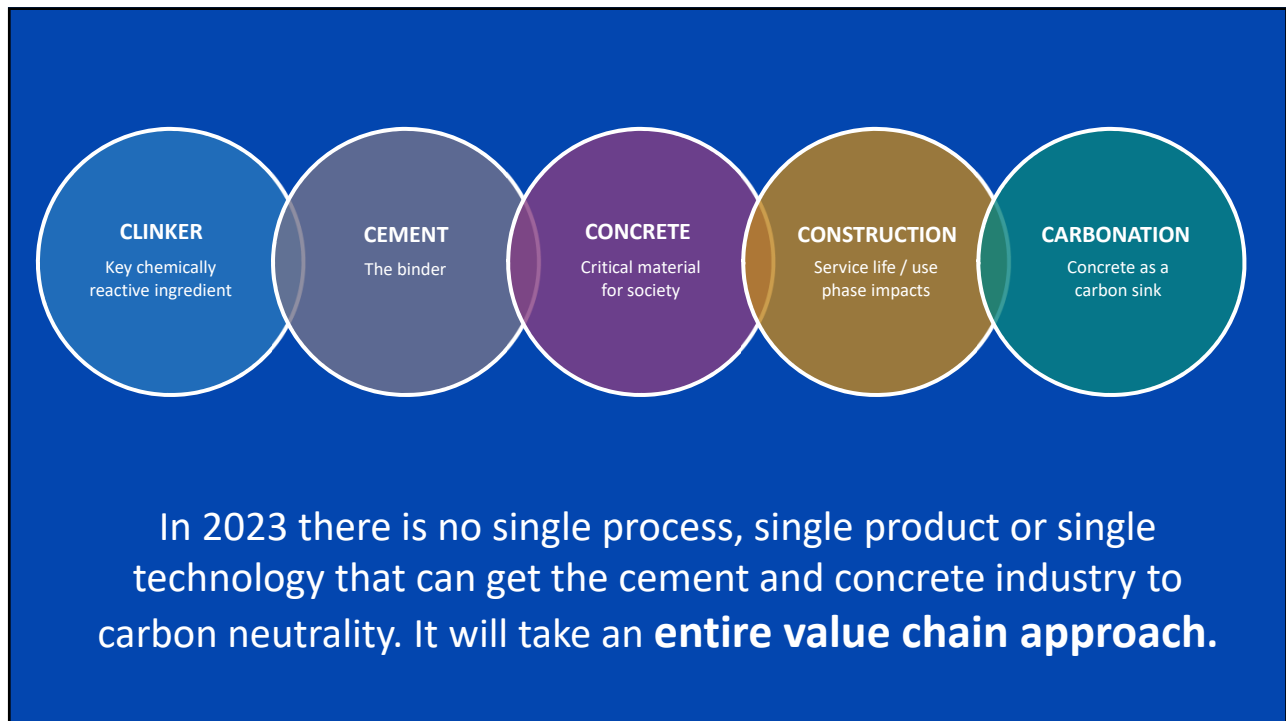


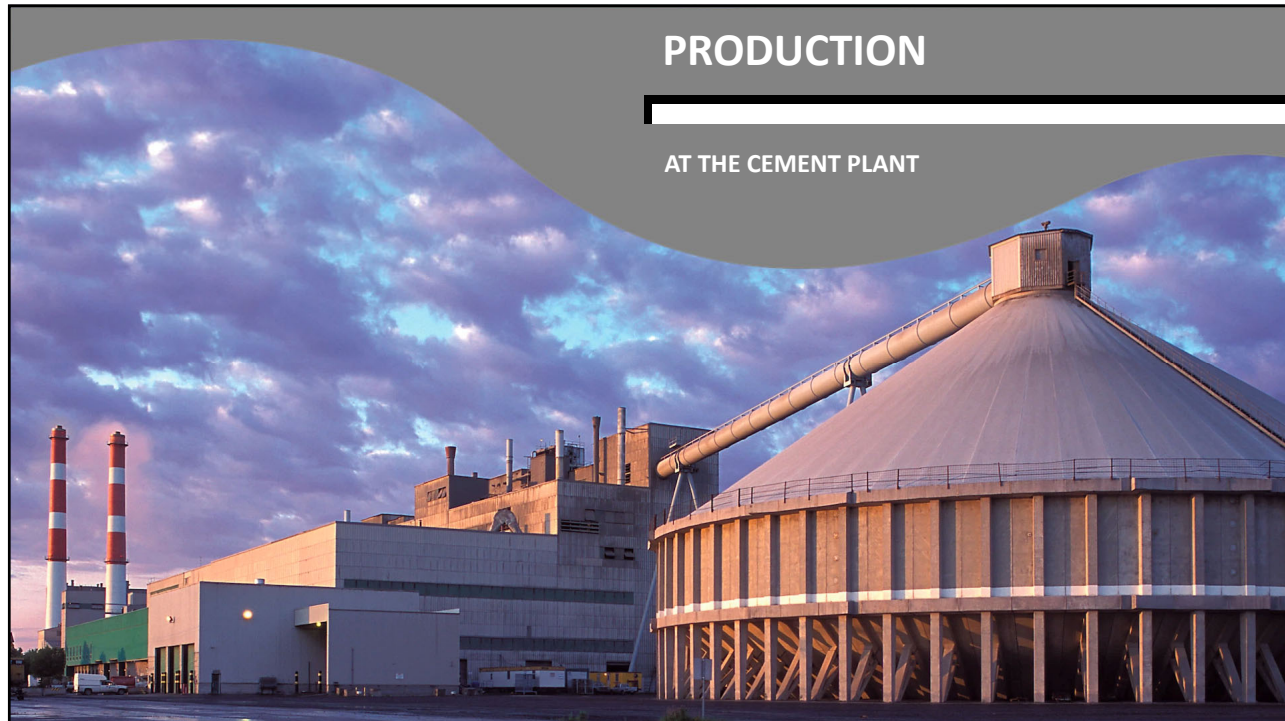
**Some say:
“CEMENT
accounts for
6-8% of CO₂
in the world.”**

**In the US,
1.25%**









The most energy intensive phase of the value chain is at the cement plant, where two critical materials – clinker and cement – are produced. However, there are opportunities to optimize energy use and shift away from traditional fossil fuels.

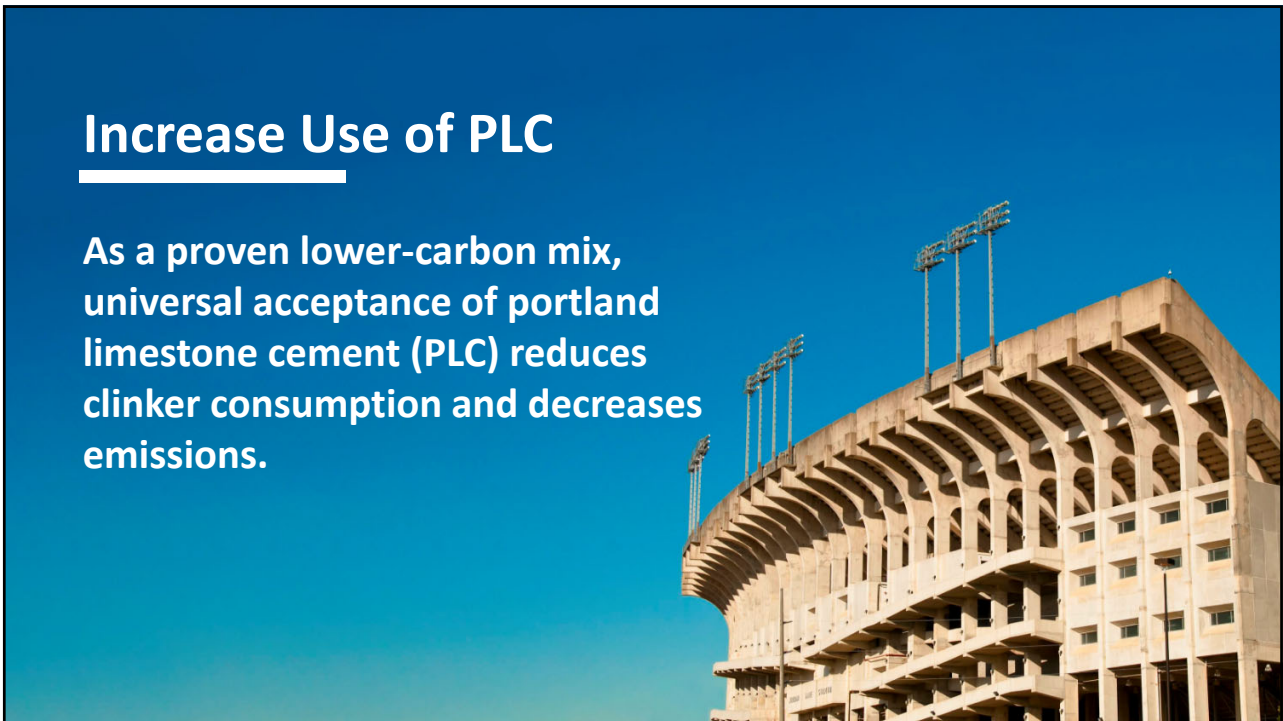
Decarbonated Materials

Using decarbonated materials eliminates CO₂ emissions from processing traditional raw materials, like limestone.



Increase Use of PLC

As a proven lower-carbon mix, universal acceptance of portland limestone cement (PLC) reduces clinker consumption and decreases emissions.



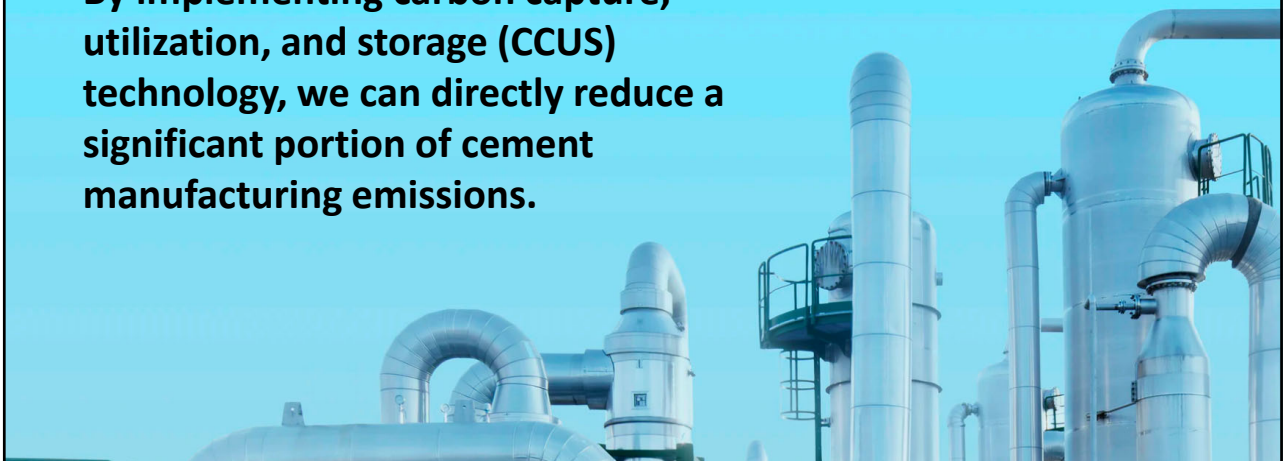
Promote New Cement Mixes

Creating innovative cements by using combinations of existing and alternative materials means less energy expended for processing and lowering the use of virgin materials for the same volume of production.



Carbon Capture Technology

By implementing carbon capture, utilization, and storage (CCUS) technology, we can directly reduce a significant portion of cement manufacturing emissions.



Continue Efficiency Improvements

Increasing energy efficiency reduces the amount of CO₂ emitted for each ton of product.



Use Alternative Fuels

Replacing traditional fossil fuels with biomass and waste-derived fuels lowers greenhouse gas (GHG) emissions and keeps materials out of landfills.




CONSTRUCTION

DESIGNING & BUILDING



Optimize Concrete Mixes

Considering the specific needs of the construction project and using only the materials necessary, avoiding excess emissions.



Use Renewable Fuels

Switching to solar, wind and other renewable sources of energy directly reduces emissions from other energy sources.



Increase Use of Recycled Materials

Recycling these materials diverts them from landfills.



**Avoid Overdesign
and Leverage
Construction
Technologies**

Optimize designs
and leverage
innovative
construction
technologies.



**Educate Design
and Construction
Community**

Improve design and specifications to be more performance oriented which will permit innovation in cement and concrete manufacturing. Encourage the use of advanced technologies to improve structural performance, energy efficiency, resiliency, and carbon sequestration.

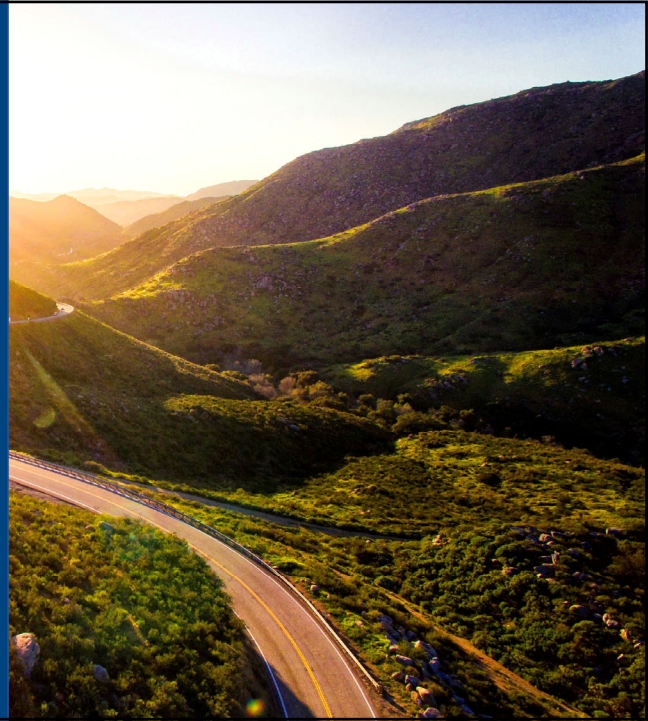


Incentivize Energy Efficient Buildings

Increasing buildings' energy efficiency can cut energy use and resulting emissions from heating and cooling.

Reduce Vehicle Emissions by Improving Fuel Efficiency

Because of its rigidity, concrete pavements enhance the fuel efficiency of vehicles driving over them, reducing vehicle emissions.



Decreased Maintenance

Due to their durability, concrete structures (buildings, pavements, bridges, dams, etc.) last longer and require less frequent maintenance.



Recycling

Concrete in place can be 100% recycled, saving both raw materials and the emissions that go with them.



Carbon Intake

Every exposed concrete surface absorbs CO₂ and over the course of its service life, a building can reabsorb 10-40% of cement and concrete production emissions.

PCA MICROSITES

**ROADMAP
TO CARBON
NEUTRALITY**
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