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# Buzzi Unicem USA and Queens Carbon Launch Low-Carbon Cement Pilot Program

BUZZI UNICEM USA HAS PARTNERED WITH QUEENS CARBON TO PILOT A BREAKTHROUGH LOW-CARBON CEMENT TECHNOLOGY AT THE STOCKERTOWN PLANT IN PENNSYLVANIA. THE PROJECT AIMS TO PRODUCE ZERO-CO<sub>2</sub> SUPPLEMENTARY CEMENTITIOUS MATERIALS THAT CAN REPLACE UP TO 50% OF TRADITIONAL CEMENT

At Buzzi Unicem USA, we're committed to innovation that supports both operational excellence and environmental responsibility. That commitment is at the heart of our new partnership with Queens Carbon, a Rutgers University startup developing cutting-edge cement decarbonization technologies. Together, we plan to build a 2,000-ton-per-year demonstration facility at our Stockertown plant in Pennsylvania. This project will test and showcase cost-effective, carbon-neutral supplementary cementitious material (SCM) production at pre-industrial scale. Queens Carbon's technology is built around a patented hydrothermal process, nicknamed "The Instant Pot of Cement Manufacturing." By using steam and pressure to drive key chemical reactions, this method operates at roughly half the temperature of traditional cement kilns. This reduction in thermal energy results in dramatically lower CO<sub>2</sub> emissions while still producing ASTM-compliant, high-performance materials.

The process is highly versatile. While preferring electrical heating, it could run on a variety of energy sources, including conventional fuels, waste heat, and renewable power. And since it uses industry-standard raw materials, it's designed to work seamlessly within the existing supply chain, ensuring easy adoption without costly overhauls to existing infrastructure.



The demonstration facility at Stockertown, will aim to initially produce 10 tons per day of zero-CO<sub>2</sub> SCMs, which could replace up to 50% of traditional cement in concrete blends, significantly reducing the clinker factor and supporting scalable decarbonization. This initiative marks a key step toward commercial-scale, carbon-neutral SCM production and will provide an opportunity to evaluate the system's technical performance, reliability, and integration with existing operations. Queens Carbon's modular manufacturing approach will allow SCMs to be produced directly on-site at cement plants, further simplifying logistics and reducing emissions from transportation. Looking ahead, Queens Carbon also plans to develop next-generation hydraulic cements capable of enabling carbon capture and even 100% replacement of conventional cement.

The pilot comes at a time of significant momentum for Queens Carbon. In addition to our partnership, the company secured a \$10 million funding round led by Clean Energy Ventures, with participation from Plug and Play and Buzzi Unicem USA. Thus, following a \$14.5 million grant awarded by the U.S. Department of Energy's ARPA-E program in Fall 2024, dedicated to the development of the scale-up project at Stockertown.

"Decarbonizing cement at scale while remaining cost-competitive requires first principles thinking, a world-class team, and the right financial and strategic partners," Daniel Kopp, CEO of Queens Carbon, said. "With support from Buzzi Unicem USA, Clean Energy Ventures and the US Department of Energy, we're building next-generation technology and assembling the cre-



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ative talent needed to drive industry revenues to move cement innovation forward and significantly reduce CO<sub>2</sub> emissions from cement production, all without a green premium." This partnership is an example of

Buzzi Unicem USA's commitment to being a leader in the sustainable cement manufacturing arena. As the industry evolves, we're proud to be shaping the future of low-carbon construction materials.



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- 2. CEO DANIEL KOPP AND COO AND CFO DAVE GERSHLOWITZ
- 3. AERIAL VIEWPOINT OF THE STOCKERTOWN PLANT IN PENNSYLVANIA