



Industrial Demonstrations Program – First Commercial Electrochemical Cement Manufacturing

The Industrial Demonstrations Program, managed by the U.S. Department of Energy (DOE) Office of Clean Energy Demonstrations (OCED), aims to accelerate decarbonization projects in energy-intensive industries and provide American manufacturers a competitive advantage in the race to lead the world in low- and net-zero carbon emissions manufacturing. To advance industrial decarbonization, OCED sought applications for \$6 billion in funding to support the demonstration of transformational technologies necessary to reduce carbon emissions in the U.S. industrial sector. Following negotiations, in November 2024, OCED awarded the First Commercial Electrochemical Cement Manufacturing project with more than \$12.7 million to begin Phase 1 of the project, located in Holyoke, MA.



Project at a Glance – Phase 1

- » **Total OCED Cost Share:** Up to \$86.9 million
- » **Phase 1 Total Project Amount:** \$32,305,004*
- » **Phase 1 OCED Award Amount:** \$12,792,364**
- » **Phase 1 Scope of Work:** Permitting, community engagement, and other planning and design activities
- » **Phase 1 Timeline:** 11 months
- » **Recipient:** Sublime Systems is a company commercializing technology to produce low-carbon cement
- » **Project Location:** Holyoke, MA
- » **Start Date:** November 2024

*Represents the total project cost for Phase 1

**Represents OCED's cost share for Phase 1. Additional funding for this project is subject to future award negotiations at the end of each project

About This Project

The First Commercial Electrochemical Cement Manufacturing project, led by Sublime Systems, plans to build a new, ultra-low-carbon cement manufacturing facility in Holyoke, MA. Sublime Systems' new method to make cement replaces carbon-intensive limestone with an abundant calcium silicate-based feedstock, resulting in industry-standard cement that is produced electrochemically instead of using high heat.

During Phase 1 of the project, Sublime Systems will perform preliminary engineering and design for the project, complete site characterization, provide documentation and reports necessary for OCED to

complete the National Environmental Policy Act review, and continue engagement activities with the community, project partners, and stakeholders.

OCED will provide oversight of the First Commercial Electrochemical Cement Manufacturing project by evaluating the status and quality of implementation at each phase of the project. Through its phased approach to project management oversight, OCED will review and evaluate the project's progress, including community benefits, which impact OCED's decision to continue to provide federal funding and allow a project to progress to the following phase.

First Commercial Electrochemical Cement Manufacturing Project Fact Sheet

Project Site

The First Commercial Electrochemical Cement Manufacturing project would be located in Holyoke, MA, in the western part of the state.

Community Benefits Commitments

Community Benefits Commitments are a key component of the First Commercial Electrochemical Manufacturing project. The commitments are informed and developed—in consultation with local communities—to maximize local community benefits and mitigate potential negative impacts. Sublime Systems plans to implement these commitments through:

- Creating **70–90 ongoing roles** once the plant is operational.
- Assessing and **increasing community awareness** of electrochemical cement manufacturing technologies and their potential benefits.
- Planning to **support the Holyoke education system** through curriculum enhancement and teacher support in partnership with the Smithsonian Science Education Center and **facilitating a long-term training pipeline** for Holyoke and the broader Pioneer Valley.
- Supporting the Justice40 initiative by **completing a Justice40 assessment** and implementation strategy during each phase.
- **Quantifying air quality impacts** for any relevant air pollutants emitted, or expected to be emitted, from the project.
- **Sharing project information publicly** to support engagement, accountability, and transparency.
- Continuing **union engagement** related to the strategic partnership with the United Steelworkers supporting Sublime Systems' employees' right to organize at the Holyoke factory.
- Pursuing next steps towards the **recruitment and training** for local and disadvantaged communities.
- **Continuing engagement with the Pioneer Valley Building Trades Council** per the Memorandum of Agreement.

More details on the First Commercial Electrochemical Cement Manufacturing project's community benefits commitments can be found in the [Community Benefits Commitments Fact Sheet](#).



Sublime Systems electrochemically manufactures low-carbon cement that performs like traditional high-emitting cement in concrete

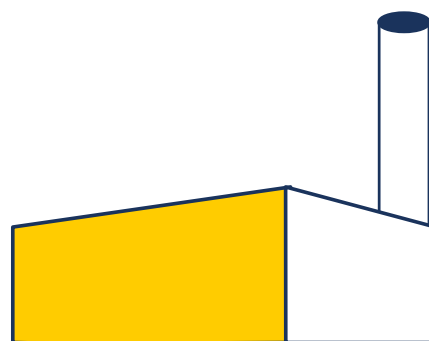
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Industrial Demonstrations Program Goals

U.S. industry is a backbone of the nation's economy, producing the goods critical to everyday life, employing millions of Americans in high-quality jobs, and providing an economic anchor for thousands of communities. Yet the sector's energy- and carbon-intensity contributes to nearly one third of the nation's carbon dioxide emissions, representing a unique and complex challenge to achieving a carbon-free economy. Decarbonizing the U.S. industrial sector will require equally unique and innovative technological solutions that leverage multiple pathways, including energy efficiency, electrification, and alternative fuels and feedstocks such as clean hydrogen. The Industrial Demonstrations Program includes new, emerging technologies that aim to help produce clean steel, cement, chemicals, and other materials used in our nation's roads, bridges, transmission lines, electric vehicles, solar panels, wind turbines, and everyday lives, which in turn, benefit every American.



A concrete cylinder made with low-carbon Sublime Cement™



Contact

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More Resources

Website: energy.gov/oced/IDP

Office of Clean Energy Demonstrations: energy.gov/oced

The U.S. Department of Energy established OCED to help scale the emerging technologies needed to tackle our most pressing climate challenges and achieve net-zero emissions by 2050. OCED's mission is to deliver clean energy demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption, and the equitable transition to a decarbonized energy system.