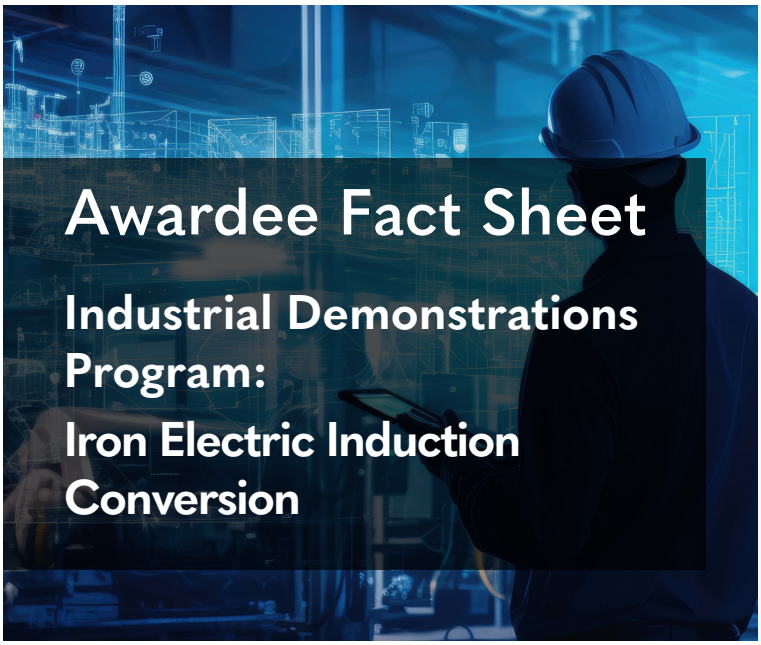
# Industrial Demonstrations Program – Iron Electric Induction Conversion

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 up to $6 billion in funding to support the demonstration of transformational technologies necessary to reduce greenhouse gas emissions in the U.S. industrial sector. Following negotiations, in September 2024, OCED awarded the Iron Electric Induction Conversion project with more than $3.1 million to begin Phase 1 of the project located in Bessemer, AL.




## Project at a Glance – Phase 1

- **Total OCED Cost Share:** Up to $75.5 million
- **Phase 1 Total Project Amount:** $6,205,402*
- **Phase 1 OCED Award Amount:** $3,102,701**
- **Phase 1 Scope of Work:** Planning, permitting, design, community engagement, and other development activities
- **Phase 1 Timeline:** Approximately 4–6 months
- **Recipient:** United States Pipe and Foundry Company
- **Project Location:** Bessemer, AL
- **Start Date:** September 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 phase.

## About This Project

The Iron Electric Induction Conversion project, led by United States Pipe and Foundry Company (U.S. Pipe), plans to replace a coke-fired furnace with electric induction melting furnaces and substantially improve air quality for nearby communities by reducing pollution from particulate matter, nitrogen oxides, and sulfur oxides. This conversion aims to eliminate the need for natural gas and coke (derived from coal) in the iron melting process and result in an estimated reduction of more than 70% in the overall gate-to-gate carbon intensity associated with the production of Ductile Iron Pipe produced at the Alabama Works production facility. The project aims to improve air quality, reduce the cost of operations, improve manufacturing capacity, and enhance the overall melting process and reliability—demonstrating the viability of electrifying a core process for iron and steel manufacturing.

The project is estimated to generate about 220 construction jobs and upskill about 36 employees. During Phase 1 of the project, preliminary engineering design will be conducted along with the procurement of long lead time equipment. OCED will provide oversight of the Iron Electric Induction Conversion 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.

# Iron Electric Induction Conversion
## Project Fact Sheet

## Project Site

The Iron Electric Induction Conversion project would be located in Bessemer, in central Alabama, at U.S. Pipe's Alabama Works ductile iron pipe production facility.

## Community Benefits Commitments

Community benefits commitments are a key component of the Iron Electric Induction Conversion project. The commitments are informed and developed—in consultation with local communities—to mitigate potential negative impacts of this project and maximize local community benefits. The Iron Electric Induction Conversion project plans to implement these commitments through:

- **Generating roughly 220 construction jobs**, upskilling about 36 employees to higher-skilled and higher-paying roles, and providing leadership development opportunities for many others and **continuing collective bargaining agreements** with United Steelworkers, International Association of Machinists and Aerospace Workers, and the International Brotherhood of Electrical Workers at Bessemer.
- **Improving air quality**—including reductions in particulate matter, nitrogen oxides, sulfur oxides, and volatile organic compounds for nearby communities by replacing the burning of coke with electric induction—and **reducing diesel emissions and improving traffic and road wear and tear** by eliminating coke transporting trucks, reducing particulate matter emissions associated with coke transport and reducing solid waste.
- Sponsoring an **internship program**—one that includes shadowing U.S. Pipe engineers—for **low-income students** in the Bessemer, AL area to expose students to clean energy manufacturing jobs.
- Integrating preference for **labor union contractors/workforce** and contracting from underrepresented businesses into its Requests for Proposal process for construction activities.
- Supporting the **Justice40 initiative** by completing a Justice40 Assessment and Implementation Strategy during each project phase.
- Sharing project information publicly to support **engagement, accountability, and transparency**.

Molten iron flowing

More details on the Iron Electric Induction Conversion project's community benefits commitments can be found in the Community Benefits Commitments Fact Sheet.

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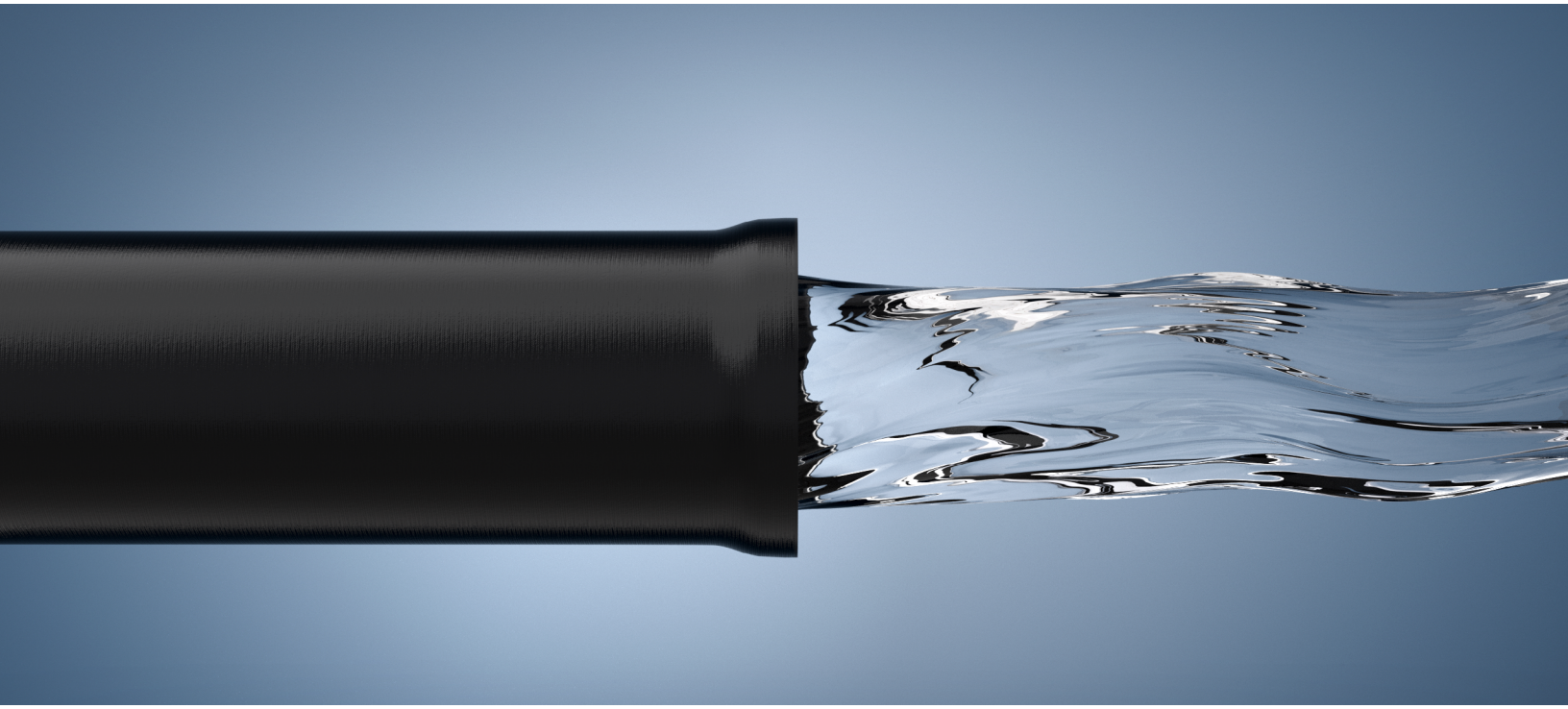
## Industrial Demonstrations Program Goals

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.



Clean water flowing from ductile iron pipe

## Contact

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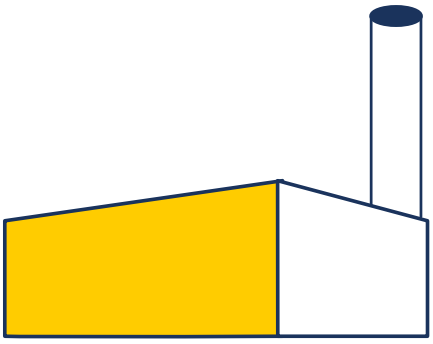
**OCED Media Email:** OCEDNewsroom@hq.doe.gov

## 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.