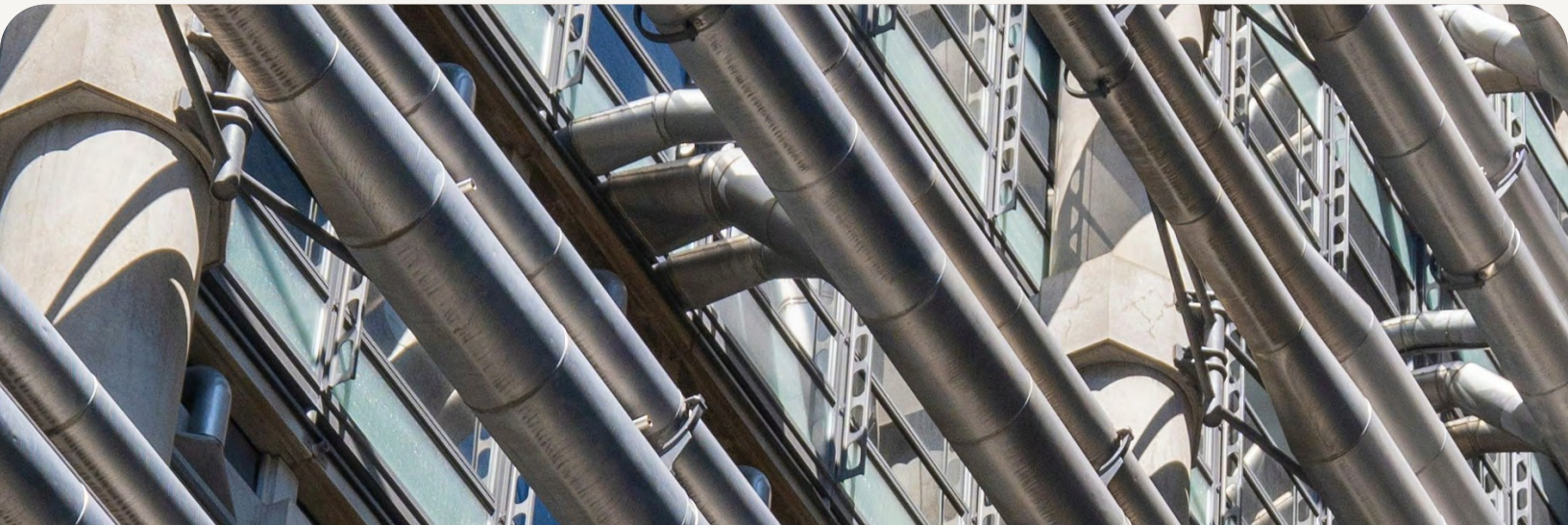
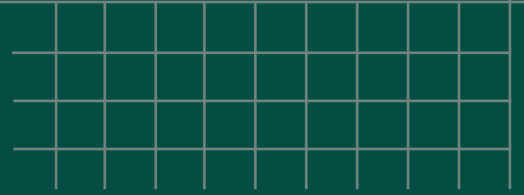


Research Progress Report

2024



Overall Impact



6,075 mmbtu

Annual mmbtu Reduction

\$1,158,677

Total Cost Savings

10,894,704 kWh

Annual kWh Reduction

47 across
9 locations

People Served

DOE Industrial Audits

Aug. 2022 — Aug. 2026 (est.)

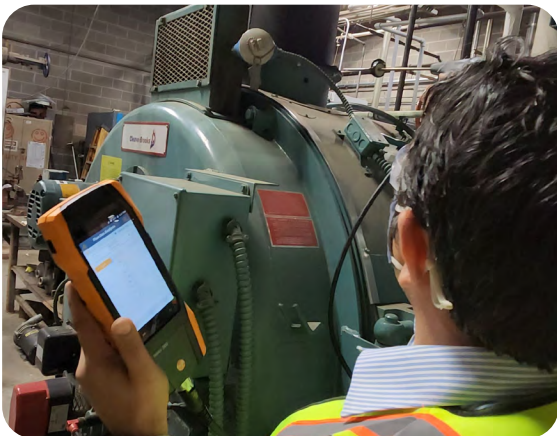


The Challenge

Small and medium-sized manufacturers need greater support to advance energy efficiency and promote productivity improvements while educating future industry leaders.

Methods

Southface currently partners with Kennesaw State University (KSU) and Clark Atlanta University (CAU) to operate the Georgia Industrial Assessment Center (Geo-IAC) based at KSU. With funding from the U.S. Department of Energy (DOE), the center provides no-cost energy and productivity assessments to small and medium-sized manufacturers and generates actionable recommendations for improvements. Geo-IAC is also focused on workforce development by training the next generation of energy and productivity professionals.



Results

Since 2022, these recommendations have led to significant energy savings (0.64 trillion BTU to date) and are saving manufacturers approximately \$5.34 million in costs. Through workforce development initiatives, 30 students are gaining hands-on experience and preparing for future careers in the field.



Collaborators



Building America HVAC Monitoring

Sep. 2022 — Feb. 2024



The Challenge

Approximately 70% of HVAC systems are operating with faults, resulting in decreased efficiency and increased energy costs.

Methods

We conducted research and validation efforts to assess the impact of HVAC installation verification and monitoring tools within climate zones 2 through 7. These tools were implemented nationwide through HVAC contractor networks to evaluate both individual and combined energy as well as the performance effects of commissioning using the measureQuick platform.

Results

Identifying and rectifying these issues using emerging tools for HVAC contractors demonstrated potential energy savings of 10% to 30% for both new and existing systems.

Collaborators



CHH Consulting

The Challenge

With the transition from large-scale power plants to distributed renewable technologies like wind, solar, hydropower, and energy storage, we need to rethink how electric infrastructure is planned to reliably meet the needs of local communities in a cost-effective way.

Methods

Through the DOE-funded Georgia Energyshed (G-SHED), Georgia Institute of Technology is analyzing various electricity generation, distribution, and consumption scenarios to guide local policy decisions and implement forward-thinking strategies across Metro Atlanta's 11 counties. Southface leads community engagement, collecting demographic data for the energyshed area, facilitating group planning sessions (charrettes), and gathering stakeholder feedback on regional planning models.

Results

This community-driven initiative is focused on addressing the energy needs of underserved populations in Metro Atlanta with the goals of reduced energy costs, greater access to renewable energy benefits, balanced growth, and shared prosperity.

Collaborators



Resources

Publications

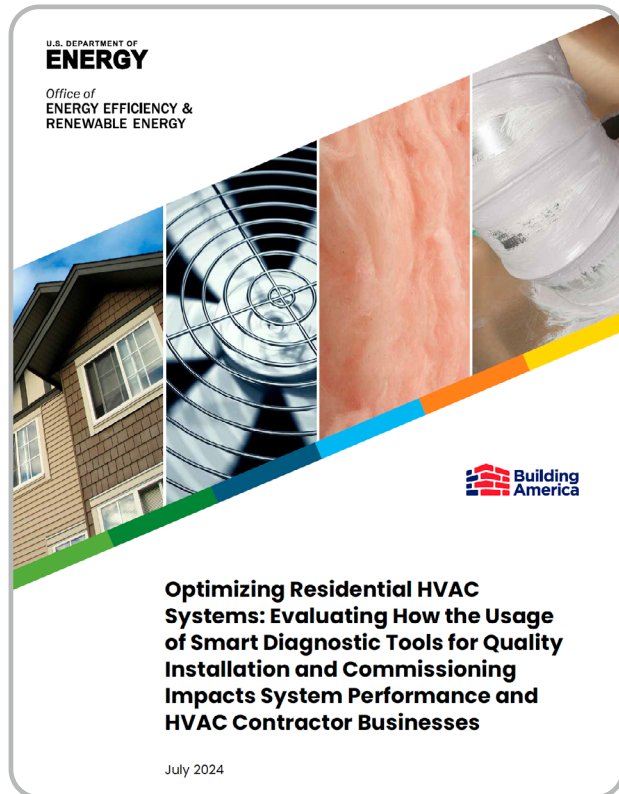
“Optimizing Residential HVAC Systems: Evaluation and Validation of Advanced Non-Invasive Tools to Aid Quality Installation and Commissioning” was published with the DOE.

Presentations

Presented on HVAC quality installation verification and the strategic scheduling of chillers using game theory at the IMADE Symposium and IMECE2024, reaching 70 attendees across events.

Posters and Papers

Posters showcased innovative findings, including “Benefits of Functioning Pipe Insulation in Industrial Facilities” and “Early Detection of Faulty Operation of Air Conditioning Systems in High Energy-Consuming Manufacturing Sites.”



[Read the full report](#)



www.southface.org/research