July 14, 2026

E4 Carolinas celebrates selection of NSF Grid Modernization Engine

Federal investment of up to $160 million positions North and South Carolina to play a larger national role in grid modernization and technology deployment

CHARLOTTE, N.C. — E4 Carolinas today announced it is a founding partner in the NSF Grid Modernization Engine in the Carolinas (Carolinas Grid Engine), one of America's newest NSF Regional Innovation Engines (NSF Engines) selected by the U.S. National Science Foundation.

Led by UNC Charlotte, the Carolinas Grid Engine will develop, test, commercialize and deploy technologies that address one of the nation's most pressing infrastructure challenges: modernizing the electric grid.

The engine is designed to build a nationally significant innovation cluster that accelerates technology deployment while strengthening the regional economy.

“NSF Engines’ investments in critical technologies and future industries will transform America’s innovation infrastructure for decades to come," said Brian Stone, performing the duties of the NSF director. “The NSF Grid Modernization Engine will strengthen U.S. energy security, meet rising energy demand, and train the workforce of the future while building economic stability across the Carolinas.”

The engine will accelerate adoption of solutions that improve grid reliability, strengthen domestic supply chains and help the United States meet rapidly growing electricity demand driven by artificial intelligence, advanced manufacturing, data centers and population growth. The award includes an initial $15 million investment over two years, with the potential for up to $160 million over the next decade based on performance milestones.

“Modernizing energy infrastructure requires more than technology development. It requires a workforce prepared to build, deploy and maintain increasingly complex energy systems,” said Tina Taylor, Interim President of E4 Carolinas. “The NSF Grid Modernization Engine in the Carolinas strengthens connections among education, workforce development and industry while helping prepare talent for the rapidly changing energy economy. The NSF Engines program forms a connected national network that supports large-scale regional partnerships focused on

accelerating the development and deployment of critical technologies, growing regional economies and strengthening America's global competitiveness."

Spanning a 36-county region, the NSF Grid Modernization Engine in the Carolinas brings together more than 100 universities, utilities, manufacturers, entrepreneurs, workforce organizations, investors, economic development organizations and state and local governments to create a nationally significant innovation ecosystem for grid modernization. In addition to E4 Carolinas and UNC Charlotte, Clemson University, the South Carolina Research Authority, York Technical College and Joules Accelerator are serving as core partners. Among the coalition's many other partners are Duke Energy, Dominion Energy, Santee Cooper, EPRI, Siemens Energy, Honeywell, Nucor, and the North and South Carolina Departments of Commerce.

"This project directly aligns with the mission of E4 Carolinas to cultivate a collaborative Carolina energy cluster to accelerate economic growth, to efficiently use our resources, and care for our environment, resulting in increased employment, productivity and prosperity," said Taylor.

One of only 12 engines selected from nearly 300 teams that entered the national competition, the Carolinas Grid Engine will focus on:

- Advancing use-inspired research and development.
- Accelerating commercialization of grid technologies.
- Strengthening domestic supply chains.
- Supporting entrepreneurship and venture creation.
- Creating workforce pathways and training programs.
- Improving grid reliability and resilience.

The engine is expected to strengthen the regional economy by accelerating technology commercialization, supporting startup creation, expanding workforce development opportunities and attracting additional public and private investment. Collectively, partners project the initiative will generate more than $2 billion in economic impact and create or retain more than 20,000 jobs across the Carolinas while helping position the region as a national hub for energy innovation and advanced manufacturing.

According to John Daniels, principal investigator for the Carolinas Grid Engine, the initiative was intentionally designed to bring together the partners needed to move promising technologies from the laboratory into widespread use more quickly.

"Grid modernization cannot happen through isolated efforts," he said. "The challenge is not simply developing new technologies. It is moving them from research to testing, commercialization and adoption quickly enough to meet rising demand."

The award enables the initiative to move into its implementation phase, activating plans developed during the engine's two-year development period.

###