



UNC Charlotte-led Carolinas partnership awarded NSF Regional Innovation Engines designation to modernize nation's electric grid

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. — The U.S. National Science Foundation has selected the NSF Grid Modernization Engine in the Carolinas (Carolinas Grid Engine) as one of America's newest NSF Regional Innovation Engines (NSF Engines). The engine is led by UNC Charlotte and supported by more than 100 partners across North and South Carolina.

The selection positions the Carolinas as a nationally significant innovation cluster for developing, testing, commercializing and deploying technologies to address one of the nation's most pressing infrastructure challenges: modernizing the electric grid.

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.

"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."

Spanning a 36-county region, the NSF Grid Modernization Engine in the Carolinas brings together partners including universities, utilities, manufacturers, entrepreneurs, workforce organizations, state and local governments, research institutions, investors and economic development partners.

"This award reflects what is possible when the public and private sectors and communities come together around a shared challenge and shared opportunity," said UNC Charlotte Chancellor Sharon L. Gaber. "The Carolinas have built the partnerships, research capability and infrastructure needed to move grid technologies from concept to deployment, and few regions are better positioned to lead that work than Charlotte, where connections across North and



South Carolina create a natural gateway for collaboration and innovation. UNC Charlotte is proud to help bring those efforts together.”

The NSF Engines program supports large-scale regional partnerships focused on accelerating the development and deployment of critical technologies, growing regional economies and strengthening America's global competitiveness.

“This federal investment will allow UNC Charlotte to continue to bring together partners from across the Carolinas and ensure North Carolina remains a leader in research, manufacturing and industry partnerships critical to advancing the next generation of grid technologies,” said U.S. Rep. Richard Hudson, R-N.C.

The late U.S. Sen. Lindsey Graham joined Hudson as a longtime advocate for the engine.

“We are grateful to Congressman Hudson and the late Senator Graham for their support of this effort from its earliest stages,” said Gaber. “Their confidence in our partners and in the potential of the Carolinas helped make this achievement possible.”

One of only 12 engines selected from nearly 300 teams that entered the national competition, the NSF Grid Modernization Engine in the Carolinas 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

Clemson University, the South Carolina Research Authority, York Technical College, Joules Accelerator and E4 Carolinas join the University in leading the engine. Among other key members of the coalition are Duke Energy, Dominion Energy, Santee Cooper, EPRI, Siemens Energy, Honeywell, Nucor and the North and South Carolina Departments of Commerce.

“The state-of-the-art Dominion Energy Innovation Center at Clemson’s Charleston Innovation Campus boasts the infrastructure, technical expertise and testing capabilities needed to address complex energy challenges and innovate the next generation of grid technologies,” said J. Cole Smith, Clemson’s executive vice president for academic affairs and provost. “We are an eager partner with the NSF Grid Modernization Engine in the Carolinas to strengthen those capabilities while supporting the applied research necessary to advance modern energy systems.”



John Daniels, vice chancellor for research at UNC Charlotte and principal investigator for the initiative, said the engine was designed to bring together the partners needed to move promising technologies from the laboratory into widespread use at unprecedented speed.

“Grid modernization cannot happen through isolated efforts,” Daniels 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. When you look across the country and ask ‘where is the highest concentration of expertise, infrastructure and partnerships to accelerate grid modernization?’, the answer is clear, it’s here.”

For North Carolina, leaders say the award reinforces ongoing efforts to strengthen critical infrastructure, expand advanced manufacturing capacity and prepare for rising electricity demand driven by economic growth and emerging technologies.

“The NSF Grid Modernization Engine in the Carolinas represents an historic opportunity for North Carolina and South Carolina to build on our shared strengths and establish the Carolinas as a global leader in energy innovation,” said Governor Josh Stein. “I look forward to watching this project fuel growth and fortify the domestic energy infrastructure essential to our national security.”

The engine also reflects the importance of a regional approach, bringing together partners across state lines to build the scale, expertise and coordination needed to address challenges no single institution or state could solve alone.

“A reliable and resilient energy supply is critical to South Carolina’s continued success. This award will help strengthen our ability to meet future demand, support economic opportunity, and ensure the Carolinas remain leaders in innovation and job creation,” said South Carolina Governor Henry McMaster. “We are proud to celebrate the partners who helped secure this award and grateful for the strong collaboration across the Carolinas that made it possible.”

The award enables the initiative to move into its implementation phase, activating plans developed during the engine’s two-year development period. Additional announcements, including the selection of a permanent CEO and broader energy initiatives at the University, are expected in the coming months.

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