



Duke Energy announces plans to build and operate the nation's first system capable of producing, storing and combusting 100% green hydrogen in a combustion turbine in Florida

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- **New end-to-end green hydrogen system will be located at Duke Energy Florida's existing facilities in DeBary**
- **Project designed to provide innovative solutions to benefit customers by adding more renewable energy to the grid**

ST. PETERSBURG, Fla. – Duke Energy today announced it soon will break ground in DeBary, Fla., on the first demonstration project in the United States to successfully create clean energy using an end-to-end system to produce, store and combust 100% green hydrogen.

The innovative system is the result of collaboration between Duke Energy, Sargent and Lundy, and GE Vernova and will be located at Duke Energy Florida's DeBary plant in Volusia County, Fla.

"Duke Energy is constantly evolving and seeking ways to provide clean, safe energy solutions to our customers," said Melissa Seixas, Duke Energy Florida state president. "DeBary will be home to Duke Energy's first green hydrogen production and storage system connected to existing solar for power generation, and we are grateful to the city for allowing this innovative technology in their community."

System for production, storage and combustion of green hydrogen

This one-of-its-kind, end-to-end system will begin with the existing 74.5-megawatt (MW) DeBary solar plant providing clean energy for two 1-MW electrolyzer units that will separate water molecules into oxygen and hydrogen atoms.

The resulting oxygen will be released into the atmosphere, while the green hydrogen will be delivered to nearby, reinforced containers for safe storage. During times when energy demand is highest, the system will deliver the stored green hydrogen to a combustion turbine (CT) that will be upgraded using GE Vernova technology to run on a natural gas/hydrogen blend or up to 100% hydrogen. This will be the nation's first CT in operation running on such a high percentage of hydrogen.

Operational Features

- Safe, quiet generation and storage of energy
- Optimizes on-site solar generation
- Allows access to on-demand (dispatchable) energy
- End-to-end technology demonstration that could provide cost-effective decarbonization

Environmental Features

- No visual impact
- Zero greenhouse gas emissions
- Production of 100% green hydrogen from solar energy

"Duke Energy anticipates hydrogen could play a major role in our clean energy future," said Regis Repko, senior vice president of generation and transmission strategy for Duke Energy. "Hydrogen has significant potential for decarbonization across all sectors of the U.S. economy. It is a clean energy also capable of long-duration storage, which would help Duke Energy ensure grid reliability as we continue adding more renewable energy sources to our system."

Ensuring Future Reliability

Readily available hydrogen is a *dispatchable* energy source, meaning it is available on demand. It can be turned on and off at any time and is not dependent on the time of day or the weather, like sun, wind or other renewable energy sources known as *intermittent*.

Dispatchable energy provides a needed element of reliability that will enable us to add more intermittent energy sources, yet still ensure we can meet customer demand, even during extended periods of high demand. Using solar energy to generate green hydrogen enables solar plants to be optimized. Relying on intermittent energy sources without available dispatchable energy sources would put our future electric system at risk of having insufficient energy to serve customer demand.

Project Timeline

Construction of the demonstration project in DeBary will begin later this year and could take about one year to complete. Duke Energy anticipates the system will be installed and fully functioning in 2024.

For additional information on the project, visit duke-energy.com/debaryhydrogen.

Duke Energy Florida

Duke Energy Florida, a subsidiary of Duke Energy, owns 10,500 megawatts of energy capacity, supplying electricity to 1.9 million residential, commercial and industrial customers across a 13,000-square-mile service area in Florida.

Duke Energy (NYSE: DUK), a Fortune 150 company headquartered in Charlotte, N.C., is one of America's largest energy holding companies. Its electric utilities serve 8.2 million customers in North Carolina, South Carolina, Florida, Indiana, Ohio and Kentucky, and collectively own 50,000 megawatts of energy capacity. Its natural gas unit serves 1.6 million customers in North Carolina, South Carolina, Tennessee, Ohio and Kentucky. The company employs 27,600 people.

Duke Energy is executing an aggressive clean energy transition to achieve its goals of net-zero methane emissions from its natural gas business by 2030 and net-zero carbon emissions from electricity generation by 2050. The company has interim carbon emission targets of at least 50% reduction from electric generation by 2030, 50% for Scope 2 and certain Scope 3 upstream and downstream emissions by 2035, and 80% from electric generation by 2040. In addition, the company is investing in major electric grid enhancements and energy storage and exploring zero-emission power generation technologies such as hydrogen and advanced nuclear.

Duke Energy was named to Fortune's 2023 "World's Most Admired Companies" list and Forbes' "World's Best Employers" list. More information is available at duke-energy.com. The [Duke Energy News Center](#) contains news releases, fact sheets, photos and videos. Duke Energy's [illumination](#) features stories about people, innovations, community topics and environmental issues. Follow Duke Energy on [Twitter](#), [LinkedIn](#), [Instagram](#) and [Facebook](#).

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