





ENGINEERING | CONSTRUCTION | CASE STUDY

MICROGRID Vertiv

Project: Hydrogen Fuel Cell Installation Location: Ohio **Business Sector:** Mission-Critical Services: Engineering/Construction Budget: \$725,000 Completed: November, 2023

Project Challenge:

Sustainability and "bring your own power" are two of the latest trends in data center construction and operations today. To accomplish this, data center operators are looking at Microgrids. Microgrids can tie in multiple sources of power, such as solar panels, wind turbines, and fuel cells coupled with battery energy storage systems (BESS) to power the data center. Installing a microgrid at a data center can help achieve sustainability goals as well as address challenges with the electrical grid.

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In order to demonstrate their capabilities in this area, Vertiv requested the installation of a hydrogen fuel cell for integration testing and proof of concept with their microgrid. Vertiv's 1.0 megawatt (MW) microgrid includes a 1.0 MW AC Solar PV (photovoltaic) array, 400 kW Hydrogen Fuel Cell, 1.0 MW Vertiv[™] DynaFlex Battery Energy Storage System (BESS), and Vertiv's Uninterruptible Power Supply (UPS) system, lithium-ion battery, system controls, and other critical components.

MISSION CRITICAL

- ENGINEERING
- CONSTRUCTION
 - **DESIGN-BUILD**
 - FACILITY MANAGEMENT
 - MAINTENANCE











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(cont'd)

TechSite Services Provided:

- Conceptual Design and Budgeting
- Detailed Engineering
- Construction Administration
- Construction Management
- Installation of (2) 200kW (400kW total) Hydrogen Fuel Cell
- Installation of DC Distribution Switchgear

To complete this project, an existing diesel generator had to be removed first. After the removal, the hydrogen fuel cell module, hydrogen tube trailer storage enclosure, and electrical distribution equipment were installed.

TechSite's engineering team created the conceptual design and detailed engineering drawings for the project, and the TechSite construction team performed construction management and administration duties. TechSite managed one subcontractor directly and provided administration services for six subcontractors hired by the customer.

Despite some challenges including long lead times on the DC electrical switchgear, factory piping rework, and managing multiple subcontractors to the owner, TechSite was able to successfully deliver the project for the customer.

If you are looking for a partner to help you with the latest power and electrical solutions, contact TechSite to see how we can help.

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Our purpose is to expertly plan, design, build, test, operate and maintain mission-critical space to maximize reliability, ROI and efficiency while providing the industry's highest level of customer satisfaction.



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