



# Microgrid projects for 2023

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Not the basics. A microgrid is still at its core a self-sufficient energy system that serves a discrete geographic footprint and uses one or more distributed energy resources. If it's connected to the central grid, it can disconnect during a power outage and reconnect when the grid comes back up.

So how are microgrids changing? As you'll see from the projects below, they are becoming more complex -- incorporating new types of fuels and different combinations of resources that allow them to better serve a broader range of customers.

A selling point for microgrids is that they can use just about any form of generation, making them able to reap the benefits of local resources. Mostly, however, they use solar, batteries and fossil fuel generators. But Schneider Electric has begun incorporating an unusual resource into microgrids built in remote areas -- river currents. The first project is being built in Igiugig, Alaska.

A new microgrid being built by Scale Microgrid Solutions and Urban Ingenuity will accomplish the unusual feat of serving its host -- a Washington, D.C., university for deaf and hard of hearing students -- and powering a community solar program. The microgrid will be capable of providing Gallaudet University, which has about 1,400 students, with almost all of its electricity during a grid outage. In addition, it will serve the District of Columbia community solar program, available to Washington, D.C., residents, nonprofit organizations and small businesses.

It's nothing new for microgrids to include electric vehicle (EV) charging stations. But it is unusual for microgrids to use charged EVs as power sources. Even more unusual is the use of hydrogen-electric buses. The Oakland Public Library project is trying out both. With \$3.2 million in funding from the California Energy Commission, the project will demonstrate the value of bidirectional electric vehicle charging to make what project partners call a vehicle-to-building resilience hub at the library.

This is another example of the growing use of microgrids to serve electrification. In this case, utility Duke Energy is demonstrating at a depot in Mount Holly, North Carolina, how to charge commercial EV fleets from both a microgrid and the grid. The Mount Holly project is designed to help speed the electrification of commercial fleets, a growth market for both utilities and microgrids. Some EV fleet owners are turning to microgrids out of concern about grid reliability or because they want to manage costs or emissions with on-site energy resources.

Marine Corps Air Station (MCAS) Miramar has completed a test demonstrating that it can increase microgrid islanding time so that the whole base -- made up of hundreds of buildings -- can be islanded for up to 21 days. This was accomplished using an innovative backup system, a milestone that generated excitement for those who have been working toward this moment for years.

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"I've been trying to do this backup generator project for so long," said Mick Wasco, utilities and energy management director for MCAS Miramar, based in San Diego. "It was painful and complicated to accomplish. I put years of effort into this, so when it finally happens, it's truly amazing and fun to see it come together."

The new microgrid being built at JFK Airport is actually four microgrids rolled into one. The four microgrids, also called power islands, can operate separately or collectively as one microgrid, making it a federated microgrid. And that's just one of the intriguing features of the 11.34-MW microgrid in New York City.

The 100-MW microgrid represents a growing trend of offsetting use of fossil fuels with RNG, a fuel made from capturing methane produced by decomposing waste from livestock, water treatment, food and other sources. Texas-based Enchanted Rock was one of the microgrid companies early out of the gate in using RNG, which allows developers to offer energy that is cleaner than fossil fuels with similar reliability.

Horizon Power plans to launch distributed energy resources management system (DERMS) technology across its microgrids in Western Australia to ease the integration of customer- and utility-owned distributed energy resources. The DERMS technology "enabled more than four times the amount of rooftop solar to be installed than in a traditional energy system."

Here is Microgrid Knowledge's list of 23 microgrid projects to watch in 2023 -- in no particular rank. We narrowed the list to 50 finalists and then painfully cut it to 23.

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