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How Can Communities Finance Microgrids for Public Safety?

Small local power grids, which may include renewable energy generation, can ensure the lights stay on during weather-related power outages.

In the United States, microgrids are concentrated in the Northeast, according to Katherine Tweed, a writer at Greentech Media. How can microgrids expand their footprint and reach other regions and cities?

The need for climate resilience is one common justification for building microgrids. Microgrids — small local power grids that may include renewable energy generation — can ensure the lights stay on at hospitals, transit centers, emergency shelters, business headquarters, prisons, colleges, apartment buildings and government offices during weather-related power outages.

According to Tweed, New Jersey has leveraged \$200 million from its community development block grant for disaster recovery to create an energy resilience bank. This bank may support distributed generation and microgrids at community facilities such as water-treatment plants, high schools, town centers, emergency-response shelters and hospitals.

In the metropolitan areas of New York City, Washington and Chicago, owners of affordable housing complexes seek out opportunities to add climate-resilience technology to their buildings.

Taking a larger-picture perspective, microgrid developers could build electrical grids to serve groups of multifamily housing complexes. They also could provide microgrids for neighborhoods where residents might be unable to leave during weather emergencies due to income or health considerations.

What financing sources are available?

Microgrid financing can come from any one of a patchwork of funding sources. Sometimes, multiple sources can be combined to support individual projects. Putting these pieces together can require extensive groundwork and patience.

According to a [presentation](#) published by Ballard Spahr LLP, many financing tools are available to support microgrid construction. These include energy bonds, tax deductions, tax credits, credit enhancements and direct cash payments.

Energy bonds may include qualified energy conservation bonds, taxable bonds and tax-exempt bonds.

Tax credits and tax deductions can benefit for-profit microgrid projects, but cannot be used by tax-exempt organizations directly. However, municipal project developers can partner with for-profit entities.

Tax deductions can include accelerated depreciation on the capital cost of energy projects, the commercial energy-efficiency deduction on capital costs and sales or property tax exemptions.

Federal tax credits for microgrids include the production tax credit, which covers utility-scale renewable energy installations, and the investment tax credit (ITC), which supports smaller renewable energy and cogeneration installations.

Some individual tax credits that recently have been available apply to wind power, solar power, geothermal energy, microturbines, hydropower, municipal solid waste combustion, cogeneration, biomass, fuel cells, marine power and thermal pumps.

However, a substantial number of these credits — the ones that apply to biomass, hydropower, marine power, municipal solid waste combustion and large-scale wind power — required construction to begin before 2014.

The future of these tax credits is [uncertain](#) because of pending changes in federal tax policy. Depending on the political decisions that are made in the next several years, these tax credits could be altered.

Credit enhancements involve third parties with good credit ratings committing to pay borrowers' debts if they default. These enhancements are available in the form of loan guarantees from United States Department of Energy, United States Department of Agriculture and other funders.

There are a number of potential sources of direct cash payments. At one point, 1,603 cash grants were available in lieu of the ITC; however, this is largely no longer the case. Renewable energy credit payments and rebates also can assist with financing. Other federal, state or local grants and incentives also may be an option.

Many utilities offer demand-side and efficiency incentive programs that provide rebates and rewards.

There are two methods of using shared savings to finance microgrids. In one approach, the developer provides the capital and shares more of the savings. In a second approach, the sponsor plays that role.

Public-benefit corporations, private investors, banks, utilities and energy service companies can provide private financing for community microgrid development.

With so many alternatives available, how can municipal project developers choose the options that are best for them?

Pace Law School has published a [report](#) that recommends a thorough initial assessment of each project. The assessment should take into account the sponsor's capital resources, its credit quality and its preferred ownership structure. These considerations should determine whether the sponsor relies on debt financing, equity financing, leasing, government funding or other options.

Is warehouse credit an option?

In January, a report by Clean Energy Group explored the possibility of providing warehouse credit for microgrids and related projects. The report, [“Ramp up Resilient Power Finance”](#) advised the creation of an integrated finance approach to make developers' work easier.

Warehouse credit involves pooling funds from groups of loans into securities that then can be traded. Green banks, community development financial institutions and government stakeholders could set up warehouse credit for microgrids once they identify adequate demand exists.

According to Clean Energy Group, warehouse credit could assist both large and small projects.

Large resilient power projects might include wastewater treatment facilities and utility-owned microgrids.

Smaller community resilient-power facilities might include multifamily affordable housing, assisted-living facilities, emergency shelters, police and fire services, dialysis and community health centers, and publicly owned buildings.

Clean Energy Group is also researching ways to integrate distributed generation with affordable housing and senior housing. This could help to prevent avoidable humanitarian crises during weather-related blackouts.

“Fortunately, new institutions do not need to be created for these financing purposes,” the report said.

GreenBiz

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