

# DEVELOPING LOCAL GOVERNMENT MICROGRIDS

## CURRENT STATUS & CHALLENGES



This Fact Sheet – and the 7 others in the Developing Town Center Microgrids series – discuss results from a research project undertaken by the New Jersey Board of Public Utilities with financial support from the United States Department of Energy.

### CURRENT STATUS

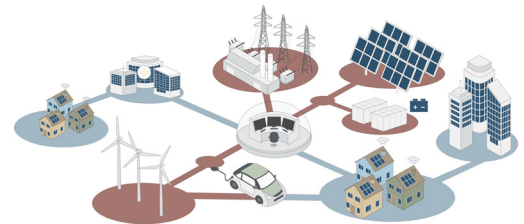
The purpose of the project was to explore the process of procuring and financing “Town Center” microgrids, which were defined as *“microgrids developed in downtown areas of communities that deliver power to a physically non-contiguous group of critical facilities, often involving multiple distributed energy resources and crossing multiple public rights of way.”*

Town Center (TC) microgrids are distinct from two other common types of microgrids: 1) single-site microgrids that serve a single building like a hospital, school, or public housing building; and 2) campus microgrids that are deployed at institutional campuses in government, education, and business sectors to power multiple structures through onsite generation and that provide control to the owner. There are many examples of successful single-site and campus microgrids. TC microgrids, on the other hand, are far more complicated and are – at least to date – far less common.

Based on the results of the study, the idea of a truly successful TC microgrid as an off-grid power supply for critical facilities remains an aspirational one. Outside of specialized use cases, the traditional role of electric distribution companies (EDC) and the existing regulatory and economic system under which they operate constitute significant challenges to the development of TC microgrids.

### CURRENT CHALLENGES

- EDC franchise rights: Most states have a statutory or regulatory regime that may limit the ability of an entity other than an existing EDC from distributing energy to customers or accessing the right of way (RoW) to do so.
- Financial challenges: In cases where there is a legal workaround to the franchise issue, allowing the microgrid to serve at least a subset of the desired customers, the microgrid may find it too costly to do so.
  - Cost recovery: Unlike an EDC that may be able to allocate these costs through rates over a large segment of its customer base, the cost of a non-EDC owner must be recovered from a smaller pool, which may be much smaller than the number of persons benefited.



Town Center Microgrid



Single-Site Microgrid



Campus Microgrid



Franchise Rights



Cost Recovery

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- Cross-Subsidization: Alternatively, if a project can work with the EDC to underground otherwise above-ground lines, it adds ratepayer value through the added resilience it brings but could cross-subsidize different customer classes. If the EDC can factor the value into its rate base for cost recovery of the improvement, there may be an intersection of interests for all parties. The challenge is how to value resilience (See Part 4, Section 4 of this report) without unduly shifting costs.



Cross-Subsidization

- Regulatory burden: A microgrid serving more than one customer could result in the regulation of the microgrid owner as an EDC, even if serving a limited population. The cost and burden of regulatory compliance, unless waived or lessened, may make the project economically unfeasible.



Regulatory Burden

- Regulatory compliance: Each state has its own regulatory environment that affects DER ownership, controls, system revenue and cost implications, and technical matters. These issues complicate the financial challenges of TC microgrid design and financing, cost recovery, and customer service requirements.



Regulatory Compliance

- Technical compliance: Both EDCs and microgrid designers advocate that electrical system safety is paramount. While a general consensus, this can break down over implementation details. Agreement on standards, controls, redundancy, and power supply reliability elements, particularly at the point of common coupling (where the DER enters the distribution system) is hard to come by. In addition, because of the ongoing evolution of DER, industry standards (e.g., IEEE) are evolving and reasonable parties may have different approaches to addressing them.



Evolving Industry Standards

- Societal and public policy issues: While TC microgrids may add resilience and reliability in emergency situations, not all configurations will be consistent with balancing statewide policies of ensuring the fiscal sustainability of the grid, greenhouse gas (GHG) reduction policies, and funding of energy efficiency (EE) programs.



Balancing Policies

## THE TC MICROGRID FACT SHEET AND WEBINAR SERIES

While these challenges are significant, they are not necessarily insurmountable. The remainder of this Fact Sheet series – and, especially, the detailed webinar discussions that accompany each Fact Sheet – unpack these issues in more detail by addressing the following Town Center Microgrid Development challenge categories:

- Fact Sheet #2: Procurement Challenges
- Fact Sheet #3: Financing Challenges
- Fact Sheet #4: Public Policy Challenges
- Fact Sheet #5: EDC Challenges
- Fact Sheet #6: Technology Challenges
- Fact Sheet #7: Other Challenges
- Fact Sheet #8: Moving Forward with TC Microgrids



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