

City of Spartanburg: Keeping the Grid on No Matter What

Building a Clean Energy Investment Pipeline in Spartanburg, South Carolina

AT A GLANCE

Investment Priorities

Solar+Storage Microgrid Systems, Emergency Resilience Hubs, EV Charging Infrastructure, Building Energy Efficiency

Pipeline Value

\$26,400,000

Key Partners

City of Spartanburg, OneSpartanburg Inc., South Carolina Energy Office, Spartanburg County Emergency Management, Spartanburg Downtown Memorial Airport, Clean Energy Fund of the Carolinas, Duke Energy, Spartanburg Community College, USC Upstate

Strategic Role:

Project Originator | Anchor Institution

The Path Forward

Securing predevelopment funding for engineering feasibility studies, financial modeling, and permitting across six resilience hub sites, and embedding clean energy standards into Spartanburg's active planning and code rewrite before the window closes.

THE BIG PICTURE

The City of Spartanburg is building a network of solar-powered resilience hubs across six City-owned facilities, anchored by Spartanburg Downtown Memorial Airport. Hurricane Helene demonstrated the City's grid fragility, with community centers providing critical emergency shelter, supplies, and services when the grid went down, operating only on diesel backup power. With support from the Municipal Investment Fund (MIF), Spartanburg is replacing that vulnerability with resilient, solar-plus-storage microgrid systems that maintain critical operations and serve the community before, during, and after extreme weather events.

The Challenge: Critical municipal facilities that serve as emergency shelters and command centers rely on aging diesel backup generators, leaving the city vulnerable during extended grid outages.

The Solution: Deploying a coordinated network of solar-plus-storage microgrid systems under Energy Services Agreements (ESAs), Power Purchase Agreements (PPAs), and Design-Build-Operate-Maintain (DBOM) structures that transfer technology and performance risk to private partners while maintaining public ownership of critical infrastructure.

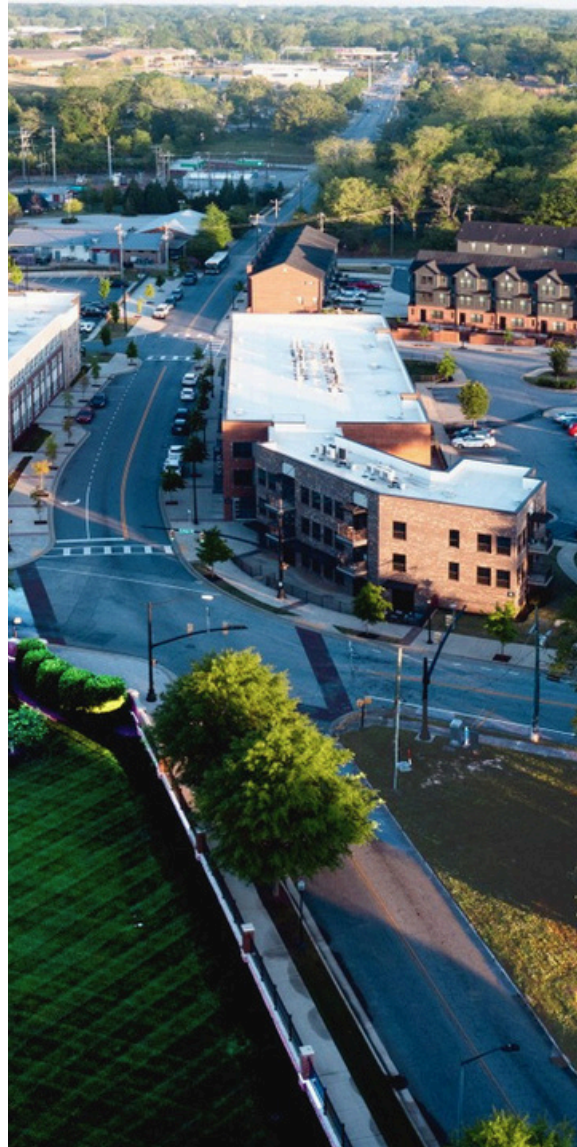


Spartanburg Downtown Memorial Airport

CREATING THE FOUNDATION: COALITION, CODE, AND CAPITAL FRAMEWORK

Through the Municipal Investment Fund (MIF), Spartanburg is building the market infrastructure needed to move the hub network from identified concepts to financeability, while capturing a narrow regulatory window to codify clean energy priorities into the City's long-term regulatory framework.

- **Coalition and Partnership:** The coalition spans City departments, the South Carolina Energy Office, Spartanburg County Emergency Management, OneSpartanburg's economic development team, and the Clean Energy Fund of the Carolinas, which brings expertise in clean energy financing structures and community loan programs. Duke Energy is engaged as the primary utility partner on interconnection, grid integration, and community solar programs, including the existing South Carolina Shared Solar program.
- **Planning and Code Rewrite Window:** Spartanburg is undergoing a comprehensive planning, zoning, and code rewrite. The City is aiming to include solar-ready and EV-charging incentives for new construction, expedited permitting tracks for clean energy projects, and contractor quality standards directly into the base code ahead of its finalization. This reduces case-by-case variances and transaction costs across future projects for developers and establishes a predictable market for infrastructure investment for the foreseeable future.
- **Diverse P3 Structure Framework(s):** Four delivery structures are prioritized: ESAs and PPAs for solar-storage deployments where private partners own and operate equipment; DBOM for facilities requiring long-term operational reliability under public ownership; Availability-Payment P3 structures for hubs where resilience and service reliability drive the primary financial case; and Energy-as-a-Service (EaaS) for sites requiring integrated solar, storage, controls, and efficiency upgrades under a single service agreement.
- **C-PACE and Financing Tools:** Spartanburg supports South Carolina's C-PACE ordinance adoption to provide long-term financing for commercial, industrial, and multifamily building owners. On-bill financing through Duke Energy is also under exploration for residential and small business energy efficiency upgrades, with the program design focused on households facing the highest energy cost burdens.



Northside Community

PROJECTS SEEKING CAPITAL: RESILIENCE HUB PORTFOLIO

Each site would incorporate solar photovoltaic systems, battery energy storage enabling microgrid island mode operation, microgrid controllers, EV charging infrastructure, and energy management systems. The Airport is the most advanced site with FAA solar approval already secured. Final technical specifications and cost estimates would be confirmed through engineering feasibility studies.

Spartanburg Downtown Memorial Airport (400-acre) — Primary Resilience Hub

A 1-MW solar array with integrated battery storage that serves as a FEMA regional staging site and the launch point for Spartanburg Regional Hospital's medical helicopter.

- Capital Stack: Energy Efficiency and Conservation Block Grant (EECBG) funds allocated for 3 to 4 Level 2 EV chargers with infrastructure capacity for 10+ additional ports.
- Transaction Size: Approx \$2.38M.
- Revenue Streams: Long-term PPA with the Airport Authority; EV charging user fees; Renewable Energy Certificate (REC) sales.
- Investment Readiness: Advanced Predevelopment. FAA approval secured January 2025; engineering feasibility study is the immediate next step.

Police Department Headquarters Resilience Hub

A 40,000 sq. ft. public safety facility currently on diesel backup, to be upgraded with a solar-plus-storage microgrid for dispatch systems, emergency operations, and fleet charging.

- Capital Stack: ESA/PPA structure; seeking ~\$3.7M.
- Revenue Streams: Energy cost savings through on-site solar generation
- Investment Readiness: Market-Scale Feasibility. Engineering feasibility study required.

Fire Department Headquarters Resilience Hub

A 66,000 sq. ft. public safety facility receiving solar-plus storage systems for power dispatch, emergency operations, and fleet charging during grid outages.

- Capital Stack: ESA/PPA or DBOM structure. Seeking ~\$4.8M.
- Revenue Streams: Energy cost savings
- Investment Readiness: Market-Scale Feasibility. Engineering feasibility study required.

TK Gregg Community Center Resilience Hub

A 46,810 sq. ft. community center that served as a primary emergency shelter during Hurricane Helene, to be equipped with solar-plus-storage sized for gymnasium sleeping areas, pool facilities with shower access, medication refrigeration, and device charging.

- Capital Stack: ESA/PPA or Availability-Payment P3 structure. Capacity for up to 10 EV charging ports. Seeking ~\$5.1M.
- Revenue Streams: Energy cost savings; EV charging user fees; availability payments reflecting emergency shelter and community services value.
- Investment Readiness: Market-Scale Feasibility. Engineering feasibility study and community benefits analysis required.

CC Woodson Community Center Resilience Hub

A 27,000 sq. ft. community center serving a priority neighborhood, equipped with solar arrays, battery storage, and microgrid systems for emergency shelter operations and community services.

- Capital Stack: Seeking ~\$3.6M. ESA/PPA or Availability-Payment P3 structure.
- Revenue Streams: Energy cost savings; availability payments reflecting emergency shelter value.
- Investment Readiness: Market-Scale Feasibility. Engineering feasibility study and community benefits analysis required.

Public Works Facility Resilience Hub

An aging Public Works building requiring modernization with solar, storage, and efficiency upgrades to support emergency response vehicle maintenance and municipal fleet operations during extended grid outages.

- Capital Stack: Project costs approximately \$6.8M. DBOM or EaaS structure incorporating solar, storage, controls, and efficiency upgrades.
- Revenue Streams: Energy cost savings; operational cost reductions from fleet electrification.
- Investment Readiness: Market-Scale Feasibility. Engineering feasibility studies and efficiency audit are required.



PROVEN IMPACT & NEXT STEPS

Spartanburg's infrastructure strategy focuses on delivering direct economic, safety, and energy benefits to critically impacted communities, codified by supportive zoning and streamlined permitting frameworks for clean energy deployment at scale. This approach not only strengthens local emergency preparedness but also stimulates local economic growth by engaging regional contractors and workforce development organizations across the pipeline. Their multi-pronged P3 delivery framework offers multiple entry points for stakeholders and project partners to envision the bankability and feasibility of each site.

- **Regulatory Advantage:** Embedding clean energy standards into an active municipal code rewrite is a high-leverage intervention rarely available to municipalities. With a regulatory environment that reduces transaction costs for future projects, Spartanburg would offer a unique market opportunity for national and local developers to activate a pipeline of projects through an expedited development process.
- **The Strategic Gap:** Engineering feasibility studies are the immediate pre-development bottleneck across the portfolio. Without site-specific solar resource analysis, structural assessments, preliminary electrical design, and financial pro formas, the City cannot issue competitive solicitations to private developers or present bankable business cases to lenders. The Airport, with FAA approval already secured, is most ready for immediate predevelopment investment and can serve as the proof-of-concept that unlocks the full network. Every dollar committed accelerates ESA and PPA execution, triggering private capital deployment at scale.



Love Where You Live

This case study was funded through the Municipal Investment Fund, a partnership between ICLEI USA and CGC to support local governments, Tribes, and their partner not-for-profit organizations develop public-private partnership plans that can accelerate the deployment of capital to sustainable energy projects.