

Lighting the Way: Resilient Ripley Microgrid

The Resilient Ripley clean energy microgrid system is providing advanced technology exposure to a rural, underserved area, increasing equitable access to clean energy technology. Designed by National Institute for Hometown Security (NIHS) and Resilient Energy & Infrastructure (REI), this project enables resiliency measures that will benefit the city of Ripley far into the future.

BUDGET

\$887K

\$621K
TVA Connected
Communities

\$266K
Proposed
Match

Background



Swift Deployment and Repositioning

The Rapid Deployment Hybrid Microgrid by REI includes approximately 30 kilowatts of solar capacity, a 90-kilowatt hour battery and other equipment. The unique design of this system allows for it to be activated by two people within an hour, enabling swift deployment and repositioning. By placing the microgrid in a key infrastructure point, the system operates more efficiently and better serves the community.

THE OPPORTUNITY

Resilient Energy Management

The microgrid can be used in both emergency and non-emergency situations. During normal operations, it helps reduce energy costs at its home base and serves as backup power in an emergency that includes loss of power in the town.

CITY OF RIPLEY

7,800
residents

Rural
town

**Economically
Disadvantaged**
community status

Scope



Evaluate Effectiveness

of the use of a mobile microgrid by a small community for critical infrastructure power in emergencies.



Identify Opportunities

for how the microgrid can be deployed for use as a clean power source in non-emergency times.



Measure Reduction

of fossil fuel-based generators by small communities during emergency response.

MICROGRID

20ft
shipping container

30kW
solar capacity

90kWh
battery

THE GOAL

Clean Backup Power

The pilot project provides a portable, clean, solar-powered microgrid system that provides backup power for emergency services and a cost-effective, emissions-free power source for non-emergency situations.



Performance

Key Performance Indicators

- Number of formalized partnerships created
- Identification of all city departments and critical infrastructure facilities impacted
- Number of buildings affected
- Amount of additional sustainable backup power capacity
- Direct economic impact on the city of Ripley
- Number of project engagements and communications
- Energy savings predicted versus achieved

The Value

City of Ripley

- Lowered cost of power to city facilities
- Enhanced backup power from clean energy generation
- Advanced energy system
- Increased infrastructure resiliency during emergency response operations

Residents

- Increased exposure to resiliency and renewable energy education
- Access to backup generation in times of need
- Sustainable city services during power outage

Key Partners

PROJECT LEAD

National Institute for Hometown Security (NIHS)

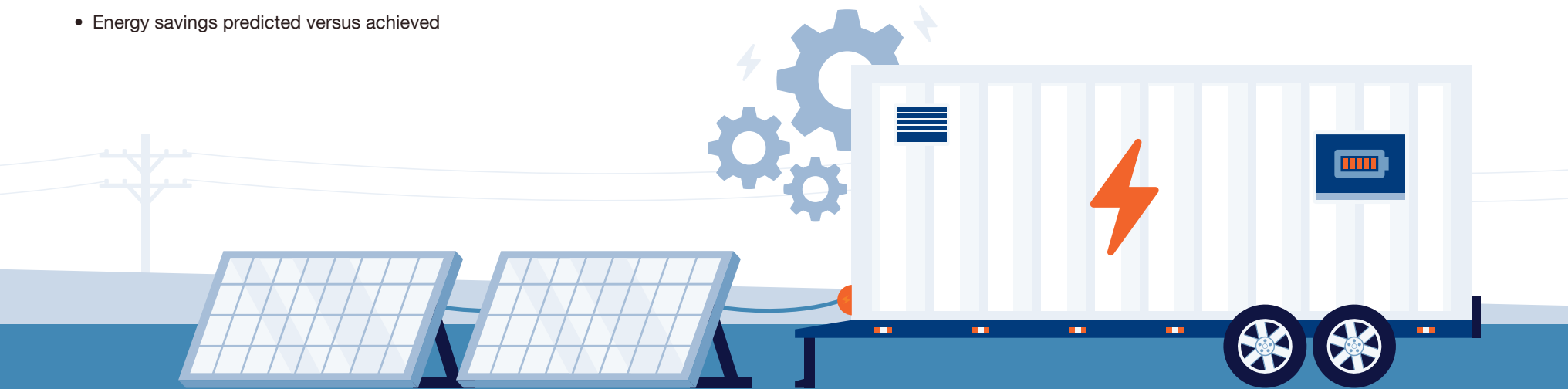
ADDITIONAL PARTNERS

City of Ripley

Resilient Energy & Infrastructure (REI), LLC

Ripley Power & Light

Tennessee Valley Authority



Timeline



Learn more about pilot projects

Phase 1 (Months 1-6)

Enable the team to jointly plan for microgrid use and begin permitting process

Phase 2 (Months 7-9)

Procure and assemble all project hardware

Phase 3 (Months 10-12)

Complete installation, testing and commissioning of the system

Phase 4 (Months 13-23)

Monitor system operations and evaluate performance

Phase 5 (Month 24)

Closure of all project areas and documentation of results