



# SCEP

STATE & COMMUNITY ENERGY PROGRAMS

Webinar

## ESPC: A Resilient Model to Achieve Resiliency Goals

October 8, 2025



**ENERGY SERVICES  
— COALITION —**

*A Public Private Partnership*

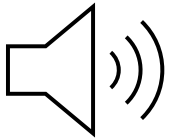
[www.energyservicescoalition.org](http://www.energyservicescoalition.org)



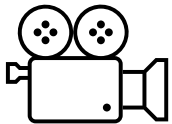
# Virtual Housekeeping



Drop your questions in the Q&A box – or raise your hand at the end!



Unmute your microphone to ask questions or join the conversation



A recording of this training (minus the final Q&A) will be posted online

# Introductions

# Speakers



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# About ESC

The Energy Services Coalition (ESC) is a national nonprofit organization composed of a network of experts from a wide range of organizations working together at the state and local level to increase energy efficiency and building upgrades through **E**nergy **S**avings **P**erformance **C**ontracting.

*Local chapters; public and private sector individuals coming together to provide outreach and education.*



# Agenda

**Learning Objective:** Since the 1970s, Energy Savings Performance Contracting (ESPC) has proven to be one of the most durable and adaptable tools for upgrading infrastructure—thriving through shifts in funding availability, political administrations, and economic climates.

In this session, we'll explore how the ESPC model not only delivers guaranteed energy savings but also supports operational and community resiliency goals for the Municipal, University, School, and Hospital (MUSH) market. Participants will gain insights into:

- Why ESPCs have endured for decades as a trusted procurement and financing mechanism
- How to align ESPC projects with long-term resiliency and sustainability objectives
- Real-world examples of MUSH market entities using ESPCs to enhance community services and critical operations

If you're seeking proven, flexible approaches to meet evolving infrastructure and resiliency needs, this webinar will show how ESPCs can be the cornerstone of your strategy.

# **ESPC History: A Resilient Model Over Time**

# ESPC Roots

## What is ESPC

Energy Savings Performance Contracting (ESPC) is a proven public-private partnership model that enables public sector entities—including Municipalities, Universities, Schools, and Hospitals (MUSH market)—to implement energy efficiency projects without upfront capital. Energy Service Companies (ESCOs) finance, design, and guarantee savings, allowing infrastructure upgrades to be paid for through long-term operational savings.

## Origins & Purpose

Energy Efficiency and MUSH ESPC projects emerged in the late 1970s–1980s in response to energy crises and aging public infrastructure. (Source: DOE Better Buildings Solution Center)

ESPC offered (and offers) a **risk-averse, budget-neutral** financing mechanism to **overcome barriers in the MUSH market:**

- Long procurement cycles
- Strict budgets
- Conservative fiscal cultures
- Risk Aversion

## Benefits to the MUSH Market

- **Budget-Friendly Modernization:** Enables upgrades without new taxes or bond measures.
- **Guaranteed Results:** ESCOs assume performance risk through contractual savings guarantees.
- **Job Creation:** Drives demand for skilled trades and technical jobs.
- **Resilience Leadership:** Improves community resilience to climate impacts like storms and droughts.
- **Operational Efficiency:** Reduces long-term costs, freeing up funds for core services.
- **Improved Environments:** Enhances comfort, safety, and productivity while lowering emissions.

# A Resilient Model Over Time and Through Change

## ESPC has proven resilient across:

- Fluctuating federal/state funding
- Political transitions
- Economic downturns

## It has Bipartisan Appeal:

- Privately financed (does not require taxpayer dollars)
- Adopted in both red and blue states.
- Supports local economies by engaging contractors and suppliers.
- Ensures transparency through rigorous Measurement & Verification (M&V)
- Reduces operating costs for MUSH market organizations with over-burdened budgets

## Result:

Over \$30 billion in cost-effective upgrades have been financed through ESPCs across 45 states. [Source](#)

**ESPC's budget-neutral structure and measurable results make it a politically neutral and fiscally responsible approach.**

# Role of State Energy Offices and DOE

## States have been instrumental in ESPC adoption:

- Legislation: 45 states have enabling laws that standardize processes and protect public owners.
  - North Carolina: Partnered with nonprofits to address legislative barriers and provide limited Owner's Rep services.
- Program Administration: State Energy Offices provide technical assistance, oversight, and education.
  - E.g., Colorado, DESEU, Georgia, New Mexico, Virginia, Washington: Established statewide ESPC programs with dedicated staff.
- Consistency: Some SEOs provide template documents for state and local agencies to use.
  - Texas, Pennsylvania, Kentucky: Promoted ESPC to modernize schools, hospitals, and government buildings.
- Financial Support: Some states offer revolving loan funds or incentives to reduce financing costs.

State of States webinar coming up on October 28th [Register Here](#)

## DOE Leadership is Essential:

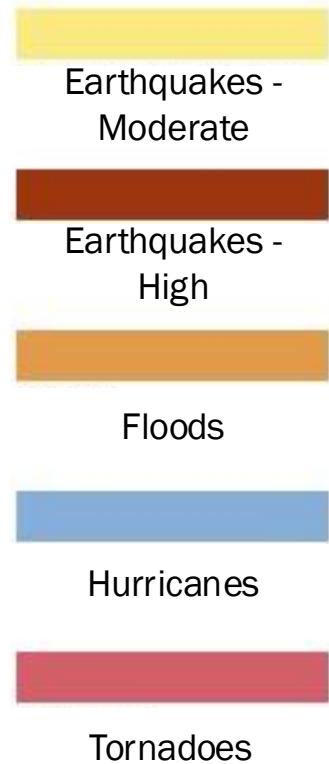
- Federal Endorsement: Reassures public officials, lenders, and ESCOs.
- National Impact, Local Benefit: Aligns with energy security, decarbonization, and economic stimulus.
- Sustains Momentum and Facilitates Coordination: Builds a self-reinforcing cycle of adoption.

# **What is Resilience?**

## **What are Resilience Goals?**

### **How can an ESPC help achieve those goals?**

# What Is Your Design Basis Threat?



# Critical Infrastructure Hazards

Black Sky Hazard: a catastrophic event that severely disrupts critical infrastructure in multiple regions for long durations

## Natural

Wind, Floods, Ice, Heat  
Drought  
Wildfire  
Earthquake or Volcano  
Solar flare  
Pandemic



## Manmade

Human error  
Aging infrastructure  
Physical attack  
Cyber attack  
EMI attack  
EMP attack

# Resilience that can be facilitated through ESPC

## Facility resilience:

- Infrastructure and equipment upgrades.

## Grid resilience:

- Avoid outages by reducing demand, contributing through DR, or islanding.

## Organizational resilience:

- Improve economics and wellbeing (internal).

## Community resilience:

- Enhance health, equity, and safety (external).

# Facility Resilience and Energy Management

## Energy Management Strategies

- Whole Systems Thinking
- Integrative Design Approach



# Facility Resilience: Whole Systems Thinking

## Steps for Whole Systems Thinking in an ESPC

### 1. Reduce existing loads first

- Optimize lighting, HVAC, and envelope to lower energy demand.
- Lower loads reduce need for costly on-site generation and battery storage (BESS).



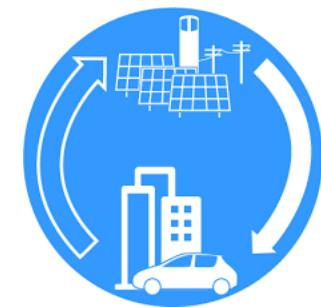
### 2. Electrify the building

- Replace fossil-fuel systems with electric alternatives.
- Use heat pumps for space conditioning and water heating.
- Account for upgraded electrical capacity (wiring, circuits, panels).



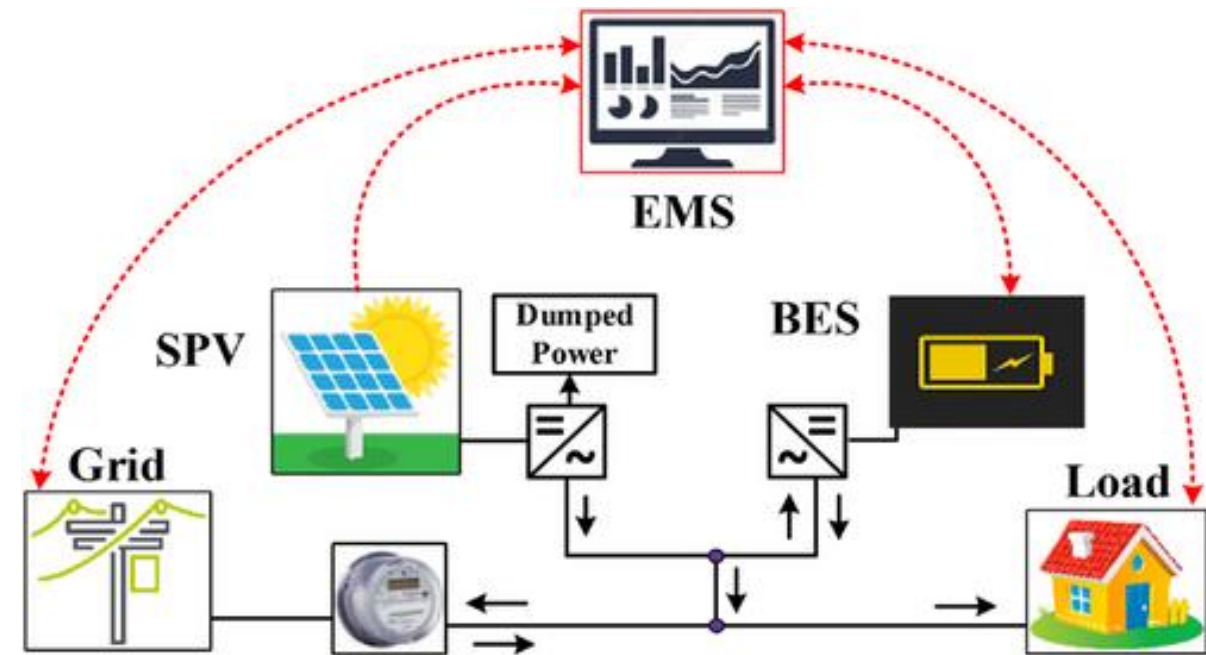
### 3. Enable Demand Response (DR)

- Install EMS or smart thermostats for temperature adjustments during grid peak.
- Use VFDs on large motors; ECMs for fractional HP motors.
- Reduces peak load and dependence on PV/BESS.
- DR programs can generate revenue.



# Facility Resilience: Integrative Design Approach

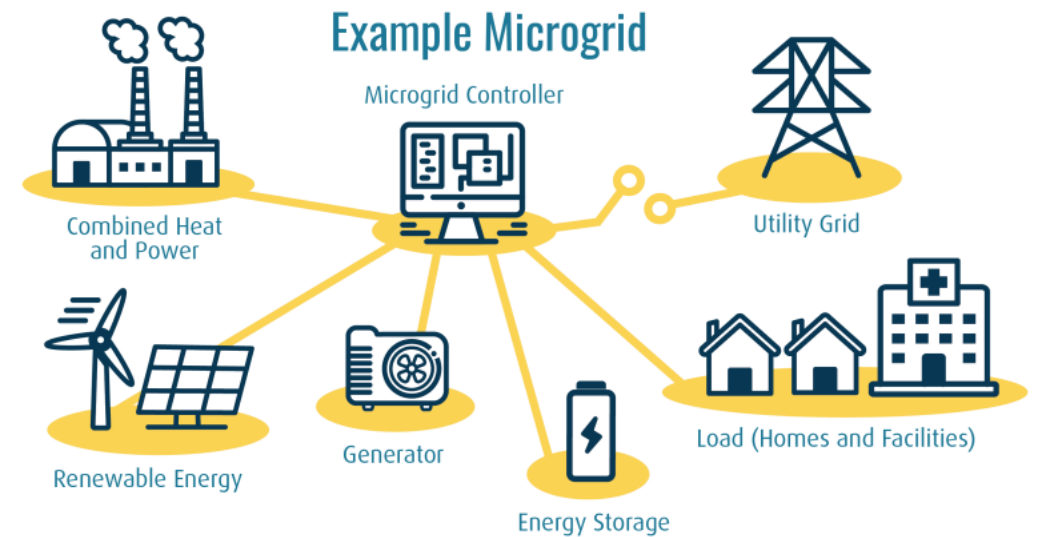
- Once the electric loads are minimized and more controllable, then “right-size” the design and installation of solar PV and BESS system
- ESCO should evaluate character of load profile, peak usage, “time-of-use” utility rates, to determine PV+BESS system sizing
- Optimize balance of power:
  - Generated by PV array
  - Charging/discharging of BESS
  - Delivered to the building
  - Excess power returned to the grid using “net metering”



# Facility Resilience: Microgrids

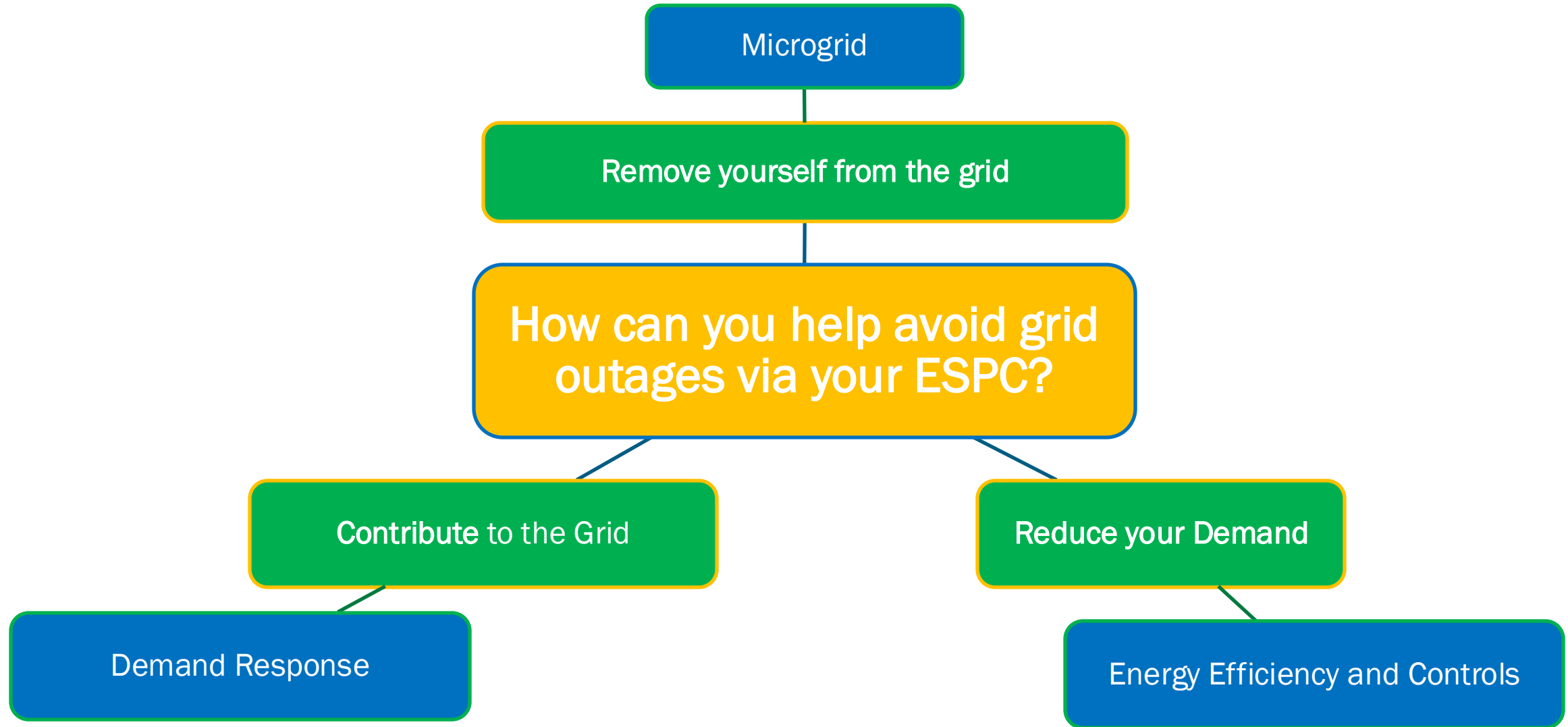
Microgrids have emerged as one of the most critical technologies for grid resilience, enabling businesses, schools, hospitals, and even whole neighborhoods to retain power even when the grid goes down.

A microgrid is a local network of distributed energy resources (DERs) and customer loads, orchestrated through a specialized controller, that acts as a unified grid resource during blue sky conditions but is able to disconnect from the grid (“Island”) and continue operating when required.



<https://www.naseo.org/issues/electricity/microgrids>

# Grid Resilience



# Economic and Organizational Resilience

Stable savings, predictable budgeting, avoidance of deferred maintenance, and improved working environment.

## Examples:

- Energy and operational savings can pay for deferred maintenance, freeing up general funds for other needs or an “emergency fund”
- Better indoor lighting and air quality leads to higher productivity, safer environment, and improved health
- Less time spent on changing lights means more time for other priorities



# Community & Social Resilience

Enhanced social equity, community safety, and improved health and wellbeing.

## Examples:

- Smart lighting in underserved areas
- Improved air quality leads to better health
- Education and engagement opportunities through signage and community events
- Workforce development initiatives to provide opportunity
- Economic development initiatives such as employing local contractors



# To Maximize the Benefits of an ESPC for Resiliency

- **Integrate resilience into project goals:** Clearly define resilience objectives alongside energy savings goals. Resilience upgrades, such as a microgrid for a police station, may not produce immediate energy cost savings but are vital for community safety.
- **Conduct comprehensive assessments:** Perform a thorough analysis of all community assets and vulnerabilities. This includes mapping critical infrastructure, identifying community vulnerabilities, and prioritizing projects with input from all stakeholders, including marginalized communities.
- **Explore alternative financing:** Recognize that some resilience measures, like strengthening a building to resist seismic activity, may not generate energy savings. In these cases, consider bundling the resilience measure with energy-saving upgrades to ensure a financially viable ESPC.
- **Leverage external resources:** The U.S. Department of Energy (DOE) offers toolkits, resources, and technical assistance through its ESPC Campaign and Performance Contracting National Resource Center (PCNRC).
- **Ensure strong contract provisions:** Use strong measurement and verification (M&V) protocols to ensure the energy service company (ESCO) delivers the guaranteed savings and performance.
- **Share with the community:** Regularly inform the public about the ESPC's progress and benefits, including the resilience improvements. This builds trust and demonstrates the value of using a budget-neutral mechanism.

# Examples

# City of Pendleton, OR: Multiphase Sustainable Infrastructure Project

**Goal:** Boost resiliency & advance ambitious net zero targets through phased citywide infrastructure upgrades and renewable energy integration.

## Key Steps:

- *Phase 1 – LED Streetlights:* Replaced 1,005 fixtures, cutting energy use by 50%, with no upfront city cost (Energy-as-a-Service financing).
- *Phase 2 – Solar Canopy:* Installed 240 kW solar system at Wastewater Treatment Facility, improving water quality, funded via ESPC/state/federal/city incentives.
- *Phase 3 – Battery Storage & Microgrid:* 500 kW / 1,376 kWh battery pairing creates microgrid resilience—backup power, lower peak costs, full use of on-site clean energy during grid outages.

## Outcomes:

- **Financial:** Reduced utility costs, long-term ROI <15 years, budget-neutral.
- **Environmental:** Annual reduction: 460+ metric tons CO<sub>2</sub>, less maintenance, supports diverse renewables, protects aquatic ecosystem.
- **Community:** Improved lighting, resource recovery, local leadership in sustainability.



# City of Telluride, Colorado

## Project Overview

Nestled in the Rocky Mountains, Telluride School District partnered with Energy Systems Group to modernize its facilities while preserving the town's historic character. The project improved energy efficiency, resilience, and sustainability by integrating renewable energy, battery backup, and critical infrastructure updates—ensuring schools stay operational year-round. The district also took great care to protect Telluride Elementary's 150-year-old historic character, reinforcing its iconic cupola and collaborating with local historical societies.

Beyond education, these buildings serve as community hubs, hosting civic events and emergency operations. With strategic energy savings and grant funding, the district reduced utility costs by 33%, securing long-term benefits for students and the broader Telluride community.

## Energy Conservation Measures

- Installed LED lighting for improved safety and energy efficiency inside and out
- Upgraded snow melt controls for enhanced energy efficiency
- Added PV Solar to generate on site renewable energy to power the school
- Reduced energy costs by utilizing the battery storage to offset peak demand charges
- Installed EV charging stations for visitors and staff
- Upgraded transformers to high-efficiency models to lower energy consumption

## Project Highlights

- Collaborated with local historical societies to preserve the exterior character
- Improved Building Envelope by eliminating drafty conditions and sealing gaps
- Replaced/repared roofs to enhance facility integrity
- Created independent on-site power supply for uninterrupted operation in emergencies

## Project Stats

- Cost of Project: \$8,858,190
- Year one utility and O&M savings: \$92,795
- Incentives, rebates, and grants: \$1,095,460
- Reduction in annual utility costs: 33.0%



**COLORADO**  
Energy Office



# Federal ESPC – Joint Base San Antonio, TX



Super ESPC project financed  
over 22 years

24% reduction  
electric energy  
use

**\$133.5M** in energy  
infrastructure  
improvements

20MW PV/CHP gen.  
+4MW/8MWh storage  
+MG control systems



900 buildings at  
5 military bases

**\$280M** total cost  
savings

Achieve energy  
security

## “Mission Assurance through Energy Assurance”

Mark Corell

Deputy Assistant Secretary of the Air  
Force for Environment, Safety, and  
Infrastructure



# Federal ESPC– Joint Base San Antonio



## Significant operational, cost and resilience benefits

### LIGHTING UPGRADES

~140,000 new LED fixtures and lamps across all JBSA locations

- Significantly reduce cooling load
- Increase light quality comfort & productivity



### CONTROLS

New open protocol controls systems, motors, VFDs

- Elimination of obsolete, expensive to maintain systems
- Improved HVAC performance, scheduling
- Reduced unscheduled downtime
- Increased electrical load efficiency



### ONSITE RENEWABLE ENERGY GENERATION

~20MW solar arrays + 4MW/8MWh BESS

Enhanced energy security, resilience and mission assurance

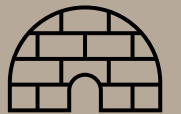
- Shaded parking for commuter comfort
- Environmental stewardship



### THERMAL STORAGE

Five new storage tanks at two locations

- Permanent electrical peak load reductions
- Mission Critical back-up and fire protection reservoir
- Additional CHW capacity for site growth



# Final Thoughts

# Technical Assistance

State and local ESPC Campaign partners are invited to set up a time to speak with an ESPC Subject Matter Expert for direct technical assistance. Discussion topics can be anything regarding an ESPC project or program, including specific questions on your project. **To request a meeting time**, please complete this **Technical Assistance Sign-Up Form**.



*"The USDOE's ESPC Campaign has been an invaluable partner in helping us strengthen collaboration with ESCOs and implement the eProject eXpress (ePX) platform effectively. Through opportunities like speaking at the Energy Services Coalition Regional Meeting and participating in a Peer Exchange, as well as receiving direct support from a DOE subject matter expert, we've made significant progress. Our ePX portfolio has become far more usable, and the interest from partners across our state has grown tremendously. The Campaign's technical assistance makes complex information clear and actionable, and I would strongly recommend it to any organization looking to advance their ESPC efforts."*

-Miracle Wilson  
Energy Resource Project Manager  
Georgia Environmental Finance Authority

# Upcoming Events (click to register)

## Webinars

- [Ally in Your Corner: Working with Owner's Reps](#)  
October 16, 2025, 1:00pm CT
- [Using eProject eXpress to Track and Report ESPC Legacy Project Data \(Led by LBNL\)](#)  
October 21, 2025, 1:00pm CT
- [State of States : How are States encouraging ESPC : The evolving role of State Energy Offices in fostering successful MUSH market projects](#)  
October 28, 2025, 1:00pm CT

## In-Person

- [2025 Annual R3 Conference and Innovation Expo - Join us in Las Vegas for the Annual Conference of the National Association of Energy Service Companies!](#)  
November 3-5, 2025 - Paris Las Vegas, Las Vegas, NV

# Resources: ESPC Campaign



The **Energy Savings Performance Contracting (ESPC) Campaign** engages states, local governments, school districts, universities and colleges, hospitals, and other market stakeholders to:

- **Support** the use of performance contracting to increase efficiency, modernize public buildings, reduce utility expenses, increase resilience, and meet lead-by-example goals
- **Share and Leverage Practical Resources** to strengthen ESPC and measurement & verification (M&V)
- **Amplify and Implement Best Practice Approaches** for ESPC projects and programs
- **Demonstrate Impact** with measured and verified energy and cost savings
- **Showcase Achievements** and share examples of successful ESPC implementation

- ✓ *Expert-led Trainings*
- ✓ *Webinars*
- ✓ *Peer Exchanges*
- ✓ *“Ask-an-Expert” Office Hours*
- ✓ *Resource Library*

**Case Study  
Submission  
Form [Here](#)**

Complete the [Expression of Interest](#) form to obtain a Partner Agreement



**Thank you!**

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