



# ***11<sup>th</sup> Annual Market Transformation Conference***

## **Using ESPC to Mitigate Weather Extremes and Enhance Resiliency**

### **Moderator**

**Tom Walther,  
ESC Private Sector Co-Chair**

## Critical Infrastructure Hazards

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

### Natural

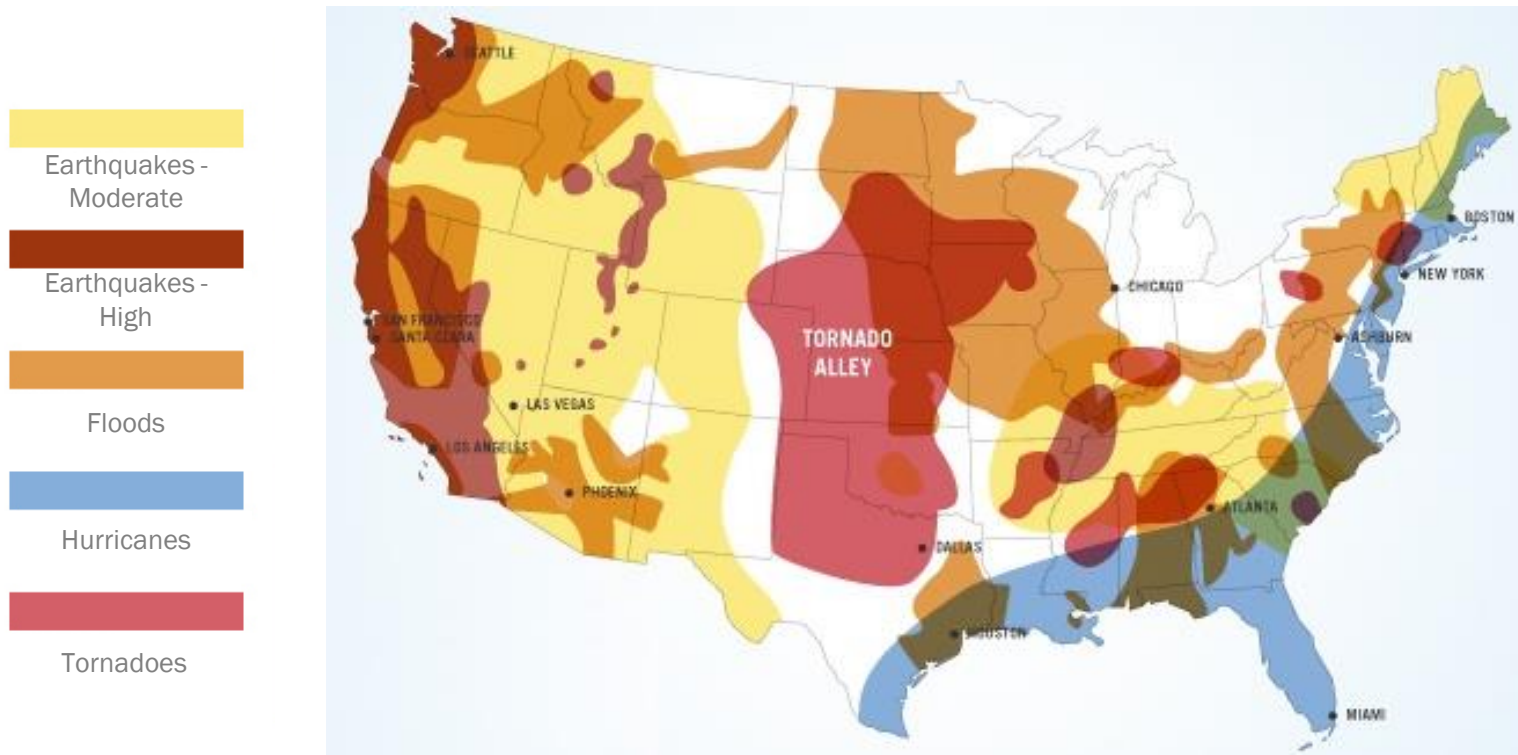
Wind, Floods, Ice, Heat  
Drought  
Wildfire  
Earthquake or Volcano  
Solar flare  
Pandemic



### Manmade

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

## What Is Your Design Basis Threat?





# Why *ESPC*?

## Improve Facility Resilience

Reduce loads

Demand response

Renewables +  
BESS

Improve “energy stealth” and mitigate future energy risks



# ***Public agencies in the Southwest using ESPC for Resilience***

**Alex Montano**

Executive Vice President

Yearout Energy

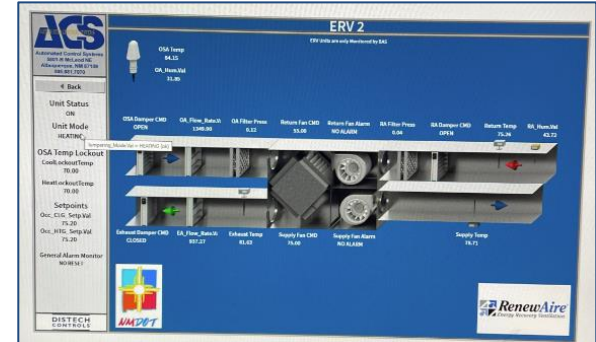
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# NMDOT District 6

Measures Implemented	
Efficiency	LED Lighting
	Building Automation System
	Weatherization
	Energy Recovery Units
	Roof Replacement
	Water Conservation (Domestic & Irrigation)
Electrification	Variable-Refrigerant Flow HVAC
	EV Charging
Generation	Solar PV Carport
Resilience	Battery Energy Storage System (2Hr Backup)





# NM Army National Guard

Measures Implemented	
Efficiency	LED Lighting
	High-Efficiency Transformers
	Building Automation System
	Weatherization
	Energy Recovery Units
	Sub-Metering
	Water Conservation (Domestic & Irrigation)
Electrification	HVAC System Electrification
	Domestic Hot Water Electrification
	Kitchen Equipment Electrification
Generation	Solar PV
Resilience	Micro-Grid Infrastructure
	Battery Energy Storage Systems
	Generators / Storage
	Water Storage
	Other Protections

## Key Objectives:

- Define Electrical, Nat Gas, Water and Sewer historic baselines
- Identify existing system deficiencies
- Identify opportunities for energy and water efficiency
- Electrification of systems
- Develop microgrid solution
- **Provide 14-Days of Energy and Water/Sewer Resiliency**
- **Establish Course of Action plan with critical path to implementation**

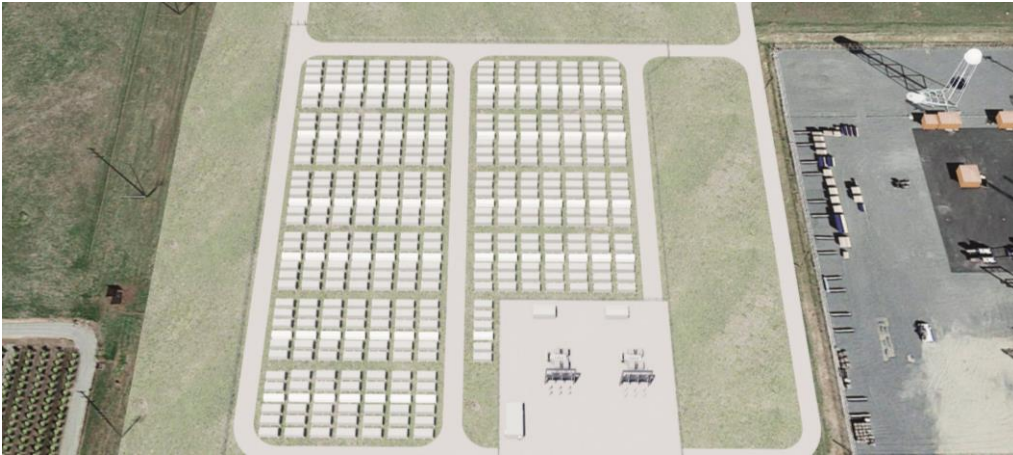


# ***Making Facilities and Communities more Resilient to Climate Impacts***

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# Southern California Edison *CA (Wild Fires, Grid Resilience)*



Ameresco entered into a contract with Southern California Edison (SCE) to design and build three grid scale battery energy storage systems (BESSs) at existing substation parcels throughout SCE's service territory in California. Due to the impact of the extreme weather events in the state, this aggressive plan will significantly increase reliability of the grid.

## Project Highlights

**Technology / Contracting:** Battery Energy Storage System; Engineering, Procurement, Construction, and Maintenance (EPCM) agreement

**Overall Energy Storage Capacity:** 2.15GWh

**Energy Storage System Configuration:** Three 537.5 MW, four-hour BESS)

# Taylor Farms

*San Juan Bautista, CA (Food and Economic Security)*



Microgrid including:

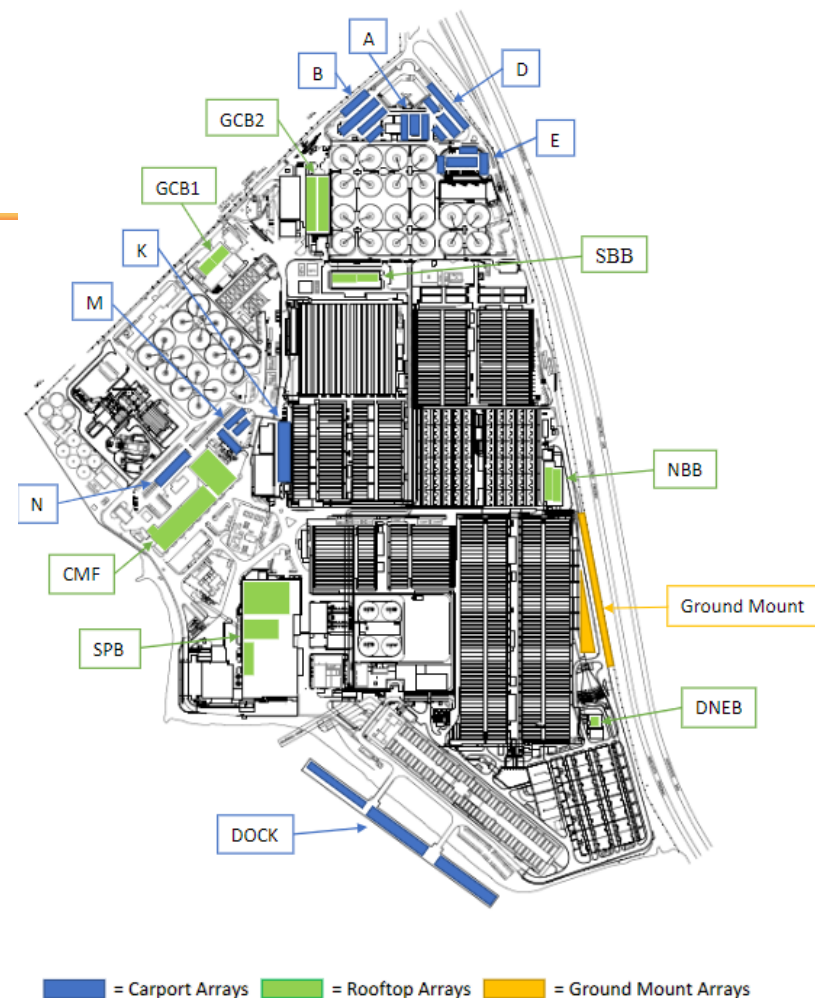
- 6MW of Bloom Fuel Cells
- 2MW of Solar Power
- 2MW Battery Energy Storage

The State of CA is facing an energy short fall. Taylor Farms is taking control by ensuring supply and price predictability.

Ameresco is working with Bloom Energy, Concept Clean Energy to install a microgrid capable of taking one of Taylor Farms' California food processing facilities completely off the energy grid and power the entire 450,000 sq. ft. facility in San Juan Bautista, CA. In Sept 2023, Taylor Farms operated independently from the grid.

# DC Water Solar (Reduced Pollution, J40)

- 4 MW Solar Installed
- Solar installations included 13 rooftops, ground mounts and car ports
- Work contracted in 2019 and completed July 2021.
- Crews focus on safety, efficiency enabling them to complete complex projects at DC Water during COVID
- Ameresco owns and operate all assets.
- DC Water will benefit from the solar output through a power purchase agreement (PPA) structure.
- Currently negotiating phase II to build 11MW of solar
- Solar will be built above catchment tanks





# Norfolk Naval Shipyard

## *Portsmouth, VA (Hurricanes, Costal Resilience)*



In 2019, Ameresco was awarded a \$173 million Energy Savings Performance Contract (ESPC) to support the Navy's efforts to improve installation resilience and reliability.

## Project Highlights

As part of this project, Ameresco will build a new 2.7 million gallon-per-year industrial wastewater treatment plant.

The project also includes:

- 19 MW CHP plant
- 3 MW battery energy storage system
- An alternate electric feed
- 12 MW of refurbished diesel generation
- Microgrid control system

# City of Philadelphia, PA



## Streetlighting (Safety, Community Resilience)

**Project Size:**  
\$90.5 Million

**Project Duration:**  
24 months

**Total Luminaire Quantity:**  
130,000

**Total Network Nodes  
Installed:**  
129,175

**ANNUAL ENERGY SAVINGS:**  
**\$8.5 Million**



- Replaced 130,000 streetlights with high-quality LED fixtures and added a lighting management system for advanced control for future Smart City applications by the City.
- To match locations, prototypical samples were developed using GIS databases, aerial imagery, and field audits to provide accurate input data for use with the photometric analysis software.
- Identified 28 Roadway applications and incorporated information on economic, social, crime, gun violence, Vision Zero corridor.
- Community engagement to determine lighting preferences and proactive addressing community concerns about LED Streetlights.
- Discussions with local community and Drexel University for input on illumination levels and luminaire color temperature. Areas were prioritized for higher or “boosted” levels of streetlight illumination using the lighting management system.



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***Thank you!***