

FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

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Fort Carson Battery Energy Storage System

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Hosted by:



Resilience through Alternative Financing

- Project Background:

- Energy Savings Performance Contract (ESPC) – awarded AUG 2017
- RFP released – JUL 2015
- Scope: Battery Energy Storage (BESS) for peak shifting, EMCS, Lighting, Electric motors & drives



- Although this was done through ESPC, could be done through UESC as well.

- Consider and Use All Tools Available:

- UESC
- ESPC
- Utilities Privatization (UP)
- Energy Resilience and Conservation Investment Program (ERCIP)
- Operations & Maintenance (O&M)
- Military Construction (MILCON)

- Not all projects will be suitable for all types of funding or contracting vehicles

Energy Resilience in the Army

- Energy and water resilience in support of mission readiness is the driving priority.
- This project started before the pivot to the resilience focus.
- That was then, this is now:
 - 2015 – RFP for Carson ESPC released
 - 2015 – Army Energy Security & Sustainability (ES2) Strategy released – Informed Decisions, Assured Access, Build Resilience, Optimize Use, Drive Innovation
 - 2016 – DoDI 4170.11 revised, Army set up metrics to measure resilience, and did pilot for ISR-MC (resilience metrics)
 - 2017 - Army Energy Resilience Directive 2017-07 released: Critical Mission Support, Assured Access, Infrastructure Condition, System Operation. Full Army-wide roll-out of ISR-MC.
 - 2018 – Start Installation Energy & Water Plans (IEWP)

Measuring Energy and Water Security / Resilience

Example ISR-MC Installation Questions

Attributes	Measured Value	Measure #	Measure Rating	Attribute Scores
Critical Mission Sustainment	a. Emergency response	MS413-20	Green	Yellow
	b. Critical mission identification and prioritization	MS413-21	Yellow	
	c. Threat and vulnerability assessment	MS413-22a	Red	
		MS413-22b	Green	
	d. Adequate energy related emergency operations capability	MS413-23	Green	
e. Long term restoration procedures	MS413-24	Yellow		
Assured Access	a. Relationship with Outside Utility Provider	MS413-1	Red	
	b. Power Reliability	MS413-2a	Green	
		MS413-2b	Yellow	
	c. Power Quality	MS413-3	NS*	
		MS413-4a	Green	
	d. Redundancy of Supply	MS413-4b	Green	
		MS413-5a	Green	
	e. Diversity of Supply	MS413-5b	Green	
		MS413-5c	Green	
		MS413-5d	Green	
MS413-6		Red		
MS413-7		Green		
Infrastructure Condition	a. System Reliability	MS413-8a	Red	
		MS413-8b	Yellow	
		MS413-9	NS*	
	b. Ability to distribute generation sources	MS413-10	Red	
	c. Redundancy	MS413-11	Green	
		MS413-12a	Green	
	d. On-site storage capacity	MS413-12b	NS*	
		MS413-13a	Red	
e. Condition Assessment	MS413-13b	Red		
	MS413-13c	Green		
	MS413-14	Yellow		
System Operation	a. Complete/adequate plans	MS413-15	Red	
	b. Planning coordination (internal + external)	MS413-16a	Green	
		MS413-16b	Green	
	c. Adequate personnel (in place, trained, access)	MS413-17a	Green	
		MS413-18	Green	
d. Periodic exercises of plans	MS413-19	Green		

Installation-level assessment of Energy and Water Security Attributes:

- **CRITICAL MISSION SUSTAINMENT (CMS):** Critical mission continuity of operations for 14 days.
- **ASSURED ACCESS (AA):** Dependable supply of energy and water needed to meet evolving mission requirements during normal and emergency response operations.
- **INFRASTRUCTURE CONDITION (IC):** Infrastructure capable of on-site storage and flexible and redundant distribution networks to reliably meet mission requirements.
- **SYSTEM OPERATION (SO):** Trained personnel conduct required energy and water security system planning, operations and sustainment activities.

Ft Carson BESS Project

- Ft Carson put out an ESPC RFP through USACE-HNC that was fairly standard.
- Having been part of the SPIDERS JCTD, and already having on-post PV generation, they saw the potential for a BESS and included it in their discussions with the ESCO.
- Demand charges are half of their electric bill, so they were able to do BESS as an economically viable project, but it doesn't quite get them to resilience on its own. Cost savings was driver, but resilience was a consideration.
- Pieces = PV + BESS + microgrid?
- Next Step – OEI has now done a Microgrid Feasibility Study.
- **Using multiple tools to execute interrelated projects to get to resilience.**



Now

- Fully fleshed out Energy & Water Resilience framework to identify critical missions, identify resilience gaps, and plan for projects that bridge the gaps.
- We now include request for evaluation of resilience measures in our RFPs.

SPECIAL CONTRACT REQUIREMENTS

H.1 Energy Security and Resilience

Federal energy and energy-saving procurements are solutions tailored to the needs of customers, requiring levels of Security (defined as the uninterrupted availability of energy sources at an affordable price) and Resilience (defined as the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents). Energy Security and Resilience may be met by Contractors following specific design criteria and delivering energy solutions and capability within four “pillars” of success: (a) Cybersecurity, (b) Industrial Control Systems, (c) DoD Architectural Framework, and (d) Controlled Technical Information. The following paragraphs of this section should assist the Contractor to demonstrate in its Feasibility Study/Investment Grade Audit how it can deliver energy security and resilience.

- Looking for pieces that DO cash flow and fit the appropriate contracting method.
- We are looking for your expertise on utility systems for ideas and insights.

Questions?

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