



OFFICE OF ENERGY INITIATIVES

Securing Army installations with *energy*
that is *resilient*, *affordable*, and *sustainable*

Army Energy Resilience: A Partnership Approach

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Executive Director

6 February 2019

2019 NASEO Energy Policy Outlook

Assistant Secretary of the Army (Installations, Energy & Environment)



Who is the Army?



Army Installations Universe

Installation
Population:
3,002,873



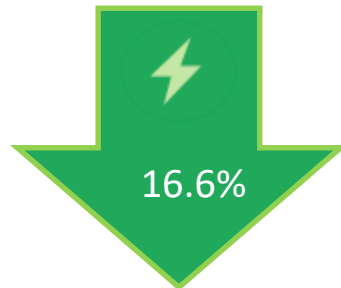
National Guard &
Reserve Centers:
>2,800

Total Land (acres):
13,591,251

Buildings (ft²):
982,668,264

Army Installation Energy & Water Consumption Costs

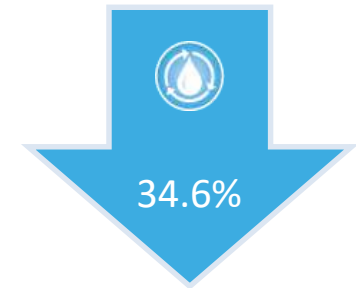
Energy Use Intensity
since FY03



**\$1.1B Energy 75.5T
BTUs/year**

**\$86.9M Potable
Water 31.2B
GALs/year**

Water Use Intensity
since FY07



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Army Office of Energy Initiatives (OEI)



What is the OEI?

Established by the Secretary of the Army first as a task force in 2011, then as a permanent office in 2014

- Serves as central management office for Army's development, implementation and oversight of **large-scale renewable and alternative energy projects** that leverage private financing
- Secures Army installations with energy that is **resilient, affordable and sustainable**
- Focused on creating an **"islandable" capability** – energy security projects that include onsite generation, storage, and controls



Fort Hood, Texas: 65 MW AC Hybrid Wind & Solar Projects; Expected to provide \$100 million in cost avoidance over the term of the 30-year contract



Redstone Arsenal, Alabama: 10 megawatt (MW) alternating current solar project with Army's first privately funded, commercially available battery storage solution



Schofield Barracks, Hawaii: 50 MW Biofuel/Multi-fuel Project operational since May 2018. Full "Islandable" energy capability expected for Schofield Barracks, Camp Kunia and Wheeler Army Airfield

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Energy Resilience Drives OEI Priorities



"It is now undeniable that the homeland is no longer a sanctuary. ... attacks against our critical defense, government, and economic infrastructure must be anticipated"

National Defense Strategy 2018

"The Secretary of Defense shall ensure the readiness of the armed forces for their military missions by pursuing energy security and energy resilience"

10 USC 2911

- Improve Mission Readiness
 - Energy and water resources are critical mission enablers required to train, sustain, and deploy a globally responsive Army
- Modernize Energy Systems
 - New capabilities emerging from advances in distributed energy, smart grids and storage technologies
- Reform Army Business Practices
 - Attract private sector capabilities and capital to ensure Army energy systems are equipped with best capabilities to withstand modern threats



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Energy Security Project: USAG, Hawaii



Project: 50 MW / 30 Day Contingency Microgrid
Hawaiian Electric constructed, owns, operates and maintains a 50 MW biofuel/multi-fuel power generation plant, fuel storage tanks, and controls, in a secure location on Schofield Barracks.

Army Benefit: Plant can provide 50 MW of “first call” and “black start” capability to three Army installations simultaneously; 5 days of fuel storage onsite, 30 days of fuel storage on island.

Utility Benefit Hawaiian Electric has a critical generation facility above the tsunami inundation zone, which will power the Oahu grid during normal operations

Community Benefit As the only baseload power generation facility on Oahu located above the tsunami inundation zone, this project enhances grid resilience and could provide power to part of the surrounding community in the event of a grid outage.

Status Operational since May 2018.



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Energy Security Project Concept: Fort Sill, OK



Project Concept: National, Community and Utility Energy Security Alignment

Public Service Corporation of Oklahoma may construct, own, operate and maintain approximately 36 MWs natural gas fueled grid-facing power plant and approximately 14 MW solar PV array with controls.

Army Benefit The project would enhance energy resilience by locating on-demand generating assets on Fort Sill that are capable of supplying reliable power to mission critical facilities during a commercial grid disruption.

Utility Benefit Utility gains a distributed asset enhancing grid reliability in normal operations that aligns with their Integrated Resource Plan. Power from the project would flow directly to the commercial grid.

Community Benefit The project provides additional operational flexibility that further improves electrical service to the surrounding Lawton community.

Status Project in pre-negotiation stage. NEPA is underway in 1st public comment period and consultation phase.





Energy Resilience Project: JFTB-LA, CA



Current Status:

- Project Solicitation – 16 MAY 18
- Industry Day – 30 MAY 18
- RFP Closed – 20 AUG 18
- Conditional Selection Notice – NOV 18
- Lease Award Target – SPRING 20



Project Concept: 3 MW / 14 Day Minimum Contingency Microgrid

Developer-constructed, owned, operated and maintained energy resilience capabilities, which include power generation assets, energy storage, and microgrid components to “island” JFTB-LA in the event of a grid disruption.

Army Benefit Project will enhance energy security by providing “islandable” capability to power the base’s critical missions for a minimum of 14 days during a grid outage.

Developer Benefit During normal operations, the developer would benefit from selling power or services from the project to off-base customers via the electrical grid.

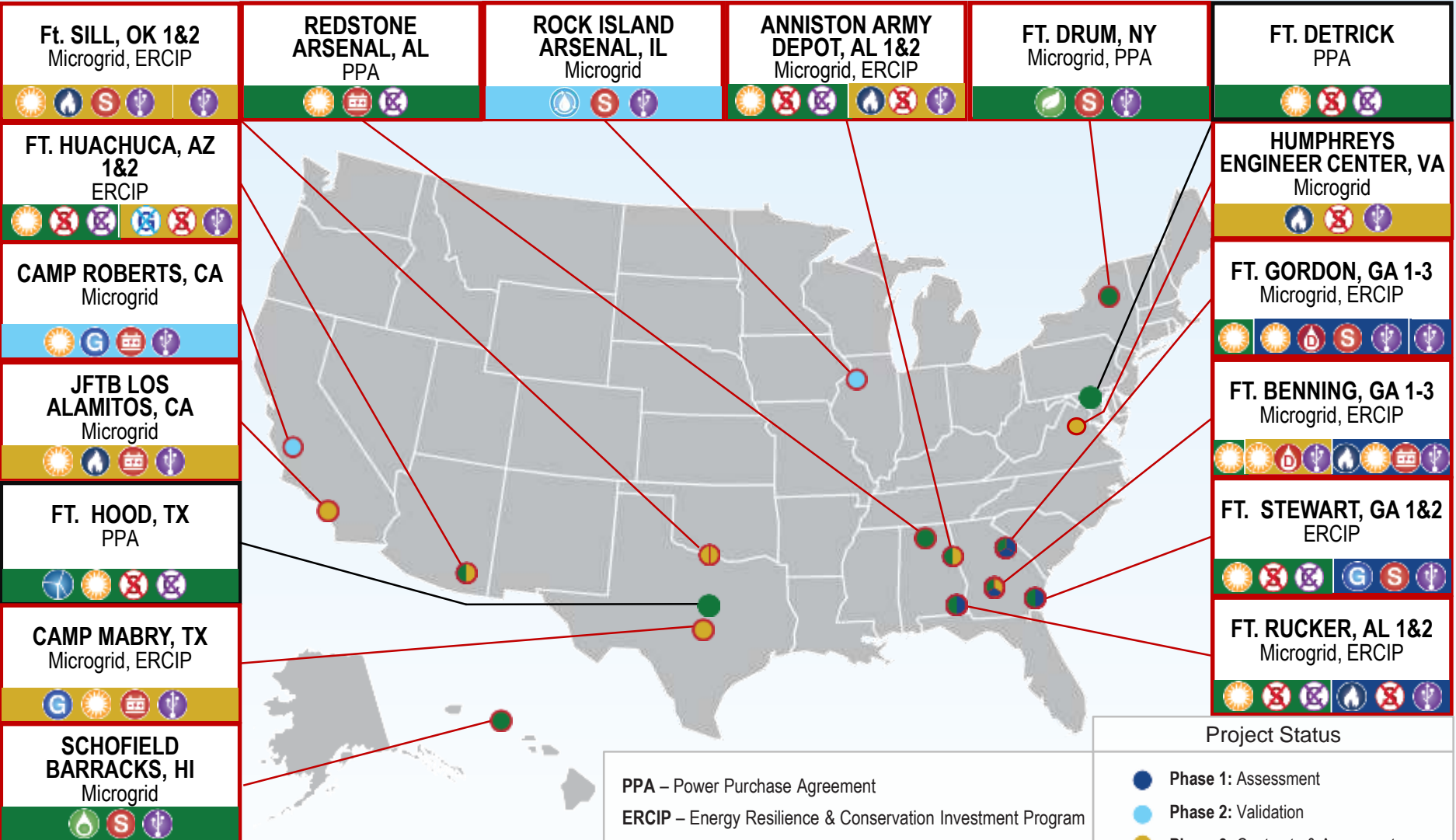
Community Benefit The project may enhance grid reliability by alleviating transmission line congestion or provide other electrical grid quality-enhancing services.

Status Conditional Selection Notice accepted by developer November 2018



Army Office of Energy Initiatives (OEI) Current Energy Projects Portfolio

As of February 2019



PPA – Power Purchase Agreement
ERCIP – Energy Resilience & Conservation Investment Program

Renewable and Alternative Energy Key

Biofuel	Diesel	Hydro	Solar	Battery Storage	Controls	No Controls
Biomass	Generation	Natural Gas	Wind	Storage / Supply	No Storage	No Generation

Project Status

- Phase 1: Assessment
- Phase 2: Validation
- Phase 3: Contracts & Agreements
- Phase 4: Construction
- Phase 5: Operational
- Project is Islandable



OEI Contact Information



Thank you

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U.S. Army Office of Energy Initiatives