

# **Energy & Sustainability Committee Meeting**

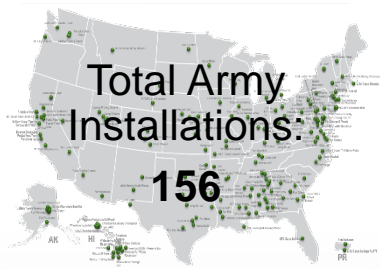
**May 7, 2019**

**Mr. Michael McGhee, P.E.**  
Executive Director  
U.S. Army Office of Energy Initiatives

Installation  
Population:  
**3,002,873**



Total Army  
Installations:  
**156**



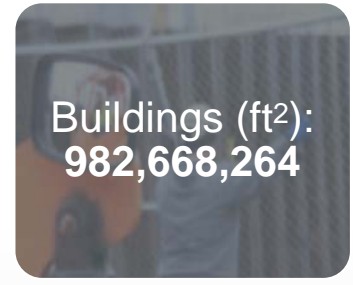
National Guard &  
Reserve  
Centers:  
**>2,200**



Total Land  
(acres):  
**13,591,251**



Buildings (ft<sup>2</sup>):  
**982,668,264**



## Army Installation Energy & Water Consumption Costs

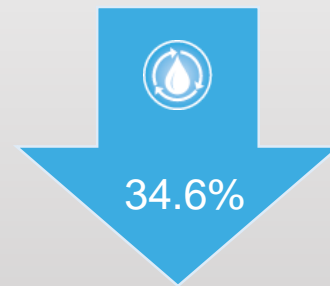
Energy Use Intensity  
since FY03



\$1.1B Energy 75.1T  
BTUs/year

\$86.9M Potable Water  
31.2B GALs/year

Water Use Intensity  
since FY07



The Office of Energy Initiatives was established by the Secretary of the Army as a task force in 2011, then as a permanent office in 2014

- Central program 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*



## 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



**FT. HUACHUCA, AZ 1&2**  
\* ERCIP

**FT. SILL, OK 1&2**  
Microgrid, ERCIP

**REDSTONE ARSENAL, AL**  
PPA

**ANNISTON ARMY DEPOT, AL 1&2**  
Microgrid, ERCIP

**FT. DRUM, NY**  
Microgrid, PPA

**FT. DETRICK, MD**  
PPA

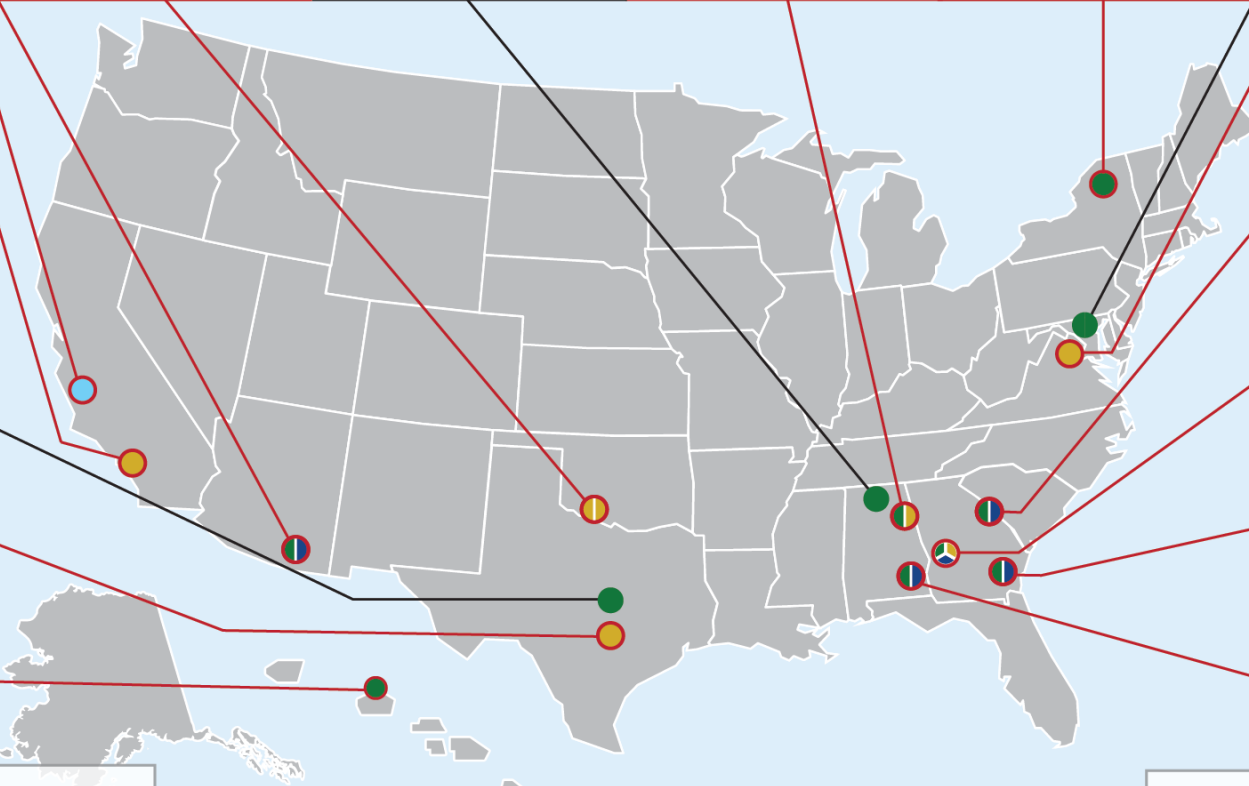
**CAMP ROBERTS, CA**  
Microgrid

**JFTB LOS ALAMITOS, CA**  
Microgrid

**FT. HOOD, TX**  
PPA

**CAMP MABRY, TX**  
Microgrid, ERCIP

**SCHOFIELD BARRACKS, HI**  
Microgrid



**HUMPHREYS ENGINEER CENTER, VA**  
Microgrid

**FT. GORDON, GA 1&2**  
Microgrid, \* ERCIP

**FT. BENNING, GA 1-3**  
Microgrid, \* ERCIP

**FT. STEWART, GA 1&2**  
\* ERCIP

**FT. RUCKER, AL 1&2**  
Microgrid, \* ERCIP

ERCIP - Energy Resilience and Conservation Investment Program  
PPA - Power Purchase Agreement  
\* Proposed ERCIP Project

As of April 2019

**Renewable and Alternative Energy Key**

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

**Project Status**

- Phase 1: Assessment
- Phase 2: Validation
- Phase 3: Contracts and Agreements
- Phase 4: Construction
- Phase 5: Operational
- Islandable Capability



## 50 MW Multi-fuel Plant / 30-Day Microgrid

- Hawaiian Electric constructed, owns and operates the generation plant to provide three installations with 100% of energy requirements during a grid outage
- Located above the tsunami inundation zone, the plant is equipped with “blackstart” capability; 5 days of fuel storage onsite and 30 days of fuel storage on the island
- Enhances Oahu grid resilience and provides power to the community during an outage

# Contact Us:

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