



AMERICA'S ARMY:
THE STRENGTH OF THE NATION

Army Energy

**Acting Deputy Assistant
Secretary of the Army,
Energy and Sustainability**

Mr. J.E. "Jack" Surash, P.E.

***DLA Worldwide Energy
Conference***

***"Service Program Office
Update"***

11 April 2017

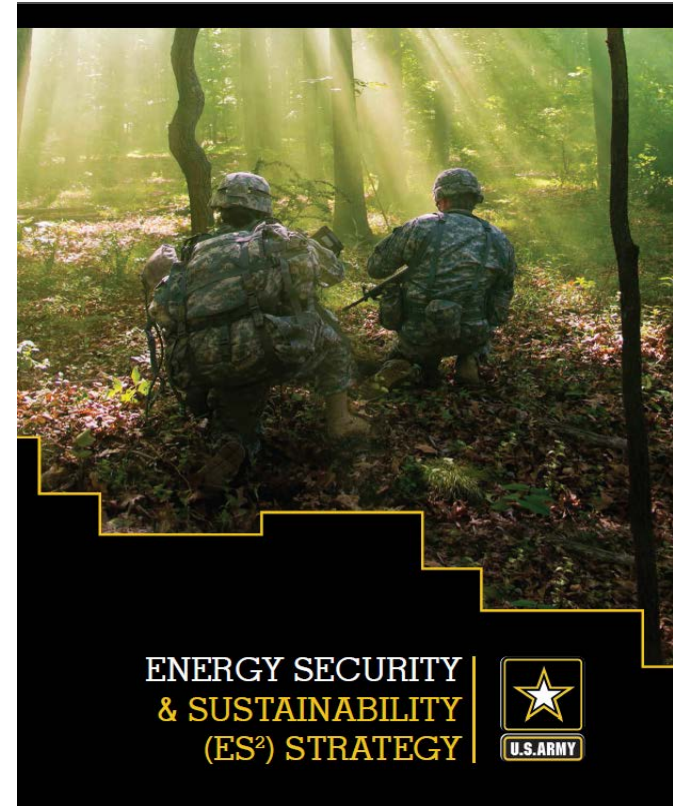




ES² Strategy is the Army's Foundation

Army Energy Security & Sustainability Strategic Goals

1. Inform Decisions
2. Optimize Use
3. Assure Access
4. Build Resiliency
5. Drive Innovation



RESILIENCE: The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions
(Executive Order 13653)

<https://www.army.mil/e2/c/downloads/394128.pdf>

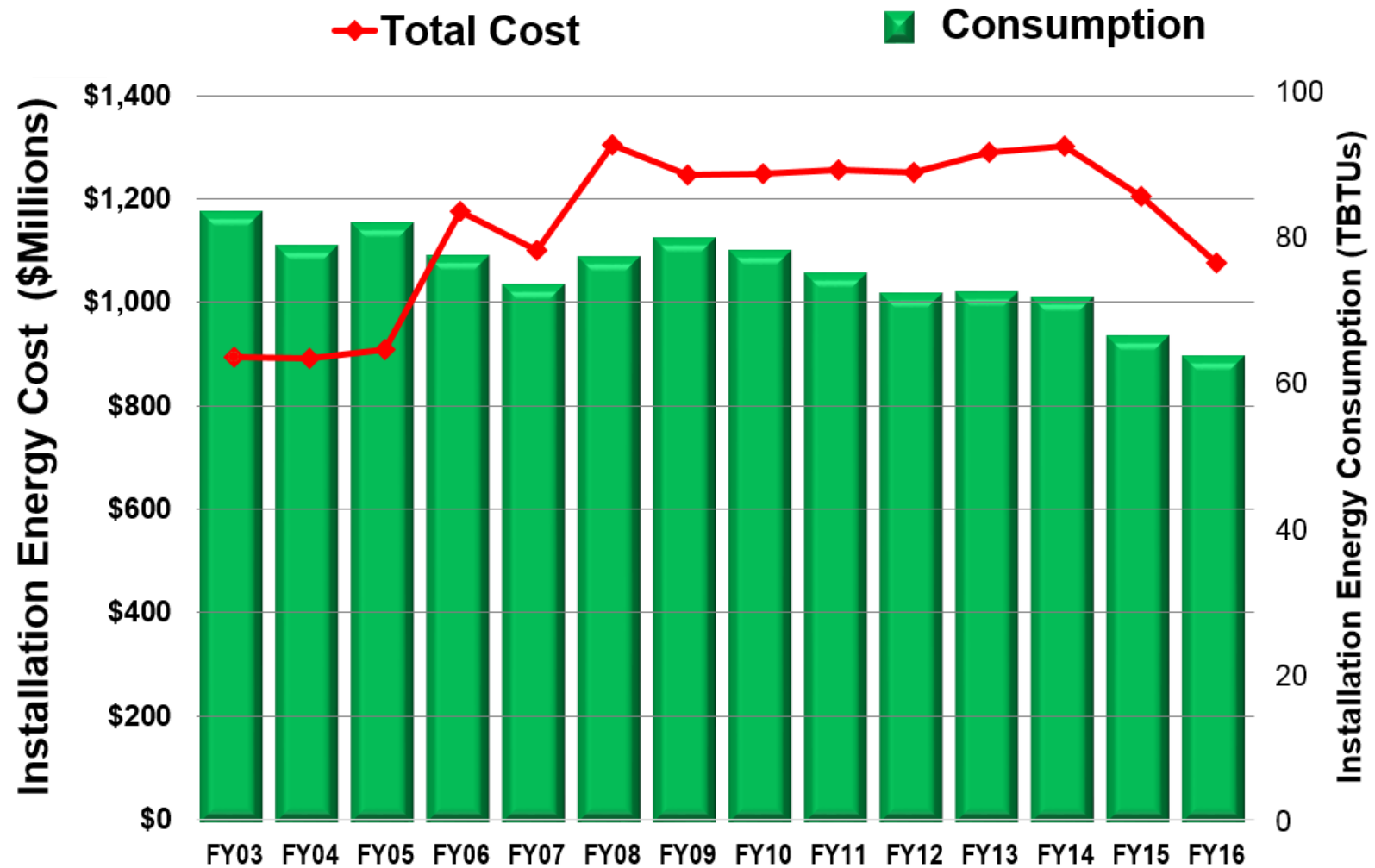


Army Directive 2017-07, Installation Energy and Water Security Policy (February 23, 2017)

- *The Army will reduce risk to critical missions by being capable of providing necessary energy & water for a minimum of 14 days.*
- *The Army will improve resilience at installations, including planning for restoration of degraded energy & water systems and reducing risks of future disruptions by addressing assured access to resource supply, reliable infrastructure condition, and effective system operations.*



Utility Costs vs Total Consumption



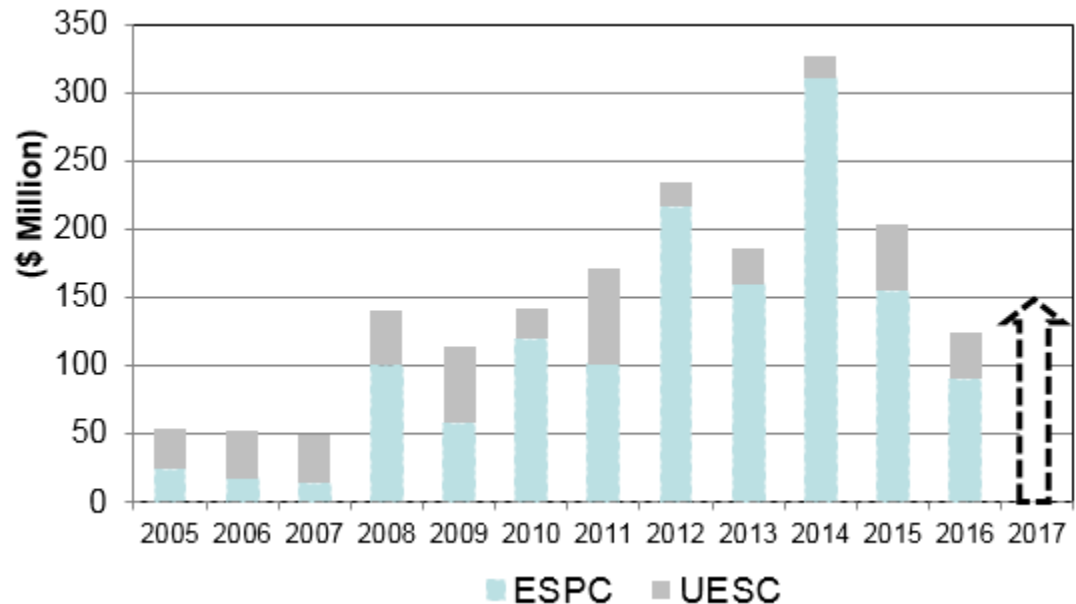


Energy Savings Performance Contract (ESPC) / Utility Energy Service Contract (UESC)

Program Summary

- 634 task orders/mods at 95 installations
- > 12.7 Trillion BTU saved per year
- Approximately \$2.6B in Private sector investments
- > \$350M more in development

Task Order Awards



Army avoided over \$180M in utility cost in FY16



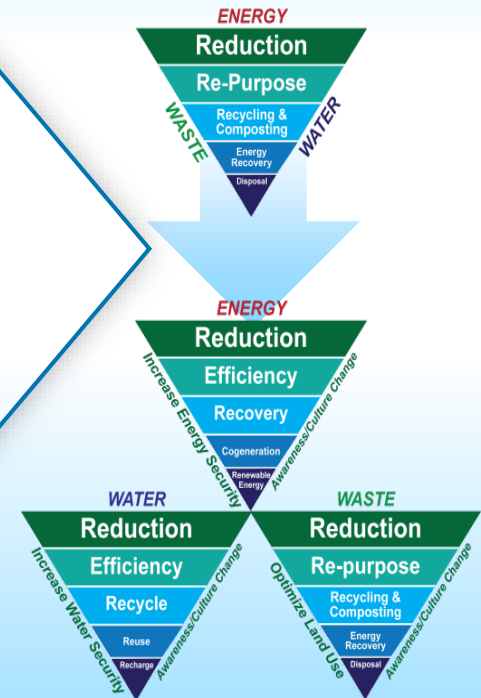
Drivers

- Energy security, surety, and reliability
- Water scarcity
- Increasing energy prices/ Fully burdened costs of fuel
- Foreign energy sources
- Environmental concerns
- Federal and DoD mandates
- Improved operational capabilities
- Risk reduction

17 Pilot Installations



Evolution of the Hierarchy



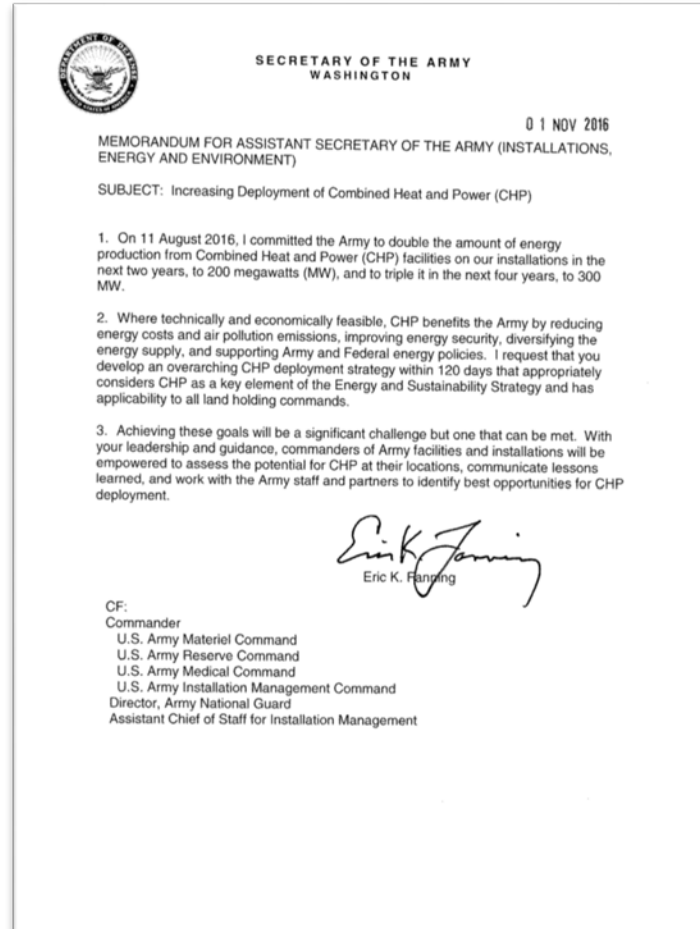
Drivers for Change Resulted in Creation of Net Zero Programs for Energy, Water, and Waste, 1 October 2011



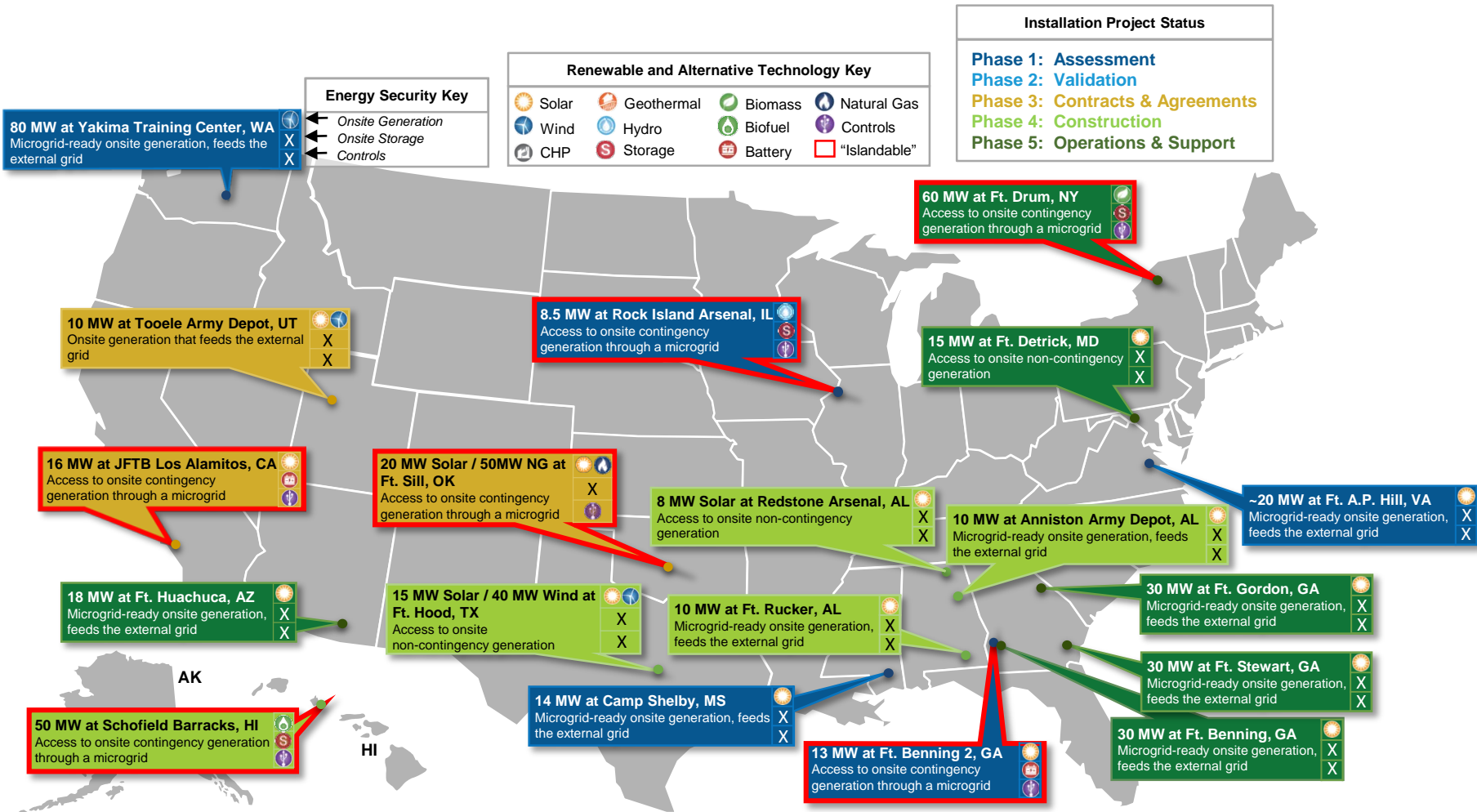
Army Goal: Double the deployment of CHP to 200 MW by end of CY 2018 and triple it to 300 MW by end of CY 2020, from a 100 MW baseline

- **Army CHP Summary:**
- **Currently Operating:**
109.2 MW
- **Prime Applications:**
- ✓ **Facilities with high heating and/or cooling demands**
- ✓ **Large barracks, dining halls, hospitals, fitness centers, hangars, labs, manufacturing, & maintenance facilities**

CHP ENHANCES ENERGY RESILIENCY



- **Energy Efficiencies of 80% are routine with this technology**
- **Life Cycle Cost (LCC) less than conventional technology**
- **CHP Recommendations:**
- ✓ **Consider as either a one or a multiple-ECM Task Order;**
- ✓ **Explore multiple funding vehicles: ESPC/UESC, ERCIP, UP, MILCON & SRM.**
- ✓ **Opportunities exist across the full spectrum, from as small as 25 kW to as large as 50 MW.**
- ✓ **Micro-CHP can decrease or eliminate the need for on-site boilers.**
- ✓ **Size project to the thermal requirement, versus electrical load, and to run almost continuously.**

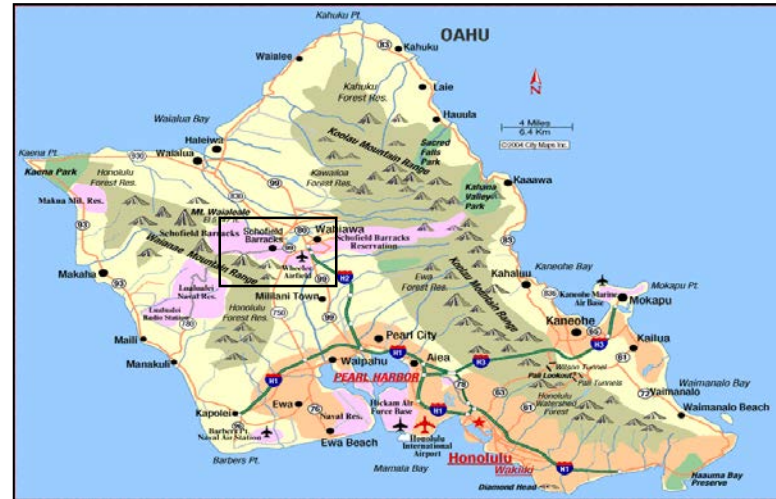


Increasing Energy Security and Resiliency Across Army Installations



Army outgrant of 10 acres at Schofield Barracks

- Hawaiian Electric will construct, own, operate and maintain a 50 MW biofuel-capable power generation plant
- During normal ops, power will flow off-base to grid serving Army and Oahu
- During contingency ops, plant will provide 50 MW of “first call” and blackstart capability to three Army installations simultaneously; 5 days of fuel storage onsite at plant and 30 days of fuel storage on island
- 50 MW of firm power is sufficient to meet 100% of peak electricity requirements at Schofield Barracks, Wheeler Army Airfield, and Field Station Kunia





- **ASA(IE&E):** <http://www.asaie.army.mil/> **ACSIM:** <http://www.acsim.army.mil/> **USACE:** <http://www.usace.army.mil/>

- **Renewable Energy on Army Lands**
 - Large Scale Renewable Energy Projects (>10MW): <http://www.asaie.army.mil/Public/ES/oei/>
 - Siting Clearinghouse: <http://www.acq.osd.mil/dodsc/>

- **Science and Technology**
 - Army Acquisition Business Website: <https://acquisition.army.mil/asfi/>; Base Camp Integration Laboratory: <https://pmfss.natick.army.mil/>
 - Communications-Electronics Research, Development and Engineering Center: <http://www.cerdec.army.mil/business/index.asp>
 - Natick Soldier Research, Development and Engineering Center: <http://nsrdec.natick.army.mil/business/index.htm>
 - National Defense Center for Energy and Environment: <http://www.ndcee.ctc.com/>
 - Network Integration Evaluation: <http://integration.army.mil/>; Rapid Equipping Force: <http://www.ref.army.mil/>

- **Facilities Energy Innovation**
 - Net Zero: <http://www.asaie.army.mil/Public/ES/netzero/>
 - Strategic Environmental Research and Development Program (SERDP) & Environmental Security Technology Certification Program (ESTCP): <http://www.serdp.org/>; Energy Security & Sustainability (ES2) Strategy: <http://usarmy.vo.llnwd.net/e2/c/downloads/394128.pdf>

- **Vehicle Innovation**
 - Tank Automotive Research, Development and Engineering Center: <http://www.army.mil/tardec>
 - Aviation & Missile Research, Development & Engineering Center: <http://www.redstone.army.mil/amrdec/Business/index.html>

- **Small Businesses**
 - Army Small Business Innovation Research Program: <https://www.armysbir.army.mil/sbir/Default.aspx>