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1. Introduction

The Department of Defense (DoD) energy program's first priority is supporting the ability to carry out the mission. Both at installations and in combat platforms, energy is a critical resource and vulnerability across the full range of military operations. As an enabler, energy availability and resilience define the capabilities of weapons platforms, facilities and equipment. In addition, energy remains a substantial expense that competes with other investments in people and equipment. These issues compel DoD to pursue cost-effective measures that increase energy performance and reduce our cost of operations.

At its core, DoD's energy program integrates three pillars (Figure 1-1):

- Expand Supply
- Reduce Demand
- Adapt Future Forces and Technology

Figure 1-1: Defense Energy Approach

DoD's fixed installations are critical components of our ability to fight and win wars accounting for approximately 30 percent of DoD's total energy use. Our Warfighters cannot do their jobs without bases from which to fight, on which to train, or in which to live when they are not deployed. The bottom line is that installations support our military readiness.

An important opportunity for the Department to improve its energy resilience exists on its fixed installations. The Department manages over 500 installations worldwide, comprising nearly 300,000 buildings. The keys to transforming installation energy are investments in energy-efficient facilities and cost-effective energy sources for those facilities, including alternative energy sources; as well as the promotion of non-materiel and behavior-based solutions. Through such initiatives, the Department can help ensure the energy resilience and reliability of a large percentage of the energy it manages and treat facility energy as a force multiplier in the support of military readiness.

Augmenting these principles, comprehensive measurement of facility energy helps the Department maintain an aggressive pace toward its larger energy objectives. To that end, this Annual Energy Management Report (AEMR) details the Department's Fiscal Year (FY) 2014 performance toward its objectives of energy supply expansion, energy efficiency and demand reduction, and the adaption of future forces and advanced technologies on fixed installations. It also details its activities addressing climate change impacts to its energy portfolio, including enhancing energy resilience.

DoD reports on its facility energy performance in the FY 2014 AEMR.[1] Table 1-1 summarizes the Department's progress toward its FY 2014 energy goals, while Appendix D presents the Department's energy-related performance metrics in greater detail. As shown, while DoD fell short of its FY 2014 goals for energy intensity reduction and renewable energy, it exceeded its goals for potable water intensity and petroleum consumption reduction.

The FY 2014 AEMR complies with the following mandates (Appendix B):

- Section 548 of the National Energy Conservation Policy Act (NECPA) of 1978 (Title 42, U.S.C., Section 8258 [42 U.S.C. §8258]), which requires Federal agencies to describe their energy management activities;
- 10 U.S.C § 2924, which requires DoD to submit to Congress an AEMR describing its facility energy activities; and
- 10 U.S.C § 2911 which requires DoD to establish energy performance goals for transportation systems, support systems, utilities, and infrastructure and facilities.

DoD distinguishes facility energy from operational energy. Facility energy includes energy needed to power fixed installations and enduring locations as well as NTVs. Operational energy is the energy required for training, moving, and sustaining military forces and weapons platforms for military operations, including energy used by tactical power systems and generators at contingency locations.[2]

The remainder of this report discusses DoD's efforts related to managing its facility energy program, reducing energy demand, increasing the supply of renewable energy, enhancing energy resilience, managing energy data and metering, funding energy projects, and reporting on federal building energy standards.

[1] This report includes the facility energy activities of the Army, Navy, Air Force, and Marine Corps, and the following Defense Agencies: Defense Contract Management Agency (DCMA); Defense Commissary Agency (DeCA); Defense Finance and Accounting Service (DFAS); Defense Intelligence Agency (DIA); Defense Logistics Agency (DLA); Missile Defense Agency (MDA); National Geospatial-Intelligence Agency (NGA); National Reconnaissance Office (NRO); National Security Agency (NSA); and Washington Headquarters Services (WHS).

[2] Definition is in 10 U.S.C. §2924(5).

Table 1-1: FY 2014 DoD Progress Toward Facility Energy and Water Goals[3]

Goals & Objectives	Metric	Entity	FY 2014 Performance	FY 2014 Target
Reduce Facility Energy Intensity relative to FY 2003 baseline (EISA 2007)	British thermal unit (Btu) of energy consumed per gross square foot of facility space.	**DoD**	**-17.6%**	**-27%**
		Army	**-15.2%**	
		Navy	**-20.6%**	
		Marine Corps	**-18.7%**	
		Air Force	**-22.3%**	
Consume more electric energy from renewable sources (EPAct 2005)	Total renewable electricity consumption as a percentage of total facility electricity consumption	**DoD**	**3.5%**	**7.5%**
		Army	**2.0%**	
		Navy	**2.1%**	
		Marine Corps	**9.1%**	
		Air Force	**5.7%**	
Produce or procure more energy from renewable sources (10 U.S.C. 2911(e))	Total renewable energy produced or procured as a percentage of total facility energy	**DoD**	**12.3%**	**25% by 2025**
		Army	**11.3%**	
		Navy	**26.5%**	
		Marine Corps	**5.2%**	
		Air Force	**6.7%**	
Reduce Potable Water Intensity relative to FY 2007 baseline (EO 13423)	Gallons of water used per square foot of facility space.	**DoD**	**-21.5%**	**-14.0%**
		Army	**-27.1%**	
		Navy	**-10.5%**	
		Marine Corps	**-27.7%**	
		Air Force	**-21.9%**	
Reduce Petroleum Consumption in non-tactical vehicles relative to FY 2005 baseline (EISA 2007, EO 13514)	Gallons of gasoline equivalent of petroleum fuel consumed.	**DoD**	**-30.2%**	**-18%**
		Army	**-38.4%**	
		Navy	**-19.4%**	
		Marine Corps	**-38.0%**	
		Air Force	**-11.4%**	

[3] Energy Independence and Security Act of 2007 (EISA), Energy Policy Act of 2005 (EPAct), and Executive Order (E.O).

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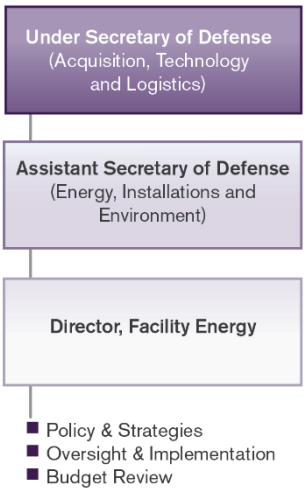
2. Facility Energy Program Management

The Assistant Secretary of Defense (Energy, Installations and Environment) (ASD(EI&E)) Facility Energy Program

The ASD(EI&E) is responsible for overseeing the Department's energy programs, including the Facility Energy Program, and progress to achieve the facility energy goals in a cost-effective manner while improving mission readiness. The ASD(EI&E) reports to the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD(AT&L) and is responsible for issuing facility energy policy and guidance to DoD Components, coordinating DoD facility energy strategy and related programs, and engaging with the Military Services, Defense Agencies, and other stakeholders. The ASD(EI&E) also coordinates all congressional reports related to facility energy. Figure 2-1 illustrates the organizational structure of the ASD(EI&E).

This section describes the Defense Components' facility energy programs.

Figure 2-1: OUSD(AT&L)

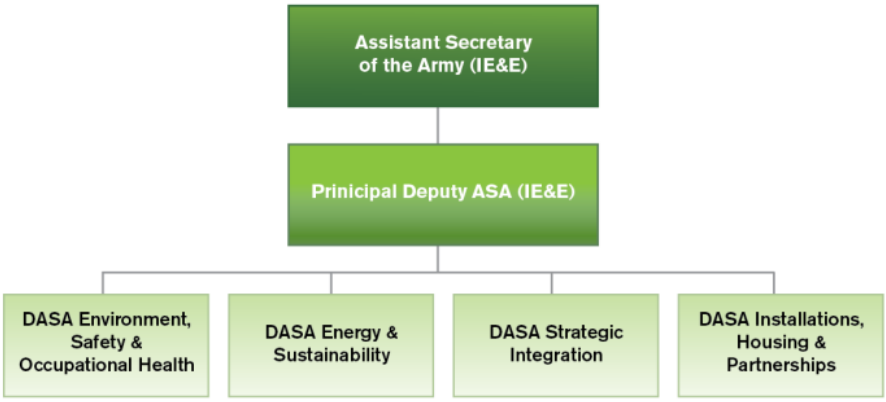


Army Facility Energy Program

The Deputy Assistant Secretary of the Army for Energy and Sustainability (DASA(E&S)) is the Senior Energy Official for the Army. The Army Energy Team consists of the Office of the Assistant Secretary of the Army for Installations, Energy and Environment (OASA(IE&E)), Office of the Assistant Chief of Staff for Installation Management (OACSIM) and the Installation Management Command (IMCOM), Army National Guard (ARNG), U.S. Army Reserve (USAR), and Army Materiel Command (AMC), in collaboration with the U.S. Army Corps of Engineers (USACE), Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (OASA(ALT)), the Army Staff, other Army Offices and Commands.

The Army's Senior Energy and Sustainability Council (SESC) functions as the overall governance of the Army's energy management efforts and provides strategic direction to integrate energy and water

Figure 2-2: Army Facility Energy Governance Structure



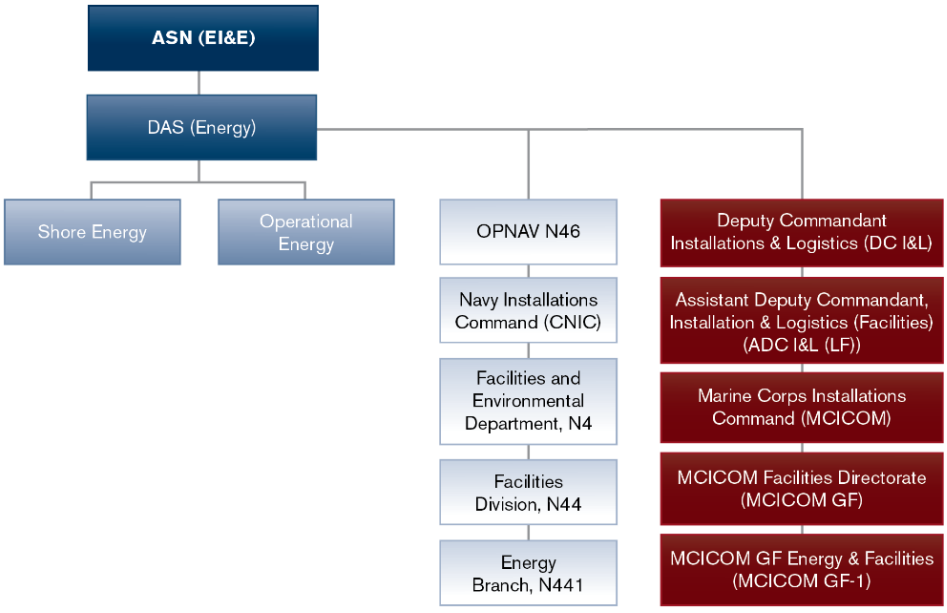
sustainability initiatives into Army plans and policies to meet Army's missions and objectives. These initiatives include matters of energy and water resilience, energy and fuel efficiencies, fossil fuel consumption and greenhouse gas (GHG) reductions, rightsizing and downsizing of the non-tactical vehicle (NTV) fleet, water efficiency and conservation, waste minimization, procurement, and high-performance sustainable buildings.

Department of the Navy (DON) Facility Energy Program

The Assistant Secretary of the Navy for Energy, Installations and Environment (ASN(EI&E)) is the designated senior DON official for energy responsible for formulating DON-wide policies, procedures, advocacy, and strategic plans, as well as overseeing all DON functions and programs related to energy. The Commander, Navy Installations Command (CNIC) is responsible for current and future shore energy requirements across warfare enterprises. CNIC N441 is the energy branch within the Facilities Division (N44) of the Facilities and Environmental Department, N4. CNIC N441 is responsible for developing and integrating shore energy requirements across the Shore Enterprise.

The Deputy Commandant for Installations and Logistics (DC I&L) is responsible for establishing energy and water management policy for Marine Corps installations per direction from the Commandant to comply with federally-mandated requirements. The Assistant Deputy Commandant for Installations and Logistics (Facilities) serves as the single point of contact responsible for program management and resourcing. The Commander, Marine Corps Installations Command (MCICOM) oversees program planning and execution. Direct support is provided by the Director, Facilities (MCICOM GF). The Energy and Facility Operations Section (MCICOM GF-1) serves as the Marine Corps Installations Energy Program Manager.

Figure 2-3: DON Facility Energy Governance Structure



The Naval Facilities Engineering Command (NAVFAC) provides facilities engineering support to the Navy and Marine Corps. The Deputy Commander for Public Works at NAVFAC Headquarters (HQ) serves as the NAVFAC Energy Officer and oversees the development of relevant energy guidance, standards, processes, and internal policy to NAVFAC.

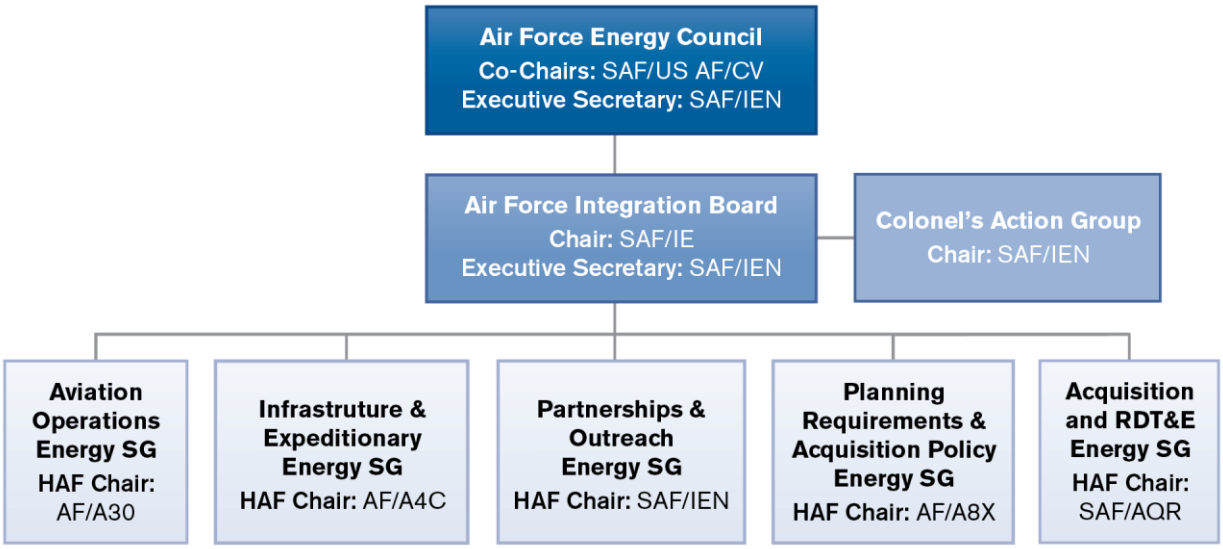
Air Force Facility Energy Program

The Air Force Energy Team comprises five entities that work together to meet the Service-wide energy priorities to improve resiliency, reduce demand, assure supply, and foster an energy aware culture.

- **HQ U.S. Air Force (HAF):** Provides the policy, guidance, oversight, and resources to ensure an effective strategy is employed at all levels.
- **Major Commands (MAJCOMs):** Develop plans to support or supplement Air Force goals and strategies, execute programs, evaluate energy usage of subordinate units, and recognize the most successful units and energy practices.
- **Air Force Civil Engineer Center (AFCEC):** Advises HAF, provides assistance to the MAJCOMs and installations by developing plans and strategies to meet mandated energy goals. Manages and facilitates execution of energy programs as the Project Management Office for facility energy and water conservation. Establishes outgrant implementation guidelines and resolves program issues. Advocates use of Air Force and DoD resources to fund outgrant project development.
- **Installations:** Develop plans to support or supplement Air Force and MAJCOM goals/strategies. Execute those plans, measure and evaluate their base energy usage, and nominate their most successful people and units for energy awards.
- **Installation Energy Manager:** Position required by Section 543 of the National Energy Conservation Policy Act (NECPA) (42 U.S.C. § 8253). The scope of duties includes, but is not limited to, responsibility and oversight for the installation's Energy Management Plan, energy awareness, education and training, audits, utility billing, and energy and water consumption reporting.

The Air Force energy governance structure (Figure 2-4) is divided into three levels and includes the Energy Council, Energy Integration Board, Colonels' Action Group, and Steering Groups. This structure is mandated by Air Force Policy Directive (AFPD) 90-17, *Energy Management*, November 29, 2011.

Figure 2-4: Air Force Energy Governance Structure



The Air Force Energy Council provides global oversight to solve the complex energy challenges facing the Air Force. It acts as a deliberative body responsible for developing Air Force energy strategies; monitoring overall attainment of those strategies and priorities; endorsing requirements; reviewing current Air Force energy programs; and directing corrective actions when goals and objectives are not met. To ensure the Air Force is addressing the energy strategies and priorities, the Energy Council reviews and prioritizes all initiatives prior to submittal to the Air Force Corporate Structure for funding decisions. The Energy Council helps garner Air Force corporate structure approval for proposed energy investments that will contribute to achieving Air Force energy goals.

The Council's scope extends to all energy acquisition, use, and conservation issues within the Air Force. This includes initiatives related, but not limited to reducing aviation, ground motor vehicle, and equipment fuel consumption; conserving energy use at all Air Force properties, including forward operating bases; developing alternative sources of energy and fuel; and identifying research and development opportunities.

Reporting to the Energy Council is the Integration Board, which is responsible for aligning investments to goals and objectives across the Air Force, including integrating and balancing energy investments.

The Energy Council and the Integration Board are directly supported by the Energy Colonels' Action Group. The Colonels' Action Group serves as the working group and is in place to disseminate information, track efforts, and provide a venue for Energy Steering Group (ESG) representatives to raise any issues that require collaboration.

Issues are addressed by the five ESGs. The steering groups are responsible for developing energy goals, objectives, metrics, plans, and policies, as well as identifying energy initiatives and investments necessary to meet the Air Force energy goals.

The HAF Steering Group Chairs provide policy, guidance, and lead functional support to the MAJCOM Champions. The Chairs help garner Air Force corporate structure approval for energy investments and efficiency savings. The MAJCOM Champions are responsible for leading efforts, including coordinating with other MAJCOMs, to meet energy requirements, including developing specific energy objectives, metrics, and requirements.

The Under Secretary of the Air Force (SAF/US) and the Vice-Chief of Staff of the Air Force (AF/CV) are the Co-Chairs of the Energy Council. The roles of the senior energy officials are to provide the enterprise oversight and strategic guidance to address the complex energy challenges facing the entire service.

The Deputy Assistant Secretary of the Air Force for Energy (SAF/IEN) is the Executive Secretary. The Deputy Assistant Secretary is responsible for the strategic management and oversight of the Air Force's energy efforts and policy development across all domains of Air Force Energy.

Defense Agencies Facility Energy Program

The Defense Agencies continue to develop and enhance their Facility Energy Management Program. Each Agency has a designated Senior Energy Official to administer their respective programs (Table 2-1).

Table 2-1: Defense Agencies Senior Energy Officials

DoD Component	Senior Energy Official
Defense Contract Management Agency (DCMA)	Energy Program Manager
Defense Commissary Agency (DeCA)	Energy Manager
Defense Finance and Accounting Service (DFAS)	Director, Support Services
Defense Intelligence Agency (DIA)	Chief, Engineering and Logistics Officer
Defense Logistics Agency (DLA)	Installation Support Director
Missile Defense Agency (MDA)	Environmental Executive
National Reconnaissance Office (NRO)	Director, Management Services and Operations
National Geospatial-Intelligence Agency (NGA)	Director, Installation Operations Office
National Security Agency (NSA)	Chief of Facilities and Infrastructure Services
Washington Headquarters Services (WHS)	Pentagon Sustainability Program Manager

The Intelligence Community (IC), in particular, has adopted a community-wide approach to maximizing energy and greening opportunities. The Office of the Director of National Intelligence has established an IC Energy Management Working Group composed of individuals with the subject matter expertise and authority to speak for the agency they represent.

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3. DoD's Progress in Reducing Energy Demand

The Department is reducing its demand of facility energy by investing in efficiency and conservation projects on its installations. DoD continues to reduce energy costs and maximize payback in order to have the best return on investment. The majority of DoD investments are in the Military Departments' operations and maintenance accounts, to be used for sustainment and recapitalization projects. Such projects typically involve retrofits to incorporate improved lighting, high-efficiency heating, ventilation, and air conditioning (HVAC) systems, double-pane windows, energy management control systems, and new roofs.

In addition to using appropriated funding to improve efficiency, both in the Components' own budget and the Defense-wide Energy Conservation Investment Program (ECIP), DoD Components are leveraging private capital through the use of performance-based contracts to improve the energy efficiency of existing buildings. In 2011, the President issued a memorandum calling on the Federal Government to initiate $2 billion worth of performance-based contracts. In May 2014, the President extended the goal to $4 billion by December 2016. DoD is responsible for $2.2 billion of the Federal Government goal. As of January 15, 2015, the Department has awarded 107 projects worth over $1 billion.

Facility Energy Demand Overview

This section describes the scope of the Department's facility energy demand in terms of cost and consumption. DoD is the single largest consuming entity in the United States, with its energy consumption comparable to that of the state of Arizona.[4] DoD operational and facility energy represent approximately 80 percent of total Federal energy consumption. Facility energy is a little over four times the total facility energy consumption of the next closest Federal agency (the U.S. Postal Service).[5]

In FY 2014, facility energy comprised approximately 19 percent of total Federal energy consumption.[6] The Department's FY 2014 facility energy consumption amounted to 1.2 percent of the total U.S. commercial sector's energy consumption.[7] The Department's total energy bill was $18.2 billion. DoD spent $4.2 billion on facility energy, which included $4.0 billion to power, heat, and cool buildings and $0.2 billion to supply fuel to the fleet of NTVs. Facility energy represented 23 percent of the Department's total energy expenditures. DoD consumed 214,164 billion British thermal units (Btus) of facility energy, which represented 30 percent of the Department's total energy consumption. DoD

[4] Energy Information Administration (EIA), U.S. States, State Profiles and Energy Estimates [online source] (Washington, D.C. 2011, accessed March 2, 2015), available from http://www.eia.gov/state/

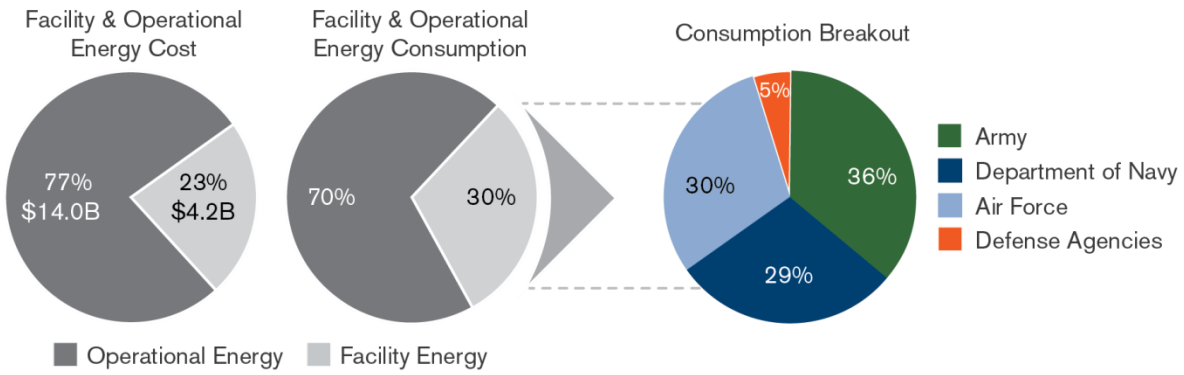
[5] EIA, Annual Energy Review, Table 1.11 U.S. Government Energy Consumption by Agency, FY 1975-2011 [online source] (Washington, D.C. September 27, 2012, accessed February 2, 2015), available from http://www.eia.gov/totalenergy/data/annual/showtext.cfm?t=ptb0111

[6] EIA, Annual Energy Review 2011: Energy Consumption by Sector and Source [online source] (Washington, D.C. , 2011, accessed February 2, 2015), available from http://www.eia.gov/oiaf/aeo/tablebrowser/#release=EARLY2012&subject=0-EARLY2012&table=2-EARLY2012&region=1-0&cases=full2011-d020911a,early2012-d121011b

[7] EIA, Annual Energy Outlook 2014, Energy Consumption by Sector and Source [online source] (Washington, D.C. May 7, 2015 accessed February 2, 2015), available on the internet at http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2014&subject=0-AEO2014&table=2-AEO2014&region=1-0&cases=ref2014-d102413a

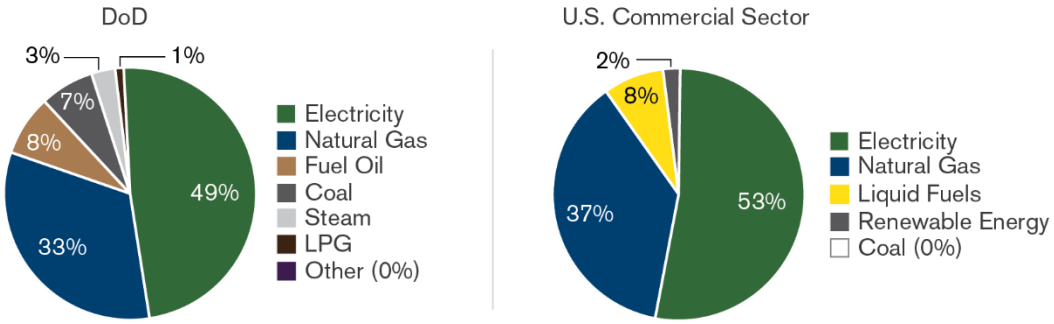
consumed 204,865 billion Btus in buildings (stationary combustion), and 9,299 billion Btus in non-tactical fleet vehicles (mobile combustion). The Army is the largest consumer of facility energy, followed by the Air Force and DON (Figure 3-1).

Figure 3-1: DoD FY 2014 Facility Energy Consumption and Cost



Electricity and natural gas accounted for over 82 percent of DoD facility energy consumption. The remaining portion of facility energy consumption includes fuel oil, coal, and liquefied petroleum gas (LPG) (Figure 3-2). DoD's facility energy consumption mix mirrors that of the U.S. commercial sector, where natural gas and electricity dominate the supply mix.

Figure 3-2: DoD Facility Energy FY 2014 and U.S Commercial Sector Stationary Combustion Fuels by Type[8]



Energy Intensity

DoD measures energy intensity in Btus per gross square foot (GSF) of facility space.[9] Section 543 of the NECPA mandates a 3.0 percent annual reduction in energy intensity relative to a baseline year (FY 2003) or a 30 percent overall reduction from the baseline by FY 2015. The Energy Independence and Security Act (EISA) 2007 further distinguishes the two categories of buildings: those subject to the energy

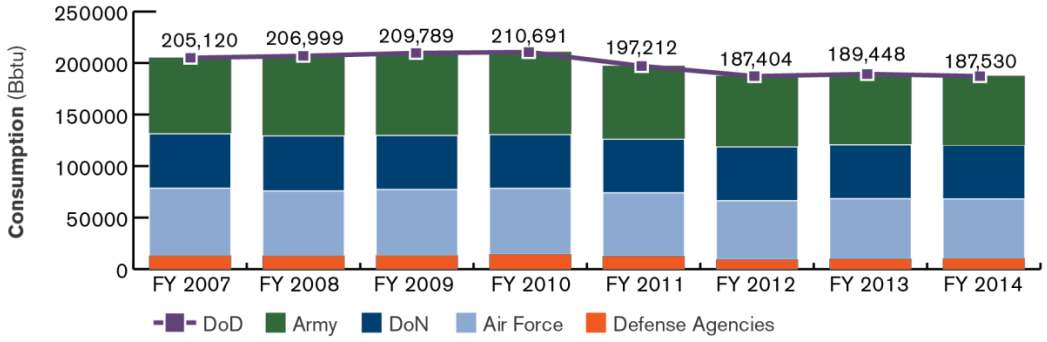
[8] EIA, 2014 Monthly Commercial Sector Energy Use, Table 2.1c [online source] (Washington, D.C. February 24, 2015 accessed March 2, 2015), available on the internet at http://www.eia.gov/totalenergy/data/monthly/

[9] Energy intensity does not include energy consumption from NTVs.

intensity reduction goal and those that can be excluded.[10] This section discusses energy intensity for DoD goal-subject buildings.

In FY 2014, DoD consumed approximately 187,500 billion Btus of energy in its goal-subject buildings and 17,300 billion Btus in goal-excluded buildings. Figure 3-3 illustrates recent historical trends in facility energy consumption by DoD Components across goal-subject buildings.

Figure 3-3: FY 2014 Facility Energy Goal Subject Consumption by Military Service

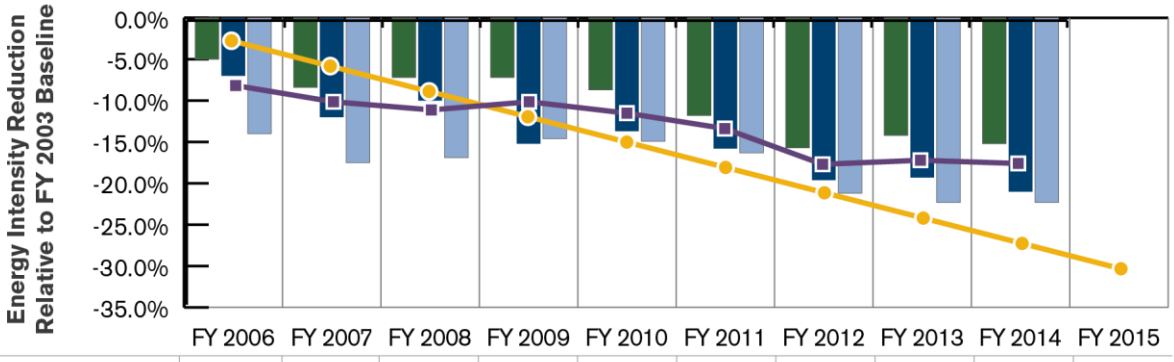


DoD energy intensity has decreased since FY 2003. Figure 3-4 illustrates DoD's and the Military Services' progress toward the EISA 2007 goal. Despite falling short of the FY 2014 intensity reduction goal of 27 percent, DoD reduced its energy intensity by 17.6 percent from the FY 2003 baseline and improved by 0.4 percent from FY 2013. While DoD continues to invest in cost-effective energy efficiency and conservation measures to improve goal progress, there will be challenges in future reductions. These challenges include: (1) budget sequestration and delayed appropriations, which lead to a reduction in energy efficiency and conservation projects; (2) uncontrollable variables such as weather and temperature variability (i.e., heating and cooling degree days[11]), increasing facility energy use; and (3) a greater reliance on conducting missions at fixed installations and enduring locations (e.g., training; unmanned aircraft; intelligence, surveillance or reconnaissance missions), leading to an increased reliance on energy from fixed installations and enduring locations.

[10] The criteria evaluated for excluding facilities include impracticability due to energy intensiveness or national security function, completed energy management reports, compliance with all energy efficiency requirements, or implementation of all cost-effective energy projects in the buildings. This energy intensity section discusses only goal-subject buildings. Source: U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, Guidelines Establishing Criteria for Excluding Buildings [online source] (Washington, D.C., 2006, accessed January 2, 2015), available on the Internet at http://www1.eere.energy.gov/femp/pdfs/exclusion_criteria.pdf.

[11] Heating and cooling degree days measure the difference between daily average temperature at a location and a baseline temperature.

Figure 3-4: DoD Energy Intensity EISA 2007 Goal Attainment[12]



	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
DoD	-8.0%	-10.0%	-11.0%	-10.0%	-11.4%	-13.3%	-17.7%	-17.2%	-17.6%	
Army	-5.0%	-8.4%	-7.2%	-7.2%	-8.7%	-11.8%	-15.7%	-14.2%	-15.2%	
DoN	-7.0%	-12.0%	-10.0%	-15.2%	-13.7%	-15.8%	-19.6%	-19.3%	-21.0%	
Air Force	-14.0%	-17.5%	-16.9%	-14.6%	-14.9%	-16.3%	-21.2%	-22.3%	-22.3%	
EISA 2007 Goal	-3.0%	-6.0%	-9.0%	-12.0%	-15.0%	-18.0%	-21.0%	-24.0%	-27.0%	-30.0%

Further, DoD has reported its energy intensity progress to the Department of Energy (DOE) since FY 1975.[13] Since this time, DoD has reduced its energy intensity from 182,153 billion Btus in FY 1975 to 96,648 billion Btus in FY 2014 (adjusted for on-site renewables and source energy credits), a DoD energy intensity reduction of over 46 percent. Figure 3-5 illustrates historical trends in DoD reductions of energy intensity since FY 1975. These reductions were a result of substantial low- and no-cost energy efficiency and conservation measures that impacted behavioral changes or project investments such as insulation or lighting upgrades. As these low- and no-cost energy efficiency and conservation initiatives continue to diminish, DoD will be challenged to make broad reductions in energy intensity. These challenges will become more prevalent as budget reductions continue, and priority is given to short-term payback rather than long-term savings. In order to continue to make progress toward annual Congressional goals, greater focus may be required on more capital-intensive projects that yield greater life-cycle savings.

[12] The DoD trend line accounts for the Defense Agencies. DoD continues to collect Navy and Marine Corps data separately. In FY 2014, the Navy achieved an intensity reduction of 20.6 percent while the Marine Corps achieved an intensity reduction of 18.7 percent relative to their FY 2003 baseline.

[13] DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Comprehensive Annual Energy Data and Sustainability Performance* [online source] (Washington, D.C.,2015, accessed March 2, 2015, available from: http://ctsedwweb.ee.doe.gov/Annual/Report/TotalSiteDeliveredEnergyConsumptionPerGrossSquareFootByFederalAgenciesByYear.aspx.

Figure 3-5: DoD Energy Intensity Progress since FY 1975

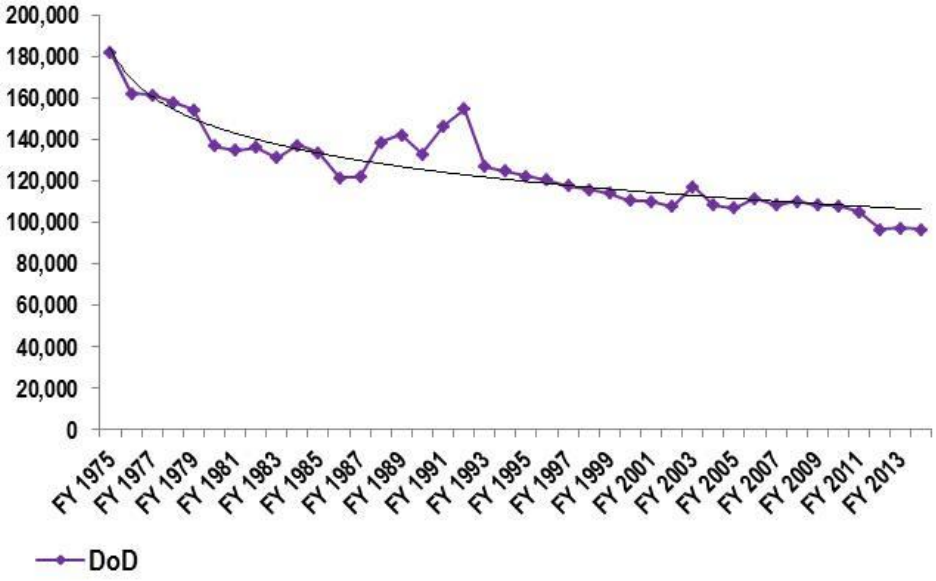


Table 3-1 summarizes annual energy intensities across the Department from FY 2008 to FY 2014 as well as FY 2014 reductions from the FY 2003 baseline.

Table 3-1: Energy Intensities across DoD

DoD Component	FY 2003 Baseline Intensity (Btu/GSF)	FY 2008 Intensity (Btu/GSF)	FY 2009 Intensity (Btu/GSF)	FY 2010 Intensity (Btu/GSF)	FY 2011 Intensity (Btu/GSF)	FY 2012 Intensity (Btu/GSF)	FY 2013 Intensity (Btu/GSF)	FY 2014 Intensity (Btu/GSF)	FY 2014 Reduction Relative to Baseline
DoD	117,334	103,692	104,527	102,929	100,268	96,596	97,149	96,648	-17.7%
Army	97,248	89,802	93,051	91,499	85,739	82,002	83,432	82,463	-15.2%
DON	127,018	109,550	103,245	105,036	103,263	102,092	102,444	100,387	-21.0%
Air Force	140,165	113,368	116,529	116,090	114,154	110,486	108,926	108,839	-22.3%
DCMA	104,425	126,299	130,494	129,435	N/A	119,070	118,319	123,083	17.9%
DeCA	146,052	139,623	136,703	136,182	138,595	135,411	132,073	130,967	-10.3%
DFAS	151,807	101,445	93,338	96,755	77,800	87,602	85,860	72,199	-52.4%
DIA	229,108	216,622	216,972	194,736	201,166	175,866	170,272	164,843	-28.1%
DLA	51,385	60,832	49,563	49,425	52,497	48,416	46,392	50,939	-0.9%
NGA	177,040	195,803	218,140	212,516	169,458	121,579	100,872	102,383	-42.2%
NSA	263,456	256,728	281,260	286,849	292,726	295,033	298,639	311,519	18.2%
WHS	179,000	187,000	184,000	185,000	181,000	173,530	145,695	147,240	-17.6%
NRO	N/A	N/A	N/A	N/A	276,357	276,197	265,832	299,005	N/A
MDA	N/A	N/A	186,061	N/A	N/A	N/A	N/A	N/A	N/A

In FY 2010, DoD began to track and report energy consumption and square footage at individual installations. This has allowed the Department to monitor energy intensity by installation as well as the Component level. Appendix E summarizes FY 2014 installation-level data.

The Committee on Appropriations of the House of Representatives directed the Secretary of Defense to report the energy use and energy efficiency projects of the ten largest installations as well as the Pentagon. Tables 3-2 and 3-3 address the congressional requirement in House Report 113-473. The majority of the installations below reported decreases in intensity from FY 2010 to FY 2014, with an average reduction of approximately 11 percent.

Table 3-2: 10 Largest GSF Installations Energy Use Intensity (EUI) FY 2010 – FY 2014

		Goal Subject Intensity					
Component	Installation Name	FY10 Intensity (kBtu/GSF)	FY11 Intensity (kBtu/GSF)	FY12 Intensity (kBtu/GSF)	FY13 Intensity (kBtu/GSF)	FY14 Intensity (kBtu/GSF)	Change from FY10 to FY14
Air Force	JBSA - Fort Sam Houston	118.8	116.1	113.8	115.7	112.5	-5%
Army	Fort Bragg	121.1	104.4	112.6	105.3	104.8	-13%
Army	Joint Base Lewis-McChord	97.1	102.4	99.6	88.8	80.4	-17%
Army	US Army Garrison Kaiserslautern	54.8	56.0	60.6	66.8	43.4	-21%
Army	US Army Garrison Grafenwoehr	59.9	59.1	60.6	64.0	57.8	-3%
Marine Corps	MCB Camp Lejeune	137.4	133.1	121.6	129.7	132.1	-4%
Air Force	Kadena Air Base	58.6	55.1	54.6	52.1	51.9	-11%
Army	Fort Bliss	91.1	80.4	66.3	66.6	63.2	-31%
Army	Fort Hood	125.0	75.7	79.4	87.7	90.1	-28%
Army	Fort Benning	83.1	80.0	82.2	113.9	95.0	14%
WHS	Pentagon Reservation	189.0	185.9	173.7	168.1	169.0	-11%

Table 3-3: Audit and Energy Efficiency Project Details of Installations

Installation	Most Recent Audit Date	Project Examples
JB San Antonio – Fort Sam Houston	23-May-13	• Heating System repairs • Window Insulation • Central Energy Plant Upgrade
Fort Bragg	1-Jun-13	• Upgrade Approx 450 Failing and Inefficient Hi-Bay Lighting in Five (5) Combat Aircraft Maintenance Hangars Aboard SAAF
Joint Base Lewis-McChord	28-Jun-13	• General improvements: LED lighting, sensor controls, retrofits • Boiler upgrades: controls, fan drives
US Army Garrison Kaiserslautern	1-Jun-11	• N/A
US Army Garrison Grafenwoehr	18-Mar-13	• Install Glass Doors on Open medium temperature multi-deck display cases (DeCA)
MCB Camp Lejeune	5-Jul-11	• General Energy Efficiency Repairs • HVAC Improvements • Boiler Modifications
Kadena AFB	2-Jun-11	• Lighting replacement/repair/upgrade • HVAC replacement/repair • Key Card controls for HVAC/lighting
Fort Bliss	28-Jun-13	• LED Street Lighting/Retrofitting • Micro-grid
Fort Hood	21-Jun-13	• Utility Monitoring Control System upgrades and integrating
Fort Benning	24-Jun-14	• Utility Monitoring Control System upgrades and integrating • Lighting replacement/repair/upgrade • Solar Thermal Water Heating
Pentagon Reservation (WHS)	14-Jun-12	• Automatic boiler blow down modification • Revolving doors • On-going commissioning • Metering • Stream distribution system and traps

Army

In FY 2014, the Army reduced its energy intensity by 15.2 percent from its FY 2003 baseline, a 1 percent reduction from FY 2013, but still falling short of the 27 percent goal. Despite the increased use of training simulation facilities and other high energy intensive buildings and functions related to the mission, total energy consumption on goal subject buildings was reduced by more than 1 trillion Btus.

Fort A.P Hill

One of the top performing Army installations in terms of reducing energy intensity, due to the replacement of inefficient fuel oil fired heating systems with modern high efficiency systems.

In FY 2014, the Army established the enduring Office of Energy Initiatives (OEI), continuing the Energy Initiatives Task Force (EITF) efforts to accelerate the development of 1 gigawatt (GW) of large-scale renewable energy projects, and expanded the NetZero initiative to all permanent installations. The Army awarded 18 Energy Savings Performance Contract (ESPC) task orders with $311 million in investment, 10 Utility Energy Service Contract (UESC) projects for $15 million of investments, and executed $43.5 million in ECIP funding for 11 projects at eight installations with a projected annual cost savings of $3.0 million and an annual energy savings of 137 billion Btus.

In FY 2014, the Army received recognition from the Federal Government for its work to improve energy efficiency. Fort Meade was recognized by the Federal Energy Management Program (FEMP) for the

implementation of a project that responded to electric grid frequency fluctuation at their water filtration plant, saving approximately 2.3 billion Btus and $75,000 in utility rebates annually. Fort Buchanan was recognized by GreenGov for the significant work done to improve energy efficiency, including the development of a Sustainability and Environmental Management System, initiation of ESPCs, and education and outreach efforts.

The Army continues to utilize combined heat and power (CHP) systems to improve its energy efficiency, which help meet reduction goals through source energy credits. In FY 2014, on-site source energy credits accounted for 1.7 percent toward the Army's energy intensity goal progress. These on-site projects contribute to improving the energy efficiency and resilience of Army installations.

DON

In FY 2014, DON reduced its energy intensity by 21 percent relative to its FY 2003 baseline. The Navy and the Marine Corps reduced their energy intensity relative to the baseline year by 20.6 percent and 18.7 percent, respectively. Both the Navy and the Marine Corps expect progress to improve in FY 2015 as projects awarded late in FY 2012 and FY 2013 begin to yield savings.

Mid-Atlantic Installations

The Navy Exchange Service Command (NEXCOM) and Naval Facilities Engineering Command Mid-Atlantic rolled out energy-saving devices on vending machines, which saved approximately 1,900 KWh annually.

In FY 2013 and FY 2014, the Navy and Marine Corps invested approximately $700 million on projects targeting building-level energy conservation measures (e.g., upgrades to lighting, and heating and cooling systems). These investments are expected to help the Navy continue to reduce its energy intensity. The following are examples of energy efficiency projects in FY 2014:

- Joint Base Pearl Harbor-Hickam: The Navy is executing a pilot project to improve current air conditioning systems by retrofitting three buildings with split system variable refrigerant flow (VRF) technology. The new cutting-edge system will employ an inverter type of compressor in the outdoor air cooled condensing unit (ACCU) that varies the speed of the compressor based on actual cooling demand, resulting in lower energy consumption. In a VRF split system, multiple indoor fan coil units (FCUs) can be served by one ACCU, thus reducing maintenance. Its implementation will result in energy savings and improved indoor air quality. Favorable results from the pilot could lead to expanding this new system in other facilities.
- Pearl Harbor Naval Shipyard: In February, the Navy awarded a $7.4 million contract to construct a new low pressure air compressor plant and install new low pressure air compressors based on one of the energy saving solutions generated from a 2010 energy audit, resulted in cost savings of $881,000 and annual energy savings of 11.7 billion Btus. The project provides the lowest total ownership cost and highest payback period by utilizing more efficient variable speed air compressors.

DON also continues to utilize thermal energy from the waste heat of cogeneration systems. These systems help to meet reduction goals through source energy credits. In FY 2014, on-site source energy

credits accounted for 4.5 percent of the Navy's energy intensity goal progress and 3.3 percent of the Marine Corps' goal progress. These on-site projects contribute to improving the energy efficiency and resilience of DON installations.

Air Force

In FY 2014, the Air Force reduced energy intensity by 22.3 percent from its FY 2003 baseline, staying consistent with their FY 2013 progress, but falling short of the 27 percent reduction goal. Both energy consumption and square footage decreased in FY 2014 for the Air Force.

The Air Force consistently identified the following as key contributors to reduction of energy consumption:

- Realization of savings from prior year facility energy savings project investments
- Increased renewable energy production
- Retro-commissioning facility HVAC systems
- Continuing success of UESC and ESPC initiatives
- Energy awareness programs across installations

The FY 2014 Air Force Energy Strategic Plan continues to reinforce four priorities: (1) improve resilience, (2) reduce demand, (3) assure supply, and (4) foster an energy aware culture. The Air Force leverages communication, training, and education to facilitate an energy aware culture. Events such as Energy Action Month and Earth Day continue to shape behavior for the Air Force. The Air Force encourages energy competitions and sharing of lessons learned through its Facebook page and Website. Through its energy aware culture priority, the Air Force fostered innovative ideas and procedures to save facility energy and aviation fuel leading to eight FEMP awards in 2014. These recognized facility energy efforts saved the Air Force over $8.6 million in FY 2014.

Kadena AB, Japan

A $58.5M project is underway to upgrade the airfield with LED lights. Replacing quartz & incandescent lighting with LED is expected to reduce consumption by 83 percent and last 40 times longer.

The Air Force also continues to utilize on-site generation systems to improve energy efficiency and resilience at installations. In FY 2014, on-site source energy credits accounted for 3.0 percent of the Air Force's energy intensity goal progress.

The Air Force faces challenges in meeting energy efficiency goals. Energy focus funds, dedicated funds for energy efficiency projects, were no longer available in FY2014. Energy projects now compete directly with all other facility, sustainment, restoration, and modernization (FSRM) projects. Air Force MAJCOMs continue to identify shortfalls in trained energy program managers at Air Force installations, making it more difficult to identify energy efficiency and conservation opportunities.

Defense Agencies

In FY 2014, the Defense Agencies continued to pursue opportunities to reduce energy intensity. Some highlights of successes are included below.

- WHS completed recommissioning of the Pentagon basement and mezzanine levels, and Remote Delivery Facility (RDF). WHS is continuing recommissioning activities at the Pentagon Emergency Response Center (PERC) as well as other areas in the Pentagon. Electricity consumption in the Pentagon has continued to decrease since recommissioning activities began, even after normalizing for weather.
- In late FY 2012, DFAS replaced and upgraded its boiler system at Limestone to a more efficient energy system.
- In FY 2014, DIA worked with DLA-Energy to obtain a task order under DOE's ESPC program. The ESPC will help DIA reduce energy use by 9 percent and save $922,000 per year.
- Two NGA Military Construction (MILCON) data center expansion projects were completed in 2014. Both MILCON projects included strategies and technologies to increase energy efficiency, improve energy resilience, and provide greater capacity to support future mission needs. Data center expansion projects included plans for integrating energy efficiency during design, construction, IT acquisitions, IT refresh cycles, data center fit-out, operations, and maintenance.

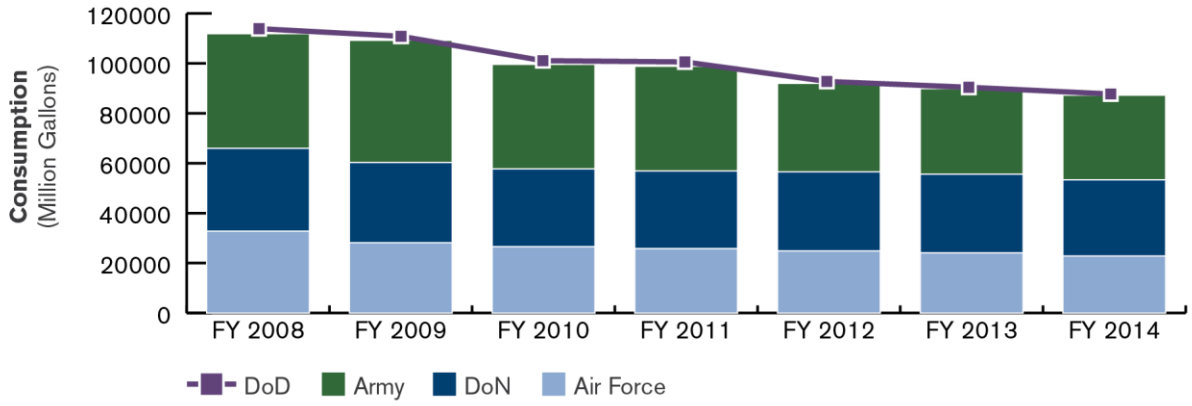
Potable Water Consumption and Intensity

> ***Potable Water*** *includes water purchased from a utility (water) provider and all fresh water (e.g., well and streams) treated and added to the domestic (for human consumption) system.*

Executive Order (EO) 13423 requires Federal agencies to achieve a 16 percent reduction in potable water intensity by FY 2015 compared to a FY 2007 baseline. EO 13514 extends the reduction goal to 26 percent by FY 2020. DoD potable water consumption has been decreasing since FY 2008. In FY 2014, DoD facilities consumed just over 88 billion gallons of potable water (Figure 3-6), with the Military Departments accounting for over 98 percent of total DoD potable water consumption.

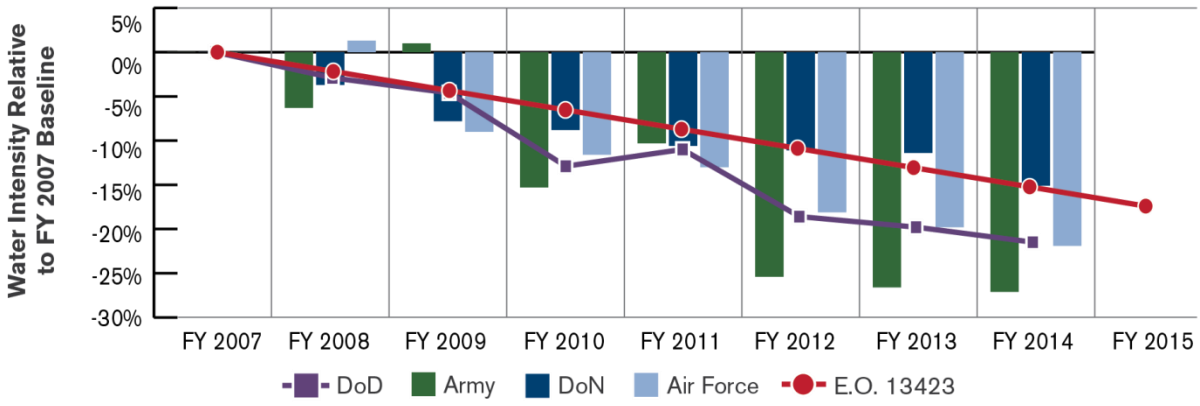
The Council on Environmental Quality (CEQ) released updated principles and guidance in March 2013 to Federal agencies to provide a common framework for analyzing water resource projects and programs.

Figure 3-6: DoD Potable Water Consumption FY 2008 – FY 2014



DoD's potable water intensity in FY 2014 was 21.5 percent below its FY 2007 baseline (Figure 3-7), ahead of the 14 percent reduction goal.

Figure 3-7: DoD Water Intensity EO 13423 Goal Attainment



Army

The Army continues to achieve potable water intensity reduction goals set forth in EO 13514. The FY 2014 potable water intensity reduction was 27.1 percent compared to the FY 2007 baseline, which is 13.1 percent below the FY 2014 goal. This progress also currently exceeds the FY 2020 goal of a 26 percent reduction.

Scranton Army Ammunition Plant

The Plant reduced their water consumption by 67 percent from the FY 2007 baseline by taking a comprehensive approach to water management. The Plant replaced three inefficient cooling towers, began implementing overall water management practices, and completed a rain water collection system.

The Army is undertaking a variety of water efficiency improvements across all installations. These initiatives include reducing make-up cooling tower water; installing low flow fixtures; implementing active leak detection programs to identify and repair water leaks; replacing/upgrading aging water distribution systems; converting from potable water to non-potable water for landscape irrigation and other appropriate water-using functions; using drought-tolerant landscaping and xeriscaping[14] where appropriate; and implementing active water conservation awareness programs including public outreach briefings, presentations, displays, and publicity.

One of the largest contributions to reducing water intensity is the detection and repair of leaks in potable water distribution systems. For example, both Watervliet and Pine Bluff Arsenals generated a combined water savings of over 500,000 gallons per year.

DON

In FY 2014, DON's potable water intensity was 15.1 percent below its FY 2007 baseline, just ahead of the 14 percent target for the year. The Marine Corps reduced potable water intensity by 27.7 percent below its FY 2007 baseline, also exceeding the FY 2020 goal of a 26 percent reduction. The Navy's potable water intensity was reduced by 10.5 percent below its FY 2007 baseline.

DON continues to install low flow bathroom fixtures, such as sink aerators, showerheads, toilets, and urinals to reduce potable water intensity in its buildings. Similar to its energy efficiency and conservation projects, DON pursues water efficiency and conservation projects that provide the greatest return on investment. In many cases, water efficiency improvements are combined with other energy savings projects to maximize economic benefits. DON expects further progress toward the potable water goal in FY 2015. In addition to energy savings, the three Navy UESC and ESPC projects awarded in FY 2014 are expected to save a combined 24 million gallons of water annually.

Air Force

In FY 2014, Air Force potable water intensity was 21.9 below the FY 2007 baseline, a 2.6 percent improvement from FY 2013. The Air Force exceeded the FY 2014 goal by pursuing leak detection and infrastructure repair, fixture replacement and upgrade, irrigation system disconnection, separately

[14] Xeriscaping is a landscaping method developed especially for arid and semi-arid climates that utilizes water-conserving techniques such as the use of drought-tolerant plants, mulch and efficient irrigation.

metering privatized systems, and using non-potable water sources for industrial, landscaping, and agricultural (ILA) water use.

The Air Force initiated nine FSRM funded water conservation projects in FY 2014 that totaled $6.4 million. These projects addressed repairs of leaking potable water mains, installation of water efficient fixtures, xeriscaping projects to minimize irrigation requirements, wastewater effluent reuse for irrigation, and use of non-potable water instead of potable water as appropriate.

Defense Agencies

In FY 2014, Defense Agencies reduced their potable water intensity by 18.2 percent from the FY 2007 baseline, with seven of eight Defense Agencies achieving the FY 2014 reduction goal of 14 percent. The Defense Agencies continued to pursue opportunities to reduce potable water intensity.

- DeCA requires low flow toilets and urinals with electronic flush sensors for new and renovated commissaries. Electronic sensor control valves also are specified on hand-wash lavatories.
- NGA used ultrasonic data logging during FY 2014 to measure water consumption and recalibrate flow meters. NGA improved data center subfloor airflow, improved the use of waterside economizers, and is exploring raising the temperatures of chilled water.
- The NRO constructed an ECIP-funded water side economizer at one of its facilities that will reduce both energy and water consumption.
- The NSA purchased reclaimed water to reduce its potable water consumption. In FY 2014, NSA consumed 62 million gallons of reclaimed water, primarily as make-up water for cooling towers—a 41 percent increase from FY 2013. NSA expects to significantly increase reclaimed water use in the future.

Industrial, Landscaping, and Agricultural Water Consumption

> ***ILA Water*** *includes naturally occurring water (e.g., lake, well, river water that is not treated [fresh]) used in an ILA application. ILA also includes any non-potable water purchased from a third party.*

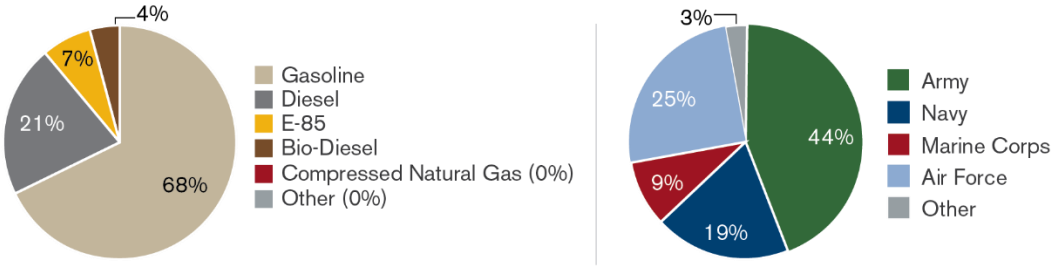
In FY 2009, EO 13514 established a new water reduction goal. The goal requires Federal agencies to reduce ILA water consumption by 2 percent annually, or 20 percent by FY 2020, relative to a FY 2010 baseline. In 2013 CEQ released guidance for Federal agencies, including DoD, to improve ILA water reporting. In FY 2014, DoD began creating supplemental guidance for Components to accurately establish a baseline, measure, and estimate ILA water use.

The Components continue to use standard methods to measure ILA consumption and identify strategies to reduce use. Projects such as xeriscaping, converting water-wash filtering systems to a dry filter system, and renovating athletic fields with artificial turf are being implemented across the Services. Policy changes to promote more efficient irrigation and mirroring local utilities by adopting water restrictions have enabled DoD to make strides in reducing consumption.

Non-Tactical Fleet Vehicle Petroleum Consumption

Section 400FF of the Energy Policy and Conservation Act, as amended by EISA Section 142, requires Federal agencies to achieve a 20 percent reduction in non-tactical fleet vehicle petroleum consumption by FY 2015 compared to a FY 2005 baseline. EO 13514 extends the reduction goal to 30 percent by FY 2020. Fleet vehicle fuel consumption accounts for about 4 percent of DoD's facility energy consumption and largely consists of gasoline. Diesel fuel represents 21 percent of the fuel mix while alternative fuels make up the remaining fleet vehicles' fuel mix. The Military Services account for slightly less than 97 percent of the Department's petroleum consumption (Figure 3-8).[15]

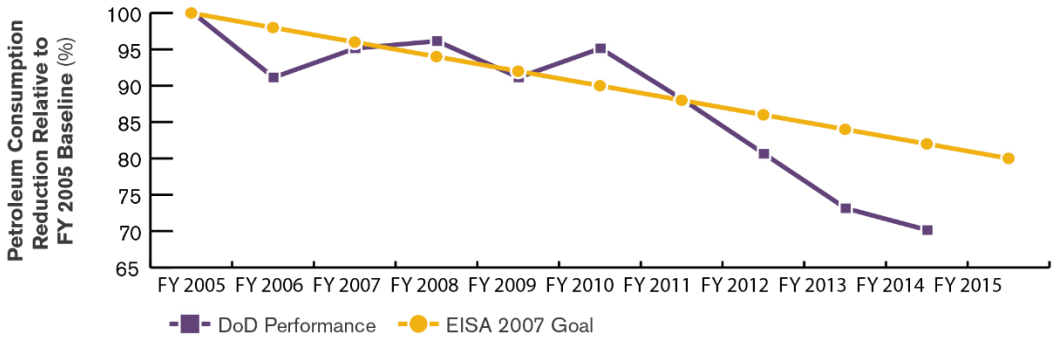
Figure 3-8: FY 2014 Fleet Vehicle Petroleum Consumption



In FY 2014, DoD fleet vehicles consumed 74 million gallons of gasoline equivalent (GGE) of petroleum, which includes gasoline and diesel/biodiesel blends. The mix of petroleum fuel types has remained relatively stable over the past seven years, and the use of alternative fuel vehicles (AFVs) has steadily increased. In FY 2014, 10 percent of the total fleet vehicle consumption was from alternative fuels, up from 7.5 percent in FY 2013. Alternative fuels include biodiesel, compressed natural gas (CNG), 85 percent ethanol fuel (E85), and hydrogen.

In FY 2014, petroleum consumption was 30.2 percent below the baseline (Figure 3-9). DoD continues to pursue replacement of fleet vehicles with more efficient models, AFVs, and hybrid electric vehicles to decrease petroleum consumption.

Figure 3-9: DoD Fleet Vehicle Petroleum Consumption, EISA 2007 Goal Attainment



[15] "Other" category includes the Defense Agencies.

Army

In FY 2014, the Army's petroleum consumption in fleet vehicles was 38.4 percent below its FY 2005 baseline. Since FY 2011, the Army has reduced its total fleet size by 15,000 vehicles. The current fleet consists of 30,500 alternative fuel and high efficiency vehicles. The Army plans to maintain fossil fuel consumption below the mandated reductions by continuing its multifaceted approach, which includes right-sizing its fleet by eliminating underutilized and unjustified vehicles, and downsizing the remaining vehicles in the fleet to the smallest vehicle able to perform the mission. Army installations are continuing transportation studies to determine the most appropriate mix of mass transit and individual vehicles to meet mission needs, while reducing fossil fuel consumption to the maximum extent possible.

"Army Strong" Electric Vehicles

DON

In FY 2014, the DON's petroleum consumption in fleet vehicles was 26.3 percent below its FY 2005 baseline. The Navy's petroleum consumption was 19.4 percent below its FY 2005 baseline, while the Marine Corps' petroleum consumption was 38 percent below its baseline.

The DON is committed to using AFVs, fuel-efficient technologies, and fleet optimization to reduce petroleum consumption. In FY 2014, the DON completed various testing and pilot studies for plug-in hybrid trucks, car sharing, and hydrogen fueling. In support of this effort, the DON completed construction of five solar carports at Naval Supply Activity (NSA) Mid-South, NSA Panama City, Naval Air Station (NAS) Whiting Field, Naval Submarine Base (NSB) Kings Bay, and NAS Fallon. The DON also completed an electric vehicle charger project at NSA Crane and two E85 fueling stations at NSA Crane and Naval Surface Warfare Center (NSWC) Dahlgren. Additional AFV infrastructure projects awarded in FY 2013 are expected to be complete by the end of CY 2015.

***An Electric Hybrid Bucket Truck** is part of a one-year demonstration project in Hawaii. With favorable fuel economy and field validation testing, the Navy could integrate plug-in heavy hybrid utility trucks into its long-term vehicle buy plan.*

The Marine Corps continues to assess installation transportation requirements, technologies, and infrastructure to reduce petroleum use. Part of the Marine Corps' strategy is to place AFVs on installations while considering mission, driving conditions, and fuel availability. The Marine Corps is pursuing AFV technologies and fuels such as hydrogen fuel cell or battery electric vehicles to reduce its petroleum energy consumption.

Air Force

In FY 2014, the Air Force reduced its petroleum consumption by 11.4 percent compared to its FY 2005 baseline, falling short of the FY 2014 goal of 18 percent.

The Air Force has taken a variety of actions to reduce petroleum use in its NTVs, including the pursuit of alternative fuel use. The Air Force pursues the most fuel efficient and cost-effective AFVs, hybrid-electric vehicles, and plug-in electric vehicles (PEVs) that support its mission requirements.

The Air Force Element, Vehicle and Equipment Management Support Office (AFELM VEMSO) has implemented many programs that directly contribute to the success of these Federal mandates by way of procurement, PEV fleets, and deployment of Automotive Information Module, 2nd Generation (AIM2) and Vehicle Validations (VV). In FY 2014, AFELM VEMSO completed 14 on-site VV visits and 13 virtual visits. The AFELM VEMSO was able to identify and reduce 1,941 vehicles no longer required to meet mission requirements, and right sized 775 vehicles to support reductions in petroleum consumption.

Defense Agencies

In FY 2014, the Defense Agencies accounted for 1 percent of DoD fleet petroleum consumption. Strategies to reduce petroleum consumption in fleet vehicles included the following:

- DIA evaluated the number of fleet vehicles required by the Agency, in order to save both on the costs of the vehicle program and to reduce leased vehicle fuel use. Based on this evaluation, DIA has reduced its vehicle fleet by 17 percent since FY 2012.
- NSA continues to purchase hybrid and AFVs to achieve the EO 13514 goal. NSA's current non-tactical fleet includes 86 hybrid vehicles and 360 AFVs.
- WHS is investigating additional methods to reduce petroleum consumption such as promoting a more pedestrian-friendly Reservation, encourage walking rather than the use of vehicles, converting the shuttle buses to hybrid vehicles, and investigating the procurement of electric fleet vehicles and solar charging stations.

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4. Increasing DoD's Supply of Renewable Energy

In addition to reducing facility energy demand, DoD is increasing the supply of renewable and other forms of distributed (on-site) energy on installations. DoD continues to invest in cost effective renewable and distributed energy solutions. DoD's strategy not only considers the cost-effectiveness of renewable and distributed energy solutions, but also the energy resilience benefits they could provide to our installations.

DoD Renewable Energy Performance

As DoD pursues renewable energy to advance its energy resilience, it also seeks to comply with legal requirements to increase renewable energy. The Department is subject to two renewable energy goals put forth in 10 U.S.C. § 2911(e) and section 203 of the Energy Policy Act (EPAct) 2005 (42 U.S.C. 15852).

Title 10 U.S.C. §2911(e) established a goal for DoD to produce or procure not less than 25 percent of the total quantity of facility energy it consumes within its facilities during FY 2025 and each fiscal year thereafter from renewable energy sources. DoD's progress toward the 10 U.S.C. § 2911(e) renewable energy goal was 12.3 percent.

The EPAct 2005 goal measures total renewable electricity consumption as a percentage of total facility electricity consumption. The EPAct 2005 goal for FY 2014 is 7.5 percent. The 10 U.S.C. §2911(e) goal is 15 percent by FY 2018[16] and 25 percent by FY 2025. In his 2012 State of the Union, the President announced DON's 1 GW goal. The Army and Air Force subsequently established a goal of deploying 1 GW of renewable energy on or near their installations following the President's announcement. Following these announcements, in April 2012, the Executive Office made official that DoD had committed to having 3 GWs of renewable energy deployed on its installations by FY 2025 (Table 4-1). DoD is also working with CEQ, the Office of Management and Budget (OMB), and DOE to provide guidance on the newly established Executive Office goal of 30 percent renewable electric energy by FY 2025. The President signed an E.O. in March 2015 identifying this new renewable energy goal.

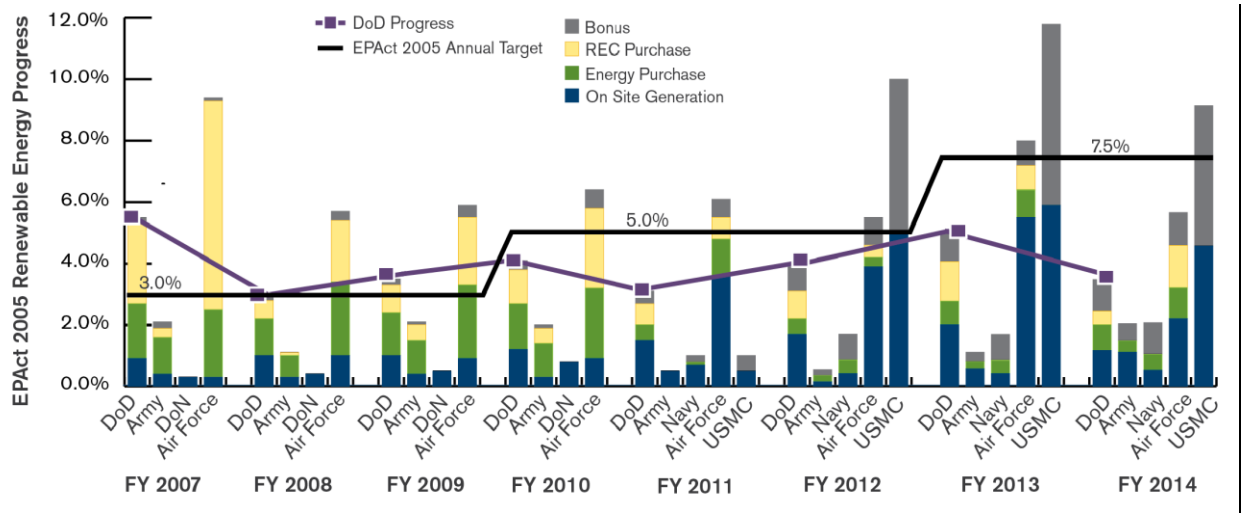
[16] This interim renewable energy goal was established as part of the Energy Performance Master Plan in the FY 2011 AEMR. See Appendix C for details on DoD energy goals.

Table 4-1: Renewable Energy Goals: Understanding the Differences between EPAct 2005, 10 U.S.C 2911(e), and the DoD 3 GW Initiative[17]

	EPAct 2005 Goal	10 U.S.C. §2911(e) Goal	DoD 3 GW Initiative
Measure	5 percent in FY 2010 - FY 2012, and 7.5 percent in FY 2013 and each FY thereafter	15 percent by FY 2015 25 percent by FY 2025	3 GW of renewable capacity by FY 2025
Unbundled Renewable Energy Credits (RECs) Purchases	Yes	No	No
Renewable Energy Purchases	Yes	Yes	No

In FY 2014, DoD did not achieve the EPAct goal. Renewable electricity consumption subject to the EPAct 2005 goal accounted for 3.5 percent of DoD's total electricity consumption. This is 4.0 percent below the FY 2014 EPAct 2005 renewable energy goal of 7.5 percent (Figure 4-1).

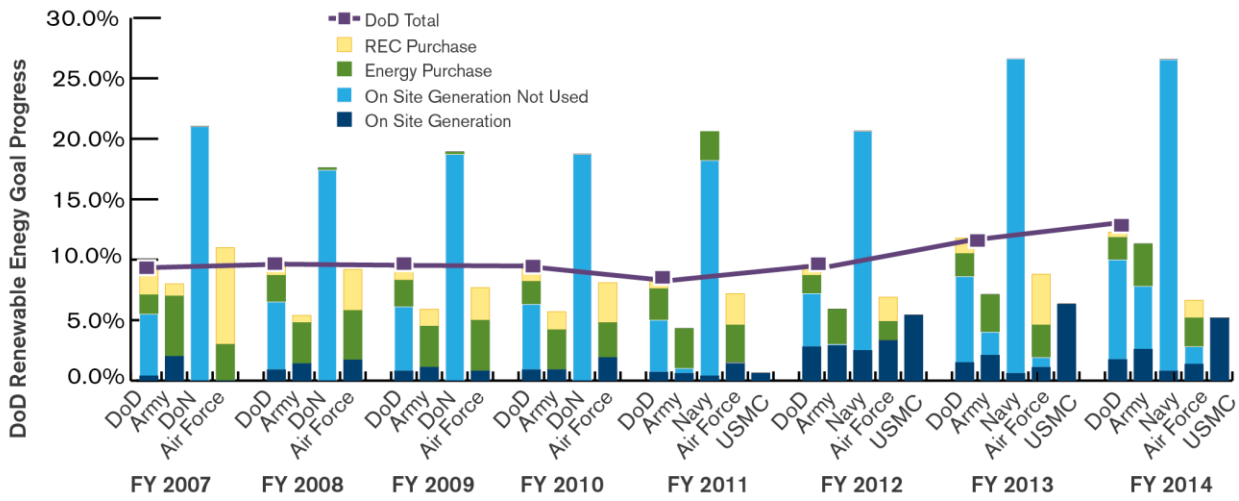
Figure 4-1: EPAct 2005 Renewable Energy Goal Attainment



DoD continued to make progress in achieving the 10 U.S.C. §2911(e) FY 2018 interim and FY 2025 renewable energy goal (Figure 4-2).

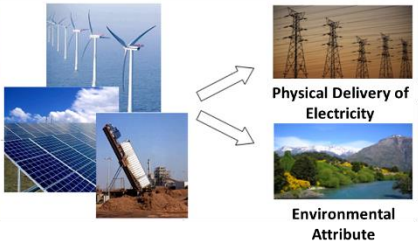
[17] Each Service has an independent target year for its 1 GW goal attainment.

Figure 4-2: 10 U.S.C §2911(e) Renewable Energy Goal



In FY 2014, purchases of Renewable Energy Credits (RECs) fell to 3.6 percent of the total renewable energy contribution toward the 10 U.S.C. §2911(e) goal, down from 10.9 percent in FY 2013. EPAct and 10 U.S.C §2911(e) treat RECs for goal attainment differently. The EPAct goal requires DoD to retain RECs for goal attainment, while retaining RECs is not a requirement to meet the 10 U.S.C. §2911(e) goal.

- ✓ Renewable Energy Credits (RECs), also known as green tags, renewable energy certificates, are tradable, non-tangible instruments that represent the environmental attributes of renewable energy generation. Each REC represents the generation of 1MWh of electricity from an eligible source of renewable energy.
- ✓ RECs may be sold bundled (paired with the physical delivery of electricity), or unbundled (as a stand-alone paper product). When combined with the physical electricity, RECs become functionally equivalent to green power purchases from a local utility.



RECs are a valuable financial tool for the development of large-scale renewable energy projects. RECs are attractive to project developers because they can lower capital (upfront) costs of projects. DoD strives to achieve an acceptable tradeoff between retaining RECs and taking advantage of the full economic benefits of RECs to encourage project development. DoD does not believe that procuring unbundled RECs is a desirable substitute for renewable energy production that provides energy resilience for its military installations.

To meet the reporting requirement under Title 10, Section 2925, Subsection (a) (4), DoD began tracking RECs associated with new third-party financed renewable energy projects in FY 2012. In FY 2014, DoD had zero bundled REC purchases resulting from new third-party financed renewable energy projects.

The Department uses various authorities to increase the supply of renewable and other distributed (on-site) sources of energy on its installations. DoD uses both appropriated funds and non-governmental (often referred to as 'third-party') financing to pursue renewable energy projects.

DoD partners with private entities to enable the development of large-scale renewable (or other distributed) energy projects and relies on congressional appropriations to fund cost effective, small scale distributed generation projects. The main authorities to pursue third-party financing of renewable energy projects are Utility Service Contracts (USCs), Power Purchase Agreements (PPAs), and outgrants (Table 4-2). Title 10, Sections 2922(a) and 2667 are not limited to renewable energy sources and can also be used for non-renewable energy sources such as natural gas and other fuel types. Title 10, Section 2410(q) is limited to renewable energy sources.

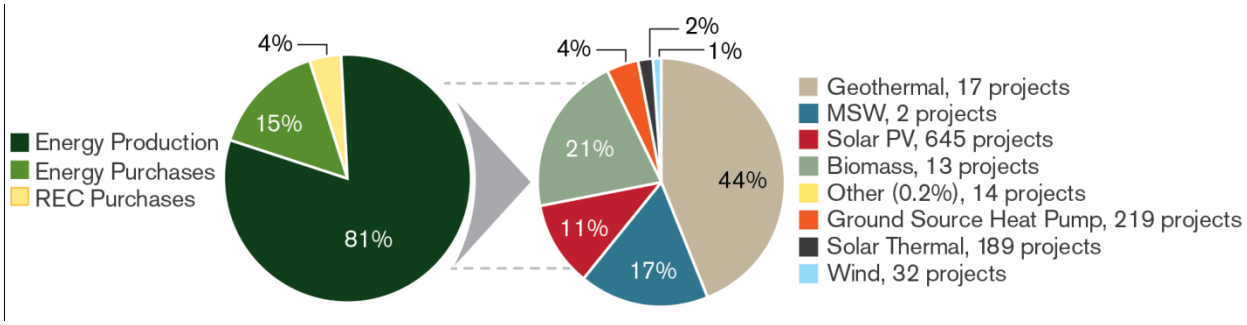
Table 4-2: Funding Mechanisms

Funding Mechanism	Authority	Definition
Utility Service Contracts (USCs)	10 USC 2922(a)	A contract enabling the DoD to enter into agreements for the provision and operation of energy production facilities and the purchase of energy from such facilities.
Power Purchase Agreement (PPA)	10 U.S.C. § 2410q	An agreement enabling the DoD to enter into a contract for the purchase of electricity from sources of renewable energy.
Outgrants	10 U.S.C. § 2667	An outgrant for the production of energy allows an installation to lease land to a lessee in return for cash or in-kind contributions. For renewable energy projects that use the authority found under 10 U.S.C. § 2667, DoD requires that the Military Department demonstrate more than a mere passive activity. For production or procurement of facility energy to qualify as being consistent with the DoD energy performance goals and master plan (and consequently qualify for an energy certification), DoD must do one of the following— • Consumption by the DoD Component of some or all of the facility energy from the project; • Structure the project to provide energy security for the installation by, e.g., retaining the right to divert to the installation the energy produced by the project in times of emergency; • Reinvest in renewable facility energy or program conservation measures of a minimum of 50 percent of the proceeds (including both in-kind and cash) from any lease.

In FY 2014, DoD had over 1,130 operational renewable energy projects, compared to approximately 900 reported last year. These projects generated over 10,000 billion Btus in FY 2014, which represents 81 percent of the total amount of renewable energy produced or procured. Coupled with purchases of renewable energy and RECs, which represent 15 percent and 4 percent of the total supply mix, respectively, DoD produced and procured approximately 12,500 billion Btus of renewable energy in FY 2014. Geothermal electric power is by far the most significant renewable energy source in DoD, accounting for almost half of the Department's renewable energy goal attainment. With the Army's FY 2014 addition of the 60 megawatt (MW) Fort Drum biomass facility, biomass (including biogas from captured methane) now makes up 21 percent of the DoD's supply mix. Municipal solid waste (MSW) is

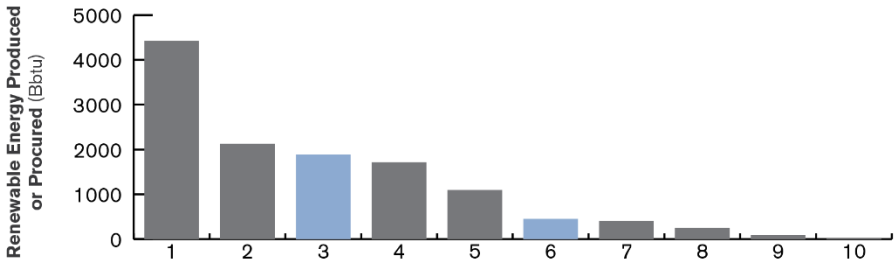
used for both electricity and steam production, and accounts for 17 percent of the Department's renewable energy production. There are 645 solar photovoltaic (PV) systems throughout DoD that contribute approximately 11 percent of the total renewable energy produced on DoD installations, followed by 219 ground source heat pump (GSHP) projects contributing approximately 4 percent to the supply mix. Figure 4-3 illustrates DoD's renewable energy supply mix by technology-type.

Figure 4-3: DoD Renewable Energy Supply Mix by Technology Type



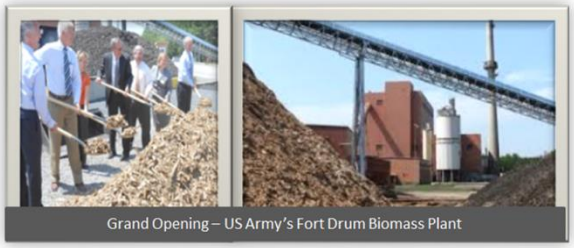
The largest renewable energy project in DoD is the Navy's China Lake geothermal power plant in California, which supplies nearly half of the Department's renewable energy production. The second largest renewable energy project in DoD is a waste-to-energy project at the Norfolk Naval Shipyard (NNSY) in Virginia that produces both electricity and steam. In FY 2014, these two projects maintained their overall energy production as compared to FY 2013. In FY 2014, DoD's renewable energy goal progress primarily increased due to the Army's 60 MW Fort Drum biomass facility. DoD Components continue to implement numerous smaller renewable energy projects. In FY 2014, 1,122 projects generated less than 100 billion Btus. Figure 4-4 shows the breakout of renewable energy projects by source of energy.

Figure 4-4: DoD Renewable Energy Projects FY 2014



	Renewable Energy Projects	BBtu
1	Geothermal, 17 projects	4,426
2	Biomass, 13 projects	2,126
3	Renewable Energy Purchases	1,884
4	MSW, 2 projects	1,711
5	Solar PV, 645 projects	1,095
6	REC Purchases	451
7	Ground Source Heat Pump, 219 projects	404
8	Solar Thermal, 189 projects	248
9	Wind, 32 projects	94
10	Other, 14 projects	18

Army


Grand Opening – US Army's Fort Drum Biomass Plant

The Army did not achieve the EPAct renewable energy goal in FY 2014, consuming 2.0 percent of electricity from renewable energy sources. The Army nearly doubled their percentage from FY 2013 and will continue to improve its EPAct renewable energy performance through the efforts of the Army OEI. The Army has over 350 renewable energy projects producing electricity and will continue to develop both small- and large-scale projects to help meet both the EPAct renewable energy goal and the renewable energy target established as part of the December 5, 2013, Presidential Memorandum.

The Army increased performance toward the 2911(e) goal, producing or procuring 11.3 percent of its electricity from renewable energy sources compared to 7.1 percent in FY 2013. This increase in renewable energy production is attributed to an increase in renewable energy projects. The Army expects to improve on its 2911(e) goal upon finalization of OEI's alternative financing agreements for developing on-site large scale renewable energy projects in partnership with private industry.

The Army continues to pursue a diverse mix of renewable energy technologies. For example, Fort Huachuca has continued to grow its renewable energy production capacity through implementation of both small- and large-scale solar PV projects. Fort Drum is developing infrastructure to purchase renewable energy from an on-site biomass plant to meet 100 percent of the installation's energy demand. Additionally, construction will start on renewable energy projects at Fort Detrick, Fort Benning, Fort Gordon, Fort Stewart, and Redstone Arsenal in 2015. The Army pursues renewable and distributed energy projects that increase renewable energy production or procurement, while improving energy efficiency and energy resilience.

DON

In FY 2014, DON did not achieve the EPAct renewable energy goal, consuming 3.5 percent of electricity from renewable energy sources. The Navy's progress against the EPAct renewable goal was 2.1 percent, while the Marine Corps exceeded the EPAct renewable energy goal by achieving 9.1 percent of electricity from renewable energy sources. However, the Marine Corps progress toward the EPAct goal fell from the 11.7 percent achieved in FY 2013.

DON's performance toward the 2911(e) goal decreased slightly, producing or procuring 22.2 percent of electricity from renewable energy sources, as compared to 22.6 percent in FY 2013. The Navy produced or procured

26.5 percent of its electricity from renewable energy sources, exceeding the 2911(e) renewable energy goal. The Marine Corps produced or procured 5.2 percent of electricity from renewable sources.

DON has made significant strides in achieving the 2911(e) goal due to its focus on large-scale renewable energy projects. The main contributors to the Navy's progress toward the 2911(e) goal are the Naval Air Weapons Station (NAWS) geothermal project at China Lake, California, and the MSW project at NNSY, Portsmouth, Virginia. At both locations, the electricity generated is sold to the utility and not consumed by the installation. The proceeds are, however, reinvested in the Navy's energy program. During FY 2014, the China Lake and NNSY power plants produced and sold over 1.2 million megawatt hours (MWh) and 260,000 MWh, respectively, to the commercial utility providers in the region. The steam generated from the MSW plant is consumed by the installation, which increases the energy resilience of the installation. Additionally, NAWS China Lake has a 13.78 MW PV array.

In addition to the EPAct and 2911(e) renewable energy goals, DON has embarked on an aggressive renewable energy strategy to deploy 1 GW of renewable energy on or near its installations. This goal was first announced in President Obama's 2012 State of the Union address. The DON's 1 GW goal is designed to support the achievement of the Secretary of the Navy's (SECNAV) goal to supply 50 percent of DON energy demand with alternative sources such as solar, wind, biofuels, and geothermal energy by 2020. Navy stood up the Renewable Energy Program Office (REPO) in May 2014 to aggressively work to meet the SECNAV 1 GW goal. By implementing its 1 GW initiative, DON expects to meet the SECNAV goal and also exceed the 2911(e) goal.

Air Force

In FY 2014, the Air Force fell slightly short of meeting the EPAct renewable energy goal of 7.5 percent, consuming 5.7 percent of its electricity from renewable energy sources. This decrease from 8.0 percent in FY 2013 can be attributed to the lack of RECs purchased in FY 2014. In FY 2013, the Air Force purchased over 320,000 MWh of RECs.

In FY 2014, the Air Force progress toward the 2911(e) goal of producing or procuring 25 percent of its total electricity from renewable energy sources by FY 2025 decreased to 6.7 percent, down from 8.9 percent in FY 2013. The Air Force will continue its progress toward the renewable energy goals by executing renewable energy projects and by purchasing commercial renewable energy. Currently, the Air Force relies on third-party financing to pursue projects for goal attainment. In FY 2014, the Air Force had 293 renewable energy projects at 97 sites. These projects were either installed, in operation, or under construction using a variety of investment strategies, including third-party financing or appropriated funds.

Davis-Monthan AFB Solar PV

New Wind Turbines at Cape Cod AF Station

In February 2014, the Air Force held a ribbon cutting ceremony recognizing the Air Force's largest solar project, a 16.4 MW PV array at Davis-Monthan Air Force Base (AFB), Arizona. The Air Force continues to procure the power produced at the Nellis AFB, Nevada, 14.2 MW PV array. Furthermore, the Air Force continues to pursue the development of a variety of renewable projects on its installations. The Air Force executed a 3.4 MW wind project at Cape Cod Air Force Station, Massachusetts, in October 2013. The Air Force currently has 19 renewable energy assessments underway.

The Air Force continues to seek opportunities to incorporate renewable energy on its installations by conducting assessments on resource availability and economic feasibility studies. The Air Force is developing 12 in-depth economic feasibility studies to assess the viability of conventional renewable energy opportunities for its installations. Conventional renewable energy opportunities include wind, solar, and biomass. Air Force studies are also considering passive renewable energy alternatives such as solar walls, solar water heating, and GSHPs.

The Air Force Renewable Energy Project Development (REPD) Subpanel was established to leverage knowledge and resources across the Air Force and coordinate renewable energy efforts. The Air Force expects that REPD's Subpanel will provide leadership for and coordination of renewable energy projects by providing a forum, process, and tools for evaluation and decision-making.

Defense Agencies

The Defense Agencies continue to implement renewable energy projects on their facilities. In many cases, Defense Agencies operate in buildings rather than campuses or installations, limiting their ability to implement renewable energy projects. However, Defense Agencies continue to consider cost-effective, small-scale, and distributed renewable energy generation. Specifically, the following are initiatives Defense Agencies undertook in FY 2014:

- DIA's primary renewable energy initiative in FY 2014 was to award a contract for a 500 kilowatt (kW) roof-mounted solar PV system at DIA's HQ campus, which will be installed in late FY 2015.
- DeCA began operation of a new PV system as part of a commissary project in Ansbach, Germany in FY 2014.
- NGA has been successful in identifying opportunities for improving renewable energy performance. NGA operates a small geothermal system contributing less than 1 percent of on-site energy, and has installed PV lighting within its smoking shelters.
- NRO purchased 5.9 MWh of wind power in FY 2014.

5. Enhancing Energy Resilience

> **DoD energy resilience is,** *the ability to prepare for and recover from energy disruptions that impact mission assurance on military installations. Further, it is the necessary planning and capability to ensure available, reliable, and quality power to continuously accomplish DoD missions.*
>
> **DUSD(I&E) Electric Power Resilience Memorandum, December 16, 2013**

The Department must be prepared for and have the ability to recover from utility disruptions that impact mission assurance on its installations. DoD relies on commercial power to conduct missions from its installations, and these commercial power supplies can be threatened by natural hazards and other events. DoD recognizes that such events could result in power outages affecting critical DoD missions involving power projection, defense of the homeland, or operations conducted at installations in the U.S. directly supporting warfighting missions overseas. Therefore, it is critical for installation commanders to understand the vulnerabilities and risk of power disruptions that impact mission assurance.

DoD is pursuing a three-pronged strategy to ensure installations have resilient, available, reliable, and continuous power. First, two elements of the facility energy strategy are essential components to improving energy resilience: reducing the installation's demand for energy and expanding the supply of distributed (on-site) energy sources. Second, DoD is actively addressing near-term concerns by (1) pursuing energy resilience initiatives to prepare for and recover from energy disruptions that impact mission assurance on its installation; and (2) actively engaging with Federal agencies, state and local governments, and key industrial players to remediate risk to DoD missions associated with commercial utility outages. Third, DoD is addressing longer-term concerns by pursuing advanced technologies that will help enhance the energy resilience of its installations.

Reporting Requirements

Title 10 U.S.C §2925 requires the reporting of utility outages at military installations. The Committee on Appropriations of the Senate directed DoD to review the value and time duration of electricity reliability and its use in making cost benefit decisions on military installations. The following discussion addresses the 10 U.S.C. §2925and the Senate Report 113-211.

In FY 2014, DoD conducted a survey of utility outages on military installations resulting from external, commercial utility interruption of its electric, gas, and water utilities. DoD Components reported approximately 114 utility outages that lasted eight hours or longer in FY 2014, a reduction from the 180 events reported in FY 2013. The majority of the utility outages were a result of electric disruptions, and included U.S. and overseas locations. The financial impact of these utility outages was approximately $246,000 per day.[18]

[18] This figure is developed from utility outages that had reported financial impacts in FY 2014.

Table 5-1 shows the cost of utility outage for data collected from FY 2012 to FY 2014. The difference in the cost per day for DoD utility outages in FY 2012 was due to the large financial impacts of the June 2012 derecho storms at one military installation, primarily a result of costs associated with purchasing emergency generator fuel and equipment replacements.

Table 5-1: FY 2012 – 2014 Cost per Day of DoD Utility Outages[19]

Cost of Utility Outages ($000/day)		
FY2012	FY2013	FY2014
$2,899	$225	$246

These utility outage costs could be incorporated into business case and cost-benefit decisions when pursuing energy resilience projects. However, business case and cost-benefit decisions should not be limited to the cost avoidance of remediation actions associated with utility outages. DoD is continuing to identify other benefits associated with enhancing energy resilience. These benefits will consider a levelized cost of electricity approach that encourages more strategic, life-cycle cost effective energy generation solutions. For example, a levelized cost of electricity approach would quantify costs associated with traditional standby generators, maintenance, fuel, infrastructure, and equipment compared to more resilient, integrated, distributed energy generation systems and infrastructure. Further, the value and duration of utility outages does not include financial benefits associated with peak shaving, demand response, or ancillary services markets. DoD also could generate financial benefits from integrated, on-site energy generation systems while improving its energy resilience.

In FY 2014, the mitigation associated with DoD utility outages include updating infrastructure, increasing servicing efforts with the local utility, and pursuit of emergency or redundant power supplies such as incorporating backup generators. These utility outages were caused by acts of nature, equipment failure, or planned maintenance. No malicious acts (e.g., physical, cyber) were reported as causing utility outages impacting installations in FY 2012, FY 2013, or FY 2014. In FY 2014, equipment failure (e.g., reliability or mechanical issues) accounted for over half of the reported utility outages, while the remaining outages were caused by planned maintenance or acts of nature (e.g., weather, storms) (Figure 5-1). The June 2012 derecho storms and Hurricane Sandy (in FY 2013) contributed to a larger proportion of outages resulting from natural events. In FY 2014, the majority of outages resulted from reliability concerns (equipment failure) since there was not a major natural event.

[19] These figure are developed from utility outages that were reported with financial impacts in FY 2012, FY 2013, and FY 2014.

Figure 5-1: FY 2014 Utility Outages: by Cause

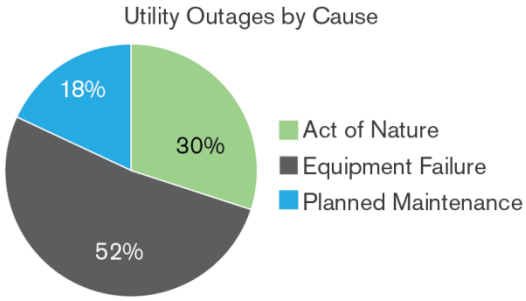
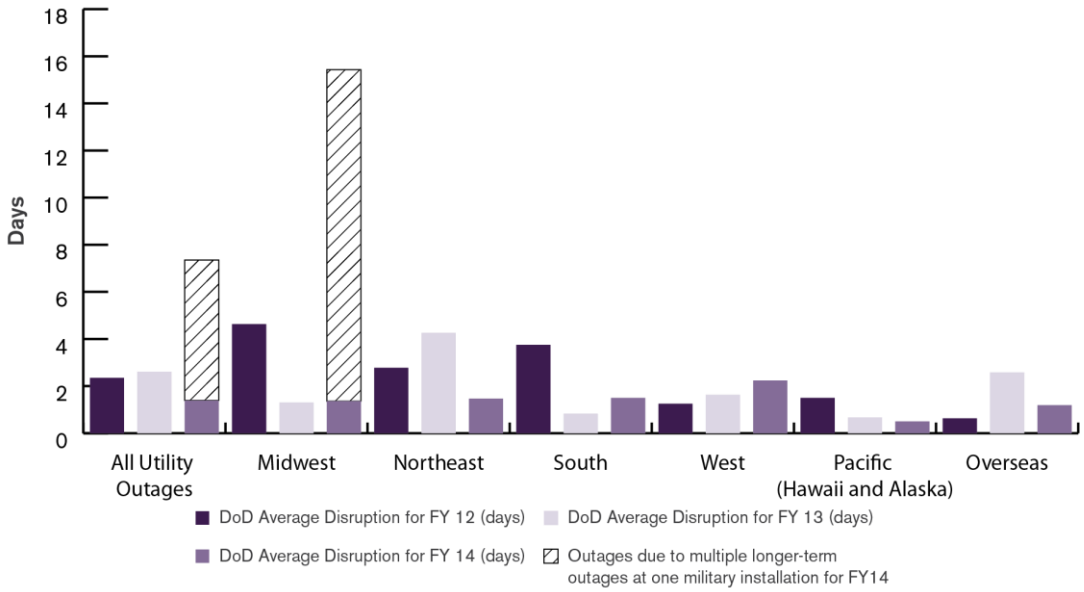


Figure 5-2 captures the average disruption time across the 114 reported utility outages by region (in days) from FY 2012 – 2014. In FY 2014, the average disruption time for all utility outages was 7.4 days. The large average time per utility outage for the Midwest in FY 2014 was due to multiple longer-term outages at one military installation that resulted from equipment failure. Removing those outages, the average time per utility outage in the Midwest and U.S. are both approximately 1.4 days. The West had the second highest average time per utility outage of 2.4 days, predominantly impacted by acts of nature. The Northeast and the South had an average time per utility outage of 1.4 and 1.5 days, respectively. Finally, the Pacific had an average time per utility outage of 0.5 days in FY 2014.

Figure 5-2: Average Time for Utility Outages by Region—FY 2012, FY 2013, and FY 2014[20]



[20]Regions used align to those established by the US Census Bureau. The Pacific division was separated out of the West region for analysis purposes. Census regions and divisions of the US can be found at the following: https://www.census.gov/geo/maps-data/maps/pdfs/reference/us_regdiv.pdf.

The 10 U.S.C. §2925 and Committee on Appropriations Senate Report 113-473 analysis results help support on-going power resilience initiatives that address near-term concerns associated with acts of nature, equipment failure, and planned maintenance. Further, these results provide some clarity that the majority of utility disruptions are of lower duration, but that there are targeted instances where natural or reliability issues have caused greater duration outages and sometimes costly remediation actions. The current status of DoD's power resilience initiative will be discussed further in the following section.

Addressing Key Near-Term Concerns

Power Resilience Initiatives

OASD(EI&E) is leading power resilience initiatives, which consider extreme weather events such as Hurricane Sandy and the June 2012 derecho storms, as well as power availability, reliability, and quality concerns associated with energy generation systems. An approach that focuses on improving the availability, reliability, and quality of current and future DoD energy generation systems also will help foster a culture of resilience and provide the capability to adapt to longer-term, evolving threats.

From January 2014 to August 2014, DoD led an effort to examine installation adherence to key energy resilience policies.[21] As a result of this review, DoD found that several policies already exist to provide guidance to Components and installation commanders to ensure energy resilience of military installations. Further, DoD is pursuing an update to installation and facility energy policy that will help raise awareness and prioritize important energy resilience requirements. This update will assist Components to better align energy requirements with critical DoD missions, encourage integrated and holistic energy solutions beyond typical standby generators, and support continued performance to already existing requirements. These existing requirements include the appropriate sizing of energy generation systems as well as maintenance, fueling, and testing of energy generation systems.

Strategic Partnerships

DoD continues to build on its energy resilience partnerships with other Federal departments and agencies, and with the private sector. DoD is supporting the DOE in developing ways to ensure the resilience of power transformers and other critical equipment. Collaboration with utility providers and state and local emergency management agencies remains a central focus to enhance the resilience and rapid restoration of commercial grid infrastructure that supports mission critical installations and facilities.

DoD will continue developing and implementing prioritized risk mitigation and remediation plans for its Defense Critical Infrastructure based on assessed criticality, vulnerability, and threats and hazards. The Department will continue developing and maturing public-private partnerships and executing programs

[21] Further information on this initiative can be found at: http://www.acq.osd.mil/ie/energy/power.shtml.

and initiatives that enhance DoD's resilience and ability to execute its critical missions, even in a disrupted or stressed commercial electric power environment.

Addressing Key Long-Term Concerns

Overview of Installation Energy Test Bed Efforts

The Environmental Security Technology Certification Program (ESTCP) Installation Energy Test Bed is a cost-effective way to demonstrate new energy technologies in a real-world, integrated building environment to reduce risk, overcome barriers to deployment, and facilitate wide-scale commercialization. Emerging technologies offer a cost-effective way for DoD to reduce its facility energy demand, increase energy surety, and provide distributed generation and storage.

Projects include rigorous operational testing and assessment of life-cycle costs of new technology while addressing DoD-unique issues. DoD can be a sophisticated first user of successful cutting-edge, transformational energy technologies. The Installation Energy Test Bed funds microgrid and advanced installation energy management technology demonstrations to evaluate the benefits and risks of various approaches and configurations. Through a competitive selection process, the Installation Energy Test Bed has undertaken projects with multiple vendors to ensure that the Department can capture the benefits of diverse approaches. More information on the ESTCP is available at http://www.serdp.org/.

Next Generation Microgrids

Smart microgrids and energy storage offer a more robust and cost-effective approach to ensuring installation energy resilience than the traditional approach of backup generators tied to single critical loads and (limited) supplies of on-site fuel. Although microgrid systems are in use today, they are relatively unsophisticated, with limited ability to integrate renewable and other distributed energy sources, little or no energy storage capability, uncontrolled load demands, and "dumb" distribution that is not optimized.

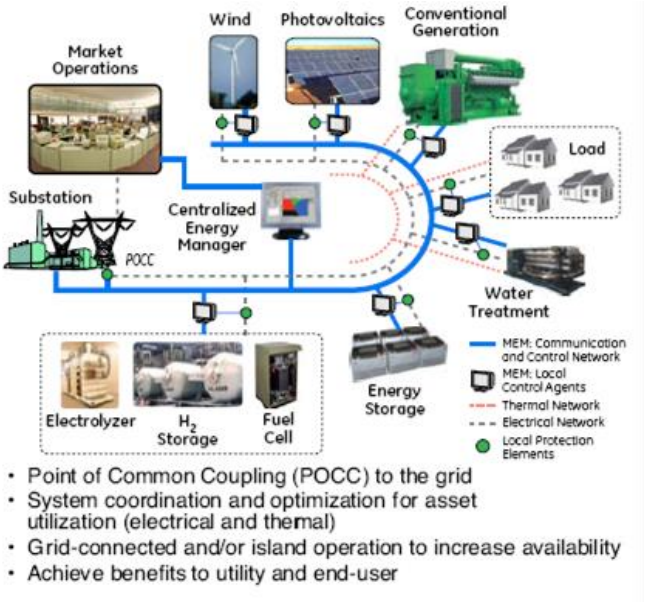


Figure 5-3: Microgrid System Example

Advanced microgrids reduce installation energy costs on a day-to-day basis by allowing for load balancing and demand response, as well as offering DoD a pathway to participate in ancillary service markets, all of which can make holistic energy management more cost-effective. They also facilitate the incorporation of renewable and other on-site energy generation. More importantly, they

offer energy resilience: the combination of on-site energy and storage, together with the microgrid' s ability to manage local energy supply and demand, allow installations to operate in "islanded" mode, shedding non-essential loads and maintaining mission-critical loads if the electrical grid is disrupted (Figure 5-3[22]).

Fort Bliss, Texas

An integrated system of energy assets under central microgrid control can provide power that is cost-effective, cleaner, and more secure than traditional operations. The project at U.S. Army Brigade Combat Team complex at Fort Bliss, Texas, is demonstrating the benefits of such an intelligent microgrid tied to the existing energy assets. An important aspect of the project is demonstrating both grid-tied and grid-independent operation, providing additional power in times of high energy demand and exhibiting the system's ability to maintain power to critical operations in the event of losing a major power source. It will also test the ability of the microgrid technology to supply peak power and reduce GHG emissions and overall energy consumption. Planning tools allow power engineers to design a microgrid, determining the optimal arrangement and control of the distributed energy assets and loads. Controllers at each piece of equipment react automatically to ensure power delivery, quality, and safety. Optimization algorithms set points to operate equipment for energy efficiency and resilience. This demonstration paves the way for the implementation of this technology at a wider range of DoD facilities.

Marine Corps Air Ground Combat Center (Twenty-nine Palms, California)

DoD is transforming the electrical infrastructure of Marine Corps Air Ground Combat Center (MCAGCC) Twenty-nine Palms, California, the Nation's largest Marine Corps Base, to enable it to operate off the commercial power grid when needed. The remote base in the Mojave Desert serves a population of more than 27,000 military and civilian personnel who facilitate large-scale training and exercises. The austere conditions, limited infrastructure, and required continuity of operations place a heavy demand on the base's electrical infrastructure. The base sustains its mission with more than 10 MW of power generated on-site by a 1.2 MW solar PV farm, 1 MW of solar PV shading, a 0.5 MW fuel cell, and a 7.2 MW co-generation plant. The base is tying together its disparate electrical infrastructure in an optimal way while serving as a test bed for new technologies. The centerpiece of this electrical infrastructure integration demonstrates how microgrids will serve as an important component of the smart grid.

[22] GE Global Research, Bringing the Smart Grid to Military Bases [online source] (accessed July 1, 2012), available on the Internet at http://ge.geglobalresearch.com/blog/bringing-the-smart-grid-to-military-bases/

In an initial demonstration, a central control system will enable facility managers to adjust the demand for electricity from buildings and substations, while dropping demand from warehouses and temporary trailers, to optimize the local system. A second phase will measure and improve the quality of the electricity flowing across the microgrid. A third phase will integrate a Sodium-Metal-Halide Battery, which can function in the extreme desert climate of Twenty-nine Palms, to help alleviate renewable energy intermittency, improve island-mode operations if the main grid goes down, reduce expensive "demand charges," and reduce stress on the main transformers and other electrical equipment on base.

Los Angeles AFB

A demonstration just getting underway at Los Angeles AFB is focused on showing the cost-effective use of DoD resources in the evolving electrical power market place, in addition to the energy resilience benefits of microgrids. This demonstration centers on medium duty PEVs. The fast-responding energy storage capability of vehicle batteries can provide power to help satisfy building, local base, and wider grid services. Although vehicles individually are not large electricity loads or sources, when aggregated they can become a controlled entity able to offset the effects of variable local resources and loads. Vehicle charging can be costly if not managed well in relation to the prevailing utility tariff. The vehicle-to-grid technology involves optimizing charging times, enabling vehicle-to-grid integration and partnering with the local utilities provider to exploit new ancillary service markets. This model has the potential to reduce the incremental cost of electric vehicles, in addition to providing the energy resilience benefits of vehicle-to-grid operation.

Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS)

U.S. Pacific Command and U.S. Northern Command continue to execute SPIDERS, a co-sponsored Joint Capability Technology Demonstration (JCTD), in partnership with DOE and the Department of Homeland Security (DHS). The purpose is to demonstrate a cyber-secure smart microgrid architecture with the ability to maintain operational surety through secure, reliable, and resilient electric power generation and distribution. Using a three-phase approach with increasing levels of system complexity, the SPIDERS JCTD will culminate in the first DoD installation-wide microgrid featuring integrated smart grid technologies, distributed and renewable generation, energy storage, and cyber defenses with the ability to operate autonomously in an "islanded" mode for extended periods of time. The deployment of cyber-secure smart microgrids on military installations will not replace commercial power as a primary source, but will enable secure, sustainable backup power for critical missions, with enhanced reliability and endurance, at the installation scale. The results of the demonstration will help inform infrastructure investment decisions to reduce the mission risk of extended electric power outages at installations, enhancing mission assurance for DoD units and potentially assisting surrounding civilian communities in disaster recovery efforts.

During Phase 1, at Joint Base Pearl Harbor-Hickam, Hawaii, an Operational Demonstration (OD) was completed in January 2013, culminating in the construction and system integration of an electric microgrid with advanced industrial controls and dynamic load management. Phase 1 resulted in a 39 fold increase in power reliability and 42 percent reduction in emissions while achieving a

30.4 percent diesel fuel savings and up to 90 percent renewable energy penetration. During Phase 2, at Fort Carson, Colorado, construction was completed in August 2013. The OD was conducted in October 2013, during which the Fort Carson microgrid operated successfully during a simulated grid outage, integrating three existing diesel generators, a solar array, and the first ever application of electric utility trucks for vehicle-to-grid distributed backup generation and storage. For Phase 3, Camp Smith, Hawaii, will be the first completely "always on, always sensing," "islandable," and cyber-secure DoD military installation microgrid. The array of infrastructure assets including office buildings, housing units, solar energy generation, energy storage, and distributed generators will greatly enhance mission assurance, energy resilience, and economic advantages in collaboration with the local utility.

The DON, NAVFAC Engineering and Expeditionary Warfare Center (EXWC), as Transition Manager will transition, as appropriate, microgrid solutions to both the Federal Government and industry. This transition has been provided for the first two phases through updates to Unified Facilities Criteria (UFC), a "Technology Transition Consolidated Report" and an Industry Day. This same approach will be used for Phase 3 and culminate with an Industry Day in August 2015.

Industrial Control Systems

Commercial electric power providers rely on industrial control systems (ICS), which include supervisory control and data acquisition (SCADA) systems, distributed control systems (DSC), and other control system configurations, such as skid-mounted programmable logic controllers (PLC). These ICS are also distributed in commercial and government building equipment, such as air conditioners, utility meters, and programmable controllers equipped with embedded computing devices. Used by commercial entities and DoD, this equipment is often specified without regard to cyber security considerations and have become increasingly networked, interconnected, and mutually dependent and are therefore potentially at risk of cyber intrusion or attack.

Focusing on relevant security specifications, DoD, in collaboration with DHS, DOE, and the National Institute of Standards and Technology (NIST), is involved with the development of the Guide to Industrial Control System Security (NIST SP 800-82), which includes a specialized ICS Security Overlay applicable to all types of control systems: utilities, facilities, weapons, medical devices and equipment, security, and transportation. Simultaneously, DoD is in the process of adopting the NIST Risk Management Framework that levies the same level of protection and continuous monitoring security requirements for both IT systems and ICS. DoD is working with the ICS community to develop new procurement language, devices, patches to existing equipment, and upgrades to information technology security measures. Working with appropriate DoD entities, such as U.S. Cyber Command and Service Cyber Commands, DoD is proactively moving ahead by fielding and deploying secure ICS solutions at DoD installations and is sharing those solutions with other appropriate ICS stakeholders in the field of logistics, security, medical, transportation, and the defense industrial base.

Service Initiatives

Army

The Army recognizes the growing importance of obtaining energy resilience on its installations and continues to work with various entities throughout the DoD to achieve this goal. During FY 2014, the U.S. Army continued to improve the energy resilience posture of its installations and facilities through enhanced energy efficiency, improved physical and cyber grid infrastructure resilience, and development of on-site power generation. The Army is continuously looking to the future to enhance energy resilience and reliability on bases to ensure the continuation of its mission.

In FY 2014, the Army undertook a variety of actions to improve the resilience of Army installations by increasing reliability, redundancy, and continuity of utility services. These actions include installing redundant feeder lines to multiple points in a distribution system, relocating overhead power lines underground to provide more secure service from weather and external damage, improving physical security at installation utility substations and plants, upgrading and repairing aging utility infrastructure through Sustainment, Restoration, and Modernization (SRM) and utility privatization capital improvement projects, installing additional fencing around utility plants, and diversifying fuel mix by adding natural gas service to areas previously served only by fuel oil and propane.

The Army is also looking at alternative solutions such as microgrids and renewable energy. By using both ESPC and ECIP project funds, the Army anticipates building a microgrid capable of meeting 100 percent of the load at Fort Hunter Liggett. The Army is also making microgrid investments at Fort Bliss, Fort Sill, and Fort Carson.

The Army requires all of its new renewable energy projects to provide power through the local distribution system and to be designed as an integrated microgrid in the future. For the biomass plant at Fort Drum, the installation will obtain 100 percent of all its energy through on-site generation. When the interconnection is completed in FY 2015, it will allow Fort Drum to remain operational in the event of a large-scale power blackout. While this policy may reduce some opportunities for renewable energy projects, the Army believes that energy resilience should be a primary objective in its energy efforts.

DON

The Navy energy vision identifies ends, ways, and means for increasing energy resilience. The Navy increases shore energy resilience by decreasing overall energy consumption, increasing the energy efficiency of shore systems, increasing the use of viable alternative energy sources, and increasing the reliability of energy for critical infrastructure. Additionally, the Navy mitigates vulnerabilities related to the electric grid, including power outages caused by natural disaster, accident, and physical and cyber-attack, in partnership with local utility providers.

The Navy values energy as a strategic resource with its security being fundamental to executing missions both afloat and ashore. NAVFAC has embarked on a comprehensive evaluation of utility infrastructure to determine current conditions and costs for necessary upgrades to avoid risk. Additionally, the

NAVFAC EXWC awarded a $2.7 million contract in 2013 to build a Microgrid Test Facility at the Mobile Utilities Support Equipment (MUSE) Yard in Port Hueneme, California. The facility will enable the Navy to conduct specific and controlled testing of microgrid concepts and components prior to field deployment.

The Navy instituted an enterprise-wide energy management program in FY 2012 to provide necessary oversight of the shore energy program and to address risks to critical infrastructure and mission-critical utility infrastructure. The Energy Security Program Plan defines the means, methods, and schedules to assess risks, develop mitigation solutions, and identify program funding for risk remediation projects at facility, pier, and adjacent municipal support activities for Navy critical electric and utility infrastructures. Naval Surface Warfare Center's Mission Assurance Division (MAD), in cooperation with the NAVFAC EXWC, leads assessment and solutions development efforts under the Energy Security Audit Program (ESAP) to provide recommendations for project development. Under this program, the Navy conducted five installation assessments in FY 2013. Currently under review, reports detail mitigation solutions that increase critical utility system infrastructure resilience and provide installations with reliable power supply. Following review, refined solutions will be provided to the appropriate command elements for project development. There are currently four ESAP assessments scheduled for FY 2014.

The Navy partnered with the Marine Corps to generate a set of top-level requirements resulting in the Navy and Marine Corps Smart Grid Capabilities Development Document (CDD), promulgated in FY 2013. The goal of the Smart Grid Program is to improve day-to-day operations of building and utility management in a cyber-secure environment in order to save operation and energy costs and support mission assurance.

The Marine Corps, through its Security Division of the Plans Programs and Operations Directorate, is developing a comprehensive pilot initiative. The primary goal of this effort is to develop a "repeatable" template for application Service-wide to help installations better understand and implement actions supporting the assurance of critical missions on Marine Corps installations in an extended commercial power outage situation.

A key supporting energy strategy was signed in June 2013 by the Deputy Assistant Commandant for Installations. The U.S. Marine Corps Installation Energy Strategy has energy security as one of the five lines of operation established for Marine Corps energy management. This strategy identifies responsibilities for installations, regions, and HQs, identifying the actions needed to achieve the strategy's objectives.

Air Force

The Air Force is always working to improve its ability to manage energy supply and demand in a way that enhances mission capability and readiness, while helping address the Nation's broader energy challenges. The Air Force is working through integrated efforts with DoD, as well as local, regional, state, and Federal partners to address energy resilience at Air Force installations.

The Air Force is focused on installation energy resilience and continues to identify energy requirements for critical missions, while developing and exercising response plans that contribute to a ready energy posture. The Air Force is working to reduce energy needs, diversify generation, and identify additional energy distribution options to improve installation energy resilience that support mission readiness. An example of how the Air Force improves energy resilience is the Joint Base Elmendorf-Richardson (JBER), Alaska, landfill gas project. This project became operational in FY 2013. It operates 24 hours a day, 7 days a week, providing energy surety to JBER by burning methane gas collected from a City of Anchorage landfill located adjacent to the base.

Two major energy resilience Engineer Technical Letters (ETLs) were developed during FY 2013 to provide guidance to the field. The first is ETL 13-04, Standby Generator Design, Maintenance, and Testing Criteria, which will improve the fidelity and accountability of the standby generator inventory of the Air Force. The second is ETL 14-6, Use of Distributed Resources, including Energy Storage, Renewable Energy Sources, and Air Force Microgrids within IEEE 1547 and IEEE 2030 Guidelines. This ETL provides criteria for the use of all distributed resources, including energy storage, renewable energy sources, and microgrids with respect to the IEEE 1547 and 2030 guidelines.

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6. Data Management and Metering

As the Department continues to improve its energy efficiency, accurate, real-time facility energy data is essential to provide a basis for effective enterprise and installation energy management. In April 2013, the DUSD(I&E) issued a utilities metering policy that sets an aggressive goal for deploying advanced meters throughout DoD to automatically and accurately measure electricity, natural gas, water, and steam use. In addition, ASD(EI&E) intends to publish strategy and policy to help Components leverage meter data to identify savings opportunities, prioritize investment decisions, and more effectively manage their building energy use at the installation and enterprise levels.

Progress toward Energy Metering Goals

Section 543 of NECPA (42 U.S.C. § 8253) required Federal agencies to install electricity meters on all Federal buildings by FY 2012, and the same level of natural gas and steam meters installed by FY 2016, with advanced meters installed to the maximum extent practicable. DoD Instruction (DoDI) 4170.11 expands on this, requiring that electricity, natural gas, and water meters be installed on all appropriate[23] facilities by FY 2012 (Table 6-1). The DoDI also requires installation of meters in conjunction with all MILCON, major renovation, and ESPC projects.

Table 6-1: Metering of Appropriate Facilities

Utility	Cumulative # of Buildings, Standard Meters	Cumulative # of Buildings, Advanced Meters	Total % Appropriate Buildings Metered
Electricity	13,713	35,611	95%
Natural Gas	5,143	9,042	82%
Water	877	5,101	35%
Steam	697	861	72%

DoD's utilities metering policy requires advanced meters on individual DoD-owned facilities sufficient to accurately capture a minimum of 60 percent of electricity and natural gas use with a goal of collecting 85 percent use at the Component level by the end of FY 2020. In FY 2014, DoD captured 19 percent of electricity and 7 percent of natural gas consumption through an advanced metering system (AMS). DoD reported that 144, or 19 percent, of installations had installation-level advanced meters for electricity and 51 installations, or 7 percent, had installation-level advanced meters for natural gas (Table 6-2).

Table 6-2: Electricity and Natural Gas AMS Progress

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	99,723	18,930	19%	144	19%
Natural Gas	66,508	4,978	7%	51	7%

[23] Appropriate facilities are those for which the DoD Component has determined metering would be cost-effective and practical. Cost practicality is determined by each individual Service or Defense Agency.

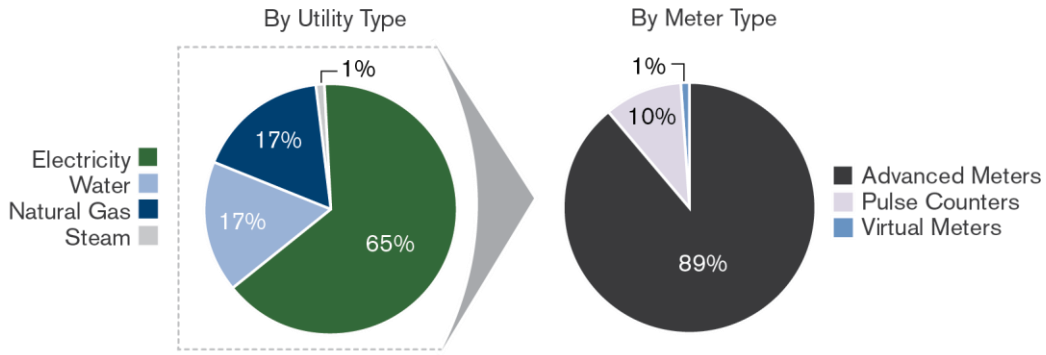
DoD's metering policy also outlines the requirements for the Components to install advanced meters on all water-intensive facilities to measure both potable and non-potable water use, and steam meters on facilities connected to district steam systems to identify steam use and system losses. Table 6-3 shows that DoD-wide, 8 percent of water intensive facilities and 2 percent of facilities connected to a district steam system have meters connected to an AMS.

Table 6-3: Water and Steam AMS Progress

Commodity	Total Consumption (Thou Gal)	Water Consumption Captured by an AMS	% Water Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	73,608,824	4,917,846	7%	57	8%
Steam				15	2%

Figure 6-1 illustrates the percentage of buildings with meters connected to an AMS by utility-type: 65 percent capture electricity use, 17 percent capture water and natural gas use, and 1 percent capture steam use. Of the total number of meters connected to an AMS, 89 percent are advanced meters, 10 percent are pulse counters, and the remaining 1 percent are virtual meters.

Figure 6-1: Breakdown of AMS Meters



Army

The Army issued its metering implementation plan in response to DoD's metering policy. The plan will result in the direct measurement of 65 percent of total energy consumed by Army facilities across advanced electric, water, gas, and steam meters. The Army has installed electric meters in over 16,500 buildings through its Army Central Meter Program, and execution of ESPCs and utility privatization. The Army has also installed over 2,700 natural gas meters, 91 steam meters, and over 2,200 water meters.

Table 6-4 shows the percentage of installations with advanced meters and the percent of energy captured by an AMS as required by the DoD metering policy. Table 6-5 shows the total number of metered buildings, both with meters connected to an AMS and not.

Table 6-4: FY 2014 Army Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	26,643	9,324	35%	72	50%
Natural Gas	20,039	2,085	10%	32	22%

Commodity	Total Consumption (Thou Gal)	Water Consumption Captured by an AMS	% Water Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	19,227,000	919,700	5%	2,510	39%
Steam				3	2%

Table 6-5: FY 2014 Army AMS Progress

Commodity	Total Number of Metered Buildings Connected to AMS		Total Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	10,289	766	5,526
Natural Gas	2,766	1,148	1,702
Water	2,267	243	427
Steam	91	0	416

The Army Metering Program is intended to help facility information sharing and training in order to improve metering deployment and implementation on installations. In FY 2014, the Army developed a webinar to provide users of the Army Meter Data Management System (MDMS) an overview of the program goals, status, accreditation process for information systems, and its user management capabilities.

DON

In FY 2014, advanced meter systems captured 24 percent of DON total electricity consumption, up from 19 percent of total electricity in FY 2013 (Table 6-6).

Table 6-6: FY 2014 Navy Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	24,010	5,790	24%	33	40%
Natural Gas	15,152	1,731	11%	13	20%

Commodity	Total Consumption (Thou Gal)	Water Consumption Captured by an AMS	% Water Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	23,424,927	2,570,871	11%	29	40%
Steam				12	10%

While most Navy locations have installed all of their planned advanced meters for electricity, 100 percent installation is not expected to be completed until FY 2015 for electricity and FY 2016 for other utilities. The intended objectives are to capture an estimated 85 percent of the electrical and natural gas consumption as well as all facilities connected to district steam systems and water-intensive facilities at installations worldwide through the DON's Advanced Meter Infrastructure (AMI) Program. Examples of progress toward metering in FY 2014 included the following:

- NAS Key West: The installation of 238 advanced meters occurred in April. Prior to the AMI initiative, many buildings at Key West had no electrical meters and consumption had to be estimated.
- NSA Bahrain: In March, 76 electric meters and three water meters were installed. Coordination of more than 35 electrical and water outages were required to complete the implementation. Backup generator support was provided to critical infrastructure, and many commands took the opportunity to exercise contingency plans for power loss. The water meters allow for advanced metering of the water from the city to both NSA Bahrain and the NSA Bahrain II waterfront.

The Navy is developing enterprise-wide software and integrated metering systems to collect and pay utility invoices, allocate consumption and bills to tenants, and incorporate metered data in a centralized and accessible database. The Comprehensive Utilities Information Tracking System (CIRCUITS) enables energy managers to oversee the review of utilities allocation, consumption, and cost data at a facility level. This will allow management to make more informed energy decisions using real data. Further, the Navy has also recognized the importance of capturing energy consumed at the waterfront in support of the Navy fleet and is now integrating these areas into AMI deployment. The Navy's Smart Grid Pilot

Project at Naval District Washington (NDW) is underway and will inform the development and rollout of a Shore enterprise-wide smart grid in future years.

The Navy reported over 8,600 advanced meters connected to an AMS for electricity, about 800 for natural gas, 2,000 for water, and a little over 200 for steam in FY 2014 (Table 6-7).

Table 6-7: FY 2014 Navy AMS Progress

Commodity	Number of Metered Buildings Connected to AMS		Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	8,685	322	7,867
Natural Gas	782	530	2,071
Water	2,034	574	6,089
Steam	209	70	563

In FY 2014, the Marine Corps AMS captured 43 percent of total electricity consumption, and 10 percent of both natural gas and water consumption (Table 6-8).

Table 6-8: FY 2014 Marine Corps Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	5,895	1,417	24%	9	43%
Natural Gas	3,080	1,108	36%	2	10%

Commodity	Total Consumption (Thou Gal)	Water Consumption Captured by an AMS	% Water Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	7,054,282	1,126,585	16%	2	10%
Steam				0	0%

The Marine Corps reported over 2,300 advanced meters connected to an AMS for electricity, about 660 for natural gas, and a little over 752 for water in FY 2014 (Table 6-9).

Table 6-9: FY 2014 Marine Corps AMS Progress

Commodity	Number of Metered Buildings Connected to AMS		Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	2,307	-	2,990
Natural Gas	663	-	694
Water	752	-	1,086
Steam	-	-	-

Per the FY 2012 NDAA, the DON has an additional requirement to meter Navy piers to accurately measure the energy consumption of naval vessels in port. As of FY 2014, the Navy had 22 installations with an estimated 580 pier berths with meters installed for electricity consumption, more than

80 percent of which were using advanced meters. Pier berths have also been metered with a mix of standard and advanced meters for other utilities: approximately 30 for steam, and almost 150 for water. Advanced meters on Navy piers have supported installation efforts to analyze consumption at the waterfront and established a foundation for working with the operational fleet to decrease consumption ashore.

Air Force

In compliance with the OSD Metering Policy, the Air Force developed and submitted a meter data management plan (MDMP), which organizes the metering strategy into a comprehensive program that includes the following:

- Installation of advanced meters adequate to capture 60 percent of Air Force consumed energy
- Deployment of advanced meter reading systems (AMRS) to approximately 35 of the highest energy consuming installations
- Using the AMRS data to analyze energy use and inform leadership decisions
- Conducting cost-benefit analysis after 60 percent of energy is captured to determine if the Air Force will continue investing in ARMS deployment at remaining installations.

The success of the MDMP depends on the Air Force allocating funding to implement the plan and installing the AMRS on installations. The Air Force estimates it will cost $42 million to implement the first phase of the project from FY 2015 – FY 2018.

The Air Force has installed installation advanced meters for both electricity and natural gas on two of its installations (Table 6-10).

Table 6-10: FY 2014 Air Force Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	30,485	72	0%	2	1%
Natural Gas	21,114	4	0%	2	1%

Commodity	Total Consumption (Thou Gal)	Water Consumption Captured by an AMS	% Water Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	22,805,102	0	0%	1	0.2%
Steam				0	0%

The Air Force reported there are 33 buildings with meters connected to an AMS for electricity, with 23 of those being advanced meters (Table 6-11).

Table 6-11: FY 2014 Air Force AMS Progress

Commodity	Number of Metered Buildings Connected to AMS		Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	23	10	10,199
Natural Gas	-	25	4,799
Water	-	20	2,581
Steam	-	-	155

Defense Agencies

The Defense Agencies continue to enhance metering data management. The following are examples of initiatives to promote metering:

- DIA uses a building automation system (BAS) that captures energy trends on all its electrical utilities and currently has advanced meters except for one building which does require a BAS. In FY 2015, DIA will be identifying opportunities to add advanced natural gas and water metering to the BAS systems.
- NGA has achieved 100 percent of both the NECPA and the DoD's utilities metering policy goals for electric, oil, gas, and water consumption.
- DeCA has over 390 pulse meters at 73 locations that are connected to a Refrigeration Monitoring Control System (RMCS). DeCA's goal is to reimburse the host installations for meters installed with the understanding that DeCA could have real time, electronic access to metered data for energy monitoring and analysis purposes.
- WHS has installed over 100 meters and sub-meters at buildings on the Pentagon Reservation. The Pentagon metering plan will install advanced meters to capture electricity, steam, chilled water, natural gas, hot water, and potable water for individual buildings on the Reservation, as well as additional sub-meters to support operations and maintenance of mission-critical users. WHS is also developing an energy monitoring dashboard incorporating existing and new meters to support energy management activities at the Pentagon.
- NSA has undertaken an aggressive program to monitor electrical usage through its SCADA system. The SCADA system allows the monitoring of mission-critical systems and also building energy consumption. The SCADA system acts as the campus meter and allows for building-level analysis of energy consumption.

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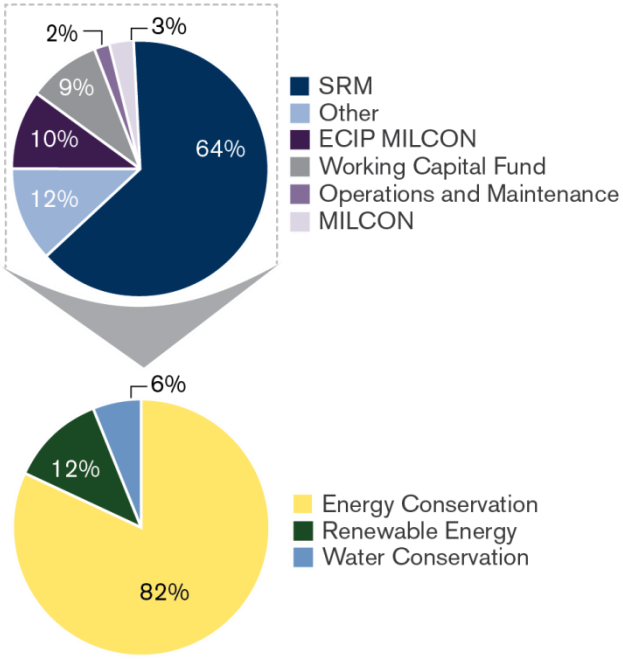
7. Funding Energy Projects

The Department continues to invest in energy and water conservation, renewable and distributed energy, as well as energy resilience projects using both appropriations and third-party financing. Appendix G contains the FY 2014 list of appropriated and third-party funded projects.

Energy Projects Funded by Appropriations

Appropriations are direct funding authorities through MILCON; SRM; Operation and Maintenance (O&M); and Defense Working Capital Fund (DWCF) accounts. For example, ECIP is a $150 million annual MILCON appropriation program centrally managed by the OSD to fund projects that save energy or reduce defense energy costs. It evaluates potential projects using a variety of criteria, including cost effectiveness, savings to investment ratio, and simple financial payback.

Figure 7-1: FY 2014 DoD Projects Funded by Appropriations, by Investment Amount



Congressional appropriations amounting to just under $800 million funded 1,283 projects in FY 2014. The majority, 82 percent, were energy conservation projects. The rest of the projects are renewable energy and water conservation (12 and 6 percent, respectively) (Figure 7-1).

Table 7-1 summarizes projects funded with FY 2014 appropriations by type and includes aggregate estimates of total project costs as well as the total number of funded projects.

Table 7-1: FY 2014 DoD Appropriations[24]

Project Type	Estimated Financial Obligation ($000s)	Number of Projects
Energy Conservation	$651,476	1,108
Renewable Energy	$98,853	130
Water Conservation	$48,277	45
Total	$798,606	1,283

[24] Totals include Defense Agencies.

Funding Mechanism	Definition
1. Military Construction (MILCON) including the Energy Conservation Investment Program (ECIP)	MILCON, ECIP, O&M, and DWCF are appropriations that finance energy projects at DoD facilities. These are direct funding authorities through appropriated accounts. ECIP is a subset of the defense-wide MILCON program, specifically designated for projects that save energy or reduce defense energy costs. ECIP supports construction of new high efficiency energy systems and the improvement and modernization of existing systems.
2. Operation and Maintenance (O&M)	
3. Defense Working Capital Fund (DWCF)	

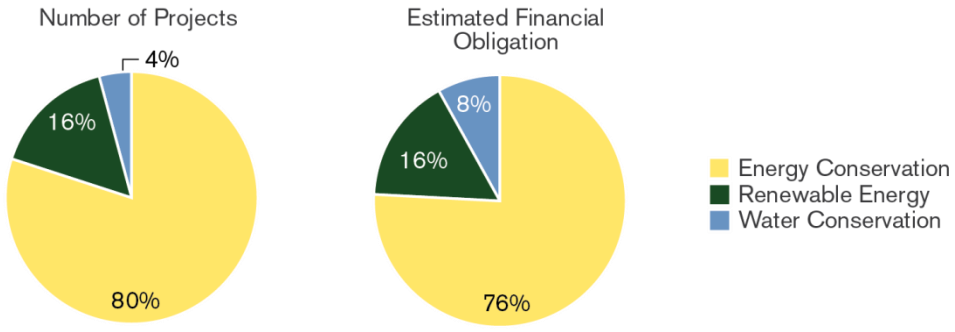
Army

In FY 2014, the Army spent approximately $333 million in appropriated funds to fund 746 energy conservation, renewable energy, and water conservation projects. These projects included lighting retrofits, HVAC improvements, and the installation of renewable energy projects such as small-scale solar PV and solar thermal systems. Table 7-2 summarizes the breakdown of appropriated projects and associated funding for the Army. Energy conservation initiatives constitute the overwhelming majority of projects, as shown in Figure 7-2.

Table 7-2: FY 2014 Army Appropriations

Project Type	Estimated Financial Obligation ($000s)	Number of Projects
Energy Conservation	$253,068	599
Renewable Energy	$53,331	117
Water Conservation	$26,636	30
Total	$333,036	746

Figure 7-2: FY 2014 Army Projects Funded by Appropriations



DON

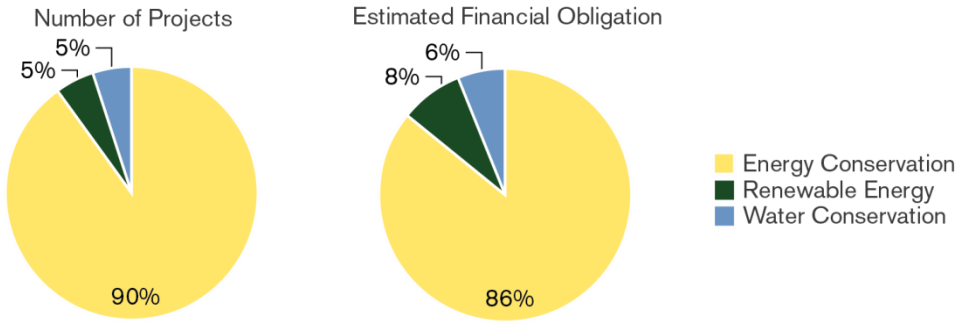
In FY 2014, DON awarded $300 million in appropriated funds for 165 energy conservation, renewable energy, and water conservation projects. These projects included building retro-commissioning, the installation of building energy management control systems, and renewable energy applications such as solar thermal and GSHPs. Table 7-3 summarizes the breakdown of appropriated projects and associated funding for the Navy and the Marine Corps.

Table 7-3: FY 2014 DON Appropriations

Project Type	Estimated Financial Obligation ($000)	Number of projects
Navy = 146 Projects		
Energy Conservation	$243,601	129
Renewable Energy	$22,926	8
Water Conservation	$19,844	9
Marine Corps = 19 Projects		
Energy Conservation	$14,362	19
Renewable Energy	$0	0
Water Conservation	$0	0
Grand Total	$300,733	165

Of the total number of projects in FY 2014, 90 percent were energy conservation projects, as illustrated in Figure 7-3.

Figure 7-3: FY 2014 DON Projects Funded by Appropriations



Air Force

In FY 2014, the Air Force spent $130 million in appropriated funds for 308 energy conservation, renewable energy, and water conservation projects. These projects included lighting and lighting controls upgrades, chiller and boiler improvements, building retro-commissioning, and water conservation investments. Of the projects awarded in FY 2014, 97 percent were energy conservation projects. Water conservation and renewable energy projects represent 2 percent and 1 percent, respectively, of the Air Force's total appropriated projects. (Figure 7-4)

Figure 7-4: FY 2014 Air Force Projects Funded by Appropriations

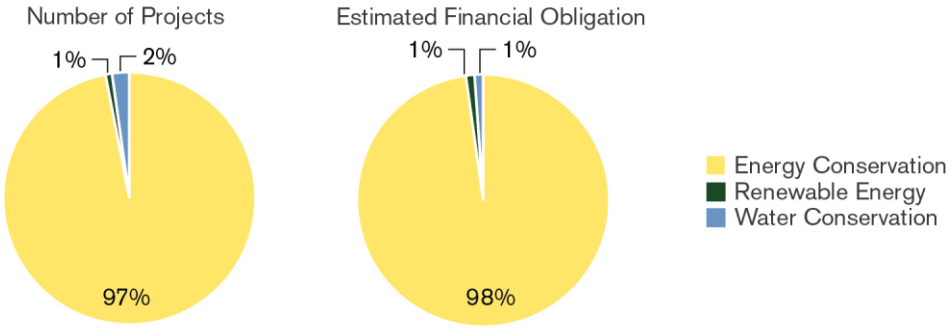


Table 7-4 summarizes the breakdown of appropriated projects and associated funding for the Air Force in FY 2014.

Table 7-4: FY 2014 Air Force Appropriations

Project Type	Estimated Financial Obligation ($000s)	Number of Projects
Energy Conservation	$127,283	299
Renewable Energy	$1,281	3
Water Conservation	$1,796	6
Total	$130,361	308

Energy Projects Financed Through Third-Party Mechanisms

The Department is increasingly relying on third-party financing mechanisms such as UESCs and ESPCs. These financing vehicles allow DoD to implement energy efficiency, renewable, and distributed energy projects, as well as energy resilience projects without up-front appropriated funds. The Federal Government repays the private capital over time using cost savings generated by the implemented projects. In FY 2014, DoD awarded nearly $375 million in non-governmental third-party financed ESPCs and UESCs. Table 7-5 summarizes the total contract awarded value of ESPCs and UESCs financed in FY 2014. This section provides an overview of the Services' ESPC and UESC initiatives for FY 2014.

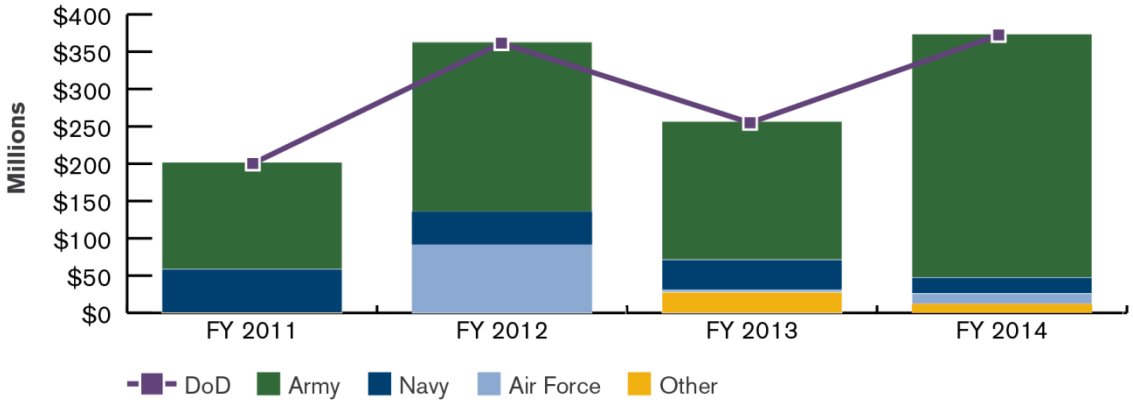
Table 7-5: FY 2014 DoD Third-Party Funding

Funding Mechanism	Total Investment Value ($000)
ESPC	$335,970
UESC	$37,770
Total	$373,740

Funding Mechanism	Definition
Energy Savings Performance Contracts (ESPC)	An ESPC is a partnership between a Federal agency and an energy service company (ESCO). The ESCO conducts a comprehensive energy audit for the Federal facility and identifies improvements to save energy. In consultation with the Federal agency, the ESCO designs and constructs a project that meets the agency's needs and arranges the necessary funding. The ESCO guarantees that the improvements will generate energy cost savings sufficient to pay for the project over the term of the contract. After the contract ends, all additional cost savings accrue to the agency. Contract terms up to 25 years are allowed.
Utility Energy Service Contracts (UESC)	In a UESC, a utility arranges funding to cover the capital costs of the project, which are repaid over the contract term from cost savings generated by the energy efficiency measures. With this arrangement, agencies can implement energy improvements with no initial capital investment. The net cost to the Federal agency is minimal, and the agency saves time and resources by using the one-stop shopping provided by the utility.

In December 2011, the President issued a challenge—the President's Performance Contracting Challenge (PPCC)—to the Federal Government to award $2 billion in third-party financed energy efficiency projects over those next two years. DoD's share of the Phase I goal was $1.2 billion. While DoD did not fully execute the goal amount before the deadline of December 31, 2013, the challenge increased DoD's use of third-party financing at a time when severe budget reductions limited appropriated funds available for energy efficiency projects. In December 2013, building on the Phase I of the PPCC, the President extended the PPCC through FY 2016. DoD's cumulative Phase I and Phase 2 PPCC goal target is now slightly below $2.2 billion ($2.183 billion). Figure 7-5 shows the breakout of third-party financing used by DoD from the start of the PPCC in FY 2011 to FY 2014.

Figure 7-5: FY 2011 - FY 2014 DoD Third-Party Financing



Army

In FY 2014, the Army advanced its program management and oversight of ESPCs and UESCs. The Army uses the ESPC and UESC funding mechanisms to support its energy efficiency strategy and progress toward achieving energy reduction goals. In FY 2014, the Army awarded more than $325 million in ESPC and UESC projects (Table 7-6).

Table 7-6: FY 2014 Army Non-Governmental Third-Party Funding

ESPC	Count, Thou. $s
Number of ESPC Task/Delivery Orders awarded in fiscal year	18
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.	$311,288
UESC	**Count, Thou. $s**
Number of UESC Task/Delivery Orders awarded in fiscal year	10
Investment value of UESC Task/Delivery Orders awarded in fiscal year.	$15,090

Army ESPC and UESC projects were awarded at the following installations during FY 2014: The 99th Regional Support Command, Aberdeen Proving Ground, Anniston Army Depot, Arlington Hall Station, Fort Bliss, Fort Carson, Fort Gordon, Fort Jackson, Fort McCoy, JB Lewis-McChord, JB Myer-Henderson Hall, Letterkenny Army Depot, Puerto Rico ARNG, Presidio of Monterey, Rock Island Arsenal, USAG Daegu, USAG Yongsan, Washington ARNG, Watervliet Arsenal, and White Sands Missile Range. The combined savings from the Army's 28 projects are estimated at 1,201,465 million Btus annually.

DON

In FY 2014, the Navy awarded one ESPC project with an investment value of $12.7 million and three UESC projects valued at $8.9 million (Table 7-7). In FY 2014, the Marine Corps did not award any ESPC

or UESC projects. The combined savings of DON's four projects are estimated at 80,316 million Btus annually.

Table 7-7: FY 2014 DON Non-Governmental Third-Party Funding

ESPC	Count, Thou. $s
Number of ESPC Task/Delivery Orders awarded in fiscal year	1
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.	$12,670
UESC	**Count, Thou. $s**
Number of UESC Task/Delivery Orders awarded in fiscal year	3
Investment value of UESC Task/Delivery Orders awarded in fiscal year.	$8,926

DON issued ESPC and UESC project awards at the following installations in FY 2014:

- NAS Lemoore
- NAS Patuxent River
- Naval Base Ventura County
- Naval Weapons Station Seal Beach

Air Force

In FY 2014, the Air Force awarded two UESC task orders totaling approximately $13.8 million. These projects were awarded at Dyess AFB and Tinker AFB and their combined savings are estimated at 2,128 million Btus annually (Table 7-8).

Table 7-8: FY 2014 Air Force Non-Governmental Third-Party Funding

ESPC	Count, Thou. $s
Number of ESPC Task/Delivery Orders awarded in fiscal year	2
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.	$13,754

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8. Federal Building Energy Efficiency Standards

In addition to retrofitting existing buildings, the Department is taking advantage of new construction to incorporate more energy efficient designs, material, and equipment into its building inventory with the goal of producing new buildings that are less expensive to own and operate, improve employee health and productivity, and leave a smaller environmental footprint. In FY 2013 the Department published UFC 1-200-02, High Performance and Sustainable Building (HPSB) Requirements, which provides minimum standards and coordinating guidance for planning, designing, constructing, renovating, and maintaining high performance and sustainable facilities that will enhance DoD mission capability by reducing total ownership costs. The UFC, combined with the Department's new sustainable buildings policy signed in November 2013, represent comprehensive guidance to ensure DoD construction practices result in buildings that meet all federal mandates related to energy and the environment, including the Federal Guiding Principles for HPSBs.

The Guiding Principles of Federal Leadership in HPSB are aimed at helping federal agencies and organizations reduce the total ownership cost of facilities; improve energy efficiency and water conservation; provide safe, healthy, and productive building environments; and promote sustainable environmental stewardship. The five strategic principles in HPSB guide agencies to (1) use integrated design principles, (2) optimize energy performance, (3) protect and conserve water, (4) enhance indoor environmental quality, and (5) reduce the environmental impact of materials.

DoD's Progress in Meeting Sustainable Building Standards

With over 51,000 buildings in the inventory—many of which were constructed prior to establishment of the HPSB guidance—DoD faces several challenges in meeting the goals. In FY 2014, 394 DoD buildings met the sustainable buildings requirements.

DoD's Progress Toward Meeting American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) 90.1 Standards

The Department continues to incorporate sustainable and high-performance building design elements to enhance energy and water system efficiencies. In FY 2014, 100 percent of new building designs started after FY 2007 are expected to exceed the ASHRAE 90.1-2007 energy efficiency standard by 30 percent.

Army

In FY 2014, the Army issued an updated Sustainable Design and Development (SDD) Policy in order to establish a comprehensive process to include energy and sustainability considerations as a fundamental part of the facility design process. The new process captured in the policy will allow the Army to meet all Federal building performance and sustainability requirements when constructing new buildings or undertaking major renovations.

Army's Progress toward Meeting ASHRAE 90.1 Standards

Through the application of the SDD policy, FY 2015 new construction and major renovations will exceed all EPAct05 and EISA provisions related to building energy efficiency. During the FY 2014 reporting period, new Army projects achieved energy savings greater than the EPAct05-mandated 30 percent savings from ASHRAE 90.1-2004 baseline. These higher energy standards are helping the Army advance toward meeting the FY 2015 goal of 65 percent savings from the FY 2003 baseline in accordance with EISA 2007.

DON

DON had a total of 206 buildings registered with the United States Green Building Council (USGBC) as Leadership in Energy and Environmental Design (LEED) certified at the end of FY 2014.

DON is taking advantage of new construction and major renovation projects to incorporate more energy-efficient designs, materials, and equipment into its building inventory with the goal of producing buildings that are less expensive to own and operate, improving employee productivity, and leaving a smaller environmental footprint. Below are some examples of DON's commitment to building sustainability during FY 2014:

- NAS Whiting Field: In March, the Joint Primary Aircraft Training System (JPATS) Training OPS Paraloft facility opened. Features of the facility include water use reduction of 30 percent, increased energy performance, daylighting and daylighting sensors, and other sustainability strategies.
- Marine Corps Base Camp Pendleton: In July, a ribbon cutting ceremony was held for the new Center for Naval Aviation Technical Training (CNATT) Marine Detachment. The $40 million project implemented sustainable construction practices: approximately 38 percent of the daily hot water needs come through glycol solar panels on the parking canopy. In addition, the parking canopy PV system provides 587 kW of direct current power, which provides 80 percent of the building's operational needs.

DON's Progress toward Meeting ASHRAE 90.1 Standards

New construction must exceed the energy efficiency standard set by ASHRAE by at least 30 percent. In FY 2014, 35 percent of Navy's reported new buildings designed since 2007 were estimated to exceed the requirement of being at least 30 percent below the ASHRAE 90.1 – 2004 standards. An additional 22 percent of reported new buildings were estimated to be at least 30 percent below the ASHRAE 90.1 – 2007 standards. In conjunction with DON's ongoing effort to install advanced meters and collect accurate and timely data, DON's capability to measure compliance with ASHRAE standards will continue to improve.

Air Force

The Air Force works to incorporate sustainability into its new construction program in a mission enduring, resource efficient, and fiscally responsible manner. The Air Force continues to update policies

to address Federal requirements, and works to meet or exceed the requirements where possible. For example, 98 percent of all buildings completed in FY 2014 met the Federal HPSB standards.

Air Force's Progress toward Meeting ASHRAE 90.1 Standards

The Air Force issued its Air Force SDD Policy Memorandum in July 31, 2007, and the SDD Implementing Guidance on June 2, 2011. The SDD Implementing Guidance memorandum requires all new construction and major renovations to fully incorporate the HPSB Guiding Principles, which includes the requirement to be at least 30 percent more energy efficient than ASHRAE 90.1-2007. Even with the diversity of building types in the Air Force's new construction program, about 80 percent of the program achieves or exceeds the 30 percent energy efficient requirement.

EISA 2007 Section 433 Required Reduction in Fossil Fuel Use

EISA 2007 section 433 (42 U.S.C. 6834), Federal Building Energy Efficiency Performance Standards, directs DOE to issue revised Federal building energy efficiency performance standards. These standards specify that buildings be designed such that the consumption of energy generated from fossil fuels is gradually reduced.

To date, DOE has not published the final regulation for implementing Section 433. DoD will start reporting on this requirement after DOE issues the final rule. In FY 2012, DoD provided DOE with consolidated feedback from DoD Components addressing DOE's notice of the proposed rule. DoD continues to work with DOE to analyze and quantify the effect of EISA 2007 section 433.

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Appendix A - List of Energy Acronyms

Acronym	Definition
ACCU	Air Cooled Condensing Unit
AEMR	Annual Energy Management Report
AF/CV	Vice-Chief of Staff of the Air Force
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFELM VEMSO	Air Force Element, Vehicle and Equipment Management Support Office
AFPD	Air Force Policy Directive
AFV	Alternative Fuel Vehicle
AIM2	Automotive Information Module, 2nd Generation
AMC	Army Materiel Command
AMI	Advanced Meter Infrastructure
AMRS	Advanced Meter Reading Systems
AMS	Advanced Metering System
ARNG	Army National Guard
ASD(EI&E)	Assistant Secretary of Defense (Energy, Installations, and Environment)
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASN (EI&E)	Assistant Secretary of the Navy for Energy, Installations and Environment
BAS	Building Automation System
Btu	British thermal unit
CDD	Capabilities Development Document
CEQ	Council on Environmental Quality
CHP	Combined Heat and Power
CIRCUITS	Comprehensive Utilities Information Tracking System
CNATT	Center for Naval Aviation Technical Training
CNIC	Commander, Navy Installations Command
CNG	Compressed Natural Gas
CY	Calendar Year
DASA (E&S)	Deputy Assistant Secretary of the Army for Energy and Sustainability
DC I&L	Deputy Commandant for Installations and Logistics
DCMA	Defense Contract Management Agency
DeCA	Defense Commissary Agency
DFAS	Defense Finance and Accounting Service
DHS	Department of Homeland Security
DIA	Defense Intelligence Agency
DLA	Defense Logistics Agency
DoD	Department of Defense
DoDI	Department of Defense Instruction

Acronym	Definition
DOE	Department of Energy
DON	Department of the Navy
DSC	Distributed Control Systems
DUSD (I&E)	Deputy Under Secretary of Defense (Installations and Environment)
DWCF	Defense Working Capital Fund
EO	Executive Order
E85	85 percent ethanol fuel
ECIP	Energy Conservation Investment Program
EIA	Energy Information Administration
EISA	Energy Independence and Security Act
EITF	Energy Initiatives Task Force
EPAct	Energy Policy Act
ESAP	Energy Security Audit Program
ESCO	Energy Service Company
ESG	Energy Steering Groups
ESPC	Energy Savings Performance Contract
ESTCP	Environmental Security Technology Certification Program
ETL	Engineer Technical Letter
EXWC	Engineering and Expeditionary Warfare Center
FCU	Fan Coil Unit
FEMP	Federal Energy Management Program
FSRM	Facilities Sustainment and Restoration/Modernization
FY	Fiscal Year
GGE	Gallons of Gasoline Equivalent
GHG	Greenhouse Gas
GSF	Gross Square Foot
GSHP	Ground Source Heat Pump
GW	Gigawatt, 1 billion Watts
HAF	Headquarters U.S. Air Force
HPSB	High Performance and Sustainable Buildings
HQ	Headquarters
HVAC	Heating, Ventilation, and Air Conditioning
IC	Intelligence Community
ICS	Industrial Control System
ILA	Industrial, Landscaping, and Agriculture
IMCOM	Installation Management Command
JBER	Joint Base Elmendorf-Richardson
JCTD	Joint Capability Technology Demonstration
JPATS	Joint Primary Aircraft Training System
KW	Kilowatt, 1 thousand Watts
KWh	Kilowatt-Hour, 1 thousand Watt-hours

Acronym	Definition
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LPG	Liquefied Petroleum Gas
MAD	Mission Assurance Division
MAJCOM	Major Command
MCAGCC	Marine Corps Air Ground Combat Center
MCICOM	Marine Corps Installations Command
MCICOM GF	Marine Corps Installations Command, Director Facilities
MCICOM GF-1	Marine Corps Installations Command, Energy and Facilities Operations Section
MDA	Missile Defense Agency
MDMP	Meter Data Management Plan
MDMS	Meter Data Management System
MILCON	Military Construction
MSW	Municipal Solid Waste
MUSE	Mobile Utilities Support Equipment
MW	Megawatt, 1 million Watts
MWh	Megawatt-Hour, 1 million Watt-hours
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAWS	Naval Air Weapons Station
NDAA	National Defense Authorization Act
NDW	Naval District Washington
NECPA	National Energy Conservation Policy Act
NEXCOM	Navy Exchange Service Command
NGA	National Geospatial-Intelligence Agency
NIST	National Institute of Standards and Technology
NNSY	Norfolk Navy Shipyard
NRO	National Reconnaissance Office
NSA	National Security Agency
NSA	Naval Supply Activity
NSB	Naval Submarine Base
NSWC	Naval Surface Warfare Center
NTV	Non-Tactical Vehicle
O&M	Operations and Maintenance
OACSIM	Office of the Assistant Chief of Staff for Installation Management
OASA(ALT)	Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology
OASA(IE&E)	Office of the Assistant Secretary of the Army for Installations, Energy and Environment
OD	Operational Demonstration
OEI	Office of Energy Initiatives
OMB	Office of Management and Budget
OUSD(AT&L)	Office of the Under Secretary of Defense (Acquisition, Technology and Logistics)

Acronym	Definition
PERC	Pentagon Emergency Response Center
PEV	Plug-in Electric Vehicle
PLC	Programmable Logic Controllers
POCC	Point of Common Coupling
PPA	Power Purchase Agreement
PPCC	President's Performance Contracting Challenge
PV	Photovoltaic
RDF	Remote Delivery Facility
REC	Renewable Energy Credit
REPD	Renewable Energy Project Development
REPO	Renewable Energy Program Office
RMCS	Refrigeration Monitoring Control System (
SAF/IEN	Deputy Assistant Secretary of the Air Force for Energy
SAF/US	Under Secretary of the Air Force
SCADA	Supervisory Control and Data Acquisition
SDD	Sustainable Design and Development
SECNAV	Secretary of the Navy
SESC	Senior Energy and Sustainability Council
SPIDERS	Smart Power Infrastructure Demonstration for Energy Reliability and Security
SRM	Sustainment, Restoration, and Modernization
UESC	Utility Energy Services Contract
UFC	Unified Facilities Criteria
U.S.	United States
USACE	US Army Corps of Engineers
USAR	US Army Reserve
U.S.C	United States Code
USC	Utility Service Contract
USGBC	United States Green Building Council
VRF	Variable Refrigerant Flow
VV	Vehicle Validations
WHS	Washington Headquarters Service

Appendix B - Compliance Matrix

	Subsection / Paragraph	Description	FY2014 AEMR Chapter / Appendix	Page Number
10 USC § 2925	**(a)**	**Annual Report Related to Installations Energy Management.**—Not later than 120 days after the end of each fiscal year, the Secretary of Defense shall submit to the congressional defense committees an installation energy report detailing the fulfillment during that fiscal year of the energy performance goals for the Department of Defense under section 2911 of this title. Each report shall contain the following:		
	(a)(1)	A description of the progress made to achieve the goals of the Energy Policy Act of 2005 (Public Law 109–58), section 2911 (e) of this title, section 553 of the National Energy Conservation Policy Act (42 U.S.C. 8259b), the Energy Independence and Security Act of 2007 (Public Law 110–140), and the energy performance goals for the Department of Defense during the preceding fiscal year.	**2, 3, 5, 7**	11,17,43,63
	(a)(2)	A table detailing funding, by account, for all energy projects funded through appropriations.	**Appendix G**	G-1
	(a)(3)	A table listing all energy projects financed through third party financing mechanisms (including energy savings performance contracts, outgrants, utility energy service contracts, utility privatization agreements, and other contractual mechanisms), the duration of each such mechanism, an estimate of the financial obligation incurred through the duration of each such mechanism, whether the project incorporates energy security into its design, and the estimated payback period for each such mechanism.	**Appendix G**	G-56

	Subsection / Paragraph	Description	FY2014 AEMR Chapter / Appendix	Page Number
	(a)(4)	In addition to the information contained in the table listing energy projects financed through third party financing mechanisms, as required by paragraph (3), the table also shall list any renewable energy certificates associated with each project, including information regarding whether the renewable energy certificates were bundled or unbundled, the purchasing authority for the renewable energy certificates, and the price of the associated renewable energy certificates.	**4**	37
	(a)(5)	A description of the actions taken to implement the energy performance master plan in effect under section 2911 of this title and carry out this chapter during the preceding fiscal year	**3, 4**	17,35
	(a)(6)	A description of the energy savings realized from such actions.	**3, 4**	17,35
	(a)(7)	An estimate of the types and quantities of energy consumed by the Department of Defense and members of the armed forces and civilian personnel residing or working on military installations during the preceding fiscal year, including a breakdown of energy consumption by user groups and types of energy, energy costs, and the quantities of renewable energy produced or procured by the Department.	**3,4**	17, 35
	(a)(8)	A description of the types and amount of financial incentives received under section 2913 of this title during the preceding fiscal year and the appropriation account or accounts to which the incentives were credited.	**3, 7**	17,63
	(a)(9)	A description and estimate of the progress made by the Military Departments to meet the certification requirements for sustainable green-building standards in construction and major renovations as required by section 433 of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1612).	**8**	71

	Subsection / Paragraph	Description	FY2014 AEMR Chapter / Appendix	Page Number
	(a)(10)	A description of steps taken to determine best practices for measuring energy consumption in Department of Defense facilities and installations, in order to use the data for better energy management.	**6**	55
	(a)(11)	Details of utility outages at military installations including the total number and locations of outages, the financial impact of the outage, and measures taken to mitigate outages in the future at the affected location and across the Department of Defense.	**5**	45
	(a)(12)	A description of any other issues and strategies the Secretary determines relevant to a comprehensive and renewable energy policy.	**4**	35
10 USC § 2911	(a)(1)	Energy Performance Goals. The DoD shall submit to the congressional defense committees the energy performance goals for the Department of Defense regarding transportation systems, support systems, utilities, and infrastructure and facilities.	**Appendix C**	C-1
	(b)(1)	Energy Performance Master Plan. The DoD shall develop a comprehensive master plan for the achievement of the energy performance goals of the Department of Defense, as set forth in laws, executive orders, and Department of Defense policies.	**Appendix C**	C-1
	(e)(2)	Interim Renewable Energy Goal. Requires the DoD to establish an interim FY 2018 goal for the production or procurement of facility energy from renewable sources.	**4, Appendix C**	35, C-1

	Subsection / Paragraph	Description	FY2014 AEMR Chapter / Appendix	Page Number
Energy Conservation Investment Program, House Appropriations Committee – (MILCON Report 113-416)	p.20	The Committee believes that as new construction and retrofit projects are undertaken at facilities to improve building energy efficiency and achieve the objectives prescribed in statutes, executive orders, and initiatives, the Department of Defense is encouraged to utilize new and underutilized, low-cost energy efficient technologies that provide the best value to taxpayers through minimal lifecycle costs. The Deputy Under Secretary for Installations and Environment shall report to the congressional defense committees on the Department's plan to implement these technologies across the Department of Defense within 60 days of enactment of this Act.	**5,7**	47,65
Senate Committee on Appropriations Report on Department of Defense Appropriations Bill, 2014 (Report 113-211)	p.52-53	To further augment energy efficiency efforts, the Committee directs the Secretary of Defense to conduct a review of the value and time duration of ''electricity reliability'' and its use in making energy efficiency project decisions on military installations.	**5**	43
House of Representatives Committee on Appropriations Bill, 2014 (Report 113-473)	p.95	The Committee directs the Secretary of Defense to submit a report to the congressional defense committees not later than 180 days after the enactment of this Act on the energy use and energy efficiency projects at the Pentagon and the ten largest Department of Defense facilities.	**3**	22

Appendix C - Energy Performance Master Plan

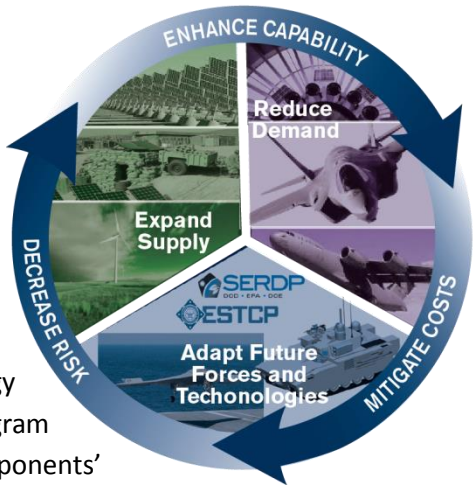
Introduction

Facility energy is the energy necessary to support the functions of over 500 fixed installations on nearly 29 million acres of land within the United States and internationally. This energy is distinct from operational energy which consists largely of mobility fuel that is used by operational aircraft, ships, and tanks, as well as generators at forward operating bases.

The Energy Performance Master Plan (hereafter referred to as Master Plan) aligns investments to energy objectives, enables consistent Department-wide decision-making, and establishes metrics to evaluate the Department of Defense's (DoD's) progress against the energy performance goals. The Master Plan was established and reported in the FY 2011 AEMR. The goals outlined in the Master Plan align with the Department's facility energy strategy designed to reduce energy costs and improve the energy resilience of fixed installations. The Department's facility energy strategy focuses on promoting efficiency, reducing costs, and supporting the mission. The key elements of the facility energy strategy are (Figure 1.0):

- Expand Supply
- Reduce Demand
- Adapt Future Forces and Technology

Figure 1.0: Defense Energy Approach



In FY 2011, the Deputy Under Secretary of Defense for (Installations and Environment) (DUSD(I&E)) developed its energy performance goals and its first Master Plan with input from the DoD Components. The energy performance goals will be reviewed and reported annually, while the Master Plan will be updated periodically in the AEMR. However, DoD Components are required to submit their facility energy investment projections for the Future Years Defense Program (FYDP) as part of their Master Plan submittal. The DoD Components' submissions to the President Budget, investment profile, energy benefit analyses and narratives will be the basis for any periodic updates of the Master Plan within the AEMR.

Energy Performance Goals

The ASD (EI&E) currently oversees the Department's facility energy program. DUSD(I&E) collaborated with the Military Departments and Defense Agencies to develop its energy performance goals. These energy performance goals of the DoD have not changed from its previous submittal, and Table 1.0 summarizes the three DoD facility energy performance goals. The table defines these goals and describes the associated measures, methods of measurement, and metrics. Table 1.1 summarizes DoD's targets for each goal, including the interim FY 2018 renewable goal (also part of last year's submittal).

Table 1.0: DoD Energy Performance Goals

Goal	Description	Uniform Measure	Method of Measurement	Metric
Improve Energy Efficiency	Decrease installation energy consumption and improve energy intensity.	Energy consumption[1] per gross square foot (energy intensity).	Energy intensity reduction.	British thermal units per thousand gross square feet (Btu/ Thousand GSF)
Increase Renewable Energy	Increase the production and procurement of on-base renewable energy.	Electric and non-electric renewable energy production and procurement.	Electric and non-electric renewable energy produced or procured compared to electricity consumption.	Billion Btu (BBtu)
Decrease Petroleum Consumption	Decrease petroleum consumption in fleet vehicles.	Fleet vehicle petroleum consumption.[2]	Fleet vehicle petroleum consumption reduction.	Gallons of gasoline Equivalent (GGE)

[1]Energy consumption includes electricity, natural gas, fuel oil, propane, purchased steam and hot water, and coal.

[2]Petroleum includes gasoline, diesel, and the diesel portion of biodiesel (B20).

Table 1.1: Energy Performance Goals Annual Targets

Target	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY25
Energy Efficiency	-18%	-21%	-24%	-27%	-30%	-31.5%	-33%	-34.5%	-36%	-37.5%	-
Renewable Energy	-	-	-	-	-	-	-	+15%	-	-	+25%
Petroleum Consumption	-12%	-14%	-16%	-18%	-20%	-22%	-24%	-26%	-28%	-30%	-

The DoD will update this Master Plan periodically to address new information, changes in energy performance goals, and to identify the investments necessary to achieve those goals. DoD's commitment to meeting the energy performance goals also supports compliance with energy statutes, regulations and Executive Orders (EOs). Accordingly, the energy performance goals continue to advance the DoD facility energy mission, vision, and strategy.

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Appendix D - DoD Energy Performance Summary

Energy Management Requirement	FY 2003 Btu/GSF	FY 2014 Btu/GSF	Percent Change FY 2003 - FY 2014	FY 2014 Goal Target
Reduction in energy intensity in facilities subject to the NECPA/E.O. 13423 goals	117,334	96,647	**-17.6%**	27.0%

Renewable Energy Requirement	Renewable Electricity Use (MWH)	Total Electricity Use (MWH)	Percentage of New Renewable as Share of Goal	Percentage of Facility Electric Use	FY 2014 Goal Target
Eligible renewable electricity use as a percentage of total electricity use	1,032,219.3	29,710,768.9	102%	**3.5%**	7.5%

Scope 1&2 Greenhouse Gas Reduction Goal	FY 2008 (MTCO2e)	FY 2014 (MTCO2e)	Percent Change FY 2008 - FY 2014
Scope 1&2 Target-Subject GHG Emissions	**26,855,109**	23,820,379	**-11.3%**

Scope 3 Greenhouse Gas Reduction Goal	FY 2008 (MTCO2e)	FY 2014 (MTCO2e)	Percent Change FY 2008 - FY 2014	Adj. Scope 3 Percent Change FY 2008 - FY 2014
Scope 3 Target-Subject GHG Emissions	**7,634,147**	7,175,497	**-6.0%**	**-13.5%**

Water Intensity Reduction Goal	FY 2007 Gallon/GSF	FY 2014 Gallon/GSF	Percent Change FY 2007 - FY 2014	FY 2014 Goal Target
Reduction in potable water consumption intensity	59.6	**46.8**	**-21.5%**	14.0%

Metering of Electricity Use	Cumulative # of Buildings Metered	Cumulative % of Appropriate Buildings Metered	FY 2013 Goal Target
Standard Electricity Meters in FY 2013	13,713	26.3%	100%
Advanced Electricity Meters in FY 2013	35,611	68.3%	Maximum Extent Practicable
Total Electricity Meters in FY 2013	49,324	94.5%	

Federal Building Energy Efficiency Standards	Percent of New Building Designs	FY 2007 forward Goal Target
Percent of new building designs started since beginning of FY 2007 that are 30 percent more energy efficient than relevant code, where life-cycle cost effective (including 8/2012 standards):	**100%**	100%

Investments in Energy and Water Management

Sources of Investment	Investment Value (Thou. $)	Anticipated Annual Savings (Million Btu)
Direct obligations for facility energy efficiency improvements	$508,931.4	2,643,462.3
Investment value of ESPC Task/Delivery Orders awarded in fiscal year	$335,970.0	987,007.0
Investment value of UESC Task/Delivery Orders awarded in fiscal year	$37,730.0	321,965.8
Total	$882,631.4	3,952,435.1

	Percentage
Total investment as a percentage of total facilty energy costs	22.1%
Financed (ESPC/UESC) investment as a percentage of total facilty energy costs	9.3%

i. NECPA/EISA Energy Goal Subject Buildings

Energy Type	BBtu	Cost (thous.)
Electricity	89,967	$ 2,432,451
Fuel Oil	16,149	$ 400,051
Natural Gas	64,830	$ 507,860
LPG	1,130	$ 27,799
Coal	9,153	$ 47,470
Steam	4,435	$ 145,836
Other	1,865	$ 70,513
Total	187,530	$ 3,631,981

Goal Subject Buildings GSF	1,877,577
Btu/GSF:	99,878
Source Energy Savings Credit	6,067
Btu/GSF w/ RE & Source Btu Credit:	96,647

ii. NECPA/EISA Energy Goal Excluded Buildings

Energy Type	BBtu	Cost (thous.)
Electricity	9757	$ 310,920
Fuel Oil	642	$ 16,357
Natural Gas	1678	$ 9,434
LPG	1	$ 15
Coal	4357	$ 19,438
Steam	900	$ 11,495
Other	0	$ -
Total	17335	$ 367,658

Goal Excluded Buildings GSF	14,112
Btu/GSF:	1,228,413
Source Energy Savings Credit	1,233
Btu/GSF w/ RE & Source Btu Credit:	1,141,013

Appendix E - FY 2014 Energy Intensity by Installation

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	63rd Regional Support Command	Moffett Field	California	290	4,962	58,465
Army	81st Regional Support Command	Fort Jackson	South Carolina	274	4,669	58,758
Army	88th Regional Support Command	Fort McCoy	Wisconsin	731	9,299	78,662
Army	99th Regional Support Command	Joint Base MDL	New Jersey	386	6,107	63,186
Army	9th Mission Support Command	Honolulu	Hawaii	7	173	38,324
Army	Aberdeen Proving Ground	Aberdeen Proving Ground	Maryland	2,543	14,158	179,622
Army	Adelphi Laboratory Center	Hyattsville	Maryland	223	1,136	196,031
Army	Alabama ARNG	Montgomery	Alabama	171	3,544	48,195
Army	Alaska ARNG	Fort Richardson	Alaska	33	864	38,660
Army	Anniston Army Depot	Anniston	Alabama	957	9,194	104,113
Army	Arizona ARNG	Phoenix	Arizona	517	1,527	338,630
Army	Arkansas ARNG	Camp Robinson	Arkansas	274	4,336	63,177

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Blue Grass Army Depot	Richmond	Kentucky	153	4,215	36,380
Army	California ARNG	Sacramento	California	154	5,589	27,535
Army	Camp Zama	Sagamihara	Japan	663	9,871	67,129
Army	Carlisle Barracks	Carlisle	Pennsylvania	138	1,081	127,757
Army	Colorado ARNG	Englewood	Colorado	49	581	83,900
Army	Connecticut ARNG	Hartford	Connecticut	85	1,345	63,351
Army	Corpus Christi Army Depot	Corpus Christi	Texas	376	341	1,101,767
Army	DC ARNG	Washington, DC	District of Columbia	22	589	36,583
Army	Delaware ARNG	Wilmington	Delaware	36	831	43,275
Army	Devens Reserve Forces Training Area	Devens	Massachusetts	111	1,291	85,703
Army	Dugway Proving Ground	Dugway	Utah	299	2,001	149,640
Army	Florida ARNG	Saint Augustine	Florida	65	3,144	20,720
Army	Fort A.P. Hill	Bowling Green	Virginia	86	1,476	58,249
Army	Fort Belvoir	Fort Belvoir	Virginia	1,274	15,023	84,790
Army	Fort Benning	Fort Benning	Georgia	1,969	20,733	94,985
Army	Fort Bliss	El Paso	Texas	1,426	22,564	63,189
Army	Fort Bragg	Fort Bragg	North Carolina	3,379	32,240	104,804
Army	Fort Buchanan	Catano	Puerto Rico	109	1,661	65,361

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Fort Campbell	Fort Campbell	Kentucky	1,725	16,993	101,486
Army	Fort Carson	Colorado Springs	Colorado	1,391	13,594	102,357
Army	Fort Detrick	Fort Detrick	Maryland	1,189	8,186	145,290
Army	Fort Drum	Fort Drum	New York	1,133	11,554	98,073
Army	Fort George Meade	Fort Meade	Maryland	532	5,822	91,331
Army	Fort Gordon	Augusta	Georgia	877	12,426	70,598
Army	Fort Greely	Delta Junction	Alaska	272	1,183	229,730
Army	Fort Hamilton	New York City	New York	70	957	72,977
Army	Fort Hood	Killeen	Texas	1,936	21,496	90,061
Army	Fort Huachuca	Fort Huachuca	Arizona	454	5,475	82,929
Army	Fort Hunter Liggett	Fort Hunter Liggett	California	52	1,361	38,209
Army	Fort Irwin	Fort Irwin	California	357	4,074	87,519
Army	Fort Jackson	Columbia	South Carolina	975	10,065	96,834
Army	Fort Knox	Fort Knox	Kentucky	888	11,108	79,974
Army	Fort Leavenworth	Fort Leavenworth	Kansas	441	4,381	100,634
Army	Fort Lee	Fort Lee	Virginia	870	9,960	87,312
Army	Fort Leonard Wood	Fort Leonard Wood	Missouri	1,489	12,847	115,883
Army	Fort McCoy	Sparta	Wisconsin	424	6,556	64,598
Army	Fort Polk	Fort Polk	Louisiana	755	8,766	86,094

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Fort Riley	Fort Riley	Kansas	1,252	12,239	102,277
Army	Fort Rucker	Fort Rucker	Alabama	591	5,822	101,439
Army	Fort Sill	Fort Sill	Oklahoma	1,130	10,822	104,461
Army	Fort Stewart	Fort Stewart	Georgia	1,148	15,062	76,222
Army	Fort Wainwright	Fort Wainwright	Alaska	2,167	7,112	304,647
Army	Georgia ARNG	Atlanta	Georgia	82	1,734	47,465
Army	Guam ARNG	Barrigada	Guam	11	260	44,230
Army	Hawaii ARNG	Honolulu	Hawaii	25	1,252	20,353
Army	Hawthorne AAP (GOCO)	Hawthorne	Nevada	144	9,404	15,267
Army	Holston AAP	Kingsport	Tennessee	176	1,756	100,413
Army	Idaho ARNG	Boise	Idaho	97	1,669	57,977
Army	Illinois ARNG	Camp Lincoln	Illinois	199	2,790	71,490
Army	Indiana ARNG	Indianapolis	Indiana	378	4,603	82,073
Army	Iowa AAP	Middletown	Iowa	389	4,008	96,953
Army	Iowa ARNG	Johnston	Iowa	181	3,068	59,131
Army	Joint Base Lewis-McChord	Tacoma	Washington	2,320	28,863	80,385
Army	Joint Base Myer-Henderson Hall	Fort Myer	Virginia	368	3,886	94,750
Army	Kansas ARNG	Topeka	Kansas	123	2,082	59,065

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Kentucky ARNG	Frankfort	Kentucky	82	1,627	50,479
Army	Kwajalein Atoll	Majuro Atoll	Marshall Islands	844	3,172	266,204
Army	Lake City AAP	Independence	Missouri	1,050	1,132	927,167
Army	Letterkenny Army Depot	Chambersburg	Pennsylvania	487	4,957	98,186
Army	US Army Joint System Meeting Center Lima	Lima	Ohio	524	1,617	324,382
Army	Louisiana ARNG	Johnson Barracks	Louisiana	159	3,117	50,852
Army	Maine ARNG	Camp Keyes	Maine	55	1,077	50,798
Army	Maryland ARNG	Baltimore	Maryland	55	1,368	40,341
Army	Massachusetts ARNG	Milford	Massachusetts	58	2,245	25,692
Army	McAlester AAP	McAlester	Oklahoma	455	10,213	44,558
Army	Michigan ARNG	Lansing	Michigan	296	4,052	73,103
Army	Milan AAP	Milan	Tennessee	19	3,527	5,514
Army	Military Ocean Terminal Concord	Concord	California	10	263	36,158
Army	Military Ocean Terminal Sunny Point	Southport	North Carolina	18	363	48,160
Army	Minnesota ARNG	Camp Ripley	Minnesota	314	4,103	76,594
Army	Mississippi ARNG	Jackson	Mississippi	298	6,234	47,880

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Missouri ARNG	Jefferson City	Missouri	117	1,766	66,400
Army	Montana ARNG	Helena	Montana	79	1,411	55,747
Army	Nebraska ARNG	Lincoln	Nebraska	84	1,649	50,892
Army	Nevada ARNG	Carson City	Nevada	41	622	65,175
Army	New Hampshire ARNG	Concord	New Hampshire	37	558	66,455
Army	New Jersey ARNG	Lawrenceville	New Jersey	123	1,224	100,419
Army	New Mexico ARNG	Santa Fe	New Mexico	42	804	52,333
Army	New York ARNG	Latham	New York	156	3,203	48,755
Army	North Carolina ARNG	Raleigh	North Carolina	100	1,507	66,071
Army	North Dakota ARNG	Bismarck	North Dakota	136	1,816	75,132
Army	Ohio ARNG	Columbus	Ohio	179	3,603	49,755
Army	Oklahoma ARNG	Oklahoma City	Oklahoma	131	1,886	69,243
Army	Oregon ARNG	Salem	Oregon	120	2,094	57,257
Army	Parks CSTC	Dublin	California	56	1,187	47,184
Army	Pennsylvania ARNG	Annville	Pennsylvania	382	4,975	76,849
Army	Picatinny Arsenal	Dover	New Jersey	545	6,045	90,221
Army	Pine Bluff Arsenal	White Hall	Arkansas	333	3,615	92,091
Army	Presidio Of Monterey	Monterey	California	209	7,800	26,829
Army	Pueblo Chemical Depot	Pueblo	Colorado	41	3,008	13,750

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	Puerto Rico ARNG	San Juan	Puerto Rico	46	1,531	30,160
Army	Radford AAP	Radford	Virginia	219	2,078	105,597
Army	Red River Depot	Texarkana	Texas	715	7,194	99,389
Army	Redstone Arsenal	Huntsville	Alabama	1,718	13,836	124,147
Army	Rhode Island ARNG	Cranston	Rhode Island	64	771	83,072
Army	Rock Island Arsenal	Rock Island	Illinois	793	6,537	121,314
Army	Scranton AAP	Scranton	Pennsylvania	24	385	61,358
Army	Sierra Army Depot	Herlong Sierra Ord-D	California	145	5,191	27,848
Army	Soldier Systems Center	Natick	Massachusetts	121	1,034	116,819
Army	South Carolina ARNG	Columbia	South Carolina	114	2,339	48,840
Army	South Dakota ARNG	Rapid City	South Dakota	67	1,395	48,106
Army	Tennessee ARNG	Nashville	Tennessee	145	2,896	50,138
Army	Texas ARNG	Camp Mabry	Texas	173	3,170	54,454
Army	Tobyhanna Army Depot	N/A	Pennsylvania	545	4,590	118,694
Army	Tooele Army Depot	Tooele	Utah	109	3,791	28,707
Army	USAG Ansbach	Ansbach	Germany	462	11,983	38,593
Army	USAG Bamberg	Bamberg	Germany	191	5,246	36,342
Army	USAG Bavaria	Grafenwohr	Germany	1,406	24,333	57,776
Army	USAG Benelux	Brussels	Belgium	131	3,019	43,250

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	USAG Daegu	Taegu	South Korea	463	5,924	78,107
Army	USAG Detroit Arsenal	Harrison Township	Michigan	298	1,966	151,692
Army	USAG Hawaii	Wahiawa	Hawaii	845	14,136	59,792
Army	USAG Heidelberg	Heidelberg	Germany	73	1,010	72,460
Army	USAG Humphreys	Camp Humphreys	South Korea	680	8,099	83,900
Army	USAG Miami	Miami	Florida	76	684	110,864
Army	USAG Red Cloud	Uijong	South Korea	1,005	10,075	99,785
Army	USAG Rheinland-Pfalz	Kaiserlautern	Germany	1,156	26,638	43,384
Army	USAG Stuttgart	Stuttgart	Germany	596	8,343	71,436
Army	USAG Vicenza	Vicenza	Italy	669	7,949	84,139
Army	USAG Wiesbaden	Wiesbaden	Germany	594	11,696	50,812
Army	USAG Yongsan	Seoul	South Korea	966	8,416	114,728
Army	Utah ARNG	Draper	Utah	91	1,668	54,282
Army	Vermont ARNG	Colchester	Vermont	55	1,107	49,737
Army	Virgin Islands ARNG	Christiansted	Virgin Islands	10	329	29,251
Army	Virginia ARNG	Fort Pickett	Virginia	241	3,366	71,519
Army	Washington ARNG	Camp Murray	Washington	91	1,469	62,087
Army	Watervliet Arsenal	Watervliet	New York	306	2,152	142,201
Army	West Point Mil Reservation	West Point	New York	1,029	7,533	136,612

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Army	West Virginia ARNG	Charleston	West Virginia	210	2,238	93,773
Army	White Sands Missile Range	White Sands	New Mexico	309	4,456	69,248
Army	Wisconsin ARNG	Madison	Wisconsin	195	2,064	94,532
Army	Wyoming ARNG	Cheyenne	Wyoming	85	1,054	80,255
Army	Yuma Proving Ground	Yuma	Arizona	140	1,776	78,919
Navy	Allegany Ballistics Laboratory	Short Gap	West Virginia	596	1,129	528,152
Navy	Camp Lemonnier	FPO	Djibouti	813	1,146	709,193
Navy	Cbc Gulfport	Gulfport	Mississippi	153	4,608	33,125
Navy	CFA Chinhae	FPO	Korea	26	386	67,246
Navy	CFA Sasebo	FPO	Japan	305	4,304	70,768
Navy	CFA Yokosuka	FPO	Japan	2,841	13,657	207,997
Navy	Frc East Cherry Point	Cherry Point	North Carolina	551	1,926	285,842
Navy	JB Anacostia Bolling	JB Anacostia - Bolling	District of Columbia	419	4,635	90,479
Navy	Jeb Little Creek-Fort Story	Virginia Beach	Virginia	711	6,914	102,849
Navy	NAF Atsugi	FPO	Japan	526	4,182	125,687
Navy	NAF El Centro	El Centro	California	71	1,194	59,284
Navy	NAF Misawa	FPO	Japan	19	918	20,670
Navy	NAS Corpus Christi	Corpus Christi	Texas	223	3,064	72,759

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Navy	NAS Fallon	Fallon	Nevada	211	2,188	96,551
Navy	NAS Jacksonville	Jacksonville	Florida	933	8,710	107,092
Navy	NAS JRB Fort Worth	Fort Worth	Texas	262	3,495	75,045
Navy	NAS JRB New Orleans	New Orleans	Louisiana	193	2,283	84,516
Navy	NAS Key West	Key West	Florida	314	2,927	107,126
Navy	NAS Kingsville	Kingsville	Texas	105	1,195	87,725
Navy	NAS Lemoore	Lemoore	California	259	3,575	72,414
Navy	NAS Meridian	Meridian	Mississippi	173	1,604	107,678
Navy	NAS Oceana	Virginia Beach	Virginia	700	7,366	94,997
Navy	NAS Patuxent River	Patuxent River	Maryland	1,005	8,271	121,489
Navy	NAS Pensacola	Pensacola	Florida	1,065	11,330	93,970
Navy	NAS Sigonella	FPO	Italy	219	3,113	70,409
Navy	NAS Whidbey Island	Oak Harbor	Washington	439	3,914	112,277
Navy	NAS Whiting Field Milton	Milton	Florida	119	1,337	89,314
Navy	NAVBASE Coronado San Diego	San Diego	California	1,310	13,917	94,162
Navy	NAVBASE Guam	FPO	Guam	466	7,863	59,218
Navy	NAVBASE Kitsap Bremerton	Bremerton	Washington	2,335	13,749	169,798
Navy	NAVBASE Point Loma	San Diego	California	427	6,317	67,623

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Navy	NAVBASE San Diego	San Diego	California	1,521	9,201	165,326
Navy	NAVBASE Ventura County - Point Mugu	Point Mugu	California	329	9,507	34,648
Navy	NAVHOSP Beaufort	Beaufort	South Carolina	86	426	202,453
Navy	NAVHOSP Bremerton	Bremerton	Washington	89	329	271,571
Navy	NAVHOSP Camp Pendleton	Camp Pendleton	California	140	1,326	105,533
Navy	NAVHOSP Guam	FPO	Guam	60	333	179,520
Navy	NAVHOSP Okinawa	FPO	Japan	68	629	107,680
Navy	NAVHOSP Twenty-nine Palms	Twenty-nine Palms	California	30	218	139,862
Navy	Navmag Indian Island	Port Hadlock	Washington	19	346	53,564
Navy	NAVSTA Everett	Everett	Washington	130	1,496	86,754
Navy	NAVSTA Great Lakes	Great Lakes	Illinois	1,395	9,794	142,383
Navy	NAVSTA Guantanamo Bay	FPO	Cuba	1,145	6,687	171,226
Navy	NAVSTA Mayport	Jacksonville	Florida	170	2,901	58,522
Navy	NAVSTA Newport	Newport	Rhode Island	626	6,350	98,636
Navy	NAVSTA Norfolk	Norfolk	Virginia	1,871	16,217	115,388
Navy	NAVSTA Pearl Harbor	Pearl Harbor	Hawaii	762	19,464	39,131
Navy	NAVSTA Rota	FPO	Spain	162	4,007	40,406

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Navy	NAVSUPPU Saratoga Springs	Saratoga Springs	New York	0	205	1,093
Navy	NAWS China Lake	China Lake	California	526	4,651	113,121
Navy	NIOC Sugar Grove	Sugar Grove	West Virginia	15	194	79,443
Navy	NOSC Midlant Washington	Norfolk	Virginia	80	716	111,566
Navy	NOSC Midsouth	Millington	Tennessee	23	398	57,789
Navy	NOSC Midwest	Great Lakes	Illinois	30	1,453	20,546
Navy	NOSC Ne Newport	Newport	Rhode Island	31	451	68,284
Navy	NOSC Northwest Everett	Everett	Washington	34	325	104,465
Navy	NOSC Southwest San Diego	San Diego	California	14	470	29,340
Navy	NSA Andersen	FPO	Guam	402	6,977	57,614
Navy	NSA Annapolis	Annapolis	Maryland	697	5,305	131,452
Navy	NSA Bahrain	FPO	Bahrain	266	2,650	100,202
Navy	NSA Bethesda	Bethesda	Maryland	1,042	7,380	141,189
Navy	NSA Crane	Crane	Indiana	784	4,242	184,862
Navy	NSA Hampton Roads	Norfolk	Virginia	949	7,503	126,449
Navy	NSA Mechanicsburg	Mechanicsburg	Pennsylvania	824	12,202	67,547
Navy	NSA Mid South Millington	Millington	Tennessee	198	2,513	78,752
Navy	NSA Monterey	Monterey	California	150	1,820	82,477

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Navy	NSA Naples	FPO	Italy	381	5,699	66,772
Navy	NSA Orlando	Orlando	Florida	22	305	71,026
Navy	NSA Panama City	Panama City Beach	Florida	136	1,464	92,570
Navy	NSA Souda Bay	FPO	Greece	33	473	70,302
Navy	NSA South Potomac Dahlgren	Dahlgren	Virginia	2,262	6,567	344,454
Navy	NSA Washington DC	JB Anacostia - Bolling	District of Columbia	1,621	11,750	137,989
Navy	NSF Diego Garcia	FPO	BIOT	524	2,729	191,989
Navy	NSS Norfolk Naval Shipyard	Norfolk	Virginia	446	7,568	58,894
Navy	Nsy Bos Portsmouth	Portsmouth	New Hampshire	1,045	3,857	270,939
Navy	PMRF Barking Sands	Kekaha	Hawaii	61	695	87,883
Navy	Singapore Area Coordinator	FPO	Singapore	28	632	44,497
Navy	Subase New London	Groton	Connecticut	837	3,217	260,258
Navy	Submarine Base Kings Bay	Kings Bay	Georgia	687	5,335	128,704
Navy	Weapons Station Earle Colts Neck	Colts Neck	New Jersey	103	1,203	85,944
Navy	Weapons Station Seal Beach	Seal Beach	California	99	2,208	44,644
Navy	Weapons Station Yorktown	Yorktown	Virginia	218	5,705	38,209

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Abraham Lincoln Capital Airport	Springfield	Illinois	26	332	78,756
Air Force	Air National Guard Readiness Center	Andrews AFB	Maryland	25	348	71,902
Air Force	Alpena County Regional Airport	Alpena	Michigan	48	554	87,300
Air Force	Altus Air Force Base	Unknown	Oklahoma	219	2,456	89,252
Air Force	Andersen Air Force Base	N/A	Guam	3	56	56,498
Air Force	Arnold Air Station	Arnold AF Station	Tennessee	778	1,794	433,633
Air Force	Atlantic City International Airport	Egg Harbor Township	New Jersey	40	495	81,008
Air Force	Aviano Air Base	N/A	Italy	261	4,194	62,185
Air Force	Bangor International Airport (ANG)	N/A	Maine	55	569	97,049
Air Force	Barksdale Air Force Base	Barksdale AF Base	Louisiana	436	5,093	85,690
Air Force	Barnes Municipal Airport ANG	Westfield	Massachusetts	44	480	92,319
Air Force	Beale Air Force Base	Beale AFB	California	264	3,069	86,135

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Birmingham International Airport	Birmingham	Alabama	34	365	93,102
Air Force	Boise Air Terminal (ANG)	N/A	Idaho	32	566	56,827
Air Force	Bradley International Airport (ANG)	N/A	Connecticut	33	370	90,397
Air Force	Buckley Air Force Base	Aurora	Colorado	130	1,450	89,358
Air Force	Buckley Air Force Base	Aurora	Colorado	72	586	122,502
Air Force	Burlington International Airport (ANG)	South Burlington	Vermont	24	483	48,827
Air Force	Camp Blanding Military Reservation (ANG)	N/A	Florida	4	124	31,715
Air Force	Camp Murray ANG Station	Tacoma	Washington	13	294	45,317
Air Force	Camp Pendleton Military Reservation(ANG)	Virginia Beach	Virginia	6	124	49,124
Air Force	Camp Perry ANG Station	Port Clinton	Ohio	6	103	57,146
Air Force	Cannon Air Force Base	Cannon AFB	New Mexico	344	2,740	125,358
Air Force	Carswell Air Reserve Station	N/A	Texas	18	356	51,174
Air Force	Channel Islands ANG Station	Port Hueneme	California	15	345	42,484

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Charlotte/Douglas Int Airport (ANG)	Charlotte	North Carolina	37	552	67,641
Air Force	Cheyenne Regional Airport	Cheyenne	Wyoming	39	432	91,317
Air Force	Columbus Air Force Base	Columbus	Mississippi	170	1,539	110,139
Air Force	Dane County Regional Airport-Truax Field	Madison	Wisconsin	40	476	84,260
Air Force	Davis-Monthan Air Force Base	Tucson	Arizona	326	4,714	69,151
Air Force	Des Moines International Airport ANG	N/A	Iowa	40	433	93,100
Air Force	Dobbins Air Reserve Base	Marietta	Georgia	89	998	89,203
Air Force	Dover Air Force Base	N/A	Delaware	438	3,552	123,232
Air Force	Duluth International Airport (ANG)	Duluth	Minnesota	62	496	124,601
Air Force	Dyess Air Force Base	Abilene	Texas	291	3,272	88,863
Air Force	Eareckson Air Station	Adak Station	Alaska	396	2,774	142,713
Air Force	Edwards Air Force Base	Lancaster	California	743	6,734	110,344
Air Force	Eglin Air Force Auxiliary Field #9	Eglin AFB	Florida	487	4,341	112,277

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Eglin Air Force Base	Valparaiso	Florida	1,256	10,629	118,126
Air Force	Eielson Air Force Base	N/A	Alaska	29	299	95,489
Air Force	Eielson Air Force Base	N/A	Alaska	2,093	4,052	516,576
Air Force	Ellington Field	Houston	Texas	41	523	77,822
Air Force	Ellsworth Air Force Base	Ellsworth AFB	South Dakota	522	4,315	121,072
Air Force	EWVRA Shepherd Field ANG	Martinsburg	West Virginia	72	640	112,875
Air Force	Fairchild Air Force Base	Airway Heights	Washington	442	4,198	105,338
Air Force	Fairchild Air Force Base	Airway Heights	Washington	19	357	52,131
Air Force	Forbes Field ANG	Topeka	Kansas	50	487	102,679
Air Force	Fort Smith Municipal Airport ANG	Fort Smith	Arkansas	24	424	55,513
Air Force	Fort Wayne International Airport	Fort Wayne	Indiana	45	430	105,685
Air Force	Francis E Warren Air Force Base	Cheyenne	Wyoming	422	3,122	135,313
Air Force	Francis S Gabreski Airport (ANG)	Westhampton Beach	New York	35	360	98,044
Air Force	Fresno Yosemite International	Fresno	California	23	418	54,089

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Ft Indiantown Gap ANG Station	Annville	Pennsylvania	23	348	66,589
Air Force	General Mitchell IAP (ANG)	Milwaukee	Wisconsin	35	370	94,101
Air Force	General Wayne A. Downing Peoria IAP (ANG)	Peoria	Illinois	37	445	82,736
Air Force	Goodfellow Air Force Base	N/A	Texas	242	2,571	94,269
Air Force	Grand Forks Air Force Base	Grand Forks AFB	North Dakota	365	2,623	139,251
Air Force	Great Falls IAP ANG	Great Falls	Montana	39	444	88,797
Air Force	Grissom Air Reserve Base	N/A	Indiana	114	1,047	108,857
Air Force	Gulfport-Biloxi Regional Airport (ANG)	Gulfport	Mississippi	35	639	54,463
Air Force	Hanscom Air Force Base	Bedford	Massachusetts	565	2,229	253,724
Air Force	Harrisburg IAP	Middletown	Pennsylvania	27	330	80,712
Air Force	Hector International Airport (ANG)	Fargo	North Dakota	40	492	81,461
Air Force	Hickam Air Force Base	Hickam A F Base	Hawaii	39	1,053	36,939
Air Force	Hill Air Force Base	N/A	Utah	1,995	12,206	163,421
Air Force	Holloman Air Force Base	N/A	New Mexico	577	5,330	108,282
Air Force	Homestead Air Reserve Base	Homestead	Florida	70	1,139	61,093

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Hulman Regional Airport	Terre Haute	Indiana	55	377	146,315
Air Force	Incirlik Air Base Adana	N/A	Turkey	268	4,822	55,553
Air Force	Jackson International Airport	Flowood	Mississippi	44	544	81,164
Air Force	Jacksonville IAP ANG	Jacksonville	Florida	28	470	59,244
Air Force	Jefferson Barracks ANG Station	N/A	Missouri	13	214	61,090
Air Force	Joe Foss Field ANG	N/A	South Dakota	44	432	100,772
Air Force	Joint Base Andrews-NAF Washington	Andrews AFB	Maryland	39	489	80,602
Air Force	Joint Base Andrews-NAF Washington	Andrews AFB	Maryland	576	5,761	99,912
Air Force	Joint Base Charleston (JBC)	N/A	South Carolina	719	8,764	82,037
Air Force	Joint Base Elmendorf-Richardson (JBER)	Elmendorf AFB	Alaska	63	556	113,194
Air Force	Joint Base Elmendorf-Richardson (JBER)	Elmendorf AFB	Alaska	1,655	11,672	141,810
Air Force	Joint Base Langley-Eustis (JBLE)	Langley AFB	Virginia	1,281	11,823	108,307

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Joint Base Mcguire-Dix-Lakehurst (JBMDL)	Mcguire AFB	New Jersey	1,460	13,067	111,711
Air Force	Joint Base Mcguire-Dix-Lakehurst (JBMDL)	Mcguire AFB	New Jersey	62	437	140,938
Air Force	Joint Base San Antonio (JBSA)	N/A	Texas	3,920	34,862	112,454
Air Force	Kadena Air Base	Kadena Air Base Okinawa	Japan	1,221	23,537	51,882
Air Force	Keesler Air Force Base	Biloxi	Mississippi	670	6,840	97,922
Air Force	Kelly Field Annex (Lackland AFB)	Lackland AFB	Texas	36	367	97,253
Air Force	Key Field Air National Guard	Meridian	Mississippi	30	414	71,268
Air Force	Kirtland Air Force Base	Albuquerque	New Mexico	741	7,025	105,529
Air Force	Kirtland Air Force Base	Albuquerque	New Mexico	23	310	73,710
Air Force	Klamath Falls Airport-Kingsley Field	Klamath Falls	Oregon	29	489	58,473
Air Force	Kunsan Air Base	Kunsan	Korea, Republic of	331	3,900	84,781
Air Force	Lajes Field	N/A	Portugal	89	2,573	34,471
Air Force	Lambert St Louis IAP ANG	St. Louis	Missouri	13	315	40,896
Air Force	Laughlin Air Force Base	N/A	Texas	112	1,868	60,162

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Lincoln Municipal Airport (ANG)	N/A	Nebraska	37	355	105,004
Air Force	Little Rock Air Force Base	N/A	Arkansas	410	3,395	120,852
Air Force	Little Rock Air Force Base	N/A	Arkansas	29	326	90,144
Air Force	Los Angeles Air Force Base	El Segundo	California	96	1,109	86,564
Air Force	Louisville IAP - Standiford Field	Louisville	Kentucky	25	413	60,135
Air Force	Luis Munoz Marin International Airport	Carolina	Puerto Rico	25	475	53,440
Air Force	Luke Air Force Base	Glendale	Arizona	259	3,645	70,994
Air Force	Macdill Air Force Base	N/A	Florida	549	5,098	107,651
Air Force	Malmstrom Air Force Base	Malmstrom AFB	Montana	481	2,995	160,473
Air Force	Mansfield Lahm Airport ANG	Mansfield	Ohio	36	353	100,972
Air Force	March Air Reserve Base	N/A	California	123	1,970	62,319
Air Force	March Air Reserve Base	N/A	California	14	356	38,760
Air Force	Martin State Airport ANG	Middle River	Maryland	31	414	75,012
Air Force	Maxwell Air Force Base	Montgomery	Alabama	610	6,179	98,786
Air Force	Mcconnell Air Force Base	Wichita	Kansas	329	2,576	127,807

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Mcconnell Air Force Base	Wichita	Kansas	68	701	97,444
Air Force	McEntire Joint National Guard Base	N/A	South Carolina	37	439	84,795
Air Force	Mcghee Tyson Airport	Louisville	Tennessee	82	721	114,229
Air Force	Memphis International Airport	Memphis	Tennessee	65	586	110,340
Air Force	Minneapolis-St Paul IAP-Air Reserve Stn	Minneapolis	Minnesota	44	467	94,567
Air Force	Minneapolis-St Paul IAP-Air Reserve Stn	Minneapolis	Minnesota	76	705	108,249
Air Force	Minot Air Force Base	Minot AFB	North Dakota	557	4,052	137,467
Air Force	Misawa Air Base	Misawa AFB	Japan	1,164	7,898	147,424
Air Force	Moffett Field ANG	Mountain View	California	14	415	33,827
Air Force	Montgomery Regional Airport (ANG) Base	Montgomery	Alabama	34	505	67,429
Air Force	Moody Air Force Base	Moody AFB	Georgia	207	2,911	71,176
Air Force	Moron Air Base	Moran Ab	Spain	29	732	39,094
Air Force	Mountain Home Air Force Base	N/A	Idaho	296	3,317	89,123

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Nashville International Airport	N/A	Tennessee	25	473	52,606
Air Force	Nellis Air Force Base	Las Vegas	Nevada	848	9,116	93,063
Air Force	New Castle County Airport	N/A	Delaware	31	388	79,044
Air Force	New Orleans NAS ANG	Belle Chasse	Louisiana	34	567	59,407
Air Force	Niagara Falls IAP-Air Reserve Station	Niagara Falls	New York	96	700	136,514
Air Force	Niagara Falls IAP-Air Reserve Station	Niagara Falls	New York	14	183	75,720
Air Force	North Highlands ANG Station	North Highlands	California	6	133	45,143
Air Force	Offutt Air Force Base	Offutt AFB	Nebraska	792	6,260	126,524
Air Force	Osan Air Base	Osan AFB	Korea, Republic of	700	7,632	91,726
Air Force	Otis Air National Guard Base	Otis ANGB, Mashpee	Massachusetts	67	693	97,298
Air Force	Patrick Air Force Base	Patrick AFB	Florida	729	6,386	114,218
Air Force	Pease International Tradeport	Portsmouth	New Hampshire	45	495	91,323
Air Force	Peterson Air Force Base	Colorado Springs	Colorado	2,286	6,763	337,968

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Pittsburgh IAP-Air Reserve Station	Moon	Pennsylvania	51	540	94,504
Air Force	Pittsburgh International Airport (ANG)	Coraopolis	Pennsylvania	60	450	132,554
Air Force	Portland International Airport	Portland	Oregon	61	813	75,439
Air Force	Quonset State Airport ANG	North Kingstown	Rhode Island	41	399	102,762
Air Force	RAF Alconbury	N/A	United Kingdom	111	1,291	85,815
Air Force	RAF Croughton	N/A	United Kingdom	100	691	145,371
Air Force	RAF Fairford	Fairford	United Kingdom	33	1,133	28,788
Air Force	RAF Lakenheath	Lakenheath	United Kingdom	613	7,709	79,468
Air Force	RAF Mildenhall	Mildenhall	United Kingdom	263	3,049	86,172
Air Force	Ramstein Air Base	Ramstein	Germany	1,012	15,837	63,906
Air Force	Reno Tahoe International Airport	Reno	Nevada	26	404	65,201
Air Force	Rickenbacker International Airport (ANG)	N/A	Ohio	55	534	102,569
Air Force	Robins Air Force Base	Robins AFB	Georgia	1,873	12,372	151,361
Air Force	Robins Air Force Base	Robins AFB	Georgia	70	716	98,260

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Rosecrans Memorial Airport	St. Joseph	Missouri	27	390	68,640
Air Force	Salt Lake City International Airport ANG	Salt Lake City	Utah	49	510	96,232
Air Force	Savannah/Hilton Head IAP	Garden City	Georgia	48	904	53,285
Air Force	Schenectady County Airport ANG	Scotia	New York	41	428	95,168
Air Force	Schriever Air Force Base	Colorado Springs	Colorado	331	1,687	196,461
Air Force	Scott Air Force Base	Belleville	Illinois	478	4,905	97,474
Air Force	Scott Air Force Base	Belleville	Illinois	31	356	88,294
Air Force	Selfridge ANG Base	Mount Clemens	Michigan	200	1,645	121,761
Air Force	Seymour Johnson Air Force Base	Seymour Johnson AFB	North Carolina	292	3,205	91,160
Air Force	Shaw Air Force Base	Shaw AFB	South Carolina	353	3,325	106,276
Air Force	Sheppard Air Force Base	Wichita Falls	Texas	708	7,246	97,768
Air Force	Sioux Gateway AP/Col. Bud Day Field (ANG)	Sioux City	Iowa	37	471	78,099
Air Force	Sky Harbor International Airport	Phoenix	Arizona	19	276	67,739
Air Force	Spangdahlem Air Base	N/A	Germany	379	7,601	49,801

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Springfield Beckley Municipal Airport	Springfield	Ohio	42	504	82,490
Air Force	Stewart International Airport	N/A	New York	100	829	120,503
Air Force	Syracuse Hancock Field ANG	Syracuse	New York	43	462	92,234
Air Force	Tinker Air Force Base	Oklahoma City	Oklahoma	3,047	19,255	158,219
Air Force	Toledo Express Airport ANG	Swanton	Ohio	30	375	80,600
Air Force	Travis Air Force Base	Fairfield	California	447	6,234	71,683
Air Force	Tucson International Airport	Tucson	Arizona	47	673	70,064
Air Force	Tulsa International Airport	Tulsa	Oklahoma	40	368	107,828
Air Force	Tyndall Air Force Base	N/A	Florida	309	3,774	81,998
Air Force	USAF Academy	Air Force Academy	Colorado	873	6,621	131,872
Air Force	Vance Air Force Base	Enid	Oklahoma	129	1,369	94,113
Air Force	Vandenberg Air Force Base	Lompoc	California	488	4,713	103,495
Air Force	Volk Field	Camp Douglas	Wisconsin	53	673	78,477
Air Force	W.K. Kellogg Airport	Battle Creek	Michigan	43	426	101,493
Air Force	Westover Air Reserve Base	N/A	Massachusetts	179	1,626	110,236
Air Force	Whiteman Air Force Base	Knob Noster	Missouri	586	3,652	160,538

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
Air Force	Will Rogers World Airport	Oklahoma City	Oklahoma	24	323	72,704
Air Force	Willow Grove Air Reserve Station	Horsham	Pennsylvania	41	726	56,063
Air Force	Wright Patterson Air Force Base	Wright-Patterson AFB	Ohio	2,563	15,247	168,068
Air Force	Yeager Airport ANG	N/A	West Virginia	43	419	101,766
Air Force	Yokota Air Base	Yokota AFB	Japan	1,240	10,150	122,185
Air Force	Youngstown-Warren Regional Airport ARS	Vienna	Ohio	90	740	122,057
USMC	1st MCD Garden City	Long Island	New York	65	166	392,524
USMC	CG MCAGCC Twenty-nine Palms	Twenty-nine Palms	California	873	6,854	127,347
USMC	CG MCB Camp Lejeune	Camp Lejeune	North Carolina	3,184	24,100	132,105
USMC	CG MCB Camp Pendleton	Camp Pendleton	California	889	20,592	43,179
USMC	CG MCCDC Quantico	Quantico	Virginia	1,016	8,361	121,542
USMC	CG MCLB Albany Ga	Albany	Georgia	268	7,032	38,164
USMC	Marine Barracks Washington DC	Washington	District of Columbia	48	623	77,494
USMC	MCAS Beaufort	Beaufort	South Carolina	223	2,632	84,845

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
USMC	MCAS Cherry Point	Cherry Point	North Carolina	693	6,254	110,750
USMC	MCAS Iwakuni	N/A	Japan	650	6,219	104,580
USMC	MCAS Miramar	San Diego	California	182	5,736	31,796
USMC	MCAS Yuma	Yuma	Arizona	214	2,908	73,501
USMC	MCB Camp Butler	N/A	Japan	1,064	17,454	60,967
USMC	MCB Hawaii Kaneohe Bay	Kaneohe Bay	Hawaii	315	6,592	47,747
USMC	MCLB Barstow	Barstow	California	212	4,625	45,930
USMC	MCMWTC Bridgeport	Bridgeport	California	48	373	127,694
USMC	MCRD Parris Island	Parris Island	South Carolina	511	3,957	129,022
USMC	MCRD San Diego	San Diego	California	236	2,816	83,806
USMC	MCSF Blount Island	Jacksonville	Florida	28	1,171	24,263
USMC	MCSF New Orleans	New Orleans	Louisiana	146	1,860	78,494
USMC	USMC Air Station Camp Pendleton	Camp Pendleton	California	41	912	45,295
DCMA	DCMA(2)	Bratenahl	Ohio	11	79	135,074
DCMA	DCMA(1)	Carson	California	9	80	111,338
DeCA	Aberdeen Proving Ground	Aberdeen	Maryland	9	62	146,562
DeCA	Altus Air Force Base	N/A	Oklahoma	8	58	140,404
DeCA	Arnold Air Station	Arnold AF Station	Tennessee	4	23	183,280

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Aviano Air Base	N/A	Italy	8	64	120,510
DeCA	Bangor International Airport (ANG)	N/A	Maine	4	29	139,379
DeCA	Barksdale Air Force Base	Barksdale AF Base	Louisiana	9	104	88,025
DeCA	Beale Air Force Base	Beale AFB	California	7	75	87,311
DeCA	Beale Air Force Base	Beale AFB	California	9	63	138,415
DeCA	Beale Air Force Base	Beale AFB	California	13	88	147,841
DeCA	Buckley Air Force Base	Aurora	Colorado	10	77	129,365
DeCA	Camp Casey	Tong Du Chon	Korea, Republic of	3	13	248,101
DeCA	Camp Henry	Taegu	Korea, Republic of	2	8	212,637
DeCA	Camp Henry	Taegu	Korea, Republic of	8	38	201,752
DeCA	Camp Henry	Taegu	Korea, Republic of	1	16	34,881
DeCA	Camp Humphreys	N/A	Korea, Republic of	4	19	229,727
DeCA	Camp Red Cloud	Uijong Bu	Korea, Republic of	1	11	68,940
DeCA	Camp Red Cloud	Uijong Bu	Korea, Republic of	1	10	114,882
DeCA	Camp Zama	Sagamihara	Japan	1	2	359,044
DeCA	Camp Zama	Sagamihara	Japan	2	13	130,030
DeCA	Camp Zama	Sagamihara	Japan	8	186	40,420
DeCA	Camp Zama	Sagamihara	Japan	0	4	61,972

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Camp Zama	Sagamihara	Japan	6	67	87,707
DeCA	Cannon Air Force Base	Cannon AFB	New Mexico	7	58	111,887
DeCA	Carlisle Barracks	Carlisle	Pennsylvania	5	23	235,398
DeCA	Carlisle Barracks	Carlisle	Pennsylvania	6	60	104,959
DeCA	CBC Gulfport	Gulfport	Mississippi	8	31	251,440
DeCA	Charleston Air Force Base	N/A	South Carolina	13	86	146,353
DeCA	Charleston Air Force Base	N/A	South Carolina	13	64	207,017
DeCA	Columbus Air Force Base	Columbus	Mississippi	4	49	74,381
DeCA	COMFLEACT Sasebo	Sasebo	Japan	5	24	199,167
DeCA	COMFLEACT Sasebo	Sasebo	Japan	3	20	138,364
DeCA	Comfleact Yokosuka	Yokosuka	Japan	15	96	157,318
DeCA	COMFLEACT Yokosuka	Yokosuka	Japan	15	86	177,594
DeCA	CSO NAS Moffett Field	Moffett Field	California	3	52	54,163
DeCA	CSTC and Camp Parks	Dublin	California	2	8	198,846
DeCA	Davis-Monthan Air Force Base	Tucson	Arizona	15	115	129,012
DeCA	Dover Air Force Base	N/A	Delaware	5	78	69,511
DeCA	Dugway Proving Ground	Dugway	Utah	3	18	138,708
DeCA	Dyess Air Force Base	Abilene	Texas	8	80	97,142

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Edwards Air Force Base	Lancaster	California	7	60	109,391
DeCA	Eglin Air Force Base	Valparaiso	Florida	15	107	141,151
DeCA	Eglin Air Force Base	Valparaiso	Florida	10	63	150,825
DeCA	Eielson Air Force Base	N/A	Alaska	7	42	166,054
DeCA	Ellsworth Air Force Base	Ellsworth AFB	South Dakota	12	72	169,079
DeCA	Fairchild Air Force Base	Airway Heights	Washington	12	85	139,219
DeCA	Fleet Activities Chinhae	Chinhae	Korea, Republic of	2	11	159,735
DeCA	Fort Belvoir	Fort Belvoir	Virginia	19	129	147,954
DeCA	Fort Benning	Columbus	Georgia	0	3	92,541
DeCA	Fort Benning	Columbus	Georgia	21	118	176,250
DeCA	Fort Bliss	El Paso	Texas	14	123	115,310
DeCA	Fort Bragg	Fort Bragg	North Carolina	12	95	125,538
DeCA	Fort Bragg	Fort Bragg	North Carolina	23	118	197,335
DeCA	Fort Buchanan	Guaynabo	Puerto Rico	11	95	120,686
DeCA	Fort Campbell	Fort Campbell	Kentucky	16	122	134,949
DeCA	Fort Carson	Colorado Springs	Colorado	17	122	135,917
DeCA	Fort Detrick	Frederick	Maryland	5	58	91,097
DeCA	Fort Detrick	Frederick	Maryland	7	39	186,716
DeCA	Fort Drum	Evans Mills	New York	14	83	163,478

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Fort George G. Meade	Fort Meade	Maryland	16	118	135,373
DeCA	Fort Gordon	Augusta	Georgia	11	92	120,468
DeCA	Fort Greely	Delta Junction	Alaska	5	25	193,096
DeCA	Fort Hamilton	New York City	New York	9	50	185,320
DeCA	Fort Hood	Killeen	Texas	25	128	196,015
DeCA	Fort Hood	Killeen	Texas	11	106	107,790
DeCA	Fort Huachuca	Sierra Vista	Arizona	10	78	129,561
DeCA	Fort Jackson	Columbia	South Carolina	12	130	95,308
DeCA	Fort Knox	Middletown	Kentucky	12	122	100,819
DeCA	Fort Leavenworth	Fort Leavenworth	Kansas	16	74	210,547
DeCA	Fort Lee	Fort Lee	Virginia	27	242	111,639
DeCA	Fort Lee	Fort Lee	Virginia	11	81	130,041
DeCA	Fort Leonard Wood	Fort Leonard Wood	Missouri	13	71	179,951
DeCA	Fort McCoy	Sparta	Wisconsin	3	16	198,556
DeCA	Fort Polk	Fort Polk	Louisiana	14	82	170,397
DeCA	Fort Riley	Fort Riley	Kansas	17	113	154,917
DeCA	Fort Rucker	Fort Rucker	Alabama	10	85	116,223
DeCA	Fort Sill	Fort Sill	Oklahoma	12	102	117,318
DeCA	Fort Stewart	Hinesville	Georgia	12	95	124,829

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Fort Stewart	Hinesville	Georgia	10	58	168,492
DeCA	Fort Wainwright	Fort Wainwright	Alaska	20	104	196,013
DeCA	Francis E. Warren Air Force Base	Cheyenne	Wyoming	12	77	153,566
DeCA	Goodfellow Air Force Base	N/A	Texas	7	57	123,508
DeCA	Grand Forks Air Force Base	Grand Forks AFB	North Dakota	4	41	106,432
DeCA	Hanscom Air Force Base	Bedford	Massachusetts	10	73	129,827
DeCA	Hill Air Force Base	N/A	Utah	18	87	210,818
DeCA	Holloman Air Force Base	N/A	New Mexico	8	69	119,482
DeCA	Incirlik Air Base Adana	N/A	Turkey	6	67	90,553
DeCA	Incirlik Air Base Adana	N/A	Turkey	1	15	96,761
DeCA	JBAB Anacostia Bolling	Washington, DC	District of Columbia	12	72	168,820
DeCA	JBPHH Pearl Harbor - Hickam	Pearl Harbor	Hawaii	13	115	113,996
DeCA	JBPHH Pearl Harbor - Hickam	Pearl Harbor	Hawaii	10	98	101,964
DeCA	JBSA - Fort Sam Houston	Fort Sam Houston	Texas	16	104	155,953
DeCA	JBSA - Lackland	N/A	Texas	20	117	174,016
DeCA	JBSA - Randolph	N/A	Texas	15	97	153,349
DeCA	JNTEXBASE Little Creek FS	Norfolk	Virginia	16	100	155,505

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Joint Base Andrews-NAF Washington	Andrews AFB	Maryland	17	113	146,654
DeCA	Joint Base Elmendorf-Ft Richardson	Elmendorf AFB	Alaska	17	105	165,543
DeCA	Joint Base Lewis-McChord	Tacoma	Washington	12	105	116,590
DeCA	Joint Base Lewis-Mcchord	Tacoma	Washington	18	148	121,507
DeCA	Joint Base Myer-Henderson Hall	Arlington	Virginia	7	74	97,132
DeCA	Kadena Air Base	Kadena Air Base Okinawa	Japan	16	87	184,518
DeCA	Keesler Air Force Base	Biloxi	Mississippi	14	98	142,241
DeCA	Kirtland Air Force Base	Albuquerque	New Mexico	14	108	133,501
DeCA	Kunsan Air Base	Kunsan	Korea, Republic of	4	16	229,380
DeCA	Lajes Field	N/A	Portugal	5	58	94,759
DeCA	Langley Air Force Base	Langley AFB	Virginia	12	103	115,626
DeCA	Langley Air Force Base	Langley AFB	Virginia	17	103	165,024
DeCA	Laughlin Air Force Base	N/A	Texas	6	75	79,004
DeCA	Little Rock Air Force Base	N/A	Arkansas	11	100	113,446
DeCA	Los Angeles Air Force Base	El Segundo	California	8	75	113,657
DeCA	Luke Air Force Base	Glendale	Arizona	11	102	103,277

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	MacDill Air Force Base	N/A	Florida	16	171	90,817
DeCA	Malmstrom Air Force Base	Malmstrom AFB	Montana	10	68	146,012
DeCA	March Air Reserve Base	N/A	California	11	117	92,140
DeCA	Maxwell Air Force Base	Montgomery	Alabama	7	66	105,211
DeCA	Maxwell Air Force Base	Montgomery	Alabama	11	87	127,287
DeCA	Mcagcc Twenty-nine Palms	Topaz	California	2	13	133,079
DeCA	MCAGCC Twenty-nine Palms	Topaz	California	7	57	120,938
DeCA	MCAS Cherry Point	Cherry Point	North Carolina	7	59	115,317
DeCA	MCAS Iwakuni	Iwakuni	Japan	5	32	150,898
DeCA	MCAS Miramar	San Diego	California	13	91	143,699
DeCA	MCAS Yuma	Yuma	Arizona	5	34	150,126
DeCA	MCB Camp Lejeune	Camp Lejeune	North Carolina	10	76	133,960
DeCA	MCB Camp Lejeune	Camp Lejeune	North Carolina	6	46	138,533
DeCA	MCB Camp Pendleton	Camp Pendleton	California	3	20	142,546
DeCA	MCB Camp Pendleton Ca	Camp Pendleton	California	13	113	116,837
DeCA	MCB Camp S D Butler Okinawa	Zukeran	Japan	7	31	212,577

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	MCB Camp S D Butler Okinawa	Zukeran	Japan	11	59	183,381
DeCA	MCB Camp S D Butler Okinawa	Zukeran	Japan	7	31	221,173
DeCA	MCB Camp S.D. Butler Okinawa	Zukeran	Japan	11	291	39,283
DeCA	MCB Hawaii Kaneohe	Kaneohe	Hawaii	11	77	142,198
DeCA	Mcconnell Air Force Base	Wichita	Kansas	8	56	148,271
DeCA	McGuire Air Force Base	Mcguire AFB	New Jersey	2	18	95,541
DeCA	Mcguire Air Force Base	Mcguire AFB	New Jersey	17	103	160,515
DeCA	MCLB Albany Ga	Albany	Georgia	5	37	138,568
DeCA	MCLB Barstow	Barstow	California	3	22	138,172
DeCA	MCRD Beaufort	Parris Island	South Carolina	5	44	102,849
DeCA	MCSPTACT Kansas City	Belton	Missouri	2	24	99,090
DeCA	Minot Air Force Base	Minot AFB	North Dakota	9	56	151,291
DeCA	Misawa Air Base	Misawa AFB	Japan	11	82	130,983
DeCA	Moody Air Force Base	Moody AFB	Georgia	9	64	133,111
DeCA	Mountain Home Air Force Base	N/A	Idaho	7	54	134,535

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	NAF Atsugi	Atsugi	Japan	5	32	171,388
DeCA	NAF El Centro	El Centro	California	2	13	156,889
DeCA	NAS Corpus Christi	Corpus Christi	Texas	8	46	179,569
DeCA	NAS Fallon	Fallon	Nevada	4	40	101,114
DeCA	NAS Jacksonville	Jacksonville	Florida	17	88	188,016
DeCA	NAS JRB Ft Worth	Fort Worth	Texas	17	93	186,808
DeCA	NAS JRB New Orleans	Belle Chasse	Louisiana	7	47	144,464
DeCA	NAS Key West	Stock Island	Florida	3	21	145,634
DeCA	NAS Kingsville	Kingsville	Texas	2	15	166,372
DeCA	NAS Lemoore	Lemoore NAS	California	6	44	146,445
DeCA	NAS Meridian	Meridian	Mississippi	6	32	180,051
DeCA	NAS Oceana	Virginia Beach	Virginia	18	110	164,139
DeCA	NAS Pensacola	Pensacola	Florida	11	74	155,855
DeCA	NAS Sigonella	Sigonella Sicily	Italy	9	68	128,827
DeCA	NAS Whidbey Island	Oak Harbor	Washington	10	66	156,923
DeCA	NAS Whiting Field	Milton	Florida	4	22	191,055
DeCA	National Training Center and Fort Irwin	Fort Irwin	California	7	57	120,814
DeCA	Naval Air Station Pax River	Patuxent River	Maryland	8	56	150,233

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Naval Base Kitsap Bremerton	Bremerton	Washington	10	61	157,760
DeCA	Naval Base Kitsap Bremerton	Bremerton	Washington	7	48	145,686
DeCA	Naval Station Great Lakes	Great Lakes	Illinois	10	60	174,791
DeCA	Naval Station Newport	Newport	Rhode Island	9	46	189,197
DeCA	Naval Support Activity Crane	Crane	Indiana	1	8	147,005
DeCA	NAVBASE Coronado	San Diego	California	9	78	112,342
DeCA	NAVBASE Coronado	San Diego	California	8	46	179,077
DeCA	NAVBASE Guam	Agana	Guam	12	57	214,466
DeCA	NAVBASE Guam	Agana	Guam	21	187	109,987
DeCA	NAVBASE San Diego	San Diego	California	15	128	118,852
DeCA	NAVBASE Ventura County - Point Mugu	Point Mugu	California	9	65	134,111
DeCA	NAVSTA Everett	Everett	Washington	9	60	151,606
DeCA	NAVSTA Mayport	Jacksonville	Florida	9	71	132,507
DeCA	NAVSTA Norfolk	Norfolk	Virginia	13	79	160,707
DeCA	NAVSTA Rota	Rota	Spain	8	50	150,540
DeCA	NAVSUPPACT Annapolis	Annapolis	Maryland	5	26	212,248

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	NAVSUPPACT Midsouth Memphis	Millington	Tennessee	11	61	176,031
DeCA	NAVSUPPACT Naples	Naples	Italy	14	85	161,430
DeCA	NAVSUPPACT Norfolk NSY	Portsmouth	Virginia	12	62	189,669
DeCA	NAWS China Lake	China Lake	California	3	24	121,498
DeCA	Nellis Air Force Base	Las Vegas	Nevada	16	130	123,992
DeCA	NSA Andersen	Andersen AB	Guam	8	122	63,636
DeCA	NSA Saratoga Springs	Saratoga Springs	New York	4	22	175,242
DeCA	NSA South Potomac	Dahlgren	Virginia	2	15	141,438
DeCA	NSY Portsmouth	Kittery	Maine	5	28	193,325
DeCA	Offutt Air Force Base	Offutt AFB	Nebraska	19	120	155,241
DeCA	Osan Air Base	Osan AFB	Korea, Republic of	4	60	58,099
DeCA	Osan Air Base	Osan AFB	Korea, Republic of	3	49	65,325
DeCA	Patrick Air Force Base	Patrick AFB	Florida	9	103	86,858
DeCA	Peterson Air Force Base	Colorado Springs	Colorado	14	102	137,081
DeCA	Picatinny Arsenal	Dover	New Jersey	5	22	210,227
DeCA	Presidio Of Monterey	Monterey	California	11	111	100,518
DeCA	RAF Alconbury	N/A	United Kingdom	10	77	129,709
DeCA	RAF Croughton	N/A	United Kingdom	3	20	159,352

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	RAF Lakenheath	Lakenheath	United Kingdom	12	112	104,397
DeCA	RAF Menwith Hill	N/A	United Kingdom	6	34	180,107
DeCA	RAF Mildenhall	Mildenhall	United Kingdom	2	14	170,217
DeCA	Ramstein Air Base	Ramstein	Germany	3	37	95,212
DeCA	Ramstein Air Base	Ramstein	Germany	25	178	139,679
DeCA	Ramstein Air Base	Ramstein	Germany	13	95	132,292
DeCA	Ramstein Air Base	Ramstein	Germany	12	41	284,237
DeCA	Ramstein Air Base	Ramstein	Germany	10	59	165,579
DeCA	Redstone Arsenal	Huntsville	Alabama	12	81	143,745
DeCA	Robins Air Force Base	Robins AFB	Georgia	10	70	147,167
DeCA	Rock Island Arsenal	Rock Island	Illinois	7	54	124,676
DeCA	Rock Island Arsenal	Rock Island	Illinois	3	33	91,942
DeCA	Schofield Barracks	Wahiawa	Hawaii	13	92	145,358
DeCA	Scott Air Force Base	Belleville	Illinois	19	114	162,830
DeCA	Selfridge ANG Base	Mount Clemens	Michigan	7	76	93,240
DeCA	Seymour Johnson Air Force Base	Seymour Johnson AFB	North Carolina	10	66	150,287
DeCA	Shaw Air Force Base	Shaw AFB	South Carolina	10	61	165,445
DeCA	Sheppard Air Force Base	Wichita Falls	Texas	10	81	126,268

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	Spangdahlem Air Base	N/A	Germany	5	44	116,720
DeCA	Submarine Base Kings Bay	Kings Bay	Georgia	8	53	150,278
DeCA	Submarine Base New London	Groton	Connecticut	5	28	174,822
DeCA	Submarine Base New London	Groton	Connecticut	9	57	166,957
DeCA	Tinker Air Force Base	Oklahoma City	Oklahoma	19	87	213,129
DeCA	Tobyhanna Army Depot	Tobyhanna	Pennsylvania	3	22	123,928
DeCA	Travis Air Force Base	Fairfield	California	16	97	163,326
DeCA	Tyndall Air Force Base	N/A	Florida	8	76	107,862
DeCA	US Army Garrison Ansbach	Ansbach	Germany	8	58	130,944
DeCA	US Army Garrison Ansbach	Ansbach	Germany	3	38	70,018
DeCA	Us Army Garrison Bamberg	Bamberg	Germany	5	47	102,518
DeCA	US Army Garrison Baumholder	Baumholder	Germany	5	32	165,438
DeCA	Us Army Garrison Benelux	Brussels	Belgium	9	48	177,023
DeCA	US Army Garrison Grafenwoehr	Grafenwohr	Germany	1	14	79,364
DeCA	US Army Garrison Grafenwoehr	Grafenwohr	Germany	11	55	206,208

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	US Army Garrison Grafenwoehr	Grafenwohr	Germany	8	52	145,331
DeCA	Us Army Garrison Heidelberg	Heidelberg	Germany	18	789	22,923
DeCA	US Army Garrison Hohenfels	Hohenfels	Germany	5	38	135,393
DeCA	US Army Garrison Kaiserslautern	Kaiserlautern	Germany	5	52	89,849
DeCA	US Army Garrison Livorno	Livorno	Italy	4	26	136,377
DeCA	US Army Garrison Schinnen	Schinnen	Netherlands	5	24	206,957
DeCA	US Army Garrison Schweinfurt	Schweinfurt	Germany	8	51	153,613
DeCA	US Army Garrison Stuttgart	Stuttgart	Germany	3	18	170,755
DeCA	US Army Garrison Stuttgart	Stuttgart	Germany	1	5	251,702
DeCA	US Army Garrison Stuttgart	Stuttgart	Germany	5	64	83,563
DeCA	US Army Garrison Stuttgart	Stuttgart	Germany	4	41	96,883
DeCA	US Army Garrison Vicenza	Vicenza	Italy	9	55	159,675
DeCA	US Army Garrison Wiesbaden	Wiesbaden	Germany	11	62	173,933
DeCA	USAF Academy	Air Force Academy	Colorado	10	67	145,117

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DeCA	USMC Base Quantico	Quantico	Virginia	15	120	126,950
DeCA	Vance Air Force Base	Enid	Oklahoma	6	34	174,241
DeCA	Vandenberg Air Force Base	Lompoc	California	6	83	66,781
DeCA	West Point Military Reservation	West Point	New York	13	73	179,293
DeCA	White Sands Missile Range	Las Cruces	New Mexico	5	32	170,563
DeCA	Whiteman Air Force Base	Knob Noster	Missouri	10	61	171,771
DeCA	Wright Patterson Air Force Base	Wright-Patterson AFB	Ohio	16	123	134,019
DeCA	Yokota Air Base	Yokota AFB	Japan	25	81	310,875
DeCA	Yongsan Garrison	Seoul	Korea, Republic of	1	8	86,724
DeCA	Yongsan Garrison	Seoul	Korea, Republic of	1	7	202,638
DeCA	Yongsan Garrison	Seoul	Korea, Republic of	14	94	146,347
DeCA	Yongsan Garrison	Seoul	Korea, Republic of	3	89	38,797
DeCA	Yuma Proving Ground	Yuma	Arizona	3	23	123,120
DFAS	DFAS Rome	Rome	New York	24	332	73,404
DFAS	DFAS Limestone	Limestone	Maine	9	153	60,850
DIA	Joint Base Anacostia Bolling	Washington DC	District of Columbia	242	1,325	182,570

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 Sqft) Goal Subject	Intensity (BTU/SF) Goal Subject
DIA	DLOC Warehouse	Landover	Maryland	18	267	66,273
DIA	Rowe Building and ULC 1/Rivanna Station	Charlottesville	Virginia	33	184	180,440
DLA	Defense Supply Center Columbus	Columbus	Ohio	302	3,865	78,040
DLA	Defense Distribution Depot San Joaquin	Tracy	California	107	5,155	20,766
DLA	Defense Supply Center Richmond	Richmond	Virginia	236	4,579	51,471
DLA	Defense Distribution Depot Susquehanna	New Cumberland	Pennsylvania	396	7,441	53,237
NGA	NGA	Springfield	Virginia	682	6,653	102,462
NSA	Fort Meade Campus	Fort Meade	Maryland	3,211	10,299	311,808
WHS	Washington HQS Service	Pentagon, Arlington	Virginia	1,287	7,622	168,793
WHS	Fort Belvoir	Fort Belvoir	Virginia	111	1,854	59,708

Appendix F - List of Energy Projects Funded by Appropriations and List of Non-Governmental Third-Party Funded Energy Projects

LIST OF ENERGY PROJECTS FUNDED BY APPROPRIATIONS

Project	Estimated Financial Obligation ($000s)
ARMY	**333,036**
Energy Conservation	**253,068**
17 locations: Meter Data Management System (Meter Data Management System)	0
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	12
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	30
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	50
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	60
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	70
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	115
63rd Regional Support Command: EMCS/HVAC Retro-Commissioning	1,053
63rd Regional Support Command: HVAC Controls Upgrade	20
63rd Regional Support Command: HVAC Controls Upgrade	20
63rd Regional Support Command: HVAC Controls Upgrade	30
63rd Regional Support Command: HVAC Controls Upgrade	75
63rd Regional Support Command: HVAC Controls Upgrade/ Retro-Commissioning	80
63rd Regional Support Command: HVAC Controls Upgrade/ Retro-Commissioning	85
63rd Regional Support Command: HVAC Controls Upgrade/Smart Meters	40
63rd Regional Support Command: HVAC Controls Upgrade/Smart Meters	40
63rd Regional Support Command: Exterior lighting Retrofit to LED	977
63rd Regional Support Command: LED and Insulation Installation	95

Project	Estimated Financial Obligation ($000s)
63rd Regional Support Command: LED and Insulation Installation	125
63rd Regional Support Command: LED and Insulation Installation	142
63rd Regional Support Command: LED and Retrofit Installation	790
63rd Regional Support Command: Install of Charging Station for Electric Vehicles	290
81st Regional Support Command: Energy Efficient Roof	445
81st Regional Support Command: Utilities Modernization Energy Efficient HVAC System	371
81st Regional Support Command: Utilities Modernization Energy Efficient HVAC System	449
81st Regional Support Command: Utilities Modernization Electrical	247
81st Regional Support Command: Utilities Modernization Electrical	417
81st Regional Support Command: Utilities Modernization Electrical	471
81st Regional Support Command: Utilities Modernization Electrical	602
81st Regional Support Command: Utilities Modernization Plumbing	48
88th Regional Support Command: Integrate HVAC Controls	53
99th Regional Support Command: Interior lighting retrofit to LED	159
9th MSC: Install Upgrade to HVAC system	434
9th MSC: Project Design	485
Army Aviation Support Facility & Readiness Center, South Burlington: Complete LED Conversion - interior & exterior	350
Alabama Army National Guard: Energy Conservations Improvements, Northport Readiness Center	91
Alabama Army National Guard: Energy Conservations Improvements, Brundidge Readiness Center	37
Alabama Army National Guard: Energy Conservations Improvements, Daleville Readiness Center	66
Alabama Army National Guard: Energy Conservations Improvements, Demopolis Readiness Center	74
Alabama Army National Guard: Energy Conservations Improvements, Dothan Readiness Center	111
Alabama Army National Guard: Energy Conservations Improvements, Florence Readiness Center	78
Alabama Army National Guard: Energy Conservations Improvements, Opelika Readiness Center	78
Alabama Army National Guard: Energy Conservations Improvements, Northport Readiness Center	222

Project	Estimated Financial Obligation ($000s)
Alabama Army National Guard: Energy Conservations Improvements, Brundidge Readiness Center	241
Alabama Army National Guard: Energy Conservations Improvements, Daleville Readiness Center	216
Alabama Army National Guard: Energy Conservations Improvements, Demopolis Readiness Center	427
Alabama Army National Guard: Energy Conservations Improvements, Dothan Readiness Center	383
Alabama Army National Guard: Energy Conservations Improvements, Florence Readiness Center	316
Alabama Army National Guard: Energy Conservations Improvements, Opelika Readiness Center	293
Alabama Army National Guard: HVAC Upgrades Taylor Hardin	709
Alabama Army National Guard: Energy Conservations Improvements, Northport Readiness Center	58
Alabama Army National Guard: Energy Conservations Improvements, Brundidge Readiness Center	64
Alabama Army National Guard: Energy Conservations Improvements, Daleville Readiness Center	78
Alabama Army National Guard: Energy Conservations Improvements, Demopolis Readiness Center	94
Alabama Army National Guard: Energy Conservations Improvements, Dothan Readiness Center	77
Alabama Army National Guard: Energy Conservations Improvements, Florence Readiness Center	112
Alabama Army National Guard: Energy Conservations Improvements, Opelika Readiness Center	150
Alabama Army National Guard: Lighting Upgrades, AASF #1	260
Alabama Army National Guard: Lighting Upgrades, AASF #2	363
Alabama Army National Guard: Energy Conservations Improvements, Atmore Readiness Center	371
Alabama Army National Guard: Energy Conservations Improvements, Brewton Readiness Center	277
Alabama Army National Guard: Energy Conservations Improvements, Citronelle Readiness Center	579
Alabama Army National Guard: Energy Conservations Improvements, Foley Readiness Center	320
Alabama Army National Guard: Energy Conservations Improvements, Huntsville (Sims)	739

Project	Estimated Financial Obligation ($000s)
Anderson: Drill Floor Lighting Upgrade	1
Anniston Army Depot: Interior Lighting	1,100
Anniston Army Depot: LED Outside lighting and Siding	1,850
Anniston Army Depot: Upgrade EMCS from R2 to AX	4,200
Arkansas Army National Guard: DCSEN Statewide EMCS Upgrade	388
Arkansas Army National Guard: RMTC Building 6400 HVAC Upgrade	77
Arkansas Army National Guard: PEC LED Lighting Upgrade	169
Arkansas Army National Guard: RMTC PT Track LED Lights	122
Arkansas Army National Guard: PEC Gas Advanced Metering	77
Arkansas Army National Guard: DCSEN RMTC Post Electrical Meter Upgrade	291
Arkansas Army National Guard: PEC Electrical Advanced Metering	71
AWMS & Inst Barracks, Ethan Allen Firing Range: Complete LED Conversion - interior	160
Arizona Army National Guard: Outside Air Economizer	17
Bedford: Drill Floor Lighting Upgrade	1
Berlin Armory: Add two inches of Hi-R board to existing under new roof	37
Building 12, Stout Field: Lighting Upgrade	10
Building 15, Camp Johnson: Complete LED Conversion - interior	98
Building 18, Stout Field: Envelope Upgrade	192
Building 18, Stout Field: Lighting Upgrade	1
Building 2, Stout Field: HVAC Replacement	45
Building 2, Camp Johnson: Replace Steam boiler with Hot Water	35
Building 2, Camp Johnson: Complete LED Conversion - interior	7
Building 5, Camp Atterbury: Solar Tubes, wall insulation and LED Lights	0
Building 512, 513, 514, and 515 Camp Atterbury: Window Replacement	55
Building 630, Camp Atterbury: Solar Tubes	24
Building 7, Camp Johnson: Replace two roof top AC units with Hi-E AC units with economizers	28
Building 7, Camp Johnson: Complete LED Conversion - interior	130
Building 9, Stout Field: Lighting Upgrade	1
Bloomington: Drill Floor Lighting Upgrade	1
Bloomington FMS: Lighting Upgrade	1
Blue Grass Army Depot: Building 208, Exterior insulation, energy conservation.	500

Project	Estimated Financial Obligation ($000s)
Blue Grass Army Depot: Building S-13, Install natural gas infrared heaters.	90
Blue Grass Army Depot: Building S-13 Install fluorescent motion sensor lighting	5
Blue Grass Army Depot: Building S-9 Install fluorescent motion sensor lighting	12
Blue Grass Army Depot: Building S-17 Install infrared heaters, additional ceiling and wall insulation, HVAC improvements, lighting improvements, quality work area improvements	600
Blue Grass Army Depot: Buildings 221 & 222 exterior insulation, insulated overhead doors, ventilation improvements, paving repairs and other repairs	2,056
Brazil: Drill Floor Lighting Upgrade	1
Building 10, Camp Johnson: Complete LED Conversion - interior	76
California Army National Guard: Electrical upgrade	150
California Army National Guard: Exterior lighting	20
California Army National Guard: Exterior lighting	200
California Army National Guard: Interior & exterior lighting	80
California Army National Guard: Interior lighting	65
California Army National Guard: Lighting	130
California Army National Guard: New Heaters	20
California Army National Guard: Security lighting	200
California Army National Guard: HVAC	260
Camp Atterbury: Advanced Meters and Building Controls not on Meter Data Management System	500
Camp Atterbury: Advanced Meters and Building Controls not on Meter Data Management System	750
Camp Henry: Install Motion Detectors For Exterior Lights	87
Camp Henry: Install Motion Detectors For Exterior Lights	187
Camp Henry: Install Motion Detectors For Exterior Lights	240
Camp Humphreys: Replace Motor Pool Lights With More Energy Efficient Lights, 2110	228
Camp Humphreys: Replace Motor Pool Lights With More Energy Efficient Lights, 2130, 2150	243
Camp Johnson: Replace all exterior HID lights with LED	54
Camp Rilea: Building Envelope (Windows) Camp Rilea	709
Camp Withycombe: Centralize Compressed Air System Camp Withycombe	404

Project	Estimated Financial Obligation ($000s)
Camp Zama: Replace HVAC System (DFMWR Skies Unlimited), B337 (SFHA) (FY14 QUTM 1)	500
Colorado Army National Guard: Replace Metal Halide high bay fixtures with LEDs in Building 122 and Building 123, 43 and 17 fixtures respectively.	42
Columbus: Drill Floor Lighting Upgrade	1
Connersville: Drill Floor Lighting Upgrade	1
Corpus Christi Army Depot: Advanced Commissioning Technology Installation	778
Cram Dining Hall, Ethan Allen Firing Range: LED conversion to lighting in kitchen	10
Crane Army Ammunition Activity: High efficiency boiler	333
Crane Army Ammunition Activity: Compressed air inspection & repair	129
Crane Army Ammunition Activity: Programmable Thermostats	42
Crane Army Ammunition Activity: Steam trap & condensate return pump inspection & repair	611
Crawfordsville: Drill Floor Lighting Upgrade	1
CSMS #1 - Stout Field: HVAC Replacement	92
CSMS #1 - Stout Field: Lighting Upgrade	1
Connecticut Army National Guard: Equipment Conversion from Oil (Steam) to NG condensing Boiler	491
Connecticut Army National Guard: Equipment Conversion from Oil to Propane Condensing Boiler & IR	115
Connecticut Army National Guard: Paint Booth & Boiler conversion from Oil (Steam) to NG direct	608
Danville: Drill Floor Lighting Upgrade	1
Devens Reserve Forces Training Area: Building #3413 - Energy Upgrade/Modernization for HVAC,Building Envelope, Plumbing, Lighting etc.	2,321
Devens Reserve Forces Training Area: Building #674 - Energy Upgrade/Modernization for HVAC, Building. Envelope, Plumbing, Lighting,etc.	4,367
Devens Reserve Forces Training Area: HVAC and lighting upgrades	2,600
Elkhart FMS: Lighting Upgrade	1
Enosburg Armory: Add two inches of Hi-R board to existing under new roof	32
Ethan Allen Firing Range: Replace all exterior HID lights with LED	47
Evansville: Domestic Hot Water Upgrade	63

Project	Estimated Financial Obligation ($000s)
Florida Army National Guard: This project is replacing Electric and Gas Tank Water Heaters at Camp Blanding Barracks with Gas Tankless Water Heater Systems.	279
Florida Army National Guard: LED lighting replacement. It will increase the efficiency of the HVAC for the latrines to 100% outside airflow, as well as replace inefficient Electric Breakers.	198
FMS 5, Lyndonville: Complete LED Conversion - interior	22
Fort Hunter Liggett: Building 339 Electric upgrade	637
Fort Hunter Liggett: Electric Distribution Replacement – Phase III – PN # 82290	5,188
Fort Hunter Liggett: Electric Distribution Replacement – Phase III – PN # 82291	187
Fort Hunter Liggett: Project Design	250
Fort Wainwright: Replace Inefficient Lighting in Multiple Vehicle Storage Facilities and Install Lighting Controls	147
Fort Wayne: Drill Floor Lighting Upgrade	1
Fort Wayne FMS: Lighting Upgrade	1
Georgia Army National Guard: Building 1 Hangar Lighting O/V Sensors	44
Georgia Army National Guard: Building 312 Hangar Lighting O/V Sensors	8
Georgia Army National Guard: Building 53 Billeting Lighting O/V Sensors	5
Georgia Army National Guard: Building 54 Billeting Lighting O/V Sensors	4
Georgia Army National Guard: Building 63 Billeting and multiple buildings Lighting O/V Sensors and programmable t-stats	39
Georgia Army National Guard: CNGC-MEDCOM - Insulated Walls (Building 142)	74
Georgia Army National Guard: CNGC-MEDCOM - Windows (Building 81)	13
Georgia Army National Guard: Region 1 ECM implementations - (12) Statewide Readiness Centers	112
Georgia Army National Guard: Region 2 ECM implementations - (10) Statewide Readiness Centers	122
Georgia Army National Guard: Region 3 ECM implementations - (8) Statewide Readiness Centers	119
Georgia Army National Guard: Region 4 ECM implementations - (13) Statewide Readiness Centers	200

Project	Estimated Financial Obligation ($000s)
Georgia Army National Guard: Building 3 Admin Controls	70
Georgia Army National Guard: (3) multi-zone mini split systems Building 10504	40
Georgia Army National Guard: Building 30 New rooftop unit heat pump, rear office split system, heat for warehouse to split system, reducting, and zone controls	374
Georgia Army National Guard: Building 300 Upgrade HVAC systems and controls	66
Georgia Army National Guard: Building 305 Upgrade HVAC system	17
Georgia Army National Guard: Building 32 New split system	9
Georgia Army National Guard: Building 350 Upgrade HVAC system	45
Georgia Army National Guard: Building 38 Replace HVAC split system; replace exhaust fans and unit heaters	31
Georgia Army National Guard: Building 402 Upgrade HVAC system	9
Georgia Army National Guard: Building 404 Upgrade HVAC system	11
Georgia Army National Guard: Building 407 Upgrade HVAC system	35
Georgia Army National Guard: Building 78 Upgrade HVAC system	17
Georgia Army National Guard: CNGC - MEDCOM - HVAC (Building 81)	412
Georgia Army National Guard: Multi-zone ductwork/split system Building 9206	32
Georgia Army National Guard: Multi-zone split system Building 9606	32
Georgia Army National Guard: Replace Condenser/AHU & Gas furnace - (13) Buildings	235
Georgia Army National Guard: Replace Condenser/AHU & Gas furnace - (15) Buildings	160
Georgia Army National Guard: Building 312 Lighting Upgrades	"
Georgia Army National Guard: Atlanta E Confederate Lighting CSMS, Building 17	36
Georgia Army National Guard: CNGC - LED Street, Parking, Site, Security Lighting for FY15 Construction	755
Georgia Army National Guard: CNGC-MEDCOM - Lighting (Building 142)	23
Georgia Army National Guard: GGTC, Building 10522 Lighting Upgrades	62
Georgia Army National Guard: LED High-bay lighting at Building. 300, CNGC in the lower left main bay	31

Project	Estimated Financial Obligation ($000s)
Georgia Army National Guard: LED High-bay lighting at Building. 300, CNGC in the upper a/c hangar	51
Gary: Roof Replacement	353
Gary FMS: Lighting Upgrade	1
Greencastle: Drill Floor Lighting Upgrade	1
Greenfield: Drill Floor Lighting Upgrade	1
Guam Army National Guard: Lamps retrofit	47
Hawaii Army National Guard: B001 EMCS HVAC Controls	192
Hawaii Army National Guard: B002 EMCS HVAC Controls	96
Hawaii Army National Guard: DCSIM HVAC Replacement	199
Hawaii Army National Guard: J-STAFF HVAC Replacement	147
Huntington: Drill Floor Lighting Upgrade	1
Iowa Army National Guard: Exterior Lighting Controls Camp Dodge	109
Iowa Army National Guard: Repair Geothermal/Replace boiler Esterville Arm	39
Iowa Army National Guard: Exterior Lighting Replacement Fort Dodge Arm	18
Iowa Army National Guard: Exterior Lighting Replacement Waterloo Arm	41
Iowa Army National Guard: Interior Lighting Camp Dodge S01	103
Iowa Army National Guard: Interior Lighting Camp Dodge PT01	40
Iowa Army National Guard: Interior Lighting Camp Dodge S03	50
Iowa Army National Guard: Interior Lighting Camp Dodge S07	26
Iowa Army National Guard: Interior Lighting Camp Dodge S14	43
Iowa Army National Guard: Interior Lighting Camp Dodge S30S	37
Iowa Army National Guard: Interior Lighting Camp Dodge S34P	65
Iowa Army National Guard: Interior Lighting Camp Dodge S38	61
Iowa Army National Guard: Interior Lighting Camp Dodge S56	31
Iowa Army National Guard: Interior Lighting Camp Dodge W46	47
Iowa Army National Guard: Interior Lighting Replacement Camp Dodge S40	54
Iowa Army National Guard: Facilities Retro-Commissioning Controls Audits - Fort Iowa	305
Iowa Army National Guard: Electrical Upgrade for Emergency Generator - Iowa City Arm	34
Iowa Army National Guard: Static Pressure Reset Controls - Fort Iowa	498

Project	Estimated Financial Obligation ($000s)
Idaho Army National Guard: Building 518 LED Interior Lighting Upgrade	101
Idaho Army National Guard: Gowen Field LED conversions	155
Idaho Army National Guard: SRTF Lighting	37
Idaho Army National Guard: Building 513 HVAC/Lighting	53
Idaho Army National Guard: Building 521 Classroom HVAC/Insulation/Lights	41
Idaho Army National Guard: Building 578 HVAC Upgrades	435
Idaho Army National Guard: MATES HVAC/Lighting upgrade	102
Jasper: Drill Floor Lighting Upgrade	1
Jasper FMS: Lighting Upgrade	1
Joint Base Lewis-McChord: Tamper Resistant Programmable Thermostats	2,415
Joint Base Lewis-McChord: LED Street Lighting Lewis North	370
Joint Base Lewis-McChord: LED Street Lighting Mcchord	396
Joint Base Lewis-McChord: LED Street Lighting Yakima	191
Joint Base Myer-Henderson Hall: Building 205, 400, 214, 417, Retrofit Pump VFD	83
Joint Base Myer-Henderson Hall: Building 405, Replace Cooling Tower	130
Joint Base Myer-Henderson Hall: Install New Variable Frequency Drives	44
Joint Base Myer-Henderson Hall: Install Occupancy Sensors	18
Joint Base Myer-Henderson Hall: Provide Occupancy Sensor Switches(L8-MY)	13
Joint Base Myer-Henderson Hall: Pump-VFD Retrofit	82
Joint Base Myer-Henderson Hall: Building 241, 243, & 400, Single Zone Vav Retrofit (Cntl-11-My)	125
Kokomo: Drill Floor Lighting Upgrade	1
Kansas Army National Guard: Dodge City FMS Energy Upgrades	198
Kansas Army National Guard: FMS #4 Energy Upgrades	256
Kansas Army National Guard: MTC Toc'S Energy Upgrades	259
Kansas Army National Guard: Exterior Lighting	107
Kansas Army National Guard: MTC Exterior Lighting	97
Kentucky Army National Guard: Ashland FMS1 Upgrade Exterior Lighting to LED with Photo Motion Sensors	13
Louisiana Army National Guard: CMF Retrofit and Energy Reduction	650

Project	Estimated Financial Obligation ($000s)
Lafayette: Drill Floor Lighting Upgrade	1
Lafayette FMS: Lighting Upgrade	1
Lebanon: Drill Floor Lighting Upgrade	1
Linton: Drill Floor Lighting Upgrade	1
Massachusetts Army National Guard: Camp Edwards Energy Improvements Building 5501	625
Massachusetts Army National Guard: Camp Edwards Energy Improvements Building 5503	575
Massachusetts Army National Guard: Camp Edwards Energy Improvements Building 5517	895
Massachusetts Army National Guard: Westfield AASF #2 Storage Building	274
Madison: Drill Floor Lighting Upgrade	1
Marion: Drill Floor Lighting Upgrade	1
Marion FMS: Lighting Upgrade	1
Martinsville: Drill Floor Lighting Upgrade	1
Maryland Army National Guard: Camp Fretterd Building 205 - Boiler replacement	17
Maryland Army National Guard: Camp Fretterd Building 114 - Boiler repairs	25
Maryland Army National Guard: Fifth Regiment Armory - Boiler repairs	53
Maine Army National Guard: Camp Keyes Natural Gas Conversion	17
Maine Army National Guard: Waterville Armory Natural Gas Conversion	2,850
Maine Army National Guard: Waterville CST Natural Gas Conversion	4,600
Maine Army National Guard: 75KW CHP at Building 260 (AASF). Secondary, takes waste engine heat and converts to hot water and interjects into the primary heating loop.	553
Michigan Army National Guard: Camp Grayling 4 barracks, 1 BOQ, & 1 COF	17
Michigan City: Drill Floor Lighting Upgrade	1
Minnesota Army National Guard: Camp Ripley Upgrade HVAC control systems	50
Minnesota Army National Guard: Camp Ripley Replace exterior with LED equivalents	300
Minnesota Army National Guard: Camp Ripley 11002 02002 Building Rehabilitation	25

Project	Estimated Financial Obligation ($000s)
Minnesota Army National Guard: Minnesota Austin Armory Building Rehabilitation	200
Minnesota Army National Guard: Minnesota Pipestone Armory Building Rehabilitation	200
Minnesota Army National Guard: Energy Audits- various locations	45
Missouri Army National Guard: Camp Clark FMS - replace hvac	12
Missouri Army National Guard: Carthage Armory -replace hvac	17
Missouri Army National Guard: ISTS-FAC office - replace hvac	14
Missouri Army National Guard: JCAASF - replace hvac	35
Missouri Army National Guard: Nevada Armory - replace hvac	19
Missouri Army National Guard: AVCRAD blade shop - upgrade to T8	10
Missouri Army National Guard: Ft Wood Building 5010 - upgrade to T5	21
Missouri Army National Guard: JCAASF - upgrade to LED	12
Missouri Army National Guard: Kennett Armory - upgrade to T5	11
Missouri Army National Guard: Moberly Armory - upgrade to T8	10
Missouri Army National Guard: Poplar Bluff FMS - upgrade to T8	8
Monticello: Roof Replacement	156
Military Ocean Terminal - Concord: Delamp Building 607	1
Military Ocean Terminal - Sunny Point: Roadway Lighting Control	250
Montana Army National Guard: Combined heat and power for Ft. Harrsion TSSF building.	166
Muncie: Drill Floor Lighting Upgrade	1
North Carolina Army National Guard: Advanced Metering	750
North Dakota Army National Guard: Exterior Parking Lot Lighting Upgrade	51
North Dakota Army National Guard: Fargo Armed Forces Readiness Center Plumbing Fixture Replacement	21
North Dakota Army National Guard: Grand Forks Armed Forces Readiness Center Plumbing Fixture Replacement	12
North Dakota Army National Guard: Minot Armed Forces Readiness Center Plumbing Fixture Replacement	20
North Dakota Army National Guard: Plumbing Fixture Replacement - Bismarck Facilities AASF, Fraine Barracks, & RJB	50
Nebraska Army National Guard: Direct Digital Controls	43
Nebraska Army National Guard: Bury Overhead Electrical Lines	438
New Albany: Drill Floor Lighting Upgrade	1
New Albany FMS: Lighting Upgrade	1

Project	Estimated Financial Obligation ($000s)
New Hampshire Army National Guard: AASF Energy Improvements - Variable Frequency Drive	21
New Hampshire Army National Guard: Statewide UST Removal and Boiler Replacement	65
New Jersey Army National Guard: Convert Oil Tank to Natural Gas Line Picatinny FMS	45
New Jersey Army National Guard: Replace Lighting at Fort Dix Building 3650	71
New Jersey Army National Guard: Upgrade LED lighting at Fort Dix Building 3601	85
New Jersey Army National Guard: Upgrade LED lighting at Fort Dix CST Building	30
New Jersey Army National Guard: Upgrade LED lighting at Lakehurst CSMS	80
New Jersey Army National Guard: Upgrade LED lighting at Lakehurst	40
New Jersey Army National Guard: Upgrade LED lighting at Lawrenceville	45
New Jersey Army National Guard: Upgrade LED lighting at Sea Girt Building #11	80
New Jersey Army National Guard: Upgrade LED lighting at Sea Girt Building #26	80
New Jersey Army National Guard: Upgrade LED lighting with Advance Metering at West Orange CSMS	40
North Vernon: Drill Floor Lighting Upgrade	1
Nevada Army National Guard: Install (DELTA) controls that interface with the current HVAC system at FMS 2 at the Harry Reid Training Center.	43
Nevada Army National Guard: Install Solar tubes in facility; install daylighting	184
Ohio Army National Guard: HVAC Akron Hawkins	418
Ohio Army National Guard: HVAC BrookPark	562
Ohio Army National Guard: HVAC Newark Armory	501
Ohio Army National Guard: Replace interior hanger lighting and perimeter building lighting - Rickenbacker 931	25
Oklahoma Army National Guard: Norman Armed Forces Readiness Center Lighting and Controls	418
Pennsylvania Army National Guard: Fort Indiantown Gap - HVAC Upgrade	130

Project	Estimated Financial Obligation ($000s)
Pennsylvania Army National Guard: Fort Indiantown Gap - HVAC Upgrade	620
Pennsylvania Army National Guard: Fort Indiantown Gap - LED Lighting Upgrade	810
Pennsylvania Army National Guard: HMP Building #10 Lighting Upgrade	33
Pennsylvania Army National Guard: New Castle FMS Lighting Upgrade	10
Pennsylvania Army National Guard: Williamsport FMS Lighting Upgrade	8
Pennsylvania Army National Guard: Fort Indiantown Gap - NG Conversion	156
Pennsylvania Army National Guard: Fort Indiantown Gap - NG Conversion	186
Pennsylvania Army National Guard: Lewisburg Natural Gas Pipeline	98
Parks Reserve Forces Training Area: Energy Management Control System	4,150
Parks Reserve Forces Training Area: High Voltage Electrical replace to Underground Phase 1	4,000
Readiness & Regional TNG CTR, Northfield: Insulate and air seal wall to roof intersection	12
Readiness & Regional TNG CTR, Northfield: CO2 Demand Control for ventilation	115
Readiness & Regional TNG CTR, Northfield: Retro-commission sequence of operations	27
Readiness & Regional TNG CTR, Northfield: Conversion to LED lighting for interior and exterior	350
Readiness & Regional TNG CTR, Northfield: Install VFD on primary heating hot water pump(s) monitor & control with BAS	32
Red River Army Depot: LED light pilot project	24
Richmond: Drill Floor Lighting Upgrade	1
Rockville: Lighting Upgrade	1
Roseburg Armory: Armory energy retrofit	1,940
Salem: Drill Floor Lighting Upgrade	1
Salem Army Aviation Support Facility - Hangar 1: Energy Retrofit, Building Envelope Salem AASF Hangar 1	45
Salem Army Aviation Support Facility - Hangar 2: DDC Salem AASF, Hgr 2	109

Project	Estimated Financial Obligation ($000s)
Salem Army Aviation Support Facility - Hangar 2: HVAC Replacement Salem AASF, Hgr 2	89
Salem FMS: Lighting Salem FMS	108
Salem JFHQ: Lighting Upgrade Salem JFHQ	411
South Carolina Army National Guard: HVAC Upgrade	98
South Carolina Army National Guard: HVAC Upgrade	98
South Carolina Army National Guard: HVAC Upgrade	99
South Carolina Army National Guard: Lighting Retrofit	53
Schofield Barracks: Lightning Towers - Exterior Parking Lots LED Conversion & Interior LED Lighting Retrofit	500
Scottsburg: Drill Floor Lighting Upgrade	1
Scranton Army Ammunition Plant: Replace Subway Shot Blast Equipment	1,390
Scranton Army Ammunition Plant: Small batch heat treatment system	5,400
Scranton Army Ammunition Plant: Replace furnace controls and combustion systems to improve efficiency and reduce maintenance and scrap	3,510
Scranton Army Ammunition Plant: Quick Die Change System	2,200
Scranton Army Ammunition Plant: Smaller Boiler for Process Heat during non-heating season	622
South Dakota Army National Guard: Ft. Meade Light Motion Sensors	4
South Dakota Army National Guard: Statewide Light Motion Sensors	23
South Dakota Army National Guard: Camp Rapid 801 Upgrade to DDC Controls	40
South Dakota Army National Guard: Yankton Upgrade to DDC Controls	28
South Dakota Army National Guard: Aberdeen AF Readiness Center DDC Controls and Lighting to LED	165
South Dakota Army National Guard: Statewide Work orders to repair items with energy efficient	37
Seymour: Drill Floor Lighting Upgrade	1
Shelbyville: Drill Floor Lighting Upgrade	1
Shelbyville Army Aviation Support Facility: Roof Replacement	483
Shelbyville Army Aviation Support Facility: Lighting Upgrade	1
Shelbyville FMS: Lighting Upgrade	1

Project	Estimated Financial Obligation ($000s)
Sierra Army Depot: Install bio-phase change material in building 303	630
Terre Haute: Roof Replacement	209
Terre Haute: Drill Floor Lighting Upgrade	1
Tobyhanna Army Depot: Replace Steam Make Up Air Heaters with Natural Gas Heaters	2,977
Tooele Army Depot: Energy Management Control System	5,500
Tooele Army Depot: Lighting Upgrades in 9 buildings	180
Tooele Army Depot: Microgrid	4,700
Texas Army National Guard: Fort Bliss, Dyess, NW Houston, Fredericksburg DDC Retro commissioning	39
Texas Army National Guard: Camp Mabry Building. 75 HVAC Upgrades	329
Texas Army National Guard: Camp Bowie Cantonment Area T12 Replacement	151
Texas Army National Guard: Camp Bowie Exterior Lighting Replacement	103
Texas Army National Guard: Camp Mabry Building 8 - T12 Retrofit	97
Texas Army National Guard: Camp Mabry Exterior Street Lighting Replacement	58
Texas Army National Guard: Ellington Field Readiness Center - T12 Lighting Replacement	116
Texas Army National Guard: Interior T12 Lighting Upgrades Various Locations	39
Texas Army National Guard: North Fort Hood Exterior Lighting Upgrades	187
Texas Army National Guard: Various Exterior Lighting	55
Texas Army National Guard: Bryan FMS Energy Major Maintenance	36
Texas Army National Guard: Westheimer Shop Air Compressor Upgrade	14
Tyndall - Indianapolis: Drill Floor Lighting Upgrade	1
Tyndall - Indianapolis: Steam Heat Repairs	15
United States Army Garrison - Adelphi: Install Ground Source Heat Pump - Building 103	472
United States Army Garrison - Ansbach: Replace Hot Water Boiler	75
United States Army Garrison - Ansbach: Install Radiant Heat In Building 9011	105

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Benelux: Integrate EMCS With Lodge Reservation System	100
United States Army Garrison - Benelux: Repair HVAC Control Systems At Chievres Air Base	150
United States Army Garrison - Benelux: Replace Energy Inefficient Lighting At Chievres Air Base	100
United States Army Garrison - Camp Casey: Replace Existing Fuel Oil Fired Energy Powers To Natural Gas System At Camp Casey - Phase 4	690
United States Army Garrison - Camp Casey: Replace Existing Fuel Oil Fired Energy Powers To Natural Gas System At Camp Casey - Phase 5	750
United States Army Garrison - Camp Casey: Replace Existing Fuel Oil Fired Energy Powers To Natural Gas System At Camp Casey - Phase 6	750
United States Army Garrison - Dugway: Replace Fossil Fuel Boilers With Electric Furnaces	1,127
United States Army Garrison - Dugway: Repair / Replace Weather-stripping	691
United States Army Garrison - Dugway: Install Energy Management Control System	3,521
United States Army Garrison - Dugway: Replace Fossil Fuel Heaters With Electric Infrared Heaters	723
United States Army Garrison - Dugway: Install Lighting Improvements Various Buildings (EEAP)	663
United States Army Garrison - Dugway: Replace Street Lights With LED Lights	709
United States Army Garrison - Fort A P Hill: Install an EIFs On Barracks And DFAC - Phase One	683
United States Army Garrison - Fort A P Hill: Install an EIFs on Barracks And DFAC - Phase Three	683
United States Army Garrison - Fort A P Hill: Install Energy Efficient Windows - Phase Three	312
United States Army Garrison - Fort A P Hill: Install Energy Efficient Windows - Phase Two	389
United States Army Garrison - Fort Belvoir: Decentralize Steam Heating Plant, Building 3138 Davison AAF	2,018
United States Army Garrison - Fort Belvoir: Central Energy Monitoring Control System	1,000

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Fort Belvoir: Replace Failing HVAC Systems , Buildings 1445, 1464-1466	3,989
United States Army Garrison - Fort Belvoir: Install Lighting Controls, Motion Sensors In Admin Areas, Conference Rooms	50
United States Army Garrison - Fort Belvoir: Decentralize Heating Plant, Building 247	1,000
United States Army Garrison - Fort Belvoir: Decentralize Steam Plant Building 3233, Davison Army Airfield	1,453
United States Army Garrison - Fort Benning: Add Co2 Sensors To UMCS	316
United States Army Garrison - Fort Benning: Add DHW Controls To UMCS	432
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 1	298
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 2	283
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 3	353
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 4	364
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 5	660
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 6	706
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 7	491
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 8	574
United States Army Garrison - Fort Benning: Add Facilities To UMCS, Phase 9	368
United States Army Garrison - Fort Benning: LED Lighting Retrofit Buildings 2411, 2386	220
United States Army Garrison - Fort Benning: Replace Hid, Mh And Hps With LED At Entry Points, And Other Facilities	545
United States Army Garrison - Fort Benning: Upgrade Building Security Lighting With LED	549
United States Army Garrison - Fort Benning: Provide Compressed Natural Gas(Cng) Filling Point	725

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Fort Benning: Provide Solar Desiccant Dehumidification	348
United States Army Garrison - Fort Bliss: Building 1001 Boiler And Controller Replacement	179
United States Army Garrison - Fort Bliss: Building 1003 Boiler And Controller Replacement	179
United States Army Garrison - Fort Bliss: Retro-Commission 11 Buildings - FY2012 EEAP Report	412
United States Army Garrison - Fort Bliss: Repair HVAC, Vehicle Maintenance Shop, Building 2624	482
United States Army Garrison - Fort Bragg: Replace Failing Chiller No. 4 At Soldier Support Center Chiller Plant, Building 4-2641	1,118
United States Army Garrison - Fort Bragg: Replace Failing Equipment For H-3014	487
United States Army Garrison - Fort Bragg: Replace/Repair Failed Weather Stripping On Doors And Windows	300
United States Army Garrison - Fort Bragg: Integrate Pope AAF Buildings Into UMCS	500
United States Army Garrison - Fort Bragg: UMCS Integration 1-3346 And Upgrade HVAC DDCs	275
United States Army Garrison - Fort Bragg: UMCS Integration 2-1133 And Upgrade HVAC DDCS	279
United States Army Garrison - Fort Bragg: UMCS Integration 8-5050 And Upgrade HVAC DDC	821
United States Army Garrison - Fort Bragg: UMCS Integration D-2004 And Upgrade HVAC DDCS	275
United States Army Garrison - Fort Bragg: Replace Failing Boiler, AHU & AC With Heat Pump C-5339	250
United States Army Garrison - Fort Bragg: Replace Failing HVAC Controls 1-1242	200
United States Army Garrison - Fort Bragg: Replace Failing HVAC Equipment & Controls In E-3556	190
United States Army Garrison - Fort Bragg: Install GFE Chiller At 82nd Chiller Plant, Building C-2337	397
United States Army Garrison - Fort Bragg: Upgrade Failing Hid High Bay Lights At 11 PAAF Hangers	1,021
United States Army Garrison - Fort Bragg: Upgrade Failing Hid High-Bay Lighting In Five (5) SAAF Facilities	729

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Fort Bragg: Upgrade Failing Hid Lighting In 5 Gyms	320
United States Army Garrison - Fort Bragg: Replace Emergency Generator For Socom CEP	896
United States Army Garrison - Fort Bragg: UMCS Integration 4-1431 And Upgrade HVAC DDC	330
United States Army Garrison - Fort Bragg: Modify Sotf Boilers From Fuel Oil To Natural Gas	1,145
United States Army Garrison - Fort Campbell: Repair Building Systems- Retro Commissioning	1,000
United States Army Garrison - Fort Campbell: Repair Chiller Plants By The Installation Of Variable Speed Drives	105
United States Army Garrison - Fort Campbell: Repair Compressors	71
United States Army Garrison - Fort Campbell: Repair / Install T8 Linear Fluorescent Lighting Fort Campbell	855
United States Army Garrison - Fort Campbell: Repair Inefficient And Failing Cross Walk Lighting	274
United States Army Garrison - Fort Campbell: Repair Inefficient And Failing Parking Lot Lighting	960
United States Army Garrison - Fort Campbell: Repair Inefficient And Failing Street Lighting	1,029
United States Army Garrison - Fort Campbell: Repair Lighting Systems By Installing Occupancy Sensors Fort Campbell	1,324
United States Army Garrison - Fort Carson: Install Water Side Economizer Building 1550	164
United States Army Garrison - Fort Carson: Install Water Side Economizer For 4 Facilities	700
United States Army Garrison - Fort Carson: Power Factor Correction Shunt Reactors	159
United States Army Garrison - Fort Carson: Phase 1 - Replace Mech Room Equipment In 12 Benham Blair Barracks	1,500
United States Army Garrison - Fort Carson: Install Blending Stations For 9 Facilities	58
United States Army Garrison - Fort Detrick: Replace Critical Cooling Tower, Building 1673, Usage Ft Detrick	750
United States Army Garrison - Fort Detrick: Repair HVAC, Admin Facs, Building 201/243	750
United States Army Garrison - Fort Gordon: Replace Central Energy Plant Manual Controls With Automated Controls	2,720

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Fort Gordon: Repair HVAC Controls, Auto-Aid Inst Building-25801, Cobb Hall, Usa Signal Coe	273
United States Army Garrison - Fort Gordon: Replace Toggle Switches With Occupant Sensor	470
United States Army Garrison - Fort Hamilton: Re-Tune(Retro-Commission)HVAC Controls	276
United States Army Garrison - Fort Hamilton: Repair HVAC, B212, USAR Center	900
United States Army Garrison - Fort Hamilton: Upgrade Existing HVAC Equipment	373
United States Army Garrison - Fort Hood: Controls-VSD Retrofit	1,014
United States Army Garrison - Fort Hood: Utilize Variable Speed Secondary Pumps At Building 21022 And Add Building To Central Plant (Building 21022)	417
United States Army Garrison - Fort Hood: Replace Multi-Zone AHU, Condensing Unit & Controls	237
United States Army Garrison - Fort Hood: UMCS Integration Phase 1 For ~46 Buildings	702
United States Army Garrison - Fort Hood: 10017 Chiller Replacement W/ VSD	1,085
United States Army Garrison - Fort Hood: 33007 Chiller Replacement W/ VSD	334
United States Army Garrison - Fort Hood: HVAC Replacement And Add DDC Controls	356
United States Army Garrison - Fort Hood: Replace Light Fixtures For ~19 Buildings	526
United States Army Garrison - Fort Hood: Install Split System And Sensors, HVAC And Boiler Replacement	570
United States Army Garrison - Fort Hood: Building 37015 - Add Buildings To Central Plant	400
United States Army Garrison - Fort Huachuca: Repair Lights, Exch Ser Outlet, Building 52045, 68718	17
United States Army Garrison - Fort Irwin: Construct Insulation In 30 Augmented Facilities	2,400
United States Army Garrison - Fort Irwin: Low Cost/No Cost For A Total Of 1300 Inefficient Light Fixtures Must Replace All Street, Parking Lot And Wall-Pack Lighting (1000, 400, 250 And	3,671

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Fort Irwin: Low Cost/No Cost For Total Of 90 Buildings To Replace Facility Lighting To High-Efficiency Lighting To Include Dimming	3,480
United States Army Garrison - Fort Irwin: Replace Failing Existing Pedestrian Lights With Off Grid Solar Light	930
United States Army Garrison - Fort Jackson: Repair, Insulate Perimeter Slab Post-Wide	680
United States Army Garrison - Fort Jackson: Install Boiler Sequencing Control On Boilers	23
United States Army Garrison - Fort Jackson: Add Natural Gas Furnaces To Existing Heat Pumps Plus Controls For Duel-Fuel Operation For 14 Buildings	191
United States Army Garrison - Fort Jackson: Replace Existing Street And Parking Lights With LEDs	1,856
United States Army Garrison - Fort Jackson: Cep Improvements	245
United States Army Garrison - Fort Lee: Recommission Various Buildings Post wide, Dpw	1,401
United States Army Garrison - Fort Lee: Recommission Various Buildings Postwide, Dpw	1,401
United States Army Garrison - Fort Lee: Repl Extr Lighting W/LED Postwide, Dpw	330
United States Army Garrison - Fort Polk: Install Phase 1 Facilities To Fort Polk UMCS (Phase 1 Of 4)	300
United States Army Garrison - Fort Polk: Repair / Replace HVAC System, Isr Component HVAC Rating Is Q-4, Building B1456, After Action Review Theater, Operations Grp	2,907
United States Army Garrison - Fort Polk: Repair / Replace HVAC System, Isr HVAC Component Rating Is Q-4, Simulator Fac, B7679, Ops Group	3,510
United States Army Garrison - Fort Polk: Repair/ Replace HVAC System & Controls, Isr HVAC Component HVAC Rating Is Q-4, B4374, Dir Logistics Trans & Receiving	4,477
United States Army Garrison - Fort Riley: EMCS Repair And Recommissionioning, 91 Buildings	1,698
United States Army Garrison - Fort Riley: Building 200 Repair Heat Pumps And Boiler	893
United States Army Garrison - Fort Riley: Dpw Lighting	284
United States Army Garrison - Fort Riley: Repair High Bay Lighting	114

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Fort Riley: Repair Lighting, 30 Range Facilities	301
United States Army Garrison - Fort Riley: Reserve Barracks Lighting	70
United States Army Garrison - Fort Riley: Temf Lighting Replacement	1,572
United States Army Garrison - Fort Rucker: LED Area Lighting Phase 3	440
United States Army Garrison - Fort Rucker: Replace Wall Packs And Parking Lot Lighting With LED (Phase 2)	650
United States Army Garrison - Fort Rucker: Replace Wall Packs Post Wide With LED (Phase 1)	351
United States Army Garrison - Fort Sill: Control Kitchen Hoods Air Flow, Building 5684	32
United States Army Garrison - Fort Sill: Lighting, Building 3040	5
United States Army Garrison - Fort Stewart: Replace Remote Sensor On Streetlights	290
United States Army Garrison - Grafenwoehr: Energy Efficient Renovation Of Building 224	313
United States Army Garrison - Grafenwoehr: Upgrade Overaged Electrical/Utility System To Energy Efficient Standards, Building 763, Nato School	500
United States Army Garrison - Grafenwoehr: Install Radiant Heating For Building 119 (Gym)	65
United States Army Garrison - Grafenwoehr: Repair Inefficient Air Handling Units At Various Buildings	685
United States Army Garrison - Grafenwoehr: Repair/Replace Inefficient Hot Air Ventilation Systems At Field Camp Shower/Toilet Facilities By Energy Efficient Heat Recovery System & Install Intelligent Energy Meters (Heat, Electricity, Water), Buildings 2105, 2145, 2185	500
United States Army Garrison - Grafenwoehr: Repair/Replace Inefficient Hot Air Ventilation Systems At Field Camp Shower/Toilet Facilities By Energy Efficient Heat Recovery System & Install Smart Energy Meters (Heat, Electricity, Water), Buildings 2325, 2225 And 2245	500
United States Army Garrison - Grafenwoehr: Place T8 Fluorescent Lights With LED And Install Motion Sensors And/or Photo Electric Timer Switches In Hallways Of Admin Buildings 244, 301, 329 And 445.	23

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Grafenwoehr: Repair Inefficient Exit Lighting With LED Lighting Fixtures	745
United States Army Garrison - Grafenwoehr: Repair/Replace Inefficient Exterior Lighting	501
United States Army Garrison - Grafenwoehr: Replace All Fluorescent Street Lighting With LED Throughout The Usage Garmisch	200
United States Army Garrison - Grafenwoehr: Replace All Street Lighting With LED Lighting Throughout Camp Aachen And Algier	300
United States Army Garrison - Grafenwoehr: Replace All Street Lighting With LED Lighting Throughout Camp Normandy	84
United States Army Garrison - Grafenwoehr: Replace All Street Lighting With LED Lighting Throughout The Usage Grafenwoehr Main Post Main Parking Lots	242
United States Army Garrison - Grafenwoehr: Replace T8 Fluorescent Lights With LED And Install Motion Sensors And/or Photo Electric Timer Switches In Hallways Of All 500 Series Admin Buildings (Cat Code 6105000)	28
United States Army Garrison - Grafenwoehr: Replace T8 Fluorescent Lights With LED And Install Motion Sensors And/or Photo Electric Timer Switches In Hallways Of All Battalion And Co Hq Buildings 900 Series	308
United States Army Garrison - Grafenwoehr: Insulate The Roof And Upgrade Heating System, Electrical System As Well As Uemcs, Building 392	300
United States Army Garrison - Grafenwoehr: Upgrade Chp Poellnricht Into Bionaturalgas Heat/Power Chp	875
United States Army Garrison - Heidelberg: Installation Of Energy Efficient Lights And Light Control	480
United States Army Garrison - Heidelberg: Installation Of Energy Efficient Lights And Light Control	480
United States Army Garrison - Heidelberg: Multi, Replace Luminaires With T5	250
United States Army Garrison - Heidelberg: Retrofit Street Lights With LED Luminaires	500
United States Army Garrison - Natick: Replace HVAC System In Building 36	650
United States Army Garrison - Natick: Replace Steam Heating System With Freakiness Centered Hot Water	165

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Picatinny: Replacement Windows/Doors. (Phase 2)	186
United States Army Garrison - Picatinny: Retro-commissioning Of Major Buildings	660
United States Army Garrison - Picatinny: Install Programmable Control Phase 2	190
United States Army Garrison - Picatinny: Replace HVAC Duct Insulation, B321	34
United States Army Garrison - Picatinny: Replace Old Inefficient HVAC Equipment	279
United States Army Garrison - Picatinny: Replace Old Inefficient HVAC Equipment Admin	507
United States Army Garrison - Presidio Of Monterey: Recommision Building 848 And 842	103
United States Army Garrison - Presidio Of Monterey: Retrofit Dual-Duct Building 4399	350
United States Army Garrison - Presidio Of Monterey: Retrofit HVAC DDC Ph 2	299
United States Army Garrison - Presidio Of Monterey: Retrofit HVAC DDC Phase 3	407
United States Army Garrison - Presidio Of Monterey: Low Cost Lighting Ecms	130
United States Army Garrison - Presidio Of Monterey: Replace Parking Lights, Phase 2	174
United States Army Garrison - Presidio Of Monterey: Replace T12 To T8 Lights, Building 4399	35
United States Army Garrison - Redstone: Replace T12 Lighting With Super T8 In Industrial Buildings	512
United States Army Garrison - Rock Island: Repair By Replacement Street Lights With LED , Oh Elect Lines, Str Eleco, Usage (Pw)	356
United States Army Garrison - Stuttgart: Replace 118 Metal Halide Parking Lot Lights With LED	250
United States Army Garrison - Stuttgart: Repair Heat Supply Lines Patch	9,000
United States Army Garrison - Vicenza: Replace Old Dehumidifying Sys B5090	216
United States Army Garrison - Vicenza: Replace Old Dehumidifying Sys B5110	216

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Vicenza: Replace Old Dehumidifying Sys B5120	216
United States Army Garrison - Vicenza: Replace Del Din Street And Perimeter Lighting	886
United States Army Garrison - Vicenza: Replace Exterior Ball Lights Fixtures Villaggio	462
United States Army Garrison - Vicenza: Replace Longare Perimeter Lighting	83
United States Army Garrison - White Sands: Replace Chiller At Building 1526	150
United States Army Garrison - White Sands: Replace Chiller At Building 1530	150
United States Army Garrison - White Sands: Replace Chiller At Building 272	128
United States Army Garrison - White Sands: Replace Lighting With LED & Power Strip Timers	150
United States Army Garrison - White Sands: Replace Boiler, Motors & Exterior Lighting	150
United States Army Garrison - Wiesbaden: Building.1066 Replace Old Heat Hot Air Blowers With Radiant Heat Panels	84
United States Army Garrison - Wiesbaden: Building.1218 Replace Old Heating System With Radiant Heat Panels	145
United States Army Garrison - Wiesbaden: Replace 180 Ea Street And Parking Lot Lights 150W With 68 W LED Lights	140
United States Army Garrison - Wiesbaden: Replace 230 Ea Exterior Building Lights With 28 W LED Lights	132
United States Army Garrison - Wiesbaden: Replace 600 Ea 150W Street Lights With 68W LED Lights	465
United States Army Garrison - Wiesbaden: Qutm Replace Old Heat Air Blowers W/ Radiant Heat Panels And Efficiency LED Lights	204
UTES Building 8, Ethan Allen Firing Range: Complete LED Conversion - interior	28
Virginia Army National Guard: AASF 3901 Fan Coil Upgrades	453
Virginia Army National Guard: Christiansburg HW/Controls/Meters	426
Virginia Army National Guard: DDC on Equipment	9
Virginia Army National Guard: Fire Finder Radar Install Controls on Equip	105
Virginia Army National Guard: FMS 1-15 Control Upgrades	671
Virginia Army National Guard: Ft. Pickett ASP Energy Audit/SURVEY	24

Project	Estimated Financial Obligation ($000s)
Virginia Army National Guard: Ft. Pickett Efficient Wash Station	82
Virginia Army National Guard: Ft. Pickett Ltg/Controls/Meters	82
Virginia Army National Guard: Ft. Pickett MATES Lighting	584
Virginia Army National Guard: Gen Sets/DR/Energy Security - Statewide	598
Virginia Army National Guard: Harrisonburg Controls/Meters	171
Virginia Army National Guard: Leesburg HVAC Upgrades	76
Virginia Army National Guard: Martinsville HW/Controls/Meters	383
Virginia Army National Guard: Norfolk Controls/Meters	67
Vincennes: Drill Floor Lighting Upgrade	1
Washington Army National Guard: Geiger Field 301 - Replace existing condensing unit with high-efficiency model; Replace existing furnaces with high-efficiency model; Replace natural gas water heater with on-demand water heater; Replace insulation on suction lines for condensing unit	36
Washington Army National Guard: Sedro Woolley - Replace storage-type water heater with on-demand water heater; Replace unit heater in shop area with radiant heat on timer; Replace Metal Halide and Exterior lighting with LEDs	78
Washington Army National Guard: Camp Murray & Kent - Connect smart meters to network for real-time monitoring purposes	83
Washington: Drill Floor Lighting Upgrade	1
Watervliet Arsenal: Metasys System Upgrade, Post	300
Watervliet Arsenal: Replace Roof, B40-6	179
Watervliet Arsenal: Upgrade Lighting, B35 High Bay	91
Wisconsin Army National Guard: Rehab Boilers - Waukesha	102
Wisconsin Army National Guard: Replace HW Boiler	90
Wisconsin Army National Guard: Replace DDC-CSMS Camp Williams	170
Wisconsin Army National Guard: Replace Security Lighting-Various Locations	84
Winchester: Drill Floor Lighting Upgrade	1
Winchester Motor Vehicle Storage Building: Lighting Upgrade	1
Wyoming Army National Guard: Statewide Utility Meter Installation	1,835
Renewable Energy	**53,331**
88th Regional Support Command: Install solar photovoltaic system for facility 100 KW	420

Project	Estimated Financial Obligation ($000s)
88th Regional Support Command: Install solar photovoltaic system for facility 100 KW	420
88th Regional Support Command: Install solar photovoltaic system for facility 125KW	500
88th Regional Support Command: Install solar photovoltaic system for facility 150 KW	620
89th Regional Support Command: Install solar photovoltaic system for facility 100 KW	420
99th Regional Support Command: Solar Lighting Parking Lot	134
99th Regional Support Command: Solar Lighting Parking Lot	180
99th Regional Support Command: Solar Lighting Parking Lot	220
9th MSC: Install a 144 KW photovoltaic system to support net zero initiative	228
Arizona Army National Guard: 110KW PV Rooftop Array	320
Arizona Army National Guard: 60KW PV Rooftop Array	175
Arizona Army National Guard: 85KW PV Covered Parking Array	285
Arizona Army National Guard: 9KW PV Rooftop Array	32
Building 15, Ethan Allen Firing Range: 43 kW roof mounted array	50
Building CHP 4, Ethan Allen Firing Range: 114 kW roof mounted array	430
Camp Atterbury: Six Solar Exterior Lighting	18
Camp Atterbury: Three Solar Exterior Lighting	9
Camp Henry: Request To Install Solar Tube Lighting System For Building. S-665, 326, 327, 510, And 601 At Camp Carroll	1,440
Georgia Army National Guard: Columbus FMS Solar PV	117
Georgia Army National Guard: Dublin FMS Solar PV	161
Georgia Army National Guard: Macon-Russell Solar PV - Title 1 only	42
Georgia Army National Guard: Washington FMS Building #3 Solar PV	147
Georgia Army National Guard: Winder FMS Solar PV	187
Hawaii Army National Guard: Renewable Energy System	350
Kansas Army National Guard: Hangar 682 - Solar Wall	450
Kentucky Army National Guard: 107 KW Roof Mounted PV WHFRTC 300, 302, 303	292
Kentucky Army National Guard: 162 KW roof Mounted PV WHFRTC CHP1	321
Kentucky Army National Guard: 36KW Roof Mounted PV USP&FO	99

Project	Estimated Financial Obligation ($000s)
Kentucky Army National Guard: Burlington Readiness Center 203 KW Roof Mounted PV	383
Kentucky Army National Guard: Cynthiana Armory 40 KW Roof Mounted PV, Upgrade Exterior Lighting to LED with photo motion sensors, Upgrade Assembly Hall Lighting to LED	126
Louisiana Army National Guard: Esler Field Solar Restoration and Expansion	649
Michigan Army National Guard: Camp Grayling Virtual Pipeline Master Plan	225
Michigan Army National Guard: Fort Custer 137 kW Solar Array	406
Michigan Army National Guard: Camp Grayling Wind Funnel Project	855
Michigan Army National Guard: Camp Grayling Wind Funnel Project	855
Michigan Army National Guard: Fort Custer Wind Funnel Project	855
Minnesota Army National Guard: Camp Ripley Wind resource study	40
Missouri Army National Guard: Camp Clark Building 131 - 25 kw solar	176
Nebraska Army National Guard: Solar Lighting Parking Lot	76
Nebraska Army National Guard: Solar Lighting Parking Lot	333
NJ Army National Guard: 600 kw solar array Sea Girt	2,764
New Jersey Army National Guard: Solar wall system and reskin Picatinny FMS	1,100
Nevada Army National Guard: Provide 180 KW Photovoltaic System to serve the NVARNG Las Vegas FMS	776
Pennsylvania Army National Guard: Fort Indiantown Gap - United States Property and Fiscal Office	67
Pendleton Army Aviation Support Facility: 150KW Pendleton AASF	815
Readiness & Regional TNG CTR, Northfield: Install 4, staged, wood pellet boilers with silo storage	410
South Dakota Army National Guard: AASF Passive Heating Solar Wall	203
South Dakota Army National Guard: Brookings FMS Passive Heating Solar Wall	89
South Dakota Army National Guard: Camp Rapid 456 Passive Heating Solar Wall	61
South Dakota Army National Guard: Mitchell CSMS Passive Heating Solar Wall	104

Project	Estimated Financial Obligation ($000s)
South Dakota Army National Guard: SF UTES Passive Heating Solar Wall	181
Tennessee Army National Guard: Solar Lighting- Camden Readiness Center	67
Tennessee Army National Guard: Solar Lighting- Columbia FMS Fueling Station	11
Tennessee Army National Guard: Solar Lighting- Dresden Readiness Center	67
Tennessee Army National Guard: Solar Lighting- Humboldt Readiness Center	55
Tennessee Army National Guard: Solar Lighting- Jefferson City Readiness Center	77
Tennessee Army National Guard: Solar Lighting- McKenzie Readiness Center	67
Tennessee Army National Guard: Solar Lighting- Milan Readiness Center	54
Tennessee Army National Guard: Solar Lighting- Rogersville Readiness Center	77
Tennessee Army National Guard: Solar Lighting- Sevierville (Pigeon Forge) Readiness Center	77
Tennessee Army National Guard: Solar Lighting- Trenton Readiness Center	69
Tennessee Army National Guard: Solar Lighting- VTS Milan CSMS Complex & Fuel Station	130
Tooele Army Depot: Wind Turbine	5,700
United States Army Garrison - Ansbach: Install Solar Heating System For Building 6504	350
United States Army Garrison - Fort Benning: Solar Thermal Water Heating For Building 2754	502
United States Army Garrison - Fort Benning: Solar Water Heating, Building 2762	502
United States Army Garrison - Fort Benning: Solar Water Heating, Building 2760	502
United States Army Garrison - Grafenwoehr: Install Photovoltaic System At Camp Mehlhaube	750
United States Army Garrison - Heidelberg: Solar Heat Hot Water Generation, Barracks	50
United States Army Garrison - Picatinny: Solar PV 390K Renewable	959

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Stuttgart: Install Solar Panels Building 185	415
United States Army Garrison - Stuttgart: Install Solar Panels Building 186	415
United States Army Garrison - Stuttgart: Install Solar Panels Building 187	415
United States Army Garrison - Stuttgart: Install Solar Panels Building 301	341
United States Army Garrison - Stuttgart: Install Solar Panels Building 302	369
United States Army Garrison - Stuttgart: Install Solar Panels Building 3313	197
United States Army Garrison - Stuttgart: Install Solar Panels Building 3320	590
United States Army Garrison - Vicenza: Install 100 KW PV On Central Energy Plant Building 55	222
United States Army Garrison - Vicenza: Install 100 KW PV System On B201	225
United States Army Garrison - Vicenza: Install 115KW PV On Community Services Building 173	255
United States Army Garrison - Vicenza: Install 120KW PV On B57	265
United States Army Garrison - Vicenza: Install 150KW Photovoltaic On Cdc/Sas B-703 Roof Ph 1	499
United States Army Garrison - Vicenza: Install 150KW Photovoltaic On Cdc/Sas B-703 Roof Ph 4	499
United States Army Garrison - Vicenza: Install 200 KW PVs Parking Garage B8 Ph 1	526
United States Army Garrison - Vicenza: Install 200KW PV Parking Garage B14 Ph 1	526
United States Army Garrison - Vicenza: Install 214 KW PV On Motor Pool Building 52	474
United States Army Garrison - Vicenza: Install 214KW PV Motor Pool Building 62	474
United States Army Garrison - Vicenza: Install 222KW PV Gym Building 34	488
United States Army Garrison - Vicenza: Install 300KW PV Barracks Building 23 Ph 1	665
United States Army Garrison - Vicenza: Install 300KW PV Barracks Building 24 Ph 1	665

Project	Estimated Financial Obligation ($000s)
United States Army Garrison - Vicenza: Install 300KW PV Motor Pool Building 82 Ph 1	665
United States Army Garrison - Vicenza: Install 368KW PV Company Operations Building 50	809
United States Army Garrison - Vicenza: Install 368KW PV Company Operations Building 60	809
United States Army Garrison - Vicenza: Install 368KW PV Company Operations Building 70	809
United States Army Garrison - Vicenza: Install 368KW PV Company Operations Building 80	809
United States Army Garrison - Vicenza: Install 50 KW PV On B202	100
United States Army Garrison - Vicenza: Install 72KW PV On Dining Facility Building 20	160
United States Army Garrison - Vicenza: Install Photovoltaic Panels At Asp7 Phase 1	843
United States Army Garrison - Wiesbaden: Install Photovoltaic Panels On Roof At Building.1205	507
United States Army Garrison - Wiesbaden: Install Photovoltaic System On New Parking Garage Building. 1004	1,805
United States Army Garrison - Yuma Proving Ground: Repair 450 KW Solar PV Array	350
Utah Army National Guard: Camp Williams 9000 Series Solar Arrays	747
Utah Army National Guard: Camp Williams Jacobs Canal 1 Solar Arrays	747
Utah Army National Guard: Camp Williams Jacobs Canal 2 Solar Arrays	747
Utah Army National Guard: Camp Williams Solar Infrastructure	280
Utah Army National Guard: Camp Williams Southwest Solar Arrays	747
Utah Army National Guard: Energy Solar PV Array At Draper Complex	713
Utah Army National Guard: Solar PV Array At Blanding Armory	112
Utah Army National Guard: St George Solar PV Array	500
Utah Army National Guard: West Jordan Aasf Solar Array	747
Utah Army National Guard: West Jordan Armory Solar Array	560
Utah Army National Guard: Design For Wind Turbine Replacement 220KW To 1.5Mw	350
Virginia Army National Guard: Ft. Pickett MOU for Bio Mass/SURVEY	386
Virginia Army National Guard: Fairfax Install Solar Panels	320

Project	Estimated Financial Obligation ($000s)
Virginia Army National Guard: Fredericksburg Install Solar Panels	240
Virginia Army National Guard: Lynchburg Install Solar Panels	106
Virginia Army National Guard: Manassas Install Solar Panels	160
Water Conservation	**26,636**
81st Regional Support Command: UTILITIES MODERNIZATION PLUMBING	142
81st Regional Support Command: UTILITIES MODERNIZATION PLUMBING	289
9th Mission Support Command: Design, procure and install a rainwater catchment	532
Colorado Army National Guard: Building automation controls and rain/wind sensors for irrigation systems at several facilities statewide, including: Aurora Readiness Center, AASF, Denver Readiness Center, Durango Readiness Center, Grand Junction Readiness Center, JFHQ, Montrose Readiness Center, Pueblo Readiness Center and Windsor Readiness Center.	36
Corpus Christi Army Depot: Modular Water-Cooled Plant	1,700
Fort Buchanan: Water System Leak Detection - Advanced	350
Fort Buchanan: Hydraulic Water Simulation	482
Fort Hunter Liggett: Building 318 Sewer system	682
Fort Hunter Liggett: Water and Sanitary Sewer Systems Study – PN #82297	800
Fort McCoy: Upgrade North Post drinking water system and replace non-compliant wells	2,700
Georgia Army National Guard: Building 1 Low-flow plumbing fixtures	0
Georgia Army National Guard: Building 53 low-flow plumbing fixtures	0
Georgia Army National Guard: Building 54 low-flow plumbing fixtures	0
Milan Army Ammunition Plant: Valve, Hydrant and Water Infrastructure Replacement on 3 production lines;	2,286
Minnesota Army National Guard: Camp Ripley Faucet aerators	2
Pueblo Chemical Depot: SCADA system	99
Pueblo Chemical Depot: South Distribution Valve and Hydrant Replacement	286
Pueblo Chemical Depot: Water Distr. System and Tank Repair, South Campus	580

Project	Estimated Financial Obligation ($000s)
Pueblo Chemical Depot: Water Distribution System Repair, North Campus	348
Pueblo Chemical Depot: Well 13 Relocation	300
Scranton Army Ammunition Plant: Replace Production Shop Wastewater Treatment System	723
Tooele Army Depot: Replace Branch Water Lines	4,400
Tooele Army Depot: Replace Main Water Lines	4,750
Tooele Army Depot: Replace Water Tanks	2,550
Texas Army National Guard: Camp Bowie Recirculating Washrack	635
United States Army Garrison - Fort Bliss: Conserve Water & Energy By Installing A Chlorinator	246
United States Army Garrison - Fort Lee: Replace Water Saving Fixtures In Barracks	809
United States Army Garrison - Redstone: Building 4500 Pass Thru Cooling	539
United States Army Garrison - Wiesbaden: Water Collecting And Storage System	350
Watervliet Arsenal: Replace Main Water Meters	20
NAVY	**286,371**
Energy Conservation	**243,601**
Camp Lemonnier Djibouti: HVAC Replacements - 4T and larger	4,851
Camp Lemonnier Djibouti: Small HVAC Replacements, 2 ton and smaller	6,297
Commander Fleet Activities Sasebo Ja: Retrofit Absorption Chiller at Bldg. 5158	427
Commander Fleet Activities Sasebo Ja: Replace Lighting System In Bldg. 80, 130, 132, 430, And 500	405
Joint Base Pearl Harbor - Hickam Pearl Harbor - Hickam Hawaii: Modify AC for Server Room Area	180
Joint Base Pearl Harbor - Hickam Pearl Harbor - Hickam Hawaii: Replace Chillers, Building 71, SY Area	1,804
Joint Base Pearl Harbor - Hickam Pearl Harbor - Hickam Hawaii: Replace Chiller Building 654 & RPLC Window A/C Building 2110H	1,795
Joint Base Pearl Harbor - Hickam Pearl Harbor - Hickam Hawaii: Replace Chillers at Building 77	2,014
Naval Air Facility El Centro Ca: Compressed Air Leak Repair/Elec to Gas Appliances	235

Project	Estimated Financial Obligation ($000s)
Naval Air Facility El Centro Ca: End of Life HVAC Repair by Replacement	419
Naval Air Facility El Centro Ca: Flagstaff Facility Improvements	127
Naval Air Facility El Centro Ca: Insulate Attics/Ext. Ductwork and Weather-stripping	327
Naval Air Facility El Centro Ca: Base-Wide Lighting Upgrade	808
Naval Air Facility Misawa Ja: Install occupancy sensors in various buildings	391
Naval Air Station Corpus Christi TX: Energy Savings Project - Replace Recreation Courts/Ball Fields Overhead Sport/Flood Light w/ LED's	227
Naval Air Station Corpus Christi TX: Energy Savings Project - Hangar 42 LED Light Replacement	289
Naval Air Station Fallon NV: Lighting Replacement in Various Locations	156
Naval Air Station Jacksonville FL: Building 868 Facility Energy Modernization	2,840
Naval Air Station Jacksonville FL: Energy - Airfield Lighting Replacements	16,547
Naval Air Station Jacksonville FL: Lighting and Sensor Bundle	636
Naval Air Station Jacksonville FL: Retro Commissioning for Buildings: 30, 919, 987, 110, 1, 926 and 867	3,221
Naval Air Station Jacksonville FL: Retro Commissioning for Buildings: 27, 135, 903, 1000	1,007
Naval Air Station JRB Fort Worth TX: Base wide EMCS Expansion 18 Buildings	905
Naval Air Station JRB Fort Worth TX: Replace High Bay HID Lights With T5 Lighting	131
Naval Air Station JRB Fort Worth TX: Replace HID Parking Lights with LED	46
Naval Air Station Jrb New Orleans La: INTERIOR LIGHTING UPGRADE	1,037
Naval Air Station Key West FL: Energy- Replace C-2076 300T chiller	455
Naval Air Station Key West FL: Energy- Various Lighting Upgrades	316
Naval Air Station Kingsville TX: Lighting Upgrade Building 3741	461
Naval Air Station Kingsville TX: HVAC Systems Upgrade in Multiple Buildings	740
Naval Air Station Kingsville TX: B2767 and B3788 Improvements	2,081
Naval Air Station Lemoore Ca: Base-Wide VFD Retrofit	582
Naval Air Station Lemoore Ca: Base-wide Lighting Upgrades	743

Project	Estimated Financial Obligation ($000s)
Naval Air Station Meridian Ms: Upgrade Joe Williams Airfield Lighting to LED	324
Naval Air Station Meridian Ms: Replace Parking Lot Lights CNIC Buildings.	195
Naval Air Station Meridian Ms: HVAC Replacement for Building 255	644
Naval Air Station Meridian Ms: Upgrade McCain Airfield Lighting LED	717
Naval Air Station Oceana VA: NASO-Dam Neck Annex Retro-commission multi-bldgs.	2,138
Naval Air Station Pensacola FL: Energy - NASP Parking Lot Lighting Upgrade	1,384
Naval Air Station Pensacola FL: Energy - Lighting Replacements for Multiple Buildings	1,389
Naval Air Station Pensacola FL: Energy - Replace HPS Acorn Fixtures on Main Site and Corry	753
Naval Air Station Pensacola FL: DDC Controls Optimization 16 Buildings	2,517
Naval Air Station Sigonella It: Sigonella NAS 2 Energy Efficiency Improvements B420 & B424	173
Naval Air Station Sigonella It: Sigonella NAS I Heating Fuel To Ng Conversion	166
Naval Air Station Sigonella It: Sigonella (NAS II Street Lights Upgrade)	472
Naval Air Station Sigonella It: Sigonella NAS 1 And Nas 2 Chillers Replacement	1,319
Naval Air Station Whidbey Island WA: Facility Upgrades - Phase 3	3,589
Naval Air Station Whiting Fld Milton FL: Combined Interior Fluorescent and LED Lighting	438
Naval Air Weapons Station China Lake: Repairs to Boiler Plant #2 - Building 01016	4,974
Naval Air Weapons Station China Lake: Replace Failing/Obsolete Lighting System - Building 20303	650
Naval Air Weapons Station China Lake: Replace Frequency Converters - 20001	219
Naval Air Weapons Station China Lake: Install VSDs on Chiller System - 00005	299
Naval Base Guam: Retro-commissioning, 20 Buildings NBG	1,384
Naval Base Kitsap Bremerton WA: Reroof/add insulation, B-233	200

Project	Estimated Financial Obligation ($000s)
Naval Base Kitsap Bremerton WA: Reroof/add insulation, B-894	1,000
Naval Base Kitsap Bremerton WA: Reroof/add insulation, B-5092	370
Naval Base Kitsap Bremerton WA: Upgrade Lighting in B-489, 233	13
Naval Base Kitsap Bremerton WA: Right size air compressor B-1051	35
Naval Base Kitsap Bremerton WA: Energy Conservation Measures - Various Buildings	6,620
Naval Base Kitsap Bremerton WA: Energy-B7000 Retro commissioning and Periscope Shop HVAC	830
Naval Base Point Loma: Retro-Commissioning of B-50-52-53	355
Naval Base Point Loma: Upgrade HVAC and Boilers - Building 544	2,317
Naval Base San Diego Ca: Replace HVAC Equipment - Various Buildings	607
Naval Base Ventura City Pt Mugu Ca: NBVC Boiler Enhancements	185
Naval Base Ventura City Pt Mugu Ca: NBVC RME Mechanical Optimization	235
Naval Construction Battalion Center Gulfport Ms: Replace Exterior Light fixtures with LED	1,568
Naval Construction Battalion Center Gulfport Ms: Replace Chillers and Add VFs on Pumps, Replace IR Heater	1,799
Naval Shipyard Portsmouth: eMMRP Replace Steam Distribution and Condensate Collection Piping along Goodrich Ave and Sicard St	1,415
Naval Shipyard Portsmouth: eMMRP Insulate Steam Manifolds at all Berths and Dry Docks	195
Naval Shipyard Portsmouth: Energy Repairs To Hazmat Waste Storage, B357	3,032
Naval Shipyard Portsmouth: Energy & Consolidation of Controlled Industrial Operations, B291	7,998
Naval Shipyard Portsmouth: Energy and Building Repairs to Central Tool Shop, B74	1,944
Naval Shipyard Portsmouth: Energy & Control Upgrades B20/FY14 MAP B20 DDC improvements	431
Naval Station Great Lakes Il: NOSC Cincinnati Facility Energy Improvements	224
Naval Station Great Lakes Il: NOSC Detroit Facility Energy Improvements	201
Naval Station Everett WA: Ventilation Motor Modernization	379
Naval Station Everett WA: Reserve - Energy - Naval Operational Support Centers	376

Project	Estimated Financial Obligation ($000s)
Naval Station Everett WA: Reserve Energy - Naval Operations Support Centers Modernization	393
Naval Station Guantanamo Bay: Retro-Commissioning of 6 Buildings	1,215
Naval Station Guantanamo Bay: DDC and Building Energy Improvements Leeward	893
Naval Station Mayport FL: Install AHU UV Lights	1,479
Naval Station Newport RI: NUWC UESC project for lighting, HVAC equip & controls steam taps and water conservation	13,500
Naval Station Newport RI: Replace Exterior light with LED Building 1258, 1259	248
Naval Station Newport RI: Modifications to Boiler Building 27A CHI and controls	150
Naval Station Newport RI: Facility Energy Improvements - Phase 2	360
Naval Station Norfolk VA: PEPCO Energy Audit Initiatives	1,262
Naval Station Norfolk VA: HID Bay Relighting	2,695
Naval Station Norfolk VA: Security Outdoor Lighting replacement	2,213
Naval Submarine Base Kings Bay Ga: Energy Conservation Repair by Replacement 22 Buildings	8,473
Naval Submarine Base Kings Bay Ga: High Bay Lighting Repair by Replacement 84 Buildings	417
Naval Submarine Base Kings Bay Ga: Upgrade Hot Water Heaters in 25 Naval Submarine Base Buildings	206
Naval Submarine Base Kings Bay Ga: Exterior Light Repair by Replacement	1,580
Naval Submarine Base New London Ct: Energy Retrofit Street Lighting	1,800
Naval Support Activity - Panama City: DDC Controls & Solar Water Heating	1,101
Naval Support Activity - Panama City: Construct LPA Satellite Compressor Plant	8,290
Naval Support Activity Andersen: Upgrade Chiller-Condensing Units Aircraft Main Shop Building 18006	2,957
Naval Support Activity Andersen: Upgrade Chiller-Condensing Units Base Supply Building 18002	3,413
Naval Support Activity Andersen: Upgrade Chiller-Condensing Units Communications Tower B18011	1,122
Naval Support Activity Andersen: Upgrade Chiller-Condensing Units Ce- Motor Pool Building 18001	3,157

Project	Estimated Financial Obligation ($000s)
Naval Support Activity Andersen: Upgrade Chiller-Condensing Units Child Care Center Building 1625	2,090
Naval Support Activity Andersen: Upgrade Chiller -Condensing Unit Units , Missile Maintenance, B51109	900
Naval Support Activity Annapolis: Energy Repairs, Annapolis Blog 2NS & Site Lighting	515
Naval Support Activity Annapolis: Energy Repairs, Annapolis Blog 89NS, N Severn	386
Naval Support Activity Annapolis: Energy Repairs, Annapolis Blgs 46NS & 47NS	604
Naval Support Activity Annapolis: Energy - Sport Fields Lighting	1,483
Naval Support Activity Bethesda Md: Energy Repairs, Building 56 Bethesda	301
Naval Support Activity Hampton Roads VA: NSA Norfolk Base wide DDC	2,738
Naval Support Activity Hampton Roads VA: NH20 Roof & light replacement	367
Naval Support Activity Mechanicsburg Pa: Energy Recirculation System Building 633 Complex	19,926
Naval Support Activity Mechanicsburg Pa: Energy -Envelope upgrades buildings 14 and 214	5,739
Naval Support Activity Mechanicsburg Pa: NSA Mech energy upgrades	787
Naval Support Activity Mechanicsburg Pa: NSA Phila Energy Upgrades	496
Naval Support Activity Mechanicsburg Pa: DDC Controls and Retro commissioning	9,345
Naval Support Activity Mechanicsburg Pa: LED lighting (ST12-0240)	495
Naval Support Activity Mechanicsburg Pa: BLDG 107 roof replacement at NSA Mech	2,649
Naval Support Activity Norfolk Naval Shipyard: NNSY Building 510 HVAC Controls	564
Naval Support Activity Norfolk Naval Shipyard: NNSY Facility Energy Improvements Building 171	16,351
Naval Support Activity Saratoga Springs Ny: Street Lighting Retrofit Project	424
Naval Support Activity Souda Bay Gr: Slop fuel re-utilization for boilers	5

Project	Estimated Financial Obligation ($000s)
Naval Support Activity South Potomac: Energy Renovations, NSF Indian Head, Blog D324-Mix House	487
Naval Support Activity South Potomac: Indian Head Gym	1,095
Naval Support Acty Panama City: DDC Energy Conservation & Control and Solar Water Heating	1,760
Naval Support Detachment Monterey Ca: Building. 700, Replace Critical HVAC Systems	2,772
Naval Support Detachment Monterey Ca: Data Center Energy Improvements at NSAM	2,084
Naval Support Detachment Monterey Ca: Lighting Efficiency Improvements at NSAM	1,657
Naval Weapons Station Earle NJ: Energy Upgrades to BLDG C-29, Recreation Building	1,099
Naval Weapons Station Seal Beach: Energy/Lighting and Mechanical Systems Improvements	309
Naval Weapons Station Seal Beach: Energy/Facility Lighting and Plumbing Improvements	537
Naval Weapons Station Yorktown: Replacement of HVAC for B2020 offices	144
Renewable Energy	**22,926**
Joint Base Pearl Harbor - Hickam Pearl Harbor - Hickam Hawaii: P-090 Install PV and Cool Roof, Building 284 Fire Station	790
Naval Air Facility El Centro Ca: Energy - Solar Thermal DHW 4016 Barracks	229
Naval Air Station Sigonella It: Large Scale Photovoltaic (PV) Plant - Weapons Area	3,637
Naval Station Guantanamo Bay: Nob Hill Roof Replacement abd solar HW System Installation	1,656
Naval Station Rota Sp: Solar Thermal for Domestic Hot Water (DHW) in 13 barracks	2,671
Naval Station Rota Sp: Roof Replacement at Building 28	581
Naval Support Activity Annapolis: Energy Repairs (GSHP) Building 181, NSA Halligan Hall	13,077
Naval Support Activity Naples It: Solar Thermal installation	285
Water Conservation	**19,844**
Naval Air Station Corpus Christi TX: Replace 1700 L.F. of 12" diameter water line with HDPE SRP 200 psi water line	1,055

Project	Estimated Financial Obligation ($000s)
Naval Air Station Corpus Christi TX: Replace 5,500 L.F. Of 4" diameter water line with 8" HDPE SRP 200 psi water line	1,400
Naval Air Station Lemoore Ca: Base-Wide Water Conservation	2,056
Naval Shipyard Portsmouth: eMMRP Upgrade Water Distribution System SCADA	1,132
Naval Station Everett WA: Water and Refrigeration Modernization	389
Naval Station Guantanamo Bay: Repairs to RO Trains A,B,1 & 2	10,819
Naval Submarine Base Kings Bay Ga: Upper Base Wastewater Effluent Reuse	2,160
Naval Submarine Base Kings Bay Ga: Repair by Replacement - 107 Buildings	491
Naval Support Activity Souda Bay Gr: Various Tank Repairs - Building 14	342
AIR FORCE	**130,361**
Energy Conservation	**127,283**
Alpena County Regional Airport: Upgrade Exterior Lights	400
Altus Air Force Base: Renovate Replace Two 10 Tn Chillers, B215	47
Altus Air Force Base: Maintain Replace 60 Ton Chiller, B228	93
Andrews Air Force Base: Repair LRS Warehouse Lighting	160
Arnold Air Force Base: Add Energy Saving Equipment To 3400 Funded Buildings	160
Atlantic City IAP: Replace AHU and DDC	138
Aviano Air Base: Install Solar Heating Panels, 4 Dorms	299
Aviano Air Base: Install Solar Heating Panels, 2 Dorms	149
Aviano Air Base: Repair HVAC System, Multi	164
Aviano Air Base: Install Photovoltaic Panels For Bldg. #1434	92
Aviano Air Base: Install Photovoltaic Panels, Multi	197
Aviano Air Base: Replace Parking Lot Lights, Multi	114
Aviano Air Base: Install Free Cooling System, Multi	93
Aviano Air Base: Install Occupancy Sensors, Multi	236
Buckley Air National Guard Base: Upgrade Lighting	300
Burlington IAP (Air National Guard): Energy Improve Bld 150	300
Camp Blanding Military Reservation (Air National Guard): Replace Exterior Lighting	22
Camp Perry Air National Guard Station: Exterior Site Lighting to HEL (LED)	3

Project	Estimated Financial Obligation ($000s)
Camp Perry Air National Guard Station: Remove boiler and add forced air heat coil - Changed project to resizing and replacing with high efficiency boiler	9
Camp Perry Air National Guard Station: Bldg. 220 Boiler resizing and replacing with high efficiency boiler	28
Camp Perry Air National Guard Station: Replaced older AC condenser and air handler with efficient R-410A	9
Cannon Air Force Base: Install Vfds On Motors	384
Cannon Air Force Base: Install Water Transfer Station At Effluent Basin	211
Cavalier Air Station: Repair Lighting, Occupancy Sensors, Led Exit Signs Multi Fac	410
Channel Islands Air National Guard Station: Install advanced meters on three buildings	27
Charlotte/Douglas IAP (Air National Guard): Repair HVAC Building 3	177
Cheyenne Mountain Air Station: Repair and Optimize Condenser Water System	238
Clear Air Station: Repair Interior Lighting & Occupancy Sensors	1,438
Columbus Air Force Base: Replace HVAC, EMCS, Lighting, Heat Recovery	1,000
Columbus Air Force Base: Replace HVAC, EMCS, Heat Recovery	400
Creech Air Force Base: Repair Mechanical Systems, Multi Fac	326
Davis Monthan Air Force Base: Chiller Upgrade	114
Davis-Monthan Air Force Base: Repair (Sustain) Parking Lot Lighting	685
Davis-Monthan Air Force Base: Repair (Replace) Chillers P1, Facs 12 & 131	432
Edwards Air Force Base: Retrofit Lights Multi Buildings	4,428
Eglin Air Force Base: Construct Entry Vestibules for Buildings 349 and 350	119
Eglin Air Force Base: Upgrade DDC System and Energy Mgmt System, Phase II	4,270
Eglin Air Force Base: Install Energy Efficient Lighting at Various Buildings	312
Eielson Air Force Base: Upgrade Lighting (B2258)	379
Eielson Air Force Base: Repair HBOs on Dorm Row	218
Eielson Air Force Base: Repair HID Lighting (Multi)	1,642
Eielson Air Force Base: Energy Cons: Repair HVAC System (B1346)	759

Project	Estimated Financial Obligation ($000s)
Ellsworth Air Force Base: Repair Exterior Lights to More Efficient	621
Ellsworth Air Force Base: INSTALL EXHAUST SYSTEM B7225 DK 100	772
Ellsworth Air Force Base: Repair HVAC - CASS	748
Ellsworth Air Force Base: Repair Boiler Systems Multi	952
Ellsworth Air Force Base: Repair Building Envelopes for Weatherization	116
Ellsworth Air Force Base: Repair Water Leaks	642
Ellsworth Air Force Base: Repair HVAC Retro-Commissioning Multi	469
Ellsworth Air Force Base: Repair Building Envelopes	1,317
Ellsworth Air Force Base: Repair Exterior Lighting to Efficient	544
Elmendorf Air Force Base: Replace Lighting - Multiple Facilities -B	663
Elmendorf Air Force Base: Replace Lighting - Multiple Facilities	639
Elmendorf Air Force Base: Repair System Ductwork Bldg. 17508	495
Fairchild Air Force Base: Turned off ever other light fixture in 445 & 447	1
Fairchild Air Force Base: Installed LED lights in Bldg. 459 warehouse	2
Fairchild Air Force Base: Turned off parking lot lights and compressors in most ANG buildings	69
Fairchild Air Force Base: Removed 3-phase water heater, and installed on-demand electric water heater in 1034.	92
Fairchild Air Force Base: REPAIR, HVAC Energy Project Base wide	1,172
Fairchild Air Force Base: HVAC Retro-Commissioning; 43 Facilities	185
Fort Dix: Pipe Insulation/Aerators Multiple Facilities	225
Fort Sam Houston (JB San Antonio): Replace Roof and HVAC at Mini Mall, B1387	263
Fort Sam Houston (JB San Antonio): Replace 2-180 Ton Chillers, US Med Com, B2792	955
Fort Sam Houston (JB San Antonio): Replace Motor Starters & Controls, East Energy Plant, B1377	550
Fort Sam Houston (JB San Antonio): DSG-RENV-Correct FSDs & Renovation, Bldg. 1398, 2225, 2500	540
Fort Sam Houston (JB San Antonio): Renovation, Bldg. 198	1,490
Fort Sam Houston (JB San Antonio): CBR-RENV-Relamp Medical Mall with EEL, B3600	65
Fort Wayne IAP: LEDs for Ext bldgs., parking, streets	40
Francis S Gabreski Airport (Air National Guard): Energy: Repl HVAC #2, Bldg. 250	170

Project	Estimated Financial Obligation ($000s)
Fort Indiantown Gap Air National Guard Station: Install new high eff. A/C condenser units	5
Fort Indiantown Gap Air National Guard Station: Install new high eff. boilers and AHU heaters i/c/w ongoing base conversion from fuel oil to natural gas.	55
Fort Indiantown Gap Air National Guard Station: Replace six HID fixtures with 400W MH bulbs with LED fixtures that use 80 watts.	3
Goodfellow Air Force Base: Replace three split systems - Bldg. 3321	61
Goodfellow Air Force Base: Replace boiler & 2 circulating pumps - Bldg. 3227	132
Goodfellow Air Force Base: Replace boiler - Bldg. 423	14
Goodfellow Air Force Base: Replace roof top high bay heating unit - Bldg. 3420	41
Goodfellow Air Force Base: Replace Rooftop High Bay Heating Unit - Bldg. 3420	45
Goodfellow Air Force Base: Replace boiler - Bldg. 3323	40
Goodfellow Air Force Base: Replace air cooled chiller - Bldg. 259	153
Goodfellow Air Force Base: Replace two package units - Bldg. 140	88
Goodfellow Air Force Base: Replace exterior lighting with LED - Multi	273
Goodfellow Air Force Base: Replace boiler - Bldg. 3420/3511/3453/222/423	197
Goodfellow Air Force Base: Replace two roof top package units - Bldg. 303	26
Goodfellow Air Force Base: Replace roof top package unit - Bldg. 303	12
Goodfellow Air Force Base: Replace two cooling towers - Bldg. 525	349
Goodfellow Air Force Base: Replace air conditioner - Bldg. 812	48
Goodfellow Air Force Base: Replace air cooled chiller - Bldg. 812	52
Goodfellow Air Force Base: Replace HVAC package unit - Bldg. 812	12
Goodfellow Air Force Base: Replace six condensers & coils	96
Goodfellow Air Force Base: Replace boiler - Bldg. 707	15
Goodfellow Air Force Base: Replace split system & air handler - Bldg. 3220	204
Goodfellow Air Force Base: Replace A/C & heater North side Bldg. 423	50
Goodfellow Air Force Base: HVAC Retro-Commissioning Services - Multi Facilities	748

Project	Estimated Financial Obligation ($000s)
Grand Forks Air Force Base: Repair (R&M) Streetlight Fixtures To Led-Base wide	120
Great Falls IAP Air National Guard: Energy: Base wide Exterior Light	260
Great Falls IAP Air National Guard: Repair HVAC ctrls, base wide	272
Greeley Air National Guard Station: Installed meters for individual facilities	36
Grissom Air Reserve Base: Repair (Replace) HVAC B596	194
Grissom Air Reserve Base: Install Occupancy Based HVAC Controls, Multi	505
Hancock Field Air National Guard: Installed 2 new boilers with 95% efficiency	14
Hanscom Air Force Base: Replace Windows, AFLCMC Res Fac, B1612	1,165
Hanscom Air Force Base: Repair HVAC in Data Centers B1435 and 1607	436
Harrisburg IAP: Replace fluorescent lights in Blue Room with LED fixtures.	3
Harrisburg IAP: Building 81 Headquarters lighting controls	19
Harrisburg IAP: Turned off building loading dock lights that were on all the time; the total energy waste real time is about 621 watts.	0
Harrisburg IAP: Replace 105 HID high bay light fixtures in hangars and high bay building areas at five buildings with LED light fixtures (recommended LEDs per the Pre-Final Draft of UFC 3-530-01).	96
Harrisburg IAP: Replace fluorescent lights in CE Conference Room with LED fixtures.	2
Hickam Air Force Base: Upgraded lighting in Building 1922 at Kalaeloa	1
Hickam Air Force Base: Upgraded lighting in POL facility on main base	3
Hickam Air Force Base: Upgraded chiller at Kahului (Maui)	5
Holloman Air Force Base: INSTALL OCCUPANCY SENSORS IN 14 BLDGS	327
Horsham Air Guard Station: Additional exterior site lighting replacement 91 misc LED fixtures	20
Hurlburt Field: REPAIR HVAC SYSTEM, HQ AFSOC BLDG 00001	1,244
Hurlburt Field: NRG ENERGY IMPROVEMENTS MULTI BUILDINGS	409
Hurlburt Field: NRG-Install Programmable Thermostats, Multi Buildings	33

Project	Estimated Financial Obligation ($000s)
Incirlik Air Base Adana: REPLACE EXTERIOR LIGHTING WITH ENERGY EFFICIENT ONES, PH1	172
Incirlik Air Base Adana: RETROFIT EXTERIOR LIGHTING, BW PH2	499
Jacksonville IAP Air National Guard: Install Energy Efficient Lighting in Aircraft Shelters	33
Joe Foss Field Air National Guard: Energy: Multi Consv Meas	760
Joint Base Charleston Engineering Support: Install Advanced Elec/Water Meters- Air Base	250
Joint Base Charleston Naval Weapons Station: Install Advanced Elec/Water Meters- Weapons Station	150
Joint Base Charleston Naval Weapons Station: Upgrade Lighting	710
Joint Base Elmendorf-Richardson: Repair Compressed Air Systems	189
Joint Base Fort Sam Houston: Lighting Efficiency Upgrades	343
Joint Base Fort Sam Houston: Renovate B4195 Highbay Lighting	116
Kadena Air Base: Repair/Replace Lighting, Hvac, Inst Solar Hot Water,B109 Gym	317
Kadena Air Base: Energy Conservation Measures, B781 & B3534	218
Kadena Air Base: Repair/Replace Lighting, Plumbing & Envelope, B3541	162
Kadena Air Base: Lighting & Water Conservation For Dining Halls B178 & B843	248
Kadena Air Base: Install O/A Dampers W/ Enthalpy Control, B109, B138, B151	167
Kadena Air Base: Install O/A Dampers W/ Enthalpy Controls, B700, B758	151
Kadena Air Base: Waste Heat Recovery Of Refrigeration Process	231
Kadena Air Base: Install O/A Dampers W/ Enthalpy Controls, B700, B758	149
Keesler Air Force Base: Repair HVAC At Multi Bldgs	532
Keesler Air Force Base: Repair Educational Lodging	3,200
Keesler Air Force Base:	4
Keesler Air Force Base: Install Motion Activated Lighting, Lodging	988
Kelly Field Annex (Lackland Air Force Base): Replace air handler at SFS B931	350
Kirtland Air Force Base: Replace Boiler Bldg. 1078	113
Kirtland Air Force Base: Install LED Lights Street & Parking Lot, KAFB Base wide	655
Kunsan Air Base: Dorm BAS Upgrade	1,754

Project	Estimated Financial Obligation ($000s)
Kunsan Air Base: Energy Management Control System (EMCS) Upgrade, Phase 1	2,968
Kunsan Air Base: Install Ground Source Heat Pump (GSHP) at Dorm B504	2,714
Kunsan Air Base: CPS Bypass At Dormitory 504 & 522	488
Lackland Air Force Base (JB San Antonio): Various Repairs and Renovations, B965	71
Lackland Air Force Base (JB San Antonio): construct Dog Grooming Facility	611
Lackland Air Force Base (JB San Antonio): Install HVAC at Basketball court B7346	500
Lackland Air Force Base (JB San Antonio): Renovate men restroom L21, B 2000	300
Langley Air Force Base: Repair UMCS Post Wide Phase 1	2,421
Langley Air Force Base: Repair Multiple Facilities - Solar Tracking Skylights	2,064
Laughlin Air Force Base: Dorm Occupancy Sensors, Var Bldgs	228
Lincoln Municipal Airport (Air National Guard): Repair Boilers	670
Lincoln Municipal Airport (Air National Guard): Replace Boilers, Var. Buildings	370
Little Rock Air Force Base: Energy Saving Systems Gym B827	600
Little Rock Air Force Base: Parking Lot Lighting Base wide	735
Louisville IAP - Standiford Field: Multiple Conservation Measures	1,200
Luke Air Force Base: Install High Efficiency Lighting	0
Luke Air Force Base: Install/Repair Free Cooling	188
Luke Air Force Base: Repair HVAC System, B2202	312
Luke Air Force Base: Retro Commissioning, Multiple Buildings	73
Maxwell Air Force Base: Roof R/R	289
Maxwell Air Force Base: Roof R/R	240
Maxwell Air Force Base: Roof R/R	165
Maxwell Air Force Base: Roof R/R	111
Maxwell Air Force Base: Roof R/R	247
Maxwell Air Force Base: Roof R/R	213
Maxwell Air Force Base: Roof R/R	108
Maxwell Air Force Base: Roof R/R	96
Maxwell Air Force Base: Roof R/R	297
Maxwell Air Force Base: Roof R/R	438
Maxwell Air Force Base: Roof R/R	386

Project	Estimated Financial Obligation ($000s)
Maxwell Air Force Base: Chiller Repl.	305
Maxwell Air Force Base: Boiler Replacement	349
Maxwell Air Force Base: Roof R/R	103
Maxwell Air Force Base: Roof R/R	103
Maxwell Air Force Base: Roof R/R	433
Maxwell Air Force Base: Chiller Replacement (Maxwell 501, Maxwell910)	267
Maxwell Air Force Base: Maxwell 804 SE HVAC Repl.	158
Maxwell Air Force Base: Roof R/R	130
Maxwell Air Force Base: Boiler Repl.	122
Maxwell Air Force Base: Roof R/R	114
Maxwell Air Force Base: Chiller Repl.	269
Maxwell Air Force Base: Roof R/R	534
Maxwell Air Force Base: Roof R/R	158
Maxwell Air Force Base: Roof R/R	501
Maxwell Air Force Base: Chiller Repl.	145
Maxwell Air Force Base: Roof R/R	129
Maxwell Air Force Base: Boiler Replacement (Gunter 846, Gunter 1143)	247
Maxwell Air Force Base: Roof R/R	127
McEntire Joint National Guard Base: HVAC replacements Buildings 252, 310, 979, 984, 1070	215
Minot Air Force Base: Upgrade EMCS Systems	2,121
Misawa Air Base: Energy Management Control System	1,775
Moody Air Force Base: RPR Infrared Heaters	380
Moody Air Force Base: Install/Repair EMCS multi fac's	222
Mountain Home Air Force Base: Boiler Installation	74
Mountain Home Air Force Base: Upgrade WonderWare Software at EMCS	57
Mountain Home Air Force Base: Base Exchange Lighting Upgrade	102
Mountain Home Air Force Base: Chiller Installation	55
Mountain Home Air Force Base: LED Lighting Upgrade Multi Fac.	325
Mountain Home Air Force Base: TIP Program - MSA Lighting	3
Mountain Home Air Force Base: Installed Solar Street Lights	16
Mountain Home Air Force Base: Repair, WWTP Effluent Filtration System, Fac 3492	3,087
Mountain Home Air Force Base: Construct, WWTP Filter House, Fac 3487	403

Project	Estimated Financial Obligation ($000s)
Mountain Home Air Force Base: Repair, Replace Boilers FAC 198 & 200	126
Mountain Home Air Force Base: Constr, Replace Blrs & Evap Clrs w/ Ht Pmp, Hgrs 201, 204, 205	351
Mountain Home Air Force Base: Repair Chillers Multiple Facilities	307
Naval Air Engineering Station - Lakehurst: Repair/Replace Pipe Insulation/Aerators - Multiple Facilities	65
Naval Air Engineering Station - Lakehurst: Replace HVAC Controls - Multiple Facilities	140
Nellis Air Force Base: Repair Daylighting Control System	722
Nellis Air Force Base: Add Solar Water Heating Systems	189
Nellis Air Force Base: Repair Thermal Water System Components	138
Nellis Air Force Base: Repair Add HVAC Controls	105
Nellis Air Force Base: Add Building Envelope Upgrades	127
Nellis Air Force Base: Repair Add Efficient Motors and Variable Speed Drives	159
Nellis Air Force Base: UPGD Paint Booth HVAC, Bldg. 256, Dock 2	276
Nellis Air Force Base: Install Daylighting/UPGD Lighting Systems, Multi Facilities	154
Nellis Air Force Base: Retro-Commissioning	322
Nellis Air Force Base: Repair Lighting With Efficient Lighting Technology	667
New Boston Air Force Station: Energy Efficiency Upgrades, B100	1,413
New Castle County Airport: HVAC Upgrades - Buildings. 2600, 2804, 2805 & 2819	280
Niagara Falls IAP: Replace oversized boiler (3 MBtu) with properly sized boiler. Replace pneumatic controls with electronic controls and actuators.	55
Niagara Falls IAP: Replace roof on base supply building. Energy savings from additional insulation and white roof incorporated.	900
Niagara Falls IAP: Boiler replacement project - Install new 399,000 Btu, natural gas fired condensing boiler	66
Offutt Air Force Base: Energy Upgrades, Building 565	881
Offutt Air Force Base: Energy Upgrades, Building 323	237
Offutt Air Force Base: Energy Upgrades, Boiler Room Building 500	1,444
Offutt Air Force Base: Repair HVAC & Lighting, Building 535	264
Offutt Air Force Base: Retro-Commissioning, B324, B364, B365	239
Offutt Air Force Base: Repair HVAC, Multiple Facilities	1,413

Project	Estimated Financial Obligation ($000s)
Offutt Air Force Base: Repair HVAC, Multiple Facilities	1,692
Offutt Air Force Base: Repair Steam Distribution, Multiple Facilities	652
Offutt Air Force Base: Repair HVAC Controls, Multiple Facilities	1,028
Patrick Air Force Base: ECM for HVAC/lighting/water/controls	130
Peterson Air Force Base: Repair Energy Efficiency, Buildings 1470/1471	1,084
Pittsburgh IAP (Air National Guard): Retrofit direct digital control (DDC) systems in five facilities.	240
Pittsburgh IAP (Air National Guard): Two intake air dampers for generators found stuck open 100% and 30% on 01/15/14, closed via 01/16/14 work order.	0
Portland IAP: Building Hangar 310 heating	113
Portland IAP: Upgrade Lighting	680
Portland IAP: Building 455 Boiler & HVAC replacement	264
Portland IAP: Building 260 heating design	27
Portland IAP: Building 155 Chiller installation	669
Portland IAP: Base DDC system master plan	55
Quonset State Airport Air National Guard: Energy: Upgrade Interior Lite	200
Quonset State Airport Air National Guard: Energy: Upgrade Exterior Lite	500
Royal Air Force Mildenhall: Install Boiler Optimization Units (Various Facilities)	230
Ramstein Air Base: Replace Roof	269
Randolph Air Force Base (JB San Antonio): Repair Restrooms and Paint Lobby Youth Center B585	180
Randolph Air Force Base (JB San Antonio): Repair Restrooms & High-Bay Lighting for 571 AMXS, H82 & 83	220
Randolph Air Force Base: Reflective Roof Replacement - Multi Facilities	481
Randolph Air Force Base: Retro-Commission HVAC Multi-Facilities Grp 2, H6,12,860,1039	322
Randolph Air Force Base: Retro-Commission HVAC Multi-Facilities Grp 1, B500,990 1038	257
Reno Tahoe IAP: Solar shades , controls, and ventilation Main Hangar Building 9	80
Reno Tahoe IAP: Electrical meters on new indoor shooting range	7

Project	Estimated Financial Obligation ($000s)
Robins Air Force Base: Retro-Commissioning Of Multiple Buildings	139
Savannah/Hilton Head IAP: Replace HVAC Systems Building 897	44
Schenectady County Airport Air National Guard: Complete removal of 11 MBtu boiler and replacement with two 2.7 MBtu and one-1.7 MBtu boiler along with associated controls and piping.	325
Schriever Air Force Base: Repair by Replacing HVAC Units, B442	240
Schriever Air Force Base: Repair By Replacing Lights w/LED, B600	180
Schriever Air Force Base: Repair by Replacement HVAC, Multiple Facilities	110
Schriever Air Force Base: Repair by Replacing HVAC Units, Building 502	155
Scott Air Force Base: Repair (R&M) Cooling, Ext Lights, Pipes, AFSPC; B861	732
Selfridge Air National Guard Base: Upgrade Exterior Lighting	300
Seymour Johnson Air Force Base: Repair HVAC at Multiple Buildings	300
Seymour Johnson Air Force Base: Repair HVAC, Fuel Cell, Building 4828	355
Shaw Air Force Base: Repair Water Fixtures	118
Shaw Air Force Base: Install/Repair Lighting Controls, Multiple Facilities	190
Sheppard Air Force Base: Retrofit HVAC Equipment Multiple Facilities	487
Sioux Gateway Airport/Col. Bud Day Field(Air National Guard): Multiple Facility Conservation Measures	580
Sky Harbor IAP: Upgrade Lighting	560
Sky Harbor IAP: Upgrade DDC System	196
South Portland Air National Guard Station: Convert Heat Systems	1,300
Spangdahlem Air Base: Taxiway Edge Lighting (LED)	373
Spangdahlem Air Base: Replace interior lighting, Warehouse Building 128	123
Thule Air Base: Repair Flattop #104	391
Thule Air Base: Repair Flattop #114	382
Tinker Air Force Base: Sustain Repair HVAC/Utilities, B/230, Ph 2	1,046
Tinker Air Force Base: Sustain Repair HVAC/Utilities, B/230, Ph 4	1,876
Toledo Express Airport Air National Guard: Replace three aged (at least 17 years old) rooftop AHUs/HVAC equipment with a 50 ton AON and 40 and 50 ton York units.	308

Project	Estimated Financial Obligation ($000s)
Travis Air Force Base: Retro-Commission Multiple Facilities	643
Travis Air Force Base: Install Billeting Controls	183
Tucson IAP: Energy: EMCS Controls	655
Tyndall Air Force Base: Replace Exterior Parking/Street Lights To LED	112
Vandenberg Air Force Base: Repair Advanced Meter Reading System	300
Vandenberg Air Force Base: Replace Area & Walkway Lighting	366
Vandenberg Air Force Base: Retro-commissioning on Multiple Facilities	292
Volk Field: Energy: Multi Consv Meas	290
Whiteman Air Force Base: Repair Steam Condensate Return System	620
Wright Patterson Air Force Base: Replace Variable Speed Drives, F/20654 (HVAC-31)	519
Wright Patterson Air Force Base: HVAC Rebalancing/Tune-Ups, Multiple Facilities	430
Wright Patterson Air Force Base: Replace Water Line Along Skyline (24056)(W-2)	696
Wright Patterson Air Force Base: Replace Steam Traps - Area B (Sd-5)	246
Wright Patterson Air Force Base: Upgrade Lighting - Parking Lot Facilities 10262 (27543)	277
Wright Patterson Air Force Base: Upgrade Lighting - Parking Lot Medical Center (28488)	129
Yeager Airport Air National Guard: Multiple Facility Conservation Measures	790
Yokota Air Base: Install Occupancy Sensors in Dormitory Common Areas	81
Yokota Air Base: Building Systems Optimization, Various Buildings	947
Yokota Air Base: Building Systems Optimization, B570	309
Yokota Air Base: Replace Building Automation System, Building 2066	267
Youngstown-Warren Regional Airport Air Reserve Station: Repair Wall Pack Lights and Occupancy Sensors	653
Renewable Energy	**1,281**
Luke Air Force Base: Install Solar Hot Water Heaters	0
Ramstein Air Base: Install Solar - VOQ	727

Project	Estimated Financial Obligation ($000s)
Royal Air Force - Lakenheath: Install Solar Photovoltaic System, Building 1319	554
Water Conservation	**1,796**
Fresno Yosemite International: Water Reduction Project.	300
Joint Base Charleston Naval Weapons Station: Water Meter Repair/Replacement Project	172
Lackland AFB (JB San Antonio): Repair water leaking under clay tile - Building 2041	100
Peterson Air Force Base: Replace Bluegrass with Xeriscape	777
Ramstein Air Base: Golf Course Water Conservation	218
Schriever Air Force Base: Survey and Repair Water Line Leaks	230
MARINE CORPS	**14,362**
Energy Conservation	**14,362**
Marine Corps Logistics Base Albany: Facility Energy Improvements project to implement ECMs identified by a base wide energy audit performed in September 2011.	364
Marine Corps Logistics Base Albany: Facility Energy Improvements project to implement ECMs identified by a base wide energy audit performed in September 2011.	215
Marine Corps Base Camp Butler: Replace outside air dampers and ductwork with motorized DDC/enthalpy-controlled dampers.	752
Marine Corps Base Camp Butler: Replace outside air dampers and ductwork with motorized DDC/enthalpy-controlled dampers.	896
Marine Corps Base Camp Butler: Replace existing showerheads with low-flow, EPA92 compliant ones in multiple buildings.	47
Marine Corps Base Camp Butler: Install heat-shielding films and blinds on building windows for the purpose of reducing solar heat gain into multiple buildings.	1,589
Marine Corps Barracks - 8TH & I: Replace deteriorated EMS/DDC that operate the building mechanical systems.	677
Marine Corps Barracks - 8TH & I: Replace deteriorated EMS/DDC that operate the building mechanical systems.	623
Marine Corps Barracks - 8TH & I: Replace deteriorated EMS/DDC that operate the building mechanical systems.	117
Marine Corps Barracks - 8TH & I: Replace deteriorated EMS/DDC that operate the building mechanical systems.	2,580

Project	Estimated Financial Obligation ($000s)
Marine Corps Base Hawaii: Conduct comprehensive, whole building evaluation/investment grade energy audits of all mechanical and electric components for 26 buildings.	972
Marine Corps Base Camp Lejeune: Replaces existing T-12 fluorescent fixtures, high intensity discharge (HID) fixtures, or incandescent lamps with new T-8 fluorescent fixtures or compact fluorescent (CFL) lamps.	931
Marine Corps Base Camp Lejeune: Installs occupancy sensor controls for lighting control in multiple facilities.	894
Marine Corps Base Camp Lejeune: Replaces aging and inefficient shower heads, toilets and urinals with low flow fixtures and install low flow aerators on existing faucets at multiple facilities.	1,057
Marine Corps Air Ground Combat Center Twenty-nine Palms: Install California State Law Rule 21 Section J.5 (Sheet 114) required meters on all solar PV system inverters which will report back through the current communication system the real time generation to Southern California Edison (SCE) as required by the interconnect agreement requirements.	1,306
Marine Corps Air Station Yuma: Installs a new raw water (non-potable) irrigation supply line to multiple athletic fields.	343
Marine Corps Air Station Yuma: Retro-Commission HVAC and hot water systems in multiple buildings.	199
Marine Corps Air Station Yuma: Retro-Commission HVAC and hot water systems in multiple buildings.	369
Marine Corps Air Station Yuma: Retro-Commission HVAC and hot water systems in multiple buildings.	431
DECA	**3,454**
Energy Conservation	**3,454**
Altus Air Force Base: Retrofitted existing open display case with glass doors	88
Bremerton: Retrofitted existing open display case with glass doors	89
Buckley Air Force Base: Retrofitted existing open display case with glass doors	63
Chievres Air Base: Retrofitted existing open display case with glass doors	56
Corpus Christi: Retrofitted existing open display case with glass doors	78

Project	Estimated Financial Obligation ($000s)
Dyess Air Force Base: Retrofitted existing open display case with glass doors	82
Ellsworth Air Force Base: Retrofitted existing open display case with glass doors	123
F. E. Warren Air Force Base: Retrofitted existing open display case with glass doors	65
Fort Bliss: Retrofitted existing open display case with glass doors	157
Fort Hood: Retrofitted existing open display case with glass doors	104
Fort Lewis: Retrofitted existing open display case with glass doors	152
Fort Riley: Retrofitted existing open display case with glass doors	156
Fort Sam Houston: Retrofitted existing open display case with glass doors	120
Fort Sill: Retrofitted existing open display case with glass doors	144
Goodfellow Air Force Base: Retrofitted existing open display case with glass doors	79
Grand Forks Air Force Base: Retrofitted existing open display case with glass doors	73
Hill Air Force Base: Retrofitted existing open display case with glass doors	113
Kingsville: Retrofitted existing open display case with glass doors	33
Kirtland Air Force Base: Retrofitted existing open display case with glass doors	115
Malmstrom Air Force Base: Retrofitted existing open display case with glass doors	109
McChord Air Force Base: Retrofitted existing open display case with glass doors	118
Minot Air Force Base: Retrofitted existing open display case with glass doors	80
Naval Air Station Whidbey Island: Retrofitted existing open display case with glass doors	105
Naval Submarine Base Bangor: Retrofitted existing open display case with glass doors	152
Peterson Air Force Base: Retrofitted existing open display case with glass doors	148
Randolph Air Force Base: Retrofitted existing open display case with glass doors	159
Rota: Retrofitted existing open display case with glass doors	50
Sheppard Air Force Base: Retrofitted existing open display case with glass doors	114

Project	Estimated Financial Obligation ($000s)
Tinker Air Force Base: Retrofitted existing open display case with glass doors	109
United States Air Force Academy: Retrofitted existing open display case with glass doors	85
Vance Air Force Base: Retrofitted existing open display case with glass doors	56
Yongsan CDC: Replace Warehouse Lighting	248
Yuma Proving Ground: Retrofitted existing open display case with glass doors	32
DLA	**26,431**
Energy Conservation	**5,116**
Defense Distribution Depot San Joaquin: Replace Existing Lights with LED Lights - Warehouse 6	175
Defense Distribution Depot San Joaquin: Replace Exterior Windows - Warehouse 14 Bubble	105
Defense Distribution Depot San Joaquin: Replace Rooftop Packaged Units - Warehouse 30 Admin.	105
Defense Distribution Depot San Joaquin: Replace Light with LED Retrofit Kits	140
Defense Distribution Depot Susquehanna: Replace Lighting in Canopies	30
Defense Distribution Depot Susquehanna: Replace Lighting in Maintenance and Material Storage Cage	192
Defense Distribution Depot Susquehanna: Replace Lighting in Truck Bays	48
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	73
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	52
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	26
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	12
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	32
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	12

Project	Estimated Financial Obligation ($000s)
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	14
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	15
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	3
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	5
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	6
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	4
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	7
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	7
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	11
Defense Distribution Depot Susquehanna: Replace Facility Admin Area Lighting Controls	3
Defense Supply Center Columbus: Replace existing exterior lights and controls	317
Defense Supply Center Richmond: Upgrade Buildings 14 & 15 to T5 Lighting with Occupancy Sensors	722
Defense Supply Center Richmond: Install Ground Source Heat Pump and Upgrade Lighting Building 80	3,000
Renewable Energy	**21,315**
Defense Supply Center Richmond: Install Thermal Solar Roofs Buildings 13, 40 and 80	1,315
Defense Supply Center Richmond: Construct Ops Center	20,000
WHS	**4,591**
Energy Conservation	**4,591**
Pentagon: Commissioning	3,017
Pentagon: Metering	184
Pentagon: Energy Monitoring / Audit Support	1,390
Grand Total	**798,606**

LIST OF NON-GOVERNMENTAL THIRD PARTY FUNDED ENERGY PROJECTS

Project	Estimated Financial Obligation ($000s)
ARMY	**326,378**
ESPC	**311,288**
99th Regional Support Command	25,495
Aberdeen Proving Ground	5,117
Aberdeen Proving Ground	36,667
Arlington Hall Station	11,361
Fort Bliss	19,188
Fort Carson	3,156
Fort Jackson	38,129
Fort McCoy	7,168
Letterkenny Army Depot	43,674
Puerto Rico Army National Guard – Camp Santiago	28,134
Rock Island Arsenal	39,201
Rock Island Arsenal	22,133
United States Army Garrison – Daegu	12,603
United States Army Garrison – Daegu	1,323
United States Army Garrison – Daegu	514
United States Army Garrison – Yongsan	10,844
Washington Army National Guard	539
White Sands Missile Range	6,017
UESC	**15,090**
Anniston Army Depot	485
Fort Gordon	3,596
Joint Base Lewis – McChord	1,090
Joint Base Myer – Henderson Hall	2,189
Presidio of Monterey	6,700
Presidio of Monterey	50
Presidio of Monterey	300
Presidio of Monterey	487
Presidio of Monterey	40
Watervliet Arsenal	152
NAVY	**21,596**

ESPC	**12,670**
Naval Air Station Patuxent River	12,670
Project	Estimated Financial Obligation ($000s)
UESC	**8,926**
Naval Air Station Lemoore	4,686
Naval Base Ventura County	2,600
Naval Weapons Station Seal Beach	1,640
AIR FORCE	**13,754**
UESC	**13,754**
Dyess Air Force Base	13,040
Tinker Air Force Base	714
DIA	**12,012**
ESPC	**12,012**
Joint Base Anacostia – Bolling	12,012
Grand Total	**373,740**

Appendix G - Contact Information

Please contact the following individuals with questions regarding the FY 2014 AEMR:

Ariel S. Castillo, Ph. D.
OASD (EI&E)
Tel: 571-372-6858
Ariel.S.Castillo.civ@mail.mil

Meredith Pringle
OASD (EI&E)
Tel: 571-372-6826
Meredith.K.Pringle.ctr@mail.mil

Appendix H - References

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