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(Installations and Environment)

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1. Introduction

In this Annual Energy Management Report (AEMR)[1] for Fiscal Year (FY) 2011, the Department of Defense (DoD) reports on its activities to promote energy security and leverage new energy technologies. This report focuses on energy at DoD's fixed installations.[2]

Facility energy is important to DoD for two reasons. The first is cost. DoD's annual energy bill is approximately $4 billion. The large bill reflects DoD's large footprint. DoD manages over 500 installations in the United States (U.S.) and overseas, comprising nearly 300,000 buildings covering 2.3 billion square feet of building space. The Department's footprint is three times that of Walmart and six times that of the General Services Administration (GSA). There are non-monetary costs as well: Although facility energy represents only 20-25 percent of DoD's energy costs, it accounts for nearly 40 percent of greenhouse gas emissions.

Second, facility energy is critical to mission assurance. The Department's fixed installations support combat operations more directly than ever before, and they serve as staging platforms for humanitarian and homeland defense missions. These installations are largely dependent on a commercial power grid that is vulnerable to disruption due to aging infrastructure, weather-related events and a potential kinetic or cyber attack. The Defense Science Board has warned that DoD's reliance on a fragile power grid to deliver electricity to its bases places critical missions at risk.[3]

The Department's facility energy strategy, designed to reduce energy costs and improve the energy security of fixed installations, has four inter-related elements (Figure 1-1):

- Reduce the demand for traditional energy through conservation and energy efficiency;
- Expand the supply of renewable energy and other forms of distributed (on-site) energy;
- Enhance the energy security of DoD installations directly (as well as indirectly, through the first two elements); and
- Leverage advanced technology.

Figure 1-1: Elements of the Facility Energy Strategy

[1] See Appendix A for a full list of acronyms used in this report.

[2] DoD distinguishes facility energy from operational energy. Facility energy includes energy needed to power fixed installations and non-tactical vehicles. Operational energy means 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 and weapons platforms, 10 U.S.C. § 2924(5). 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); TRICARE Management Agency (TMA); and Washington Headquarters Services (WHS).

[3] "More Fight -- Less Fuel," Report of the Defense Science Board Task Force on DoD Energy Strategy, February 2008.

As DoD implements this strategy, it also strives to meet a variety of energy and water management goals that are established in law, regulation and policy (Appendix B). The FY 2011 AEMR complies with the following mandates:

- Section 548 of the National Energy Conservation Policy Act (NECPA) of 1978, which requires Federal agencies to describe their energy management activities;
- Title 10, United States Code (U.S.C.) § 2925, which requires DoD to submit to Congress an AEMR describing its facility energy activities;
- Title 10, U.S.C. § 2911(a), which requires DoD to establish energy performance goals for transportation systems, support systems, utilities, and infrastructure and facilities; and
- Title 10, U.S.C. § 2911(b), which requires DoD to provide a comprehensive master plan for the achievement of DoD's energy performance goals (Appendix C).

Table 1-1 summarizes the Department's progress against some of the key goals for FY 2011. Refer also to Appendix D for additional data on FY 2011 key performance metrics. In summary, DoD fell short of goals for energy intensity reduction and renewable energy, but exceeded goals for potable water intensity and petroleum consumption reduction. This report contains more detailed information on the Department's performance related to these and other goals.

Table 1-1: FY 2011 DoD Progress Toward Facility Energy and Water Goals

Goals & Objectives	Metric	Entity	FY 2011 Performance	FY 2011 Target
Reduce Facility Energy intensity relative to FY 2003 baseline (Energy Independence & Security Act of 2007, § 431)	British thermal unit (Btu) of energy consumed per gross square foot of facility space.	DoD	-13.3%	-18%
		Army	-11.8%	
		Navy	-16.9%	
		Marine Corps	-9.4%	
		Air Force	-16.3%	
Consume more electric energy from renewable sources (Energy Policy Act of 2005, § 203)	Total renewable electricity consumption as a percentage of total facility electricity consumption.	DoD	3.1%	5%
		Army	0.5%	
		Navy	1.0%	
		Marine Corps	1.2%	
		Air Force	6.0%	
Produce or procure more energy from renewable sources (U.S. Code Title 10, § 2911(e))	Total renewable energy (electric and non-electric) produced or consumed as a percentage of total facility electricity consumption.	DoD	8.5%	25% by FY 2025
		Army	4.3%	
		Navy	20.6%	
		Marine Corps	0.6%	
		Air Force	7.1%	
Reduce Potable Water Intensity relative to FY 2007 baseline (Executive Order 13423)	Gallons of water used per square foot of facility space.	DoD	-10.7%	-8%
		Army	-10.3%	
		Navy	-4.0%	
		Marine Corps	-22.7%	
		Air Force	-13.1%	
Reduce Petroleum Consumption in non-tactical vehicles relative to FY 2005 baseline (Energy Independence & Security Act of 2007, § 142, Executive Order 13514 § 2(a)(iii))	Gallons of gasoline equivalent of petroleum fuel consumed.	DoD	-11.8%	-12%
		Army	-10.3%	
		Navy	-26.0%	
		Marine Corps	-16.6%	
		Air Force	-8.3%	

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 security; managing energy data and metering; funding energy projects; and reporting on federal building energy standards.

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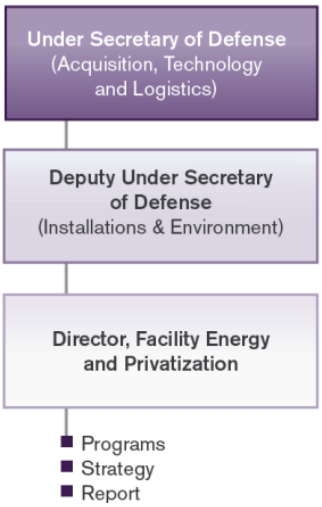
2. Facility Energy Program Management

The Deputy Under Secretary of Defense (Installations and Environment) (DUSD[I&E]), Facility Energy Program

The DUSD (I&E) is responsible for overseeing the Department's Facility Energy Program and progress to achieve the facility energy goals. The DUSD (I&E) reports to the Under Secretary of Defense (Acquisition, Technology and Logistics), and is responsible for issuing facility energy policy and guidance to the DoD Components, coordinating the DoD facility energy strategy and related programs, and engaging with the Military Services, Defense Agencies and other stakeholders. The DUSD (I&E) also coordinates all congressional reports related to facility energy. Figure 2-1 illustrates the organizational structure of the DUSD (I&E).

This section describes the Defense Components' facility energy programs.

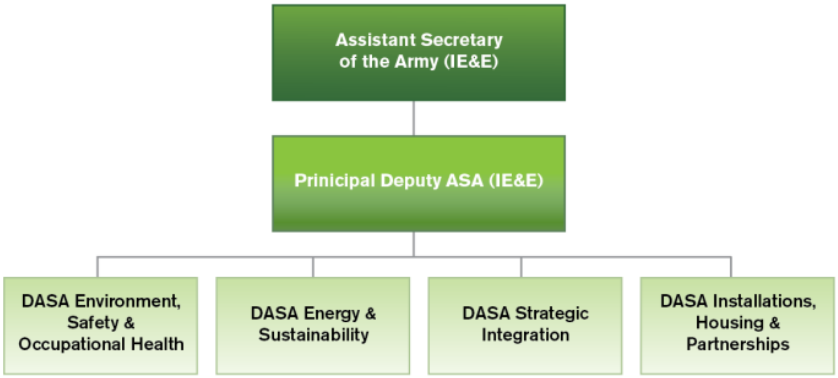
Figure 2-1: ODUSD (I&E) Organization



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 comprises staff from the Office of the Assistant Secretary of the Army for Installations, Energy and Environment (ASA (IE&E)), Office of the Assistant Chief of Staff for Installation Management (ACSIM) and the Installation Management Command (IMCOM), U.S. Army National Guard (USARNG), U.S. Army Reserves (USAR), Army Materiel Command (AMC), Army Medical Command (MEDCOM) and Space and Missile Defense Command (SMDC). The Army Energy Team collaborates with the U.S. Army Corps of Engineers (USACE), Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA (ALT)), the Army Staff, other Army offices and commands (Figure 2-2). On September 15, 2010, the Under Secretary of the Army directed that the energy security and sustainability governance structures be combined. Since then, the Army Senior Energy and Sustainability Council (SESC) has served as the overarching senior body for all Army energy and sustainability efforts, including both installation and operational energy. Through SESC leadership, the Army is actively supporting advanced technologies at installations, in weapon systems, and in operations. The Army is pursuing projects such as large scale solar, wind, and geothermal power sources; electric and hybrid vehicles; and improved insulation and power management of temporary base camp facilities. Through the SESC structure, the Army continues to establish energy security priorities, policies, and metrics; evaluate energy security progress; and provide guidance on future energy investments.

Figure 2-2: Army Facility Energy Governance Structure

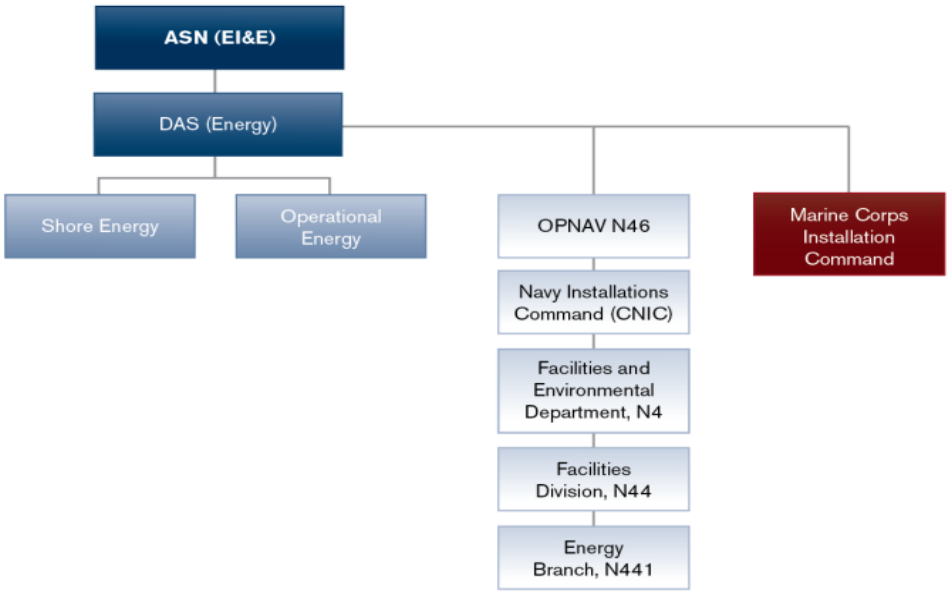


Department of the Navy (DON) Facility Energy Program

The Assistant Secretary of the Navy for Energy, Installations and Environment (ASN (EI&E)) is the designated senior DON official for energy who is responsible for formulating Department-wide policies, procedures, advocacy and strategic plans, as well as overseeing all DON functions and programs related to energy. The Deputy Assistant Secretary of the Navy for Energy (DASN (Energy)), reports to ASN (EI&E) and is the Chairman of the DON Shore Energy Policy Board. The Office of the Chief of Naval Operations (CNO) Shore Installation Management Division (OPNAV-N46) is responsible for developing policy and program resources for the Navy's Facility Energy Program. OPNAV-N46 also ensures compliance with the DON shore energy goals. 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, N41. N441 is responsible for developing and integrating shore energy requirements across the Shore Enterprise.

The Navy energy community consists of a broad range of subject matter experts, analysts, and program managers who are led by the senior Navy officials (Figure 2-3).

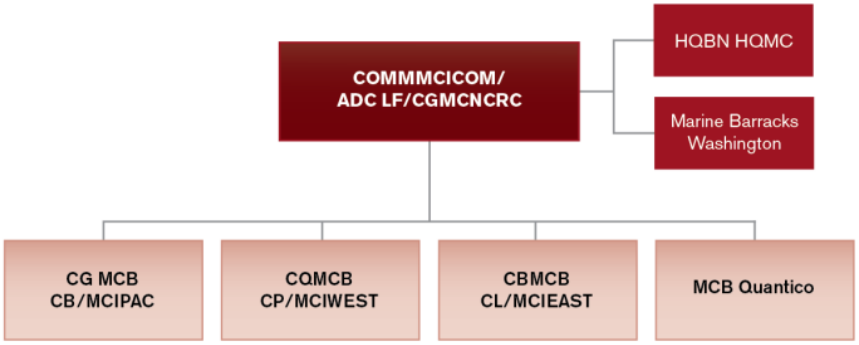
Figure 2-3: DON Facility Energy Governance Structure



The Marine Corps Installations Command (MCICOM) oversees three subordinate regional commands: Marine Corps Installations East, Marine Corps Installations West and Marine Corps Installations Pacific. The Commander of MCICOM also serves as the Assistant Deputy Commandant (ADC), Installations & Logistics (Facilities), with full responsibility and authority for all installations functions and funding, including the Installations Energy Program.

The Commander of MCICOM/ADC I&L (Facilities) is the Senior Official responsible for the development, management, and execution of the Marine Corps Installations/Facilities Energy and Water Management Program. The Director, Facilities (HQMC LFF/MCICOM GF) provides direct oversight of the Marine Corps Facilities Energy and Water Management Program. Facility Operations and Energy Section (MCICOM GF-1), provides additional program oversight. MCICOM GF-1 serves as the Marine Corps Facilities Energy Program Manager (Figure 2-4).

Figure 2-4: Facility Energy Governance Structure



Naval Facilities Engineering Command (NAVFAC) provides facilities engineering support to the Navy and Marine Corps. The Deputy Commander for Operations at headquarters serves as the NAVFAC Energy Officer. The NAVFAC Energy Office is responsible for developing guidance and coordinating across NAVFAC commands. The NAVFAC Energy Office plans, develops, executes, and provides oversight of energy projects and processes for DON installations.

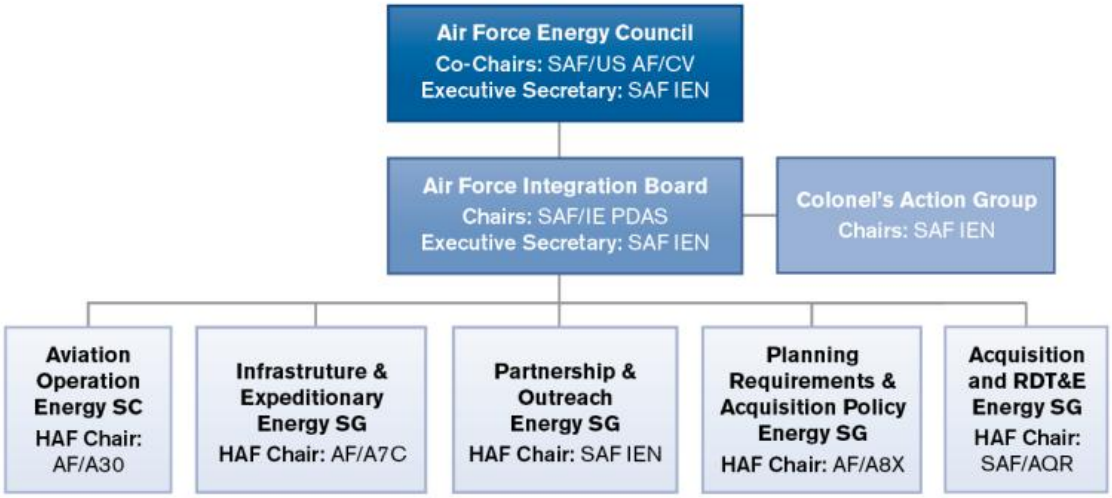
Air Force Facility Energy Program

The Air Force Energy Team comprises seven entities that work together to meet the Service-wide energy goals to reduce demand, increase supply, and change the culture:

- **Headquarters (HQ) U.S. Air Force (USAF):** 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 Support Agency (AFCESA):** Advises Headquarters U.S. Air Force and provides assistance to the MAJCOMs and installations in developing plans and strategies to meet mandated energy goals. It also manages and facilitates execution of energy programs as the home of the Air Force Facility Energy Center, the central Program Management Office for facility energy and water conservation.
- **Air Force Center for Engineering and the Environment (AFCEE):** Advises HQ USAF and provides assistance to the MAJCOMs and installations developing plans and strategies to meet mandated sustainable design and construction goals. It also manages and facilitates the Air Force Military Construction (MilCon) program.
- **Air Force Real Property Agency (AFRPA):** Acts as the center of real estate excellence within the Air Force. Establishes Enhanced Use Lease (EUL) implementation guidelines and resolves program issues. Advocates use of Air Force resources to fund EUL 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 (42 U.S.C. § 8253). The scope of duties include, 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 has three levels (Figure 2-5). The Air Force Energy Council provides global oversight to solve the complex energy challenges facing the Air Force. The Council also acts as a deliberative body responsible for developing the strategies and priorities and endorsing requirements as well as providing oversight of the Air Force efforts to achieve energy priorities, goals, and objectives. The Air Force Energy Council's scope extends to all energy acquisition, use, and conservation initiatives and issues within the Air Force. This includes initiatives related to but not limited to the reduction of fuel use in aviation, ground motor vehicles, and equipment; conserving energy use at all properties under control of the Air Force, including installations and forward operating bases; developing alternative sources of energy and fuel; and identifying research and development opportunities. The Energy Integration Board (EIB) reports to the Energy Council and is responsible for aligning energy investments to goals and objectives across the Air Force. There are five energy steering groups under the EIB; Aviation Operations, Infrastructure and Expeditionary, Partnership and Outreach, Planning, Requirements and Acquisition Strategy, and Acquisition, and Research, Development, Test, and Evaluation (RDT&E). Co-Chairs of the Energy Council, the Under Secretary of the Air Force (SAF/US), and the Vice-Chief of Staff of the Air Force (AF/CV) are the Senior Energy Officials within the Air Force. The Deputy Assistant Secretary of the Air Force for Energy (SAF/IEN) is the Executive Secretary of the EIB.

Figure 2-5: Air Force Energy Governance Structure



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 Management
Defense Commissary Agency (DeCA)	Energy, Environmental Engineer
Defense Finance and Accounting Service (DFAS)	Director, Support Services
Defense Intelligence Agency (DIA)	Chief, Engineering and Logistics Office
Defense Logistics Agency (DLA)	Installations Support Director
Missile Defense Agency (MDA)	Senior Energy Manager
National Geospatial-Intelligence Agency (NGA)	Director, Installation Operations Office
National Security Agency (NSA)	Technical Director for Installations and Logistics
TRICARE Management Agency (TMA)	Chair, Health Facilities Steering Committee (Energy and Sustainability Sub-Committee)
Washington Headquarters Service (WHS)	Pentagon Energy and Sustainability Manager
National Reconnaissance Office (NRO)	Senior Energy Officer

3. DoD's Progress in Reducing Energy Demand

The Department is reducing its demand for traditional forms of facility energy through conservation and improved energy efficiency. DoD shares Energy Secretary Chu's view that "energy efficiency is not just the low-hanging fruit—it's the fruit laying on the ground." The Department's FY 2013 budget includes more than $1.1 billion for investments in conservation and energy efficiency, and almost all of that is directed to existing buildings. The lion's share is 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 HVAC systems, double-pane windows, energy management control systems, and new roofs.

In addition to direct funding (the Components' own and that provided by the Energy Conservation and Investment Program), DoD Components are using performance-based contracts to improve the energy efficiency of existing buildings. In response to the President's memorandum calling on the Federal Government to initiate $2 billion worth of performance-based contracts over the next two years, the Department has established its own goal to meet at least half of that commitment.

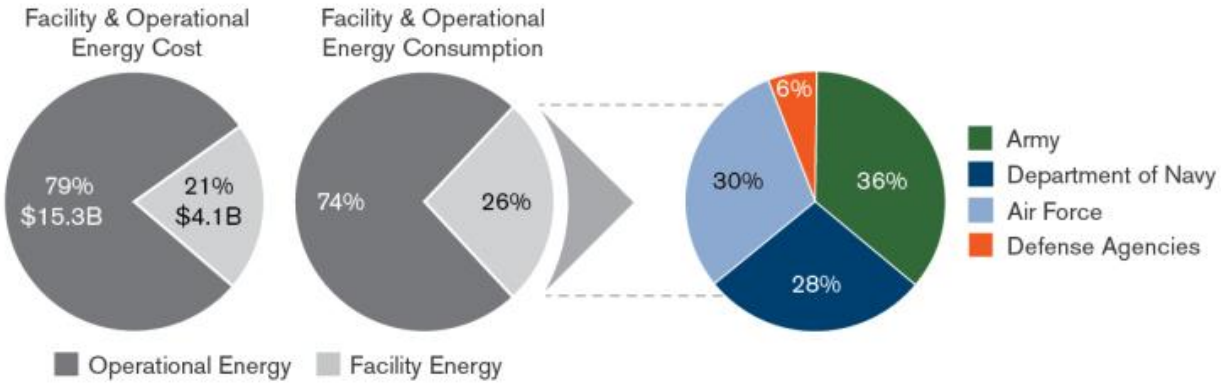
Facility Energy Demand Overview

DoD distinguishes facility energy from operational energy. This section describes the scope of the Department's facility energy demand in terms of cost and consumption. Facility energy includes energy needed to power fixed installations and non-tactical vehicles.

In FY 2011, the Department's total energy bill was $19.3 billion. DoD spent $4.1 billion on facility energy, which included $3.9 billion to power, heat, and cool buildings and $0.2 billion to supply fuel to the fleet of non-tactical vehicles. Facility energy represented 21 percent of the Department's total energy expenditures.

In FY 2011, DoD consumed 223,800 billion British thermal units (BBtu) of facility energy, which represented 26 percent of the Department's total energy consumption. DoD consumed 212,700 BBtu in buildings (stationary combustion), and 11,100 BBtu in non-tactical fleet vehicles (mobile combustion). The Army is the largest consumer of facility energy, followed by the Air Force, and the DON (Figure 3-1).

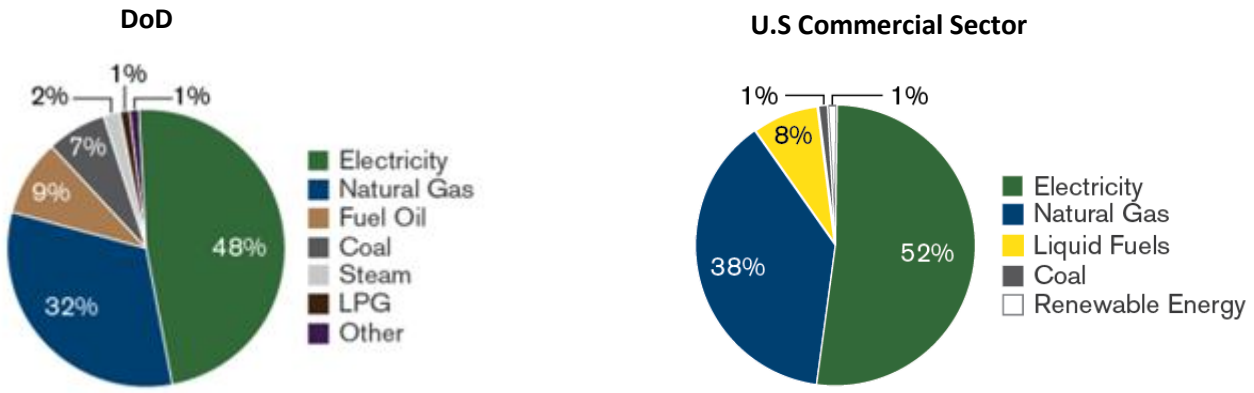
Figure 3-1: DoD FY 2011 Facility Energy Consumption and Cost



Electricity and natural gas accounted for nearly 80 percent of DoD facility energy consumption. DoD facilities also consumed fuel oil, coal, and liquefied petroleum gas (Figure 3-2).

DoD's consumption mix mirrors that of the U.S. commercial sector, where natural gas and electricity make up more than 75 percent of the supply mix. However, the Department's FY 2011 facility energy consumption amounts to only 1.1 percent of the total U.S. commercial sector's energy consumption.[4]

Figure 3-2: DoD FY 2011 and U.S Commercial Sector Stationary Combustion Fuels by Type



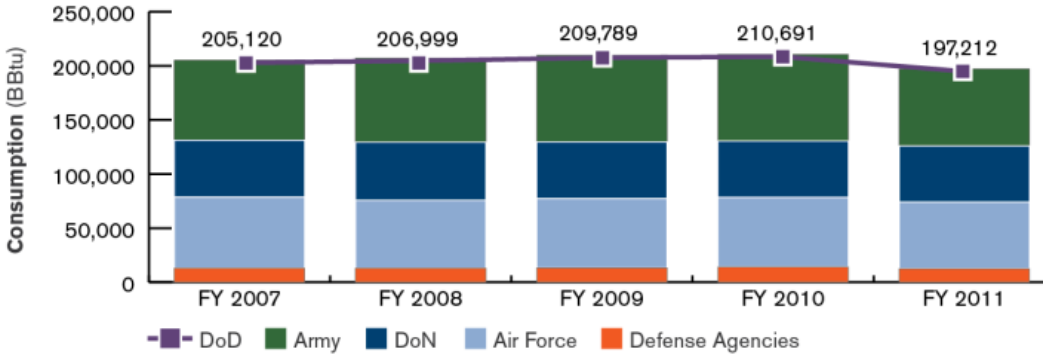
[4] Energy Information Administration (EIA), *Annual Energy Review 2010*: *Energy Consumption by Sector and Source* [online source] (Washington, D.C. , 2011, accessed February 1, 2012), available from http://www.eia.gov/oiaf/aeo/tablebrowser/#release=EARLY2012&subject=0-EARLY2012&table=2-EARLY2012&region=1-0&cases=full2011-d020911a,early2012-d121011b, Internet.

Energy Intensity

DoD measures energy intensity in BBtu per gross square foot of facility space. Section 543 of the National Energy Conservation Policy Act mandates a 3 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. EISA 2007 further distinguishes two categories of buildings: those subject to the energy intensity reduction goal and those that can be excluded.[5] This section discusses energy intensity for DoD "goal-subject" buildings.

In FY 2011, DoD consumed 197,000 BBtu of energy in its goal-subject buildings and 15,400 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 2011 Facility Energy Consumption by Military Service[6]

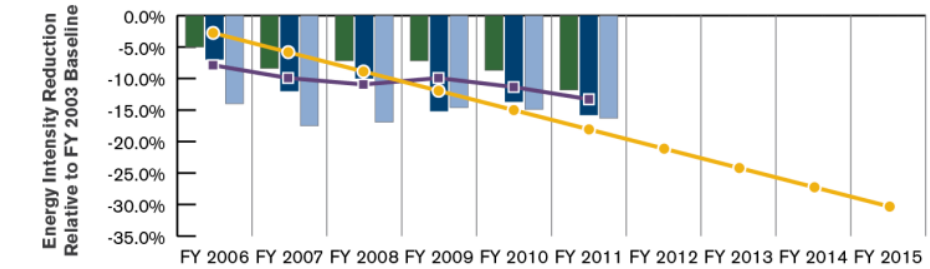


DoD energy intensity has decreased since FY 2003. Figure 3-4 illustrates DoD's and the Military Services' progress toward the EISA 2007 goal. Despite falling short of the FY 2011 intensity reduction goal of 18 percent, DoD (as a whole) and each of the Military Services reduced their energy intensity by 2 percent from their respective FY 2010 levels. In FY 2011, DoD's energy intensity reflected a 13.3 percent reduction from the FY 2003 baseline.

[5] 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, *Energy Independence and Security Act of 2007: Major Provisions of Interest to Federal Energy Managers* [online source] (Washington, D.C., 2011, accessed June 1, 2012), available from http://www1.eere.energy.gov/femp/news/news_detail.html?news_id=11683, Internet.

[6] Navy and Marine Corps reported separately for the first time in FY 2011.

Figure 3-4: DoD Energy Intensity EISA 2007 Goal Attainment[7]



DoD	-8.0%	-10.0%	-11.0%	-10.0%	-11.4%	-13.3%				
Army	-5.0%	-8.4%	-7.2%	-7.2%	-8.7%	-11.8%				
DoN	-7.0%	-12.0%	-10.0%	-15.2%	-13.7%	-15.8%				
Air Force	-14.0%	-17.5%	-16.9%	-14.6%	-14.9%	-16.3%				
EISA 2007 Goal	-3.0%	-6.0%	-9.0%	-12.0%	-15.0%	-18.0%	-21.0%	-24.0%	-27.0%	-30.0%

Table 3-1 summarizes annual energy intensities across the Department from FY 2008 to FY 2011 as well FY 2011 changes 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 2011 Change Relative to Baseline
DoD	115,647	103,692	104,527	102,929	100,268	-13.3%
Army	97,248	89,802	93,051	91,499	85,739	-11.8%
DoN	122,607	109,550	103,245	105,036	103,263	-15.8%
Air Force	136,437	113,368	116,529	116,090	114,154	-16.3%
DeCA	146,052	139,623	136,703	136,182	138,595	-5.1%
TMA	226,880	211,113	204,660	213,151	197,994	-12.7%
DLA	51,385	60,832	49,563	49,425	52,497	2.2%
DIA	229,108	216,622	216,972	194,736	201,166	-12.2%
WHS	161,044	176,053	213,963	170,876	180,027	11.8%
NGA	177,040	195,803	218,140	212,516	169,458	-4.3%
NSA	263,456	256,728	281,260	286,849	292,726	11.1%
DCMA	N/A	126,299	130,494	129,435	N/A	N/A
NRO	N/A	N/A	N/A	N/A	276,357	N/A
MDA	N/A	N/A	186,061	N/A	N/A	N/A

[7] The DoD trend line accounts for the Defense Agencies. In FY 2011, Army excluded ammunition plants from the baseline energy intensity and from the goals. Excluding ammunition plants in FY 2009 and FY 2010 would have yielded a -0.2 percent reduction in FY 2009 and a 1.18 percent increase in FY 2010 compared to FY 2011. Navy and Marine Corps also reported separately for the first time in FY 2011: they achieved intensity reductions of 16.9 percent and 9.4 percent respectively, relative to their FY 2003 baseline.

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 rather than only in aggregate form. Appendix E summarizes FY 2011 installation-level energy intensities.

In FY 2011, the Department increased investments in energy efficiency and conservation. These investments will be implemented over a number of years. The benefits from these investments will accrue after they are fully implemented. Therefore, measurements of energy efficiency improvements in FY 2011 reflect investments made in prior years.

Army

Despite the increases in military activity at U.S. installations, the Army was still able to reduce goal-subject facility energy use by 4.7 percent from 72.9 to 69.5 trillion BTUs, between FY 2010 and FY 2011, while reducing its goal-subject square footage by 5.2 percent, from 855 million square feet to 810 million square feet. The Army accomplished this decrease through various activities such as joint basing, a combination of increased senior level energy program leadership, and increased conservation efforts by installation energy users. In FY 2011, the Army's energy intensity reflected an 11.8 percent reduction from the FY 2003 baseline.

Army Energy Security Goals (ESGs)

ESG1: Reduce Energy Consumption

ESG2: Increase Energy Efficiency Across Platforms and Facilities

In FY 2011, the Army identified a baseline correction at eight ammunition plants whose processes consumed large amounts of mission-related energy not directly related to efficiency or conservation measures. Therefore, these ammunition plants were excluded from goal-subject energy consumption, and their associated energy use is no longer included in the baseline energy consumption, square footage (i.e., FY 2003 baseline intensity), or the FY 2011 intensity. This type of exclusion is permitted by Section 543 of the National Energy Conservation Policy Act, as amended. Only the industrial energy use was exempted, while base operations' energy use at the plants is still subject to energy efficiency requirements. Due to the exclusion, the Army's 2003 baseline decreased from 100,261 Btu/GSF to 97,250 Btu/GSF. The Army excluded energy and square footage for McAlester AAP, Scranton AAP, Radford AAP, Milan AAP, Holston AAP, Lone Star AAP, Lake City AAP and Iowa AAP. Due to wartime operational requirements supporting tactical forces, energy use in these ammunition plants increased 102 percent over the baseline, as compared to a reduction of 11.8 percent in energy intensity within goal-subject buildings. As operations scale back in areas of conflict, such as Iraq and Afghanistan, energy use in AAPs is expected to decrease proportionally.

On December 17, 2010, the Army issued the Building Energy Efficiency Tax Deduction Policy (Section 179D). The policy allows tax benefits for private industry partners who implement certain energy efficient building investments to increase economic viability of energy efficiency projects. The policy will also support the Army's efforts to achieve energy and utility cost savings and greenhouse gas reductions on its installations. On October 27, 2010, the Army issued a new policy requiring that all light bulbs acquired for use in Army-owned, leased, or controlled facilities and structures meet higher energy efficiency standards. In FY 2011, the Army conducted a holistic review of its energy policies and instituted a practice for continuous policy to review and update four to six policies annually. Policies under review include lighting standard upgrades, enhancement of the Army's Energy Savings and Performance Contract (ESPC) Program, and improved training for energy managers.

Navy

DON reduced its energy intensity by 15.8 percent from its FY 2003 level, the Navy by 16.9 percent and the Marine Corps by 9.4 percent from their respective baselines. On-site source energy credits accounted for 6 percent of DON's energy intensity reduction, the largest single technology contribution.[8] However, the DON did not reach the 18 percent goal in FY 2011. One contributing factor was the insufficient number of energy efficiency projects awarded in prior years to maintain the annual 3 percent reduction. Another determinant was the lack of funding for energy audits, resulting in missed opportunities to identify improvements in energy efficiency. Energy efficiency opportunities programmed for FY 2012 and FY 2013 are expected to reverse the DON's downward trend in energy consumption. In January 2011, the DON launched its "Energy Program for Security and Independence" aimed at reducing installation energy intensity by 50 percent by FY 2020 relative to a FY 2003 baseline.

To achieve this, the DON's Energy Program for Security and Independence supports the implementation of a variety of energy efficiency and conservation initiatives that aim to curtail energy consumption and improve resource management. Recent and planned naval energy initiatives include:

- Facility energy audits;
- The adoption of advanced metering and integration with energy management systems;
- Building recommissioning;
- RDT&E on innovative energy technologies; and
- Partnerships with industry to implement cutting-edge technologies.

[8] There is an allowable Federal credit toward the energy intensity goal for more efficient on-site power uses.

Marine Corps

In FY 2011, the Marine Corps energy intensity reflected a 9.4 percent reduction from the FY 2003 baseline. The Marine Corps continues to be committed to improving energy and water efficiency. In August 2009, the Commandant of the Marine Corps (CMC) declared energy a top priority. In March 2011, the Marine Corps published its Expeditionary Energy Strategy (EES) establishing a framework that communicates the CMC's vision, mission, goals, and objectives for both expeditionary and installation energy management.

- Ensure a secure, reliable, and affordable energy and water supply to support operating forces and their families
- Reduce life-cycle operating costs of Marine Corps installations and manage future commodity price volatility
- Support our Nation's efforts to reduce greenhouse gas emissions and environmental impacts, reduce dependence on foreign oil, and promote conservation of water supplies

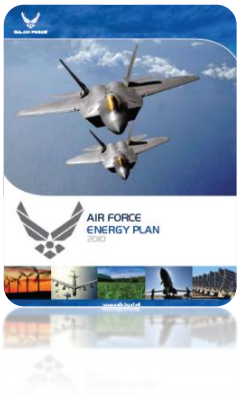
USMC Expeditionary Energy Strategy

Limited capital investment over the past 10 years is the primary factor influencing the overall efficiency of Marine Corps facilities. However, large scale capital investments are planned for FY 2012 through FY 2014 targeting the following:

- Energy efficient heating, cooling, ventilation, and hot water heating equipment including the Heating Ventilation and Air Conditioning (HVAC) distribution system, including work related to central chillers, chilled water distribution, cooling towers, and the installation of ground source heat pumps (GSHP);
- Thermal envelope of buildings through building insulation, weatherization, and reflective roof coatings;
- Lighting systems and controls including fixtures, lamps and motion sensors, as well as day-lighting, internal emergency lighting, exterior building lighting, and parking lot and street lighting;
- Centrally controlled energy systems that have the ability to automatically adjust temperature, shed electrical loads, control motor speeds, or adjust lighting intensities; and
- Commissioning measures to verify building energy related systems are installed, calibrated, and operating to meet the original design intent and optimize the systems to satisfy current operational needs.

Over the past decade, the Marine Corps has relied primarily on ESPCs and Utility Energy Service Contracts (UESCs) to invest in energy-efficient technologies. These sources will continue to be utilized where viable project opportunities can be identified.

Air Force



In FY 2011, the Air Force's energy intensity reflected a 16.3 percent reduction from the FY 2003 baseline, a 1.4 percent reduction from its level in 2010. The Air Force is committed to a robust energy management program that accounts for all energy functions. In FY 2011, the Air Force's energy priorities evolved with the development of an overarching framework that addresses every dimension of the Air Force energy challenges. As stated in the Air Force Energy Plan, the Air Force is committed to "improve resilience, assure supply, reduce demand and foster an energy culture." Although facilities consume only 12 percent of the total Air Force energy consumption, this represents 17 percent of the total government inventory and incur more than $1B in energy commodity expenditures each year. Several factors contributed to the Air Force not reaching its energy intensity goal, including reduced allowable credit from renewable energy purchases, and a more severe weather year.

However, the FY 2011 performance exceeded expectations and demonstrated the benefit that awareness and culture change can have in complementing efforts to implement energy efficient technologies. The Air Force continues to improve its existing program, conduct facility audits to identify opportunities for energy conservation and efficiencies, hire resource efficiency managers at its installations, and retro-commission[9] existing facilities to improve energy consumption. Across the Air Force, MAJCOMs and installation-level Energy Managers identified four principal factors that contributed to the Air Force's continued progress in FY 2011: (1) the Sustainment, Restoration, and Modernization program; (2) facility energy audits in FY 2010; (3) continued use of Resource Efficiency Managers at each base and MAJCOM; and (4) the beginning of a building retro-commissioning program which produces immediate energy reductions while maintaining or improving occupant comfort. In the last two years, the Air Force has centrally funded 458 energy conservation projects, and in FY 2013, the Air Force expects to complete energy audits on 75 percent of its buildings to identify additional energy-efficient opportunities.

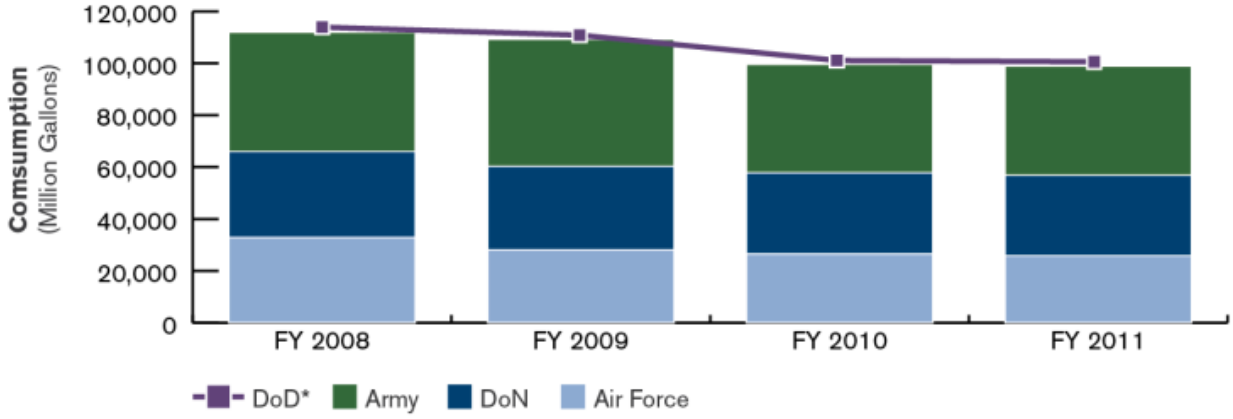
[9] Retro-commissioning is the first stage of a building upgrade process. It identifies and implements improvements to existing buildings to ensure continued energy performance over time.

Potable Water Consumption and Intensity

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 2011, DoD facilities consumed over 101 million gallons of potable water (Figure 3-5), with the Military Departments accounting for 98 percent of total DoD potable water consumption.

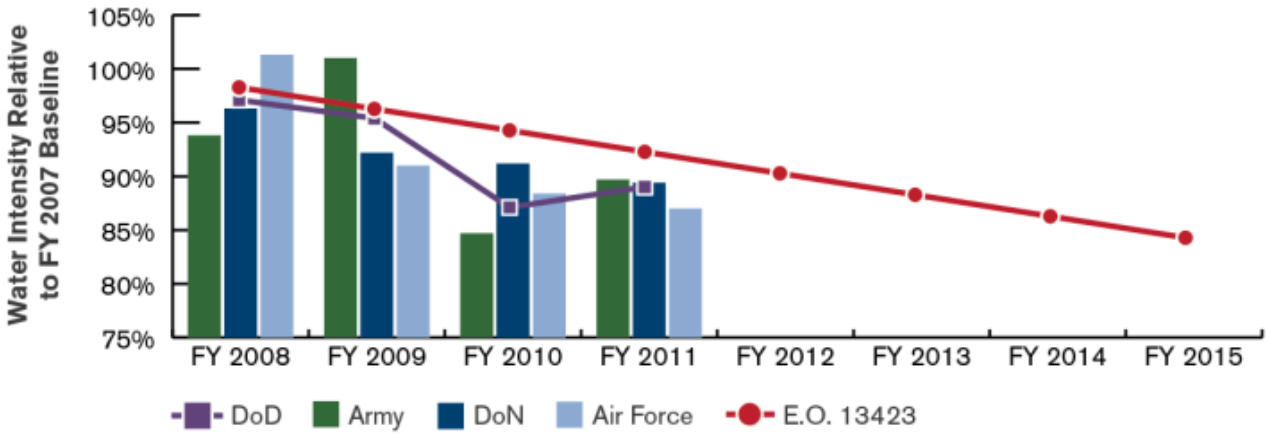
> ***Potable Water*** *includes water purchased from a utility (water) provider and all fresh water (e.g., well and streams) that are treated and added to the domestic (for human consumption) system.*

Figure 3-5: DoD Potable Water Consumption FY 2008 - FY 2011



DoD's potable water intensity in FY 2011 was 10.7 percent below its FY 2007 baseline (Figure 3-6), ahead of the 8 percent reduction goal.

Figure 3-6: DoD Water Intensity EO 13423 Goal Attainment



Army

In FY 2011, the Army's potable water intensity was 10.3 percent below its FY 2007 baseline. The Army released its Installation Management Water Portfolio in April 2011. The portfolio describes the Army's water management strategies that installations can use to streamline potable water consumption, increase efficiency of use, and expand the use of recycled and reclaimed potable water. In FY 2011, the Army implemented a number of water conservation initiatives. Specifically, at the Detroit Arsenal, the Army installed flow sensors in all bathroom renovation projects at the Detroit Arsenal. The Army also installed and isolation valves to reduce the amount of water potentially lost to leaks and line breaks at Dugway Proving Ground.

The Army undertook a series of water availability studies to evaluate the vulnerability of select installations to potential water shortages over the next 30 years. Pilot studies were first conducted at Fort Bragg, NC, and Fort Bliss, TX, to develop the methodology for a broader study.

Navy

In FY 2011, the Navy's potable water intensity was 4 percent below its FY 2007 baseline. The Navy has installed low flow bathroom fixtures, such as sink aerators, showerheads, toilets, and urinals to reduce potable water intensity in its buildings. Other projects in FY 2011 also focused on repairing leaks and improving processes in Navy water plants.

The Naval Air Station Key West, FL, conducted leak detection and repair efforts that save 30 million gallons of water per year.

Marine Corps

In FY 2011, the Marine Corps potable water intensity was 22.7 percent below its FY 2007 baseline. Water conservation projects such as the installation of low flow water fixtures, contributed to this reduction.

The Marine Corps implemented conservation projects across multiple installations including the dual piping of toilets and urinals in new facilities.

Air Force

In FY 2011, the Air Force's potable water intensity was 13.0 percent below its FY 2007 baseline. In FY 2011, the Air Force centrally funded 18 potable water conservation projects ranging from leak repairs, installing low flow water faucets and showerheads, repairing entire water distribution systems, and installing water meters.

Peterson Air Force Base (AFB), CA, replaced toilets, urinals, faucets and showerheads with low consumption equivalents in 14 facilities resulting in savings of 5.9 million gallons annually.

Defense Agencies

In FY 2011, the Defense Agencies continued to pursue opportunities to reduce potable water intensity. Examples of these initiatives include:

- DIA's primary potable water reduction efforts include the addition of low flow toilets during renovations, as well as adding heat recovery chillers which reduce evaporation rates from the DIA HQ cooling towers.
- The DLA Richmond facility implemented water conservation projects to eliminate water storage tanks that required frequent flushing and replaced portions of the in-ground cast iron water lines that were leaking.
- NRO developed small scale programs for water conservation, including the use of waterless urinals at some facilities.
- WHS installed low flow fixtures as part of the Pentagon building renovation. The agency also installed a boiler blow down heat exchanger to reduce the amount of potable water used to cool the boiler blow down water.

Industrial, Landscaping, and Agricultural (ILA) Water Consumption

> ***Industrial, Landscaping, and Agriculture (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 metered by and 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. DOE's Federal Energy Management Program (FEMP) is currently developing guidance to assist Federal agencies in interpreting and implementing the ILA water consumption reduction goal.

DoD components use standard methodologies to measure ILA consumption and identify strategies to reduce usage. DoD participated in a Federal inter-agency water working group, to develop guidelines and identify challenges and mitigation strategies associated with meeting the ILA goal. DoD understands that DOE will soon issue new guidance regarding ILA consumption.

Army

The Army continues to implement initiatives to achieve net zero water installations to help decrease ILA water consumption at its installations. These efforts concentrate on water conservation and the enhancement of distribution systems. In an effort to promote net zero water installations and improve water management at its installations, the Army reported ILA water separately from potable water in FY 2011.

White Sands Missile Range xeriscaping projects

Source: Army Installation Management Water Portfolio 2011-2017, April 2011

Navy

The Navy is pursuing a variety of projects to reduce its ILA water consumption. For example, Naval Air Station in Jacksonville, FL, significantly expanded their use of wastewater for irrigation purposes. The installation constructed a new wastewater reuse pump station and installed more than 12,000 feet of pipeline to reduce wastewater discharge to the St. Johns River. Instead, the water is used to irrigate the base's golf course and an existing irrigation pond on the golf course. This project removes 18,000 pounds of nutrients per year from the river, and eliminates the need to withdraw approximately 37 million gallons of potable water from the Florida aquifer per year.

Marine Corps

The Marine Corps renovated athletic fields with artificial turf, lowering both water and maintenance costs, and installed central irrigation control systems to monitor and manage all of the potable and reclaimed irrigation lines.

Air Force

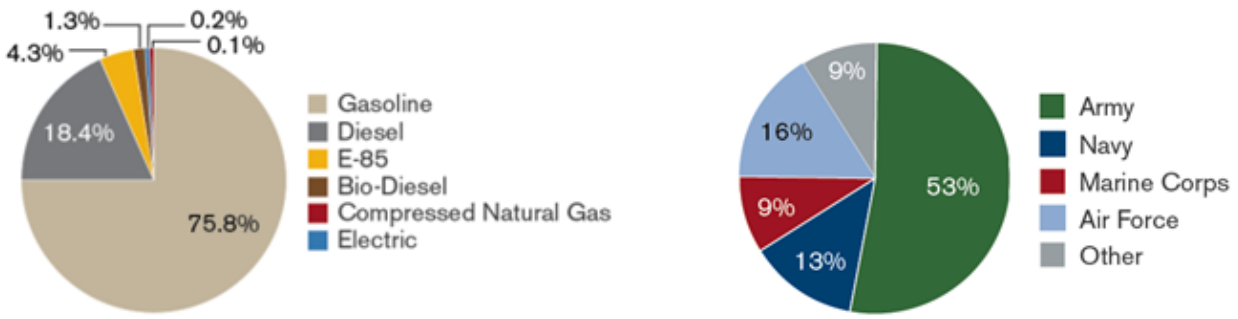
The Air Force was able to reduce its ILA water consumption through xeriscaping[10] and implementing recycling projects to service landscaping applications. While the Air Force was able to achieve ILA water consumption reduction goals in FY 2011, it faced challenges from climatic factors and low payback for water conservation projects.

[10] 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).

Non-Tactical Fleet Vehicles Petroleum Consumption

Section 400FF of the Energy Policy and Conservation Act, as amended (42 U.S.C. § 6374e), 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 5 percent of DoD's facility energy consumption and is largely comprised of gasoline. Diesel fuel represents 18.4 percent of the fuel mix while alternative fuels make up the remaining fleet vehicles' fuel mix. The Military Departments account for more than 90 percent of the Department's petroleum consumption (Figure 3-7).[11]

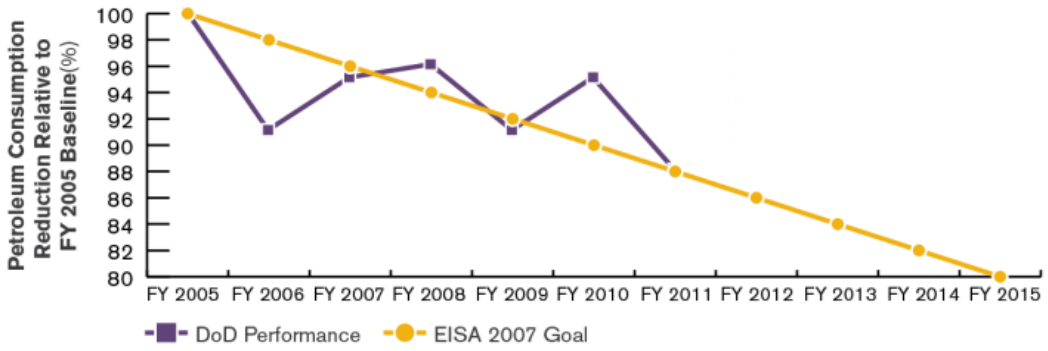
Figure 3-7: FY 2011 Fleet Vehicle Petroleum Consumption



In FY 2011, DoD fleet vehicles consumed 74.8 million gallons of gasoline equivalent (GGE) of petroleum, which includes gasoline, diesel, and the diesel portion of biodiesel blends (80 percent of a B20 blend). The mix of petroleum fuel types has remained relatively stable over the past six years, and the use of alternative fuel vehicles (AFVs) has steadily increased. In FY 2011, 6.2 percent of the total fleet vehicle consumption was from alternative fuels.

In FY 2011, consumption was 11.8 percent below the baseline (Figure 3-8). The Department continues to pursue replacement of fleet vehicles with more efficient models, AFVs and hybrid electric vehicles to decrease petroleum consumption.

Figure 3-8: DoD Fleet Vehicle Petroleum Consumption, EISA 2007 Goal Attainment



[11] "Other" category includes U.S. Army Corps of Engineers and the Defense Agencies.

Army

In FY 2011, the Army's petroleum consumption in fleet vehicles was 10.3 percent below its FY 2005 baseline. During the annual GSA vehicle replacement cycle, the Army continued to downsize and right size its non-tactical vehicle (NTV) fleet of 80,000 vehicles by eliminating Class IV or larger vehicles (Suburban, Yukon, Crown Victoria) and downsizing Class III sports utility vehicles (SUVs) not required for justified missions (e.g., law enforcement, fire and emergency services). In FY 2011, 560 Class III and IV SUVs were identified for replacement with smaller more fuel-efficient vehicles, and only 74 were approved for retention.

Low-speed electric utility vehicles at Fort Sam Houston, TX

DON

In FY 2011, the Navy's petroleum consumption in fleet vehicles was 26 percent below its FY 2005 baseline. The Marine Corps consumption was 16.6 percent below its baseline. Together, Navy and Marine Corps had more than 50,000 NTV. As of September, 2011, 30 percent of the Navy's non-tactical fleet comprised AFVs. By 2015, the Navy expects that 100 percent of new light duty fleet vehicle acquisitions will be AFVs.

Solar-powered vehicle at NAVFAC Southeast in Jacksonville, FL

Air Force

In FY 2011, the Air Force's petroleum consumption in fleet vehicles was 8.3 percent below its FY 2005 baseline. The Air Force gives preference to procuring the most fuel- and cost-effective alternative fuel vehicles, hybrid electric vehicles, or plug-in electric vehicles to meet their fleet's requirements. In FY 2011, the Air Force announced that Los Angeles AFB will be the first DoD installation to have an all-electric fleet. The Air Force is evaluating the logistics to relocate AFVs where it already has access to alternative fuels and install new alternative fuel infrastructure on bases where there is demand.

Electric vehicle at Los Angeles AFB, CA

Defense Agencies

In FY 2011, the Defense Agencies accounted for 2 percent of DoD fleet petroleum consumption. Strategies to reduce petroleum consumption in fleet vehicles include:

- DLA replaces, where available, old and inefficient vehicles with more efficient ones such as alternative or hybrid vehicles.
- DIA reduces the number of vehicles permanently assigned to individuals, increases the use of teleconferencing and videoconferencing, requests AFVs, hybrid vehicles, and electric vehicles, and operates shuttle buses to and from the DIA HQ facility.

4. Increasing DoD's Supply of Renewable Energy

In addition to reducing the demand for traditional forms of facility energy, DoD is increasing the supply of renewable and other forms of distributed (on-site) energy on installations. On-site energy is critical to making installations more energy secure. Together with smart microgrids and storage technologies, on-site energy will allow a military base to maintain its critical operations "off-grid" for weeks or months if necessary.

DoD Renewable Energy Performance

As DoD pursues renewable energy to advance its energy security, it also seeks to comply with legal requirements to increase renewable energy. DoD is subject to two renewable energy goals put forth in 10 U.S.C. § 2911(e) and section 203 of the EPAct 2005. The 10 U.S.C. §2911(e) goal measures the total renewable energy (electric and non-electric) production and procurement as a percentage of total facility electricity consumption, while the EPAct 2005 goal measures total renewable electricity consumption as a percentage of total facility electric consumption. The EPAct 2005 goal for FY 2010-2012 is 5 percent, while the 10 U.S.C. § 2911(e) goal is 25 percent by FY 2025 (Table 4-1).

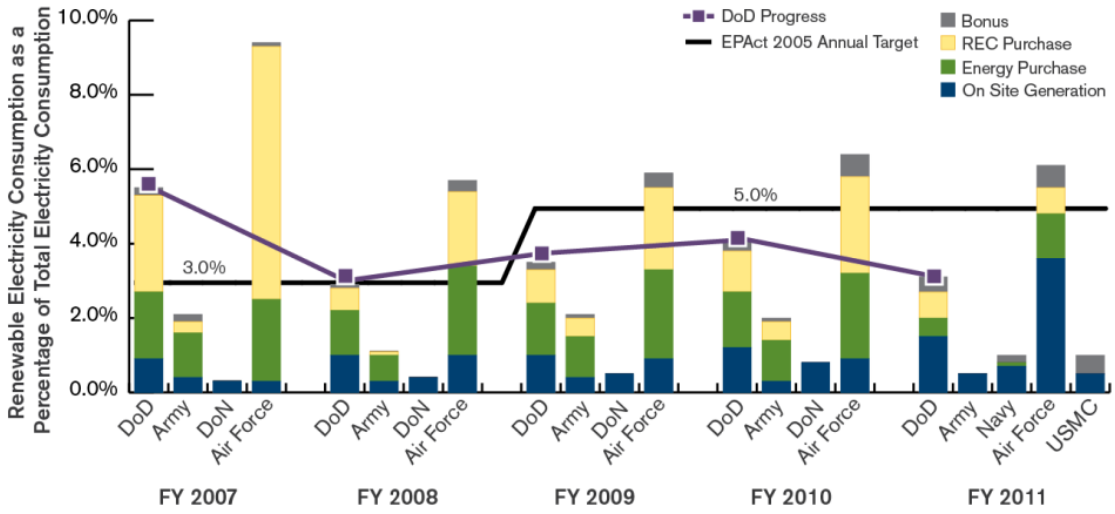
Table 4-1: Renewable Energy Goals: Understanding the Differences Between EPAct 2005 and 10 U.S.C 2911(e)[12]

	EPAct 2005	10 U.S.C. §2911(e)
Goal	5 percent in FYs 2010 - 2012, and 7.5 percent in FY 2013 and each FY thereafter	25 percent by FY 2025
Numerator	Renewable Electricity Consumed	Renewable Electricity and Thermal Energy Produced or Procured
Denominator	Total Electricity Consumed	Total Electricity Consumed
Unbundled Renewable Energy Credits (RECs) Purchases	Yes	No
Renewable Energy Purchases	Yes	Yes

[12] See Appendix F for the House Armed Services Committee Letter on the 10 U.S.C § 2911 (e) goal.

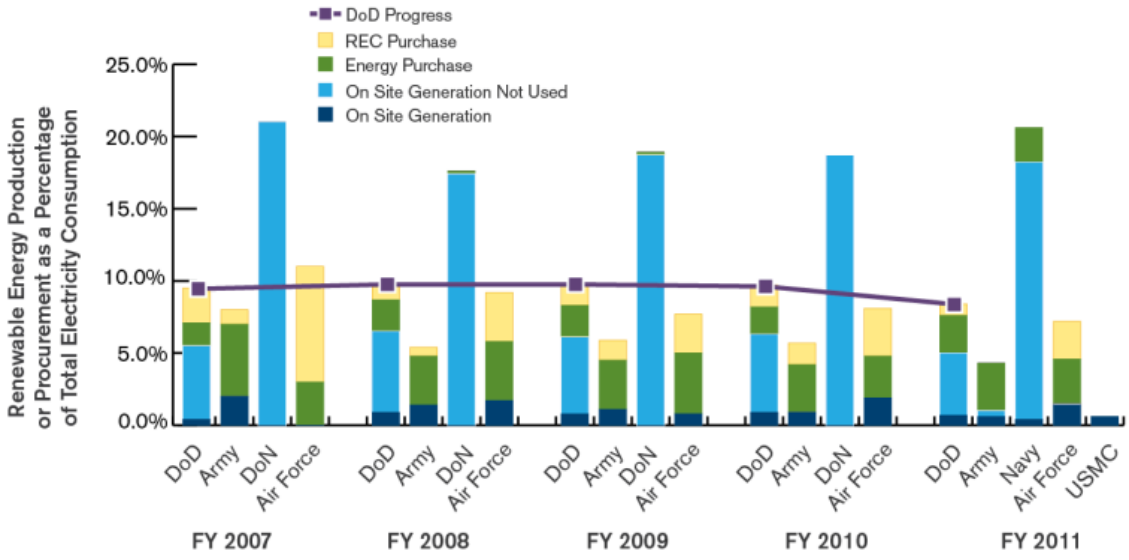
In FY 2011, DoD did not achieve its two renewable energy goals. Renewable electricity consumption subject to the EPAct 2005 goal accounted for 3.1 percent of DoD's total electricity consumption. This is 1.9 percent below the FY 2011 EPAct 2005 renewable energy goal of 5.0 percent (Figure 4-1).

Figure 4-1: EPAct 2005 Renewable Energy Goal Attainment



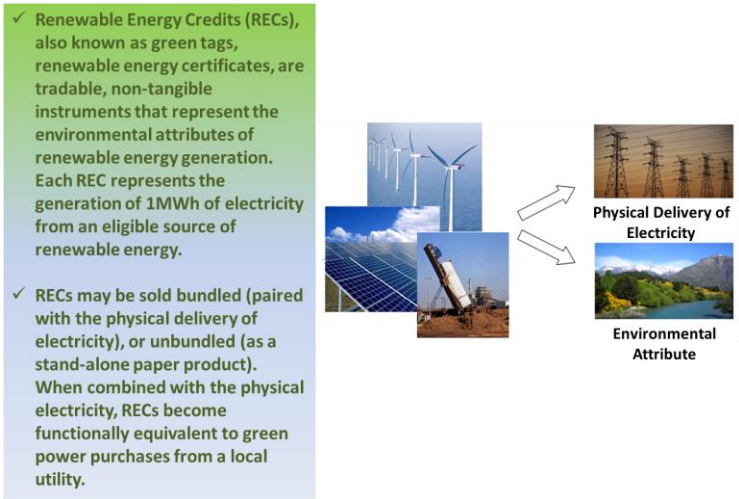
DoD did not make the progress it desires in achieving the 10 U.S.C. §2911(e) renewable energy goal. Total production and procurement of renewable energy was 8.5 percent of the total facility electricity consumption (Figure 4-2); in FY 2011, DoD performance fell from its FY 2010 level of 9.6 percent.

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



In FY 2011, purchases of Renewable Energy Credits (RECs) fell by more than 50 percent from the level observed in FY 2010. This was the main contributor to DoD's renewable energy achievement decreasing between FY 2010 and FY 2011. In FY 2011, RECs fell to 10 percent of the total renewable energy contribution to the 10 U.S.C. §2911(e) goal.

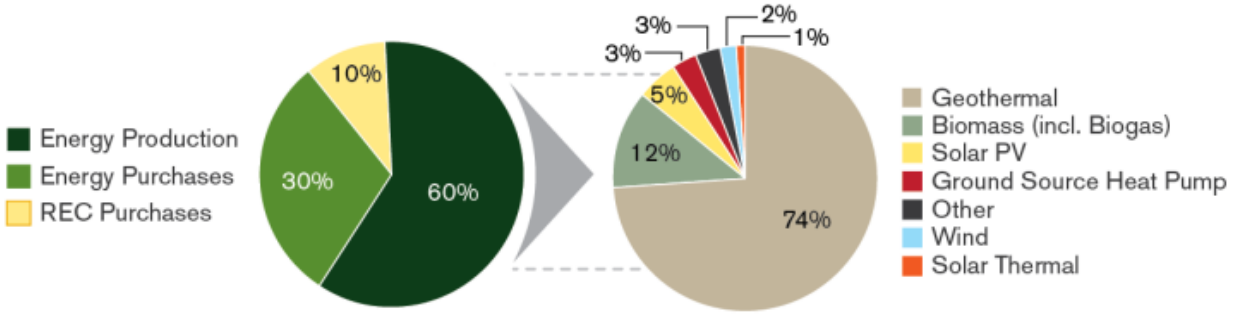
EPAct and 10 U.S.C §2911(e) treat RECs for goal attainment differently. The EPAct goal requires DoD to retain the REC to count toward goal attainment. However, retaining RECs is not a requirement to meet the 10 U.S.C. §2911(e) goal.



RECs are a valuable financial tool for the development of large scale renewable energy projects. RECs are attractive to project developers because their monetary value improves the payback of renewable energy projects. DoD strives to achieve an acceptable tradeoff between retaining RECs to meet its EPAct goals and allowing project developers to hold them. DoD also believes that procuring unbundled RECs (those RECs not tied to a renewable energy project) are not a desirable substitute for renewable energy production that provides energy security for bases.

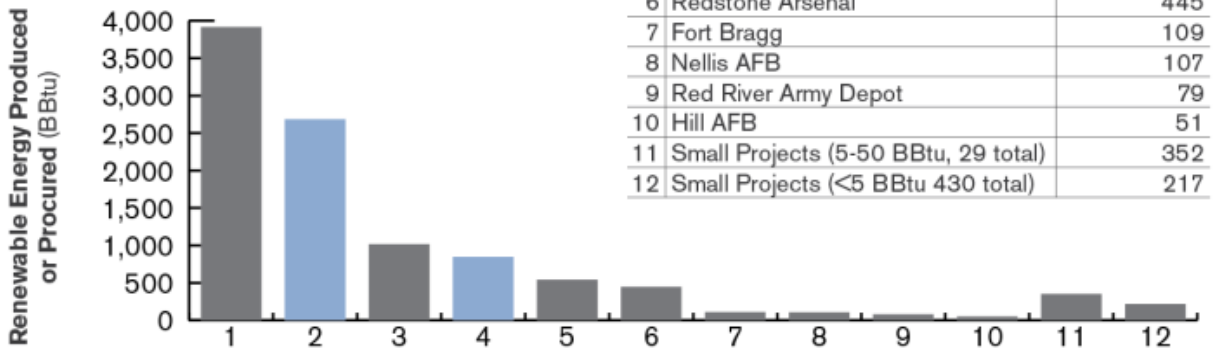
In FY 2011, DoD had more than 467 renewable energy projects operating. These projects generated approximately 5,300 BBtu per year, which represents 60 percent of the total amount of renewable energy produced or procured. Coupled with purchases of renewable energy and RECs, which represent 30 percent and 10 percent of the total supply mix respectively, DoD produced and procured more than 8,800 BBtu of renewable energy in FY 2011. Geothermal electric power is by far the most significant renewable energy source in DoD, accounting for more than three quarters of the Department's renewable energy goal attainment. Biomass and biogas from captured methane make up 12 percent of the supply mix, followed by more than 280 solar photovoltaic (PV) systems contributing to approximately 5 percent of the supply mix. There are 83 ground source heat pump (GSHP) projects throughout DoD, contributing to 3 percent of the total renewable energy produced on DoD installations. 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 across DoD is the Navy's China Lake geothermal power plant, which supplies more than three quarters 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 that produces both electricity and steam (Figure 4-4). The DoD Components continue to implement numerous small distributed generation projects. In FY 2011, 459 renewable energy projects generated less than 50 BBtu.

Figure 4-4: DoD Renewable Energy Projects FY 2011



Army

The Army did not achieve the EPAct renewable energy goal in FY 2011, obtaining 0.5 percent of electricity from renewable energy sources. The Army also experienced a decrease in performance toward the 2911(e) goal, obtaining 4.3 percent of electricity from renewable energy sources versus 5.6 percent in FY 2010. In FY 2011, the Army generated approximately 48,000 MWh of total electricity from renewable energy sources. This was a decrease of 2 percent from FY 2010 driven by the Army's decision to reduce the purchase of RECs. The purchase of RECs does not support the Army's mission and capabilities to sustain national security operations. Therefore, the Army is shifting away from REC purchases and increasing its renewable energy projects to enhance energy security at installations. The Army also produces a significant amount of thermal renewable energy (213 BBtu) from the widespread adoption of GSHPs. The renewable energy generated from GSHPs count toward the attainment of the 10 U.S.C. §2911(e) goal but not the EPAct 2005 goal.

Solar PV at Fort Carson

In September 2011, the Army established the Energy Initiatives Task Force (EITF) to collaborate with the private sector to invest in cost-effective, large scale (10 MW+) renewable energy projects. The Task Force uses an enterprise-level approach to initiate, execute, and manage cost-effective, large scale renewable energy projects on Army installations. These efforts aim at enhancing energy security and sustainability, and support the Army's goal of developing 1 GW of renewable energy on its installations by 2025. The Army is currently executing project due diligence on 12 separate projects located on 8 installations. For example, the Army has solar projects at Fort Bliss, TX (1MW), White Sands Missile Range, NM (4.5 MW), and Fort Carson, CO (2MW). In addition to an enterprise-level approach for large scale renewable projects, cost-effective, small scale renewable energy projects also contribute to local energy security.

Navy

In FY 2011, the Navy produced or procured 20.6 percent of its electricity from renewable energy sources, setting itself well within reach of the renewable energy goal of 25 percent by 2025. The Navy did not achieve the EPAct renewable energy goal in FY 2011 of 5 percent, obtaining just 1 percent of electricity from renewable energy sources.[13] The Navy continues to make significant strides in achieving the 2911(e) goal by focusing on large scale renewable energy projects. Two Navy projects currently account for 97 percent

Geothermal Plant at China Lake

[13] It is possible to have significant disparities in performance between the two renewable energy goals: EPAct 2005 and 2911(e). For the Navy, an overwhelming majority of the renewable energy produced on base comes from the Navy's China Lake

of the Department's 2911(e) achievement. These two renewable energy projects include the Naval Air Warfare Center (NAWS) geothermal project at China Lake, CA and the municipal solid waste project at Norfolk Navy Shipyard (NNSY), Portsmouth, VA. The China Lake project accounts for 77 percent of the 2911(e) goal achievement, while the Norfolk Navy Shipyard project accounts for the 20 percent of the 2911(e) goal achievement. At both locations, the electricity generated on the Navy installations is sold to the utility and it is not consumed by the installation. In contrast, at NNSY, the steam generated from the municipal solid waste plant is consumed by the installation. Overall, the Navy's strategy for achieving its renewable energy goal is two-fold, first to drive down consumption and energy intensity, and then to encourage cost-effective renewable energy investments. The Navy continues to leverage the authority granted by 10 U.S.C. §2922(a), which allows it to engage in long-term energy production facility contracts for up to 30 years. Recent examples in FY 2011 of the Navy's progress toward, and continued support of renewable energy goals, include:

- Naval Facilities Engineering Command Southwest Renewable Program Office awarded a multiple award construction contract to enable private companies to build large scale solar electric plants on Navy property and sell the power to the government. The first task order under the contract was awarded in September 2011 for the development of a 14MW solar plant at NAWS China Lake, CA which will generate more than 30 percent of China Lake's energy load.
- In August 2011, NAVFAC Pacific awarded a $500 million maximum, indefinite-delivery indefinite-quantity multiple award contract for the purchase of reliable, locally generated power from solar generation systems at military installations in Hawaii.

Marine Corps

In FY 2011, the Marine Corps produced or procured 0.6 percent of its electricity consumption from renewable sources. The Marine Corps also did not achieve the EPAct renewable energy goal in FY 2011 of 5 percent, obtaining only 1.2 percent of electricity from renewable energy sources. In FY 2011, the Marine Corps produced 35 BBtu of renewable energy, 55 percent of from solar sources, and the remaining production attributable to wind development. Approximately 92 percent of the Marine Corps' current renewable energy capacity is located in the southwestern U.S. and Hawaii. However, the Marine Corps made significant strides in diversifying its renewable energy supply:

MCLB Albany Landfill Gas Project

geothermal electric power plant. However, the Navy does not consume any of this electricity. Since renewable electricity must be consumed to count toward the EPAct goal (as discussed earlier in Section 3), the Navy is precluded from counting this electricity toward the EPAct goal. This electricity generation is, however, counted toward the 2911(e) goal.

- In September 2011, Marine Corps Logistics Base (MCLB) Albany, Dougherty County (Georgia) and Chevron Energy Solutions completed the DON's first landfill gas (LFG) co-generation power plant. MCLB Albany and Dougherty County entered into a 20-year partnership allowing the county to sell LFG to MCLB Albany to operate a 1.9 MW combined heat and power generator.
- At Marine Corps Base (MCB) Camp Pendleton, the Marine Corps completed the development of a 1.4 MW solar PV system constructed on a closed landfill. The project, funded by American Recovery and Reinvestment Act (ARRA) funding, represents the largest PV system on a Marine Corps base and ranks among the largest solar installations in San Diego County.
- At Marine Corps Air Station (MCAS) Miramar, a waste-to-energy plant currently under development, will take in natural methane gas released from the decomposing trash of the city of San Diego's Miramar Landfill facility (owned by the Navy) and produce power expected to provide approximately 50 percent of the base's electricity needs.
- Marine Corps Base (MCB) Camp Pendleton, Marine Corps Recruit Depot (MCRD) San Diego, MCB Camp Lejeune have each programmed $10M to install photovoltaic systems of more than 1MW capacity each.
- MCB Hawaii, MCLB Barstow, and Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms are entering in energy production facility contracts with private developers to purchase cost-effective electricity generated from Solar PV systems Marine Corps bases.

Air Force

Nellis AFB Solar PV

The Air Force exceeded the EPAct renewable energy goal in FY 2011, obtaining 6.0 percent of electricity from renewable energy sources. The Air Force also made progress toward the 2911(e) goal by obtaining 7.1 percent of electricity from renewable energy resources in FY 2011 versus 8.1 percent in FY 2010. The Air Force was able to attain the EPAct goal by executing renewable on-base projects, purchasing commercial renewable energy, and purchasing RECs. The Air Force centrally manages the procurement of RECs and is phasing out individual base purchases. In FY 2011, the Air Force centrally purchased RECs, which represented 1.4 percent of its 6.0 percent renewable energy EPAct 2005 performance. The Air Force performance toward the 2911(e) goal fell in FY 2011 as a result of reduced REC purchases and increased electricity consumption.

Current commercial utility rates and limited congressional appropriations make it difficult for the Air Force to invest in the development of renewable energy resources. Therefore, the Air Force is facing these challenges by establishing innovative partnerships with private sector developers.

Specifically, through the authority granted by 10 U.S.C. §2667, the Air Force can enter in energy EULs designated to lease non-excess land to private developers to execute large scale projects for sale to utilities.

Additionally, through the authority granted by 10 U.S.C. §2922(a), renewable energy production facility contracts are executed to supply renewable power to an installation at a lower cost. The first EUL under negotiation for the Air Force is a solar PV project at Edward Air Force Base in California, which will generate approximately 440 Megawatts (MW) of power. The Air Force has also recently completed a 6 MW solar PV project at the Air Force Academy in Colorado Springs and plans to double the 14 MW solar PV array at Nellis Air Force Base in Nevada. Luke Air Force Base in Arizona is partnering with a local company to build a solar PV array that once completed, will produce enough electricity to meet approximately half of the base's power needs.

Defense Agencies

The Defense Agencies continue to implement renewable energy projects on buildings and facilities. However, most Defense Agencies operate in a "buildings" or "facilities" environment rather than campuses or installations. This factor impedes the agencies' ability to implement renewable energy projects that would have a measurable impact. However, the Defense Agencies continue to implement and consider cost-effective, small scale, on-site, distributed renewable generation. These include solar parking lot lighting (solar-powered traffic lighting), solar hot water projects, and solar light towers. Specifically, the Defense Agencies have implemented the following:

- DIA currently has two permanently mounted and three temporary solar powered lights consuming 2 MWh of electricity annually. In FY 2011, DIA began a major effort to increase its renewable energy production and use by taking advantage of Energy Savings Performance Contracts (ESPC). DIA began working with DLA-Energy to obtain a task order under the Department of Energy's (DOE) Super ESPC to purchase electricity from a solar PV system.
- NSA completed retrofitting its 37-year-old building, replacing inefficient equipment and installing renewable energy technologies, such as a solar PV arrays on its roof.
- WHS continues to examine opportunities to implement renewable energy systems such as small scale wind, ground source heat pumps and solar PV panels.

Potential for Renewable Energy on Military Installations

DoD's installations are well situated to support solar, wind, geothermal and other forms of distributed energy. In response to a congressional directive, DUSD(I&E) commissioned a study of the potential for solar energy development on military installations in the Mojave and Colorado Deserts in California and Nevada. The year-long study looked at seven military bases in California and two in Nevada. It found that, even though 96 percent of the surface area of the nine bases was unsuited for solar development because of military activities, the presence of endangered species and other factors, the solar-compatible area on four of the California bases was nevertheless large enough to support the generation of 7,000 megawatts (MW) of solar energy—equivalent to the output of seven nuclear power plants. [14]

Section 332(b) of the National Defense Authorization Act for FY 2010 directed the Secretary of Defense to assess certain aspects of the potential for renewable energy on military installations. This section updates and expands the initial assessment provided in the FY 2010 AEMR. The text box to the right describes the factors that must be evaluated when DoD is considering the development of renewable energy on military installations. The renewable energy assessment in this section explores the potential of renewable energy sources on DoD installations based on economic, technical and regulatory attributes. It does not represent planned renewable energy projects on DoD installations. The Department's renewable energy plans to meet performance goals are included in the Energy Performance Master Plan located in Appendix C.

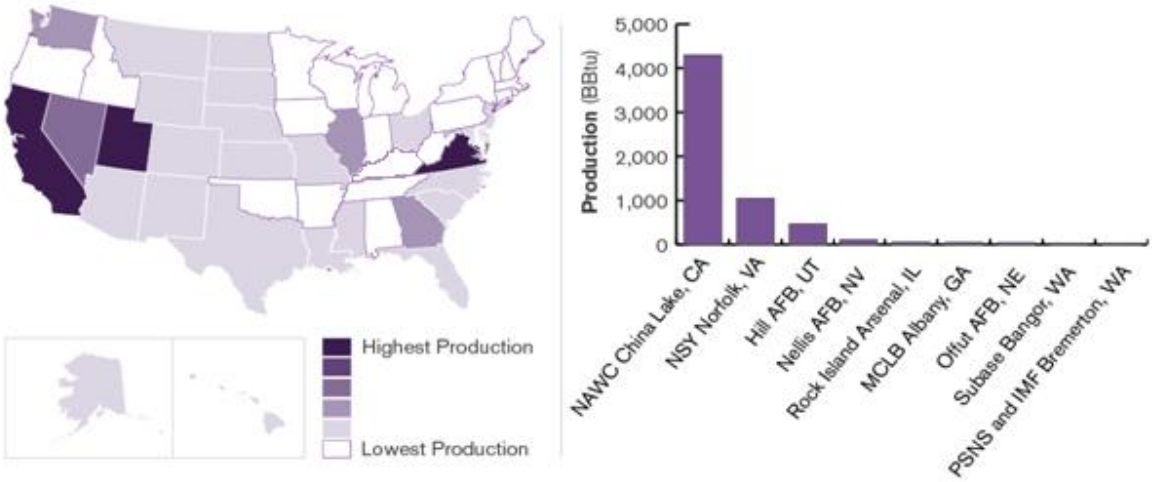
Opportunities for the development of renewable energy depend not only on the availability of renewable resources, but more importantly, on a number of key factors necessary to provide adequate market, financial and regulatory environments for a project to be cost-effective. These include:

- **Local demand for energy:** Without a large enough population of energy users and available grid connections, there may be little demand for new renewable sources;
- **Local /regional energy prices**: Areas with higher electricity prices may experience more development of renewable energy resources because higher market prices for electricity allow higher cost technologies (such as renewables) to compete in the market place;
- **Regulatory incentives:** Federal, state and local programs may offer low cost loans, loan guarantees, grants, tax incentives and technical assistance to reduce renewable energy startup and operations costs. Other market drivers include renewable portfolio standards (RPS) and special agreements such as feed-in tariffs, which allow facilities to sell renewable energy directly back to the utility;
- **Location:** Proximity to and adequacy of high voltage transmission lines and power demand centers;
- **Financing:** Access to capital, particularly private financing for large scale, utility-size renewable energy developments; and
- **Developable land:** land availability and suitability.

In FY 2010, DoD produced over 6,700 BBtu of renewable energy. Figure 4-5 illustrates DoD FY 2010 renewable energy production by state, with the darker purple shading indicating higher production. The bar chart illustrates the FY 2010 top renewable energy producing installations.

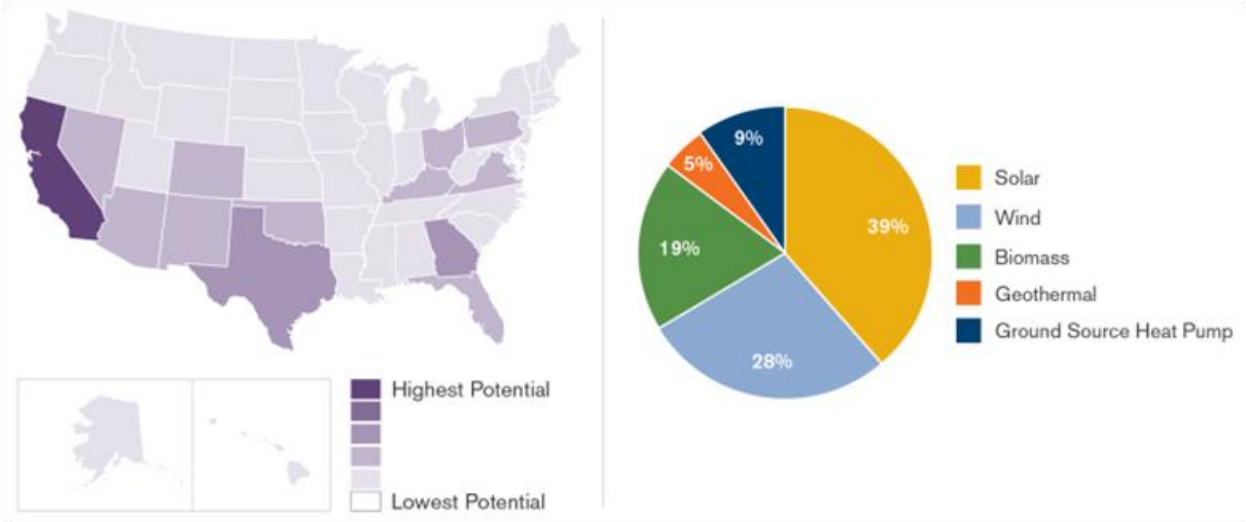
[14] ICF International, *Solar Energy Development on Department of Defense Installation in the Mojave and Colorado Deserts* [online source] (January 2012, accessed May 24, 2012); available from http://www.icfi.com/insights/reports/2012/full-report-solar-energy-development-on-department-of-defense-installations-mojave-colorado-deserts; Internet.

Figure 4-5: DoD FY 2010 Renewable Energy Production



DoD identified over 17,000 BBtu of renewable energy potential across the U.S. Figure 4-6 illustrates the distribution of the renewable energy potential by state, type and DoD Component. The map with purple shading illustrates DoD's renewable energy potential by state, where the darker purple represents a higher potential. The pie chart illustrates potential renewable energy breakdown by type. Appendix G contains the high level assessment of each installation's renewable energy potential by DoD Component.

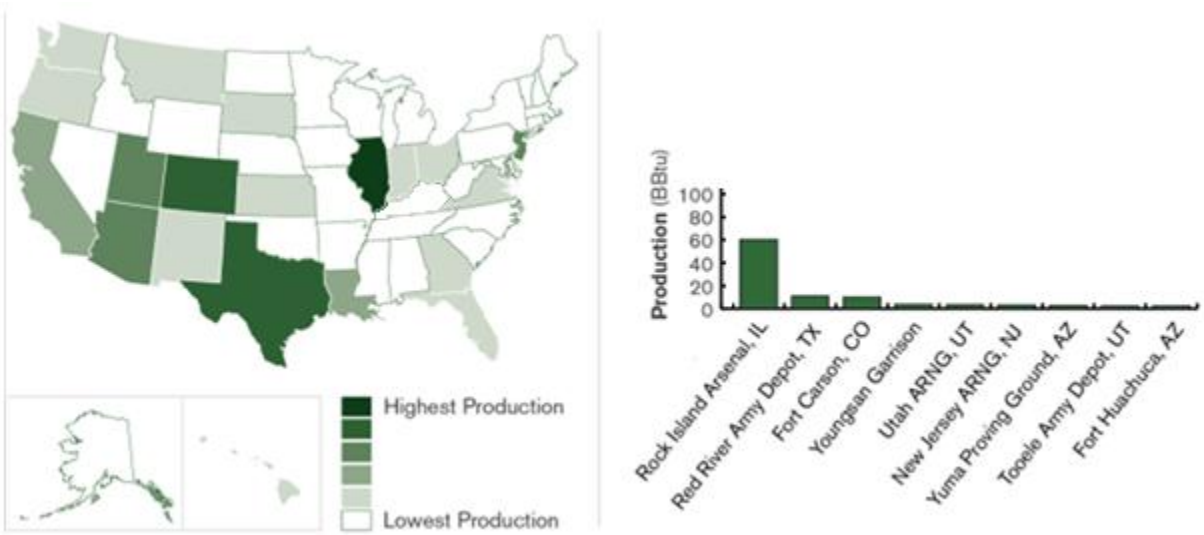
Figure 4-6: DoD Renewable Energy Potential



Army

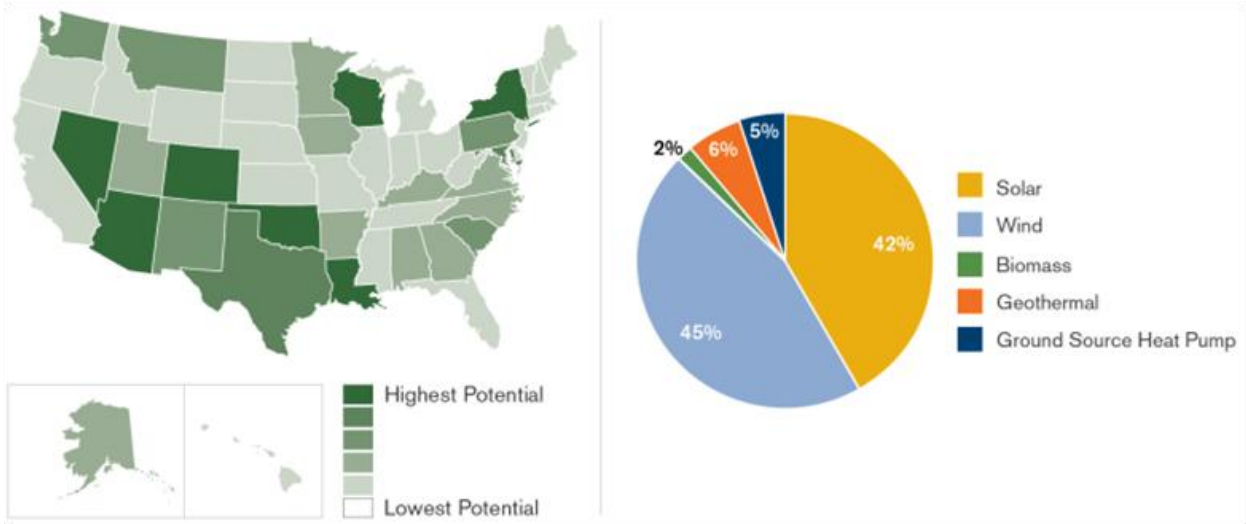
Figure 4-7 illustrates the Army's top renewable energy-producing installations and the map illustrates the production, by state (darker green shading represents higher production) in FY 2010.

Figure 4-7: Army FY2010 Renewable Energy Production



The Army identified over 19,000 BBtu of renewable energy potential on its installations. The map in Figure 4-8 illustrates the potential for renewable energy production, by state, where darker green represents higher potential and the pie chart breaks out the renewable energy potential by type.

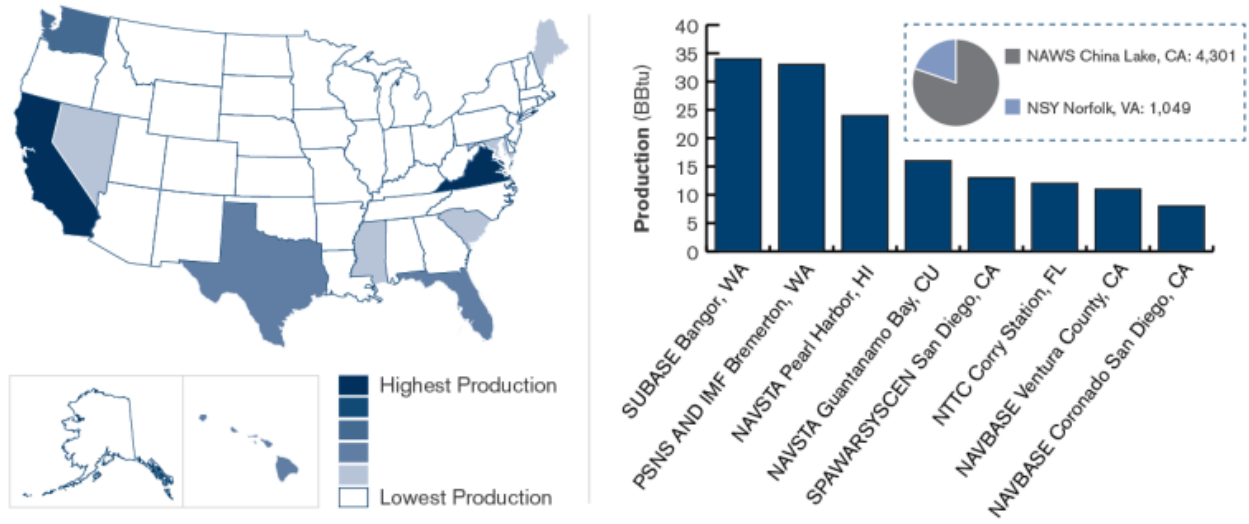
Figure 4-8: Army Renewable Energy Potential



Navy

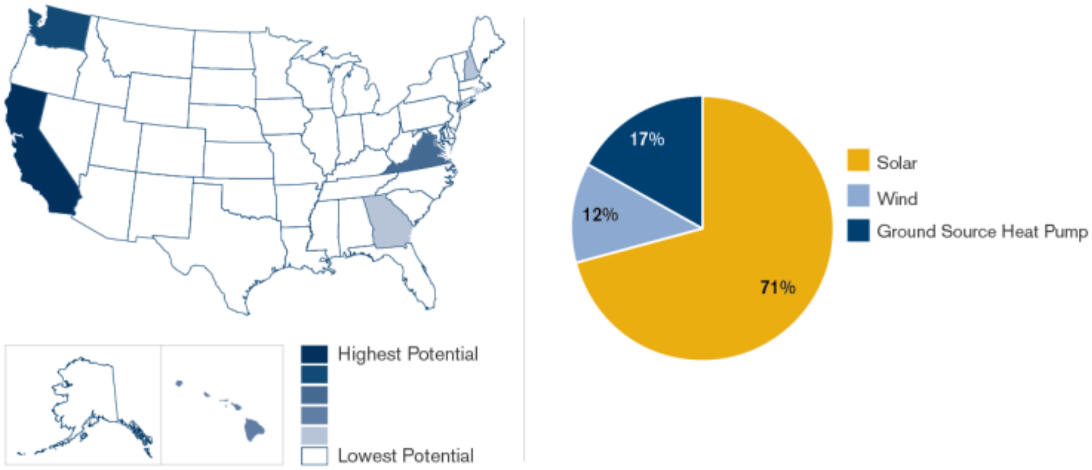
In FY 2010, one third of Navy's installations contributed to the production of more than 5,569 BBtu of renewable energy. The top two renewable energy producing installations are Naval Air War Center China Lake, California, followed by Naval Ship Yard (NSY) Norfolk, Virginia. Figure 4-9 shows the Navy's top renewable energy-producing installations and the map illustrates the production by state (darker navy blue shading representing higher production) in FY 2010.

Figure 4-9: Navy FY 2010 Renewable Energy Production



The Navy identified over 200 BBtu of potential renewable energy that could be developed on its installations. The map in Figure 4-10 illustrates the potential for renewable energy production by state, where the darker navy blue represents higher potential. The pie chart in Figure 4.9 represents the breakout of renewable energy potential by type for the Navy.

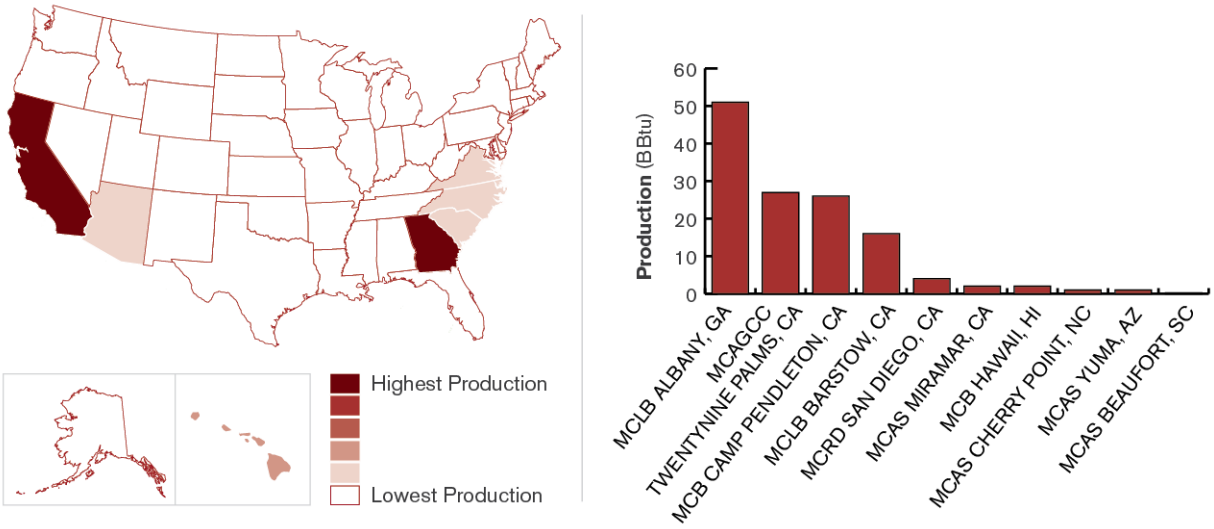
Figure 4-10: Navy Renewable Energy Potential



Marine Corps

In FY 2010, 11 Marine Corps installations produced over 129 BBtu of renewable energy. Renewable electricity production accounted for 85 percent. The top two renewable energy producing installations are Marine Corps Logistics Base (MCLB) Albany followed by Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms. The bar chart in Figure 4-11 illustrates the Marine Corp's top renewable energy-producing installations and the map illustrates the production by state (darker red shading representing higher production) in FY 2010. To date, the Marine Corps has not assessed the renewable energy potential. However, in FY 2012, the DOE National Renewable Energy Laboratory (NREL) will perform a high level assessment of renewable energy potential at Marine Corps installations.

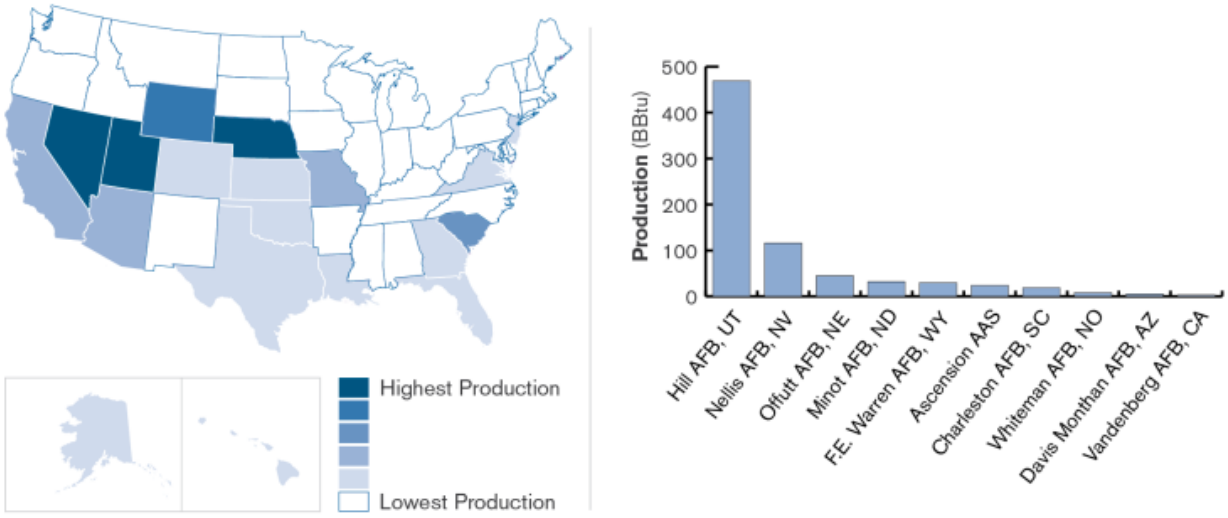
Figure 4-11: Marine Corps FY2010 Renewable Energy Production



Air Force

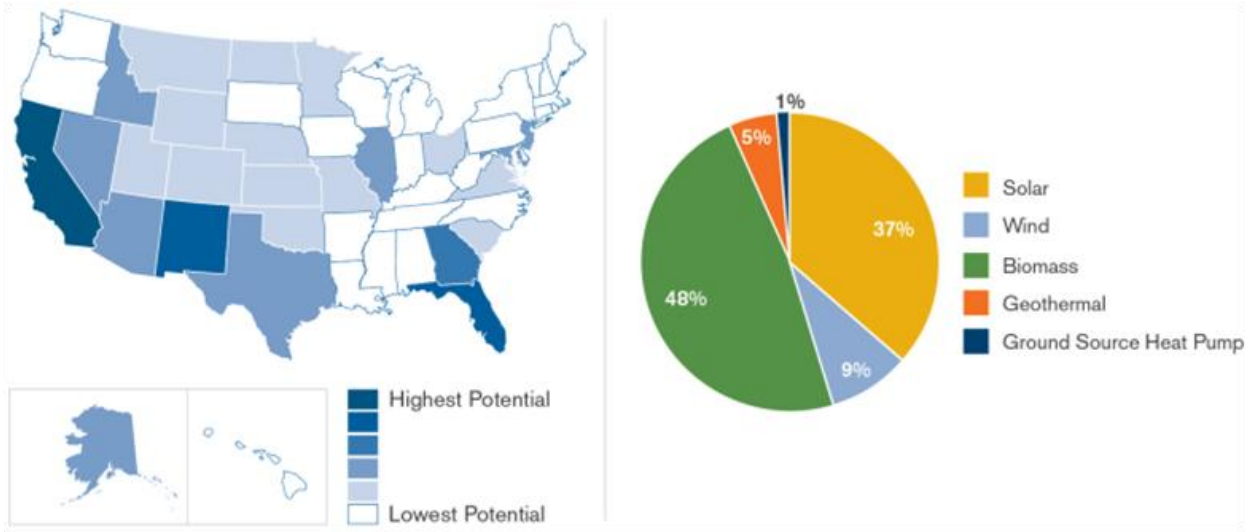
In FY 2010, the Air Force produced 771 BBtu of renewable energy at 35 installations. Thermal energy accounted for 70 percent of the total production. The top two renewable energy producing installations were Hill Air Force Base (AFB) followed by Nellis AFB. Figure 4-12 illustrates the Air Force's top renewable energy producing installations, and the map illustrates the production by state (darker blue shading representing higher production) in FY 2010.

Figure 4-12: Air Force FY2010 Renewable Energy Production



The Air Force identified over 11,000 BBtu of potential renewable energy projects that could be developed on its installations, the majority of which could come from biomass projects. The map in Figure 3.12 illustrates the potential for renewable energy production by state, where the darker blue represents higher potential. The pie chart in Figure 4-13 represents the breakout of renewable energy potential by type for the Air Force.

Figure 4-13: Air Force Renewable Energy Potential

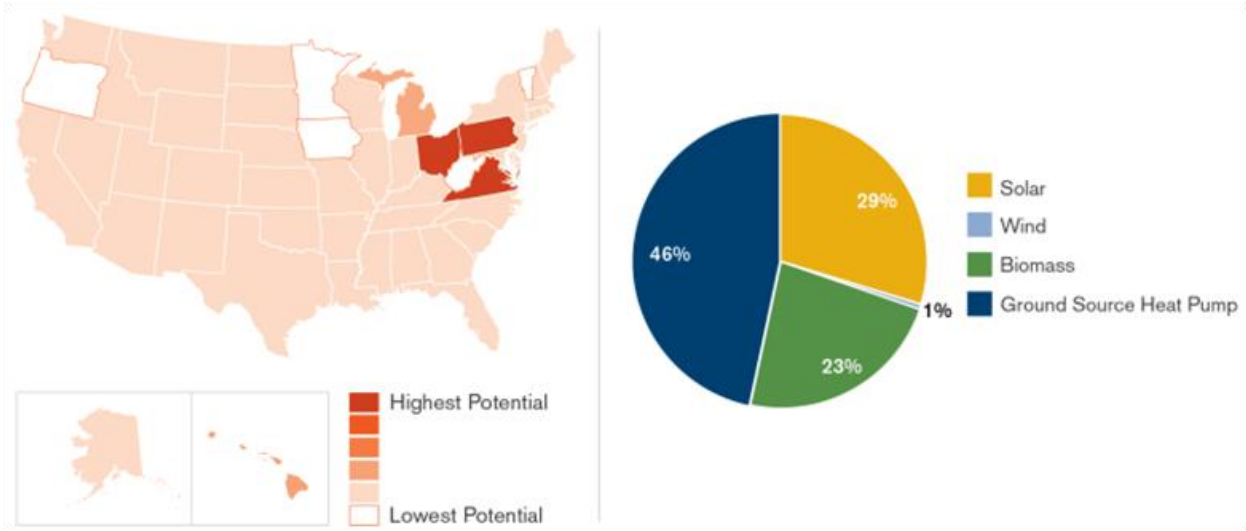


Defense Agencies

The Defense Agencies[15] identified over 5,000 BBtu of potential renewable energy that could be developed across the portfolio of 288 installations on which they are located. Of the total renewable energy identified by the Defense Agencies, 92 percent was attributed to 10 DLA facilities. All the renewable energy potential identified across the 256 DeCA facilities was solar, contributing to 4 percent of the total renewable energy potential for the Defense Agencies. DIA[16] and TMA contributed to 1 and 4 percent, respectively, of the total renewable energy potential. The map in Figure 3.1 illustrates the Defense Agencies potential for renewable energy production by state where the darker orange represents higher potential. The pie chart in Figure 4-14 represents the breakout of the renewable energy potential by type.

[15] DeCA, DLA, DIA and TMA.
[16] DIA was the only Defense Agency that produced renewable energy, for a total of 7.5 BBtu.

Figure 4-14: Defense Agencies Renewable Energy Potential



Net Zero Energy Installation

In 2008, DOE and DoD, in collaboration with the Federal Energy Management Program and the National Renewable Energy Laboratory (NREL), established Net Zero Energy Installation (NZEI), a joint initiative to address military energy use. NZEI representatives created a task force to examine the potential for net zero energy military installations. The goal of the NZEI task force was to create a repeatable template for planning and developing Net Zero energy installations across the Military Services and facilitate major increases in deployed energy efficiency and renewable energy. The task force initially defined a NZEI as "a military installation that produces as much energy on or near the installation as it consumes in its buildings and facilities."

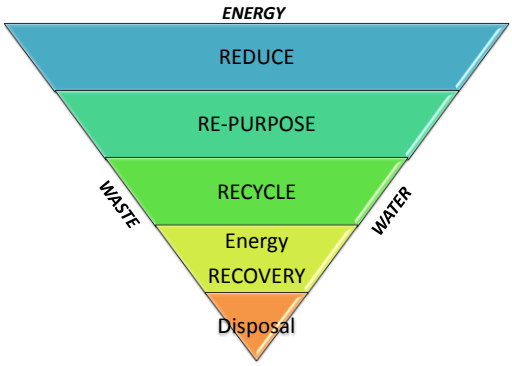
In principle, a Net Zero installation should reduce its load through energy efficiency (typically the most cost-effective measure that will allow the highest returns per dollar spent) and conservation (use only what is needed), then meet the remaining load through on-site renewable energy. The NZEI assessment template offers a systematic framework for the Military Services to analyze energy projects at installations while balancing other site priorities such as mission, cost and security.

The Military Services adopted the assessment template and are now planning and executing many Net Zero initiatives at military installations through dedicated programs. While Net Zero is first and foremost aimed at matching supply with demand, it also makes installations more energy secure by reducing their dependence on the commercial power grid.

Army

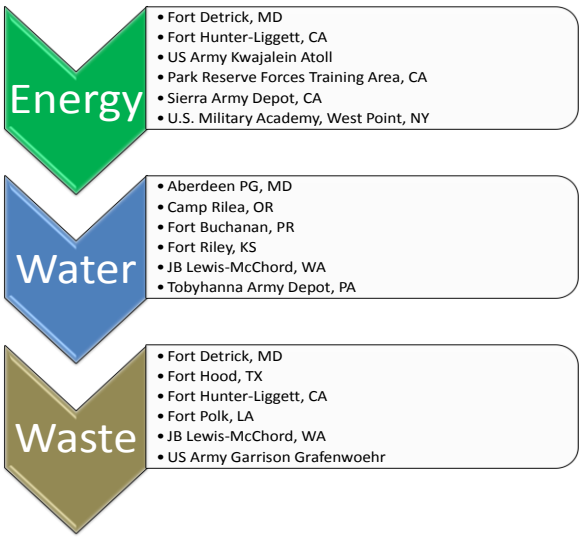
For the Army, the goal of Net Zero efforts is to manage Army installations to become model sustainable communities. The efforts focus on energy, waste, and water streams, striving to operate as close to Net Zero as possible. Army's Net Zero approach includes five interrelated and integrated steps that capture the management of energy, water and waste to enhance the ecological productivity of land, water, and air (Figure 4-15).

Figure 4-15: Army Net Zero Approach



On April 19, 2011, the Army identified several pilot installations that will focus on achieving Net Zero in either energy, water or waste by 2020 (Figure 4-16).

Figure 4-16: Army Net Zero Pilot Installations



Net Zero installations will produce as much energy, water or waste on site as they use. To achieve Net Zero Energy, these Army installations will implement aggressive conservation and efficiency efforts while benchmarking energy consumption to identify additional opportunities. The next step is to utilize or re-purpose waste from boiler stack exhaust, building exhaust, and other thermal streams for secondary purpose and co-generation to recover heat from electricity generation processes. When the most practical efficiencies are achieved, these installations will assess complementary renewable energy projects to meet the balance of energy needs.

Navy

The Secretary of the Navy (SECNAV) set forth a goal for 50 percent of DON installations to be Net-Zero by FY 2020. SECNAV Instruction 4101.3 defines a Net Zero Installation as "an installation which, over the course of a fiscal year, matches or exceeds the electrical energy it consumes ashore with electrical energy generated from alternative or renewable energy sources." Thus far, 10 Navy sites have been evaluated using the Navy's Renewable Energy Opportunity (REO) model, which provides data to evaluate renewable energy options, estimate costs and recommend a mix of technologies that meets a site's energy goals. The REO tool informs project development and prioritizes resources. The DON determines the alternative energy projects to pursue at each installation based on the Net Present Value (NPV) and Return on Investment (ROI) methodologies. Currently, site visits are being conducted to validate results.

USMC

The NZEI Task Force selected MCAS Miramar, California, as the initial prototype installation for Net Zero energy analysis. NREL assessed building energy efficiency for facilities on base in order to determine the potential for additional energy efficiency investment, and began an analysis to determine the renewable energy generation potential at the base by examining the level of resource potential. NREL analyzed the potential for solar technologies, combined heat and power (CHP), and landfill gas, examined projects already planned, and proposed additional projects that would cost-effectively help Miramar progress toward NZEI status.

5. Enhancing Energy Security

The Department must conduct critical missions during disruptions to the Nation's electrical grid. DoD is reliant on the commercial grid, which is vulnerable to natural or man-made disruptions that have the potential to create short- or long-term power outages impacting military installations and the ability to sustain DoD missions.

> ***Energy security is defined as*** *"having assured access to reliable supplies of energy and the ability to protect and deliver sufficient energy to meet mission essential requirements."*
>
> Title 10, U.S.C., Section 2924

DoD is pursuing a multi-pronged strategy to ensure that installations have predictable, continuous, and reliable power. First, two elements of the overall facility energy strategy are essential components to improving energy security: reducing the installation's need for traditional forms of energy and expanding on-site energy generation will indirectly improve energy security. Second, the Department is actively engaged with other Federal agencies, state and local governments, and key industrial players in addressing near-term concerns. Third, investments in technology are focused on the development, demonstration, and deployment of next generation microgrids that offer a direct, robust and cost-effective approach to ensuring installation energy security.

The following sections describe the Department's activities directed at enhancing energy security in FY 2011. It describes the Department's ongoing energy security efforts and also responds to the House Armed Services Committee (HASC) Report 112-78, "Department of Defense Microgrid Activities." DoD conducted a detailed study with the Massachusetts Institute of Technology Lincoln Laboratory (MIT-LL) to respond directly to the first requirement in the HASC Report 112-78. The responses to Requirements 2 and 3 are included throughout this energy security chapter of the FY 2011 AEMR.

> **HASC Report 112-78 Reporting Requirements**
>
> (1) An assessment of the total investment being made into Department of Defense microgrid and smart grid activities, including total value, location, duration of project, and transition plan
> (2) An assessment of activities being pursued collaboratively with the Department of Energy to advance microgrids
> (3) An assessment of policy initiatives and oversight of microgrid and smart grid activities by the Deputy Under Secretary of Defense for Installations and Environment

Addressing Near-Term Concerns

The Department is participating in interagency discussions to better understand the magnitude of the threat to the grid and how best to mitigate it. DoD is examining various means to ensure continuous energy supplies to maintain critical operations at installations in the face of an electrical grid disruption. The Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs and the DUSD (I&E) co-chair DoD's Electric Grid Security Executive Council (EGSEC). The council is working to improve the security, adequacy, and reliability of electricity supplies and related infrastructure key to the continuity of critical defense missions. As required by Section 335 of the FY 2009 NDAA, and as a result of work by the EGSEC, the Department submitted a separate report to Congress that provides a plan for identifying and addressing areas in which electricity needed to carry out critical military missions on DoD installations is vulnerable to disruption.

In addition to working across DoD, the EGSEC works closely with the DOE and Department of Homeland Security (DHS). The three agencies recently created an Energy Surety Public Private Partnership (ES3P) to work with private sector entities. As an initial focus, the ES3P is collaborating with utilities in the National Capital Region to improve energy security at mission-critical facilities.

DoD is also addressing cyber threats to the security of energy systems through a DoD Information Risk Management Technical Working Group that is engaged in the development of a control systems cyber-security overlay that specifies security controls and supporting guidance to complement the baseline put forth in the Committee on National Security Systems (CNSS) Instruction No. 1253, Revision 1.1, *Security Controls and Control Selections for National Security Systems*.

Finally, the Department continues its efforts to expand its current energy security policy in DoD Instruction, "Installation Energy Management" (DoDI 4170.11). This instruction provides guidance to installation commanders and energy managers on a range of energy security and energy efficiency matters.

Next Generation Microgrids

A major focus of the Department is advanced, or "smart," microgrid technology. Smart microgrids and energy storage offer a more robust and cost-effective approach to ensuring installation energy security 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.

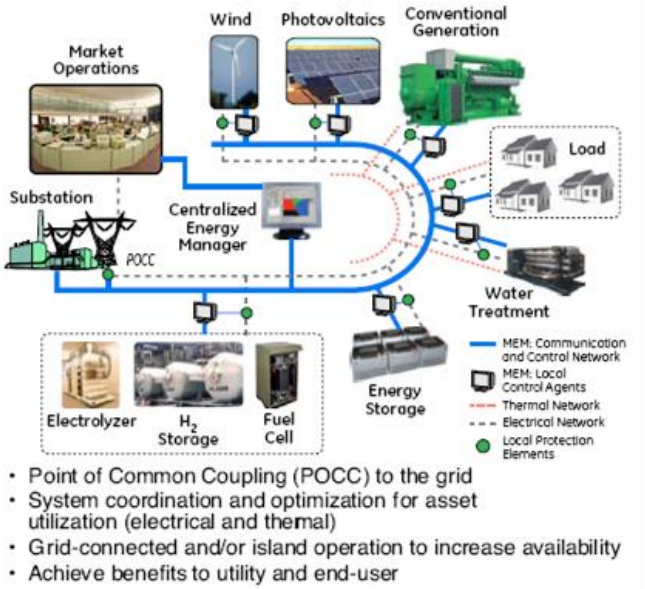


Figure 5-1: Microgrid Paradigm

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

Advanced microgrids are a "triple play" for DoD's installations. Such systems 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. Most important, they offer energy security: 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 5-1).

Overview of Installation Energy Test Bed Efforts

The Environmental Security Technology Certification Program's (ESTCP) Installation Energy Test Bed is a cost-effective way for DoD to demonstrate and validate emerging energy technologies in a real-world environment. Projects conduct rigorous operational testing and assessment of the life-cycle costs of new technology while addressing DoD-unique issues. Following demonstrations, the DoD can be a sophisticated first user of successful cutting-edge, transformational energy technologies.

The Installation Energy Test Bed has funded 10 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. Demonstrations are underway at Fort Bliss, TX (Lockheed Martin); Twentynine Palms, CA (General Electric's advanced microgrid system); Los Angeles Air Force Base (Lawrence Berkeley National Laboratory); and several other installations.

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. This project is demonstrating such an intelligent microgrid tied to the existing energy assets at a U.S. Army Brigade Combat Team complex at Fort Bliss, TX. 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 greenhouse gas 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 each piece of equipment for energy efficiency and security. This demonstration will help pave the way for the implementation of this technology at a wider range of DoD facilities.

Marine Corps Air Ground Combat Center Base (Twentynine Palms, California)

DoD is transforming the electrical infrastructure of MCAGCCB Twentynine Palms, CA, 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 2 MW solar photovoltaic farm, 1 MW of solar photovoltaic 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.

2 MW Solar PV Farm | 1 MW PV Shading | 7.2 MW Cogeneration Plant

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 Twentynine 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 Air Force Base

A demonstration just getting underway at Los Angeles Air Force Base is focused on showing the cost-effective use of DoD resources in the evolving electric power market place, in addition to the energy security benefits of microgrids. This demonstration centers around medium duty, plug-in, electric vehicles. 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 security benefits of vehicle-to-grid operation.

Microgrid Studies and Analyses

DUSD(I&E) commissioned outside experts to develop two studies addressing microgrids on DoD installations. First, MIT-LL developed a complete technical review of the Department's work on microgrids. This work classified different microgrid architectures and characteristics and compared their relative cost-effectiveness. This study responds to the first requirement in the HASC Report 112-78, as it provides an assessment of the total investment made into DoD microgrid and smart grid activities, including total value, location, duration of project, and a transition plan. The study provides insight into increasing energy security and reducing energy costs

Photo Source: MIT Lincoln Laboratory, Lexington, MA.
Available from http://www.ll.mit.edu/

MIT Lincoln Lab

through the incorporation of renewable energy resources into microgrids, as well as new market opportunities for DoD in the area of demand response and ancillary services.

The study highlights the extent of ongoing microgrid work across the DoD. It identified 44 installations that either had existing microgrids, planned installation of microgrids, or conducted microgrid studies or demonstrations at their facilities. The authors interviewed more than 75 people from the military Services, the Office of the Secretary of Defense, and the DOE. The analysis categorized the ongoing microgrid efforts based on several key attributes including size, maturity, the inclusion of renewable resources and the ability to operate in a grid-tied manner.

The analysis confirms the value of microgrids to the DoD. The combination of on-site energy generation and storage, together with the microgrid's ability to manage local energy supply and demand, allow installations to shed non-essential loads and maintain mission-critical loads if the electrical grid is disrupted.

The study illustrates the largely untapped potential of moving to smarter, next generation microgrids that would accommodate far greater penetration of renewable energy sources, as well as tighter integration with the electrical grid. If solar resources that are increasingly being installed on DoD installations were available during islanded operation of a microgrid, they could significantly extend the islanding time. Moreover, a microgrid that could operate when tied to the grid would offer new opportunities for the DoD to generate cost savings by using backup generation assets during normal operation and generate financial revenue by using advanced ancillary services.

One important finding is that there will be no "one size fits all" solution. The location of a military installation influences the options available for energy generation sources, the options available for interaction with the local utility, the characteristics of the local electricity market, and the regulatory environment. The most effective microgrids will be those that take into account the needs of the local commercial electrical grid and are configured so that they can earn value helping to meet those needs.

The complete study is available at the ESTCP website: http://www.serdp.org/News-and-Events/News-Announcements/Program-News/DoD-study-finds-microgrids-offer-improved-energy-security-for-DoD-installations.

Second, DUSD(I&E) is just beginning an analysis of the opportunities for installations to use demand response, which is the ability to curtail load or increase on-site generation in response to a request from the grid operator and as compensation, receive revenue. This revenue may be generated by altering an installation's power consumption that is supplied by the grid during times of peak demand on the grid. Although some installations engage in demand response even with their existing energy systems (typically, a base agrees to use backup generators on a few peak demand days in return for a payment from the local utility), advanced microgrid systems will create opportunities for much more sophisticated interactions with the regional power market.

Service Initiatives

Navy

The Navy developed the Smart Power Partnership Initiative to group geographic clusters of Navy and Marine Corps installations into regional smart grids capable of sharing power and thereby protecting mission-critical resources. The primary purpose of the initiative is to enhance mission assurance and energy security. This initiative is being piloted among San Diego area Navy and Marine Corps installations. In order to optimize the electricity loads across the region while protecting the mission-critical loads on each base, further investments in renewable generation, backup generation (preferably powered with biofuel), and storage technologies will be considered.

The Navy continues making progress with the smart grid pilot project at Naval District Washington (NDW). The pilot project allows NDW to collect, transport, and synthesize installation energy consumption and load demand information. The Navy is collaborating with NREL to demonstrate new or leading-edge commercial energy technologies whose subsequent deployment will support DoD's efforts in meeting the energy efficiency and renewable energy goals while enhancing installation energy security. A number of technology demonstrations will be conducted on Naval bases in Guam and in Hawaii. NREL is leveraging private industry participation and investments to improve the integration of ongoing energy activities.

Air Force

To mitigate energy security vulnerabilities introduced by connecting renewable energy systems to the electrical grid, the Air Force is implementing rigorous design requirements and project reviews compliant with new Institute of Electrical and Electronic Engineers guide for design, operation and integration of distributed resource island systems with electrical power systems. This effort will eliminate the risks of inadvertent grid shutdown, poor power quality, and system control hijacking by cyber attack. Additionally, the Air Force continues to use comprehensive energy security checklists to assess electrical system vulnerabilities and gaps in backup power supplies that may compromise mission capabilities.

The Air Force completed an energy security study, which contributed to ongoing efforts to refine criteria for a standardized energy security scorecard. Based on the criteria, the Air Force developed the scorecard to help installations identify and optimize actions that could improve their energy security posture. The energy security checklist is being integrated into various assessments.

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6. Data Management and Metering

As DoD strives to improve its energy efficiency, accurate, real-time facility energy information has become essential. The Department could do a much better job of measuring its energy consumption. A large fraction of buildings are not metered, and lack the standardized processes and integrated systems needed to systematically track, analyze and benchmark facility energy and water use and the related costs. The absence of usage and cost data reduces the efficiency of existing facility operations, and limits the Department's ability to make the right investments in new, efficiency-enhancing technology and tools.

DUSD(I&E) is updating policy on the metering of DoD facilities. In addition to lowering the threshold for buildings that must be metered, the policy will address the types of meters that can be used and establish guidelines for determining when advanced meters make financial sense. No less important, the policy will help ensure that installed meters can securely deliver data to the energy professionals in the field. As an example, Naval District of Washington has developed an innovative approach that uses a secure network to integrate data on energy usage with information on building management so as to allow for active management of facility energy.

Progress Toward Energy Metering Goals

EPAct 2005 Section 103 requires that by FY 2012, Federal agencies meter 100 percent of electricity in buildings appropriate[17] for metering. DoDI 4170.11 expands on this and requires that meters be installed in all Military Construction (MILCON), major renovation, and ESPC projects. EISA 2007 Section 434(b) requires full metering for natural gas and steam by FY 2016.

By the end of FY 2011, DoD had metered 75 percent of appropriate buildings for electricity. The Department installed water, steam, and natural gas meters in 53 percent of appropriate buildings. These numbers are based on the Services' divergent analyses of cost-effectiveness of meter installation. Table 6-1 summarizes DoD's metering progress in FY 2011 for electricity, water, steam, and natural gas.

Table 6-1: FY 2011 DoD Metering Progress

Utility	Standard Meters			Advanced Meters			Total % Appropriate Buildings Metered
	Total Number of Metered Buildings	% of Appropriate Buildings	Total Number of Meters	Total Number of Metered Buildings	% of Appropriate Buildings	Total Number of Meters	
Electricity	14,554	39%	18,747	13,659	36%	18,697	75%
Water	7,460	43%	11,056	1,720	10%	3,102	53%
Steam	824	45%	1,098	138	8%	277	53%
Natural Gas	2,263	22%	3,183	3,093	31%	3,990	53%

[17] Appropriate facilities are defined as those where metering would be cost-effective and practical.

In FY 2011, DoD captured approximately 53 percent of electricity consumption, over 49 percent of natural gas consumption, 23 percent water consumption, and 14 percent of steam consumption on installed meters (Table 6-2).

Table 6-2: FY 2011 DoD Utility Quantity Metered

Utility	Units	Standard Meters		Advanced Meters		Total % utility Metered
		Utility Quantity Metered	% Total Consumption	Utility Quantity Metered	% Total Consumption	
Electricity	*BBTU*	15,089	16%	35,326	37%	**53%**
Water	*Thousand Gallons*	20,525,123	18%	4,818,259	4%	**23%**
Steam	*BBTU*	646.86002	12%	99.84243849	2%	**14%**
Natural Gas	*BBTU*	13,246	20%	19,410	29%	**49%**

In FY 2011, less than a quarter of advanced meters reported to a Centralized Data Management System (CDMS). The CDMS provides real time energy usage information, promoting effective energy management at DoD facilities. Table 6-3 summarizes the number of advanced meters that report to a CDMS by utility.

Table 6-3: FY 2011 Centralized Data Management Reporting

Utility	Units	Consumption Reported to Centralized Data Management System	% of Total Consumption	Number of Meters Reporting to Centralized Data Management System	% of Advanced Meters Reporting to Centralized Data Management System
Electricity	*BBTU*	16,778	18%	**3,900**	21%
Water	*Thousand Gallons*	171,870	0.15%	**154**	5%
Steam	*BBTU*	0	0%	**7**	3%
Natural Gas	*BBTU*	8,027	12%	**1,032**	26%

Initiatives to Improve Facility Energy Monitoring

DUSD(I&E) has been leading the development of an Enterprise Energy Information Management (EEIM) system that will facilitate the automated collection of standardized facility energy and cost data. Automation will reduce the time it now takes for energy managers to input and analyze data manually, and standardization will allow for data to be aggregated and analyzed on a Service-wide and Department-wide basis. The EEIM will also provide advanced analytical tools that will allow energy professionals at all levels of the Department both to improve their existing operations and identify cost-effective investments. Although the Services will continue to use their individual energy information management systems for the time being, the EEIM will gradually the Department to expand and connect them to create an enterprise-wide system.

Enterprise Energy Information Management System (EEIM)

The EEIM is an integration of capabilities across all DoD Components to give energy professionals at all levels of the DoD enterprise, the right data, dashboards, and advanced analytical tools to make informed and intelligent investment decisions. When implemented, EEIM will leverage a wide net of advanced utility meters to facilitate automated collection and consolidation of standardized facility energy, cost, and project data, eliminating manual and dual data entry. When EEIM requirements are published, DoD Components will develop implementation plans for incorporating EEIM business rules and common data language into their energy and project systems of record (SORs), which will allow automated communication between the SORs and the centrally hosted data warehouse.

Army

In FY 2011, the Army executed a program management initiative—the Army Central Meter Program—to meter energy and water consumption and incorporate the data into a centralized energy monitoring system. The program establishes a metering standard to ensure all advanced meters can report to appropriate data management systems. Table 6-4 summarizes the Army's FY 2011 metering profile.

Table 6-4: FY 2011 Army Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting CDMS	% of Meters Reporting to CDMS	Consumption Reported to CDMS	% of Total Consumption
Electricity	BBtu	5,755	62%	12,800	40%	7,482	274	4%	1,280	4%
Water	Thousand Gallons	6	0%	11,000	0%	6	6	100%	1,100	0%
Steam	BBtu	0	0%	0	0%	0	0	0%	0	0%
Natural Gas	BBtu	1,154	29%	5,000	20%	1,154	135	12%	700	3%

Navy

The Navy is deploying an advanced metering infrastructure (AMI) system to capture up to 95 percent of the electrical consumption and 75 percent of the mechanical (natural gas, steam and water) consumption at installations worldwide. Additionally, 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 system, called CIRCUITS, is deployed at all U.S. locations and will be deployed Navy-wide by the end of FY 2012. Table 6-5 summarizes the Navy's FY 2011 metering profile.

Table 6-5: FY 2011 Navy Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting CDMS	% of Meters Reporting to CDMS	Consumption Reported to CDMS	% of Total Consumption
Electricity	BBtu	1,782	10%	2,494	13%	1,800	19	1%	0	0%
Water	Thousand Gallons	553	6%	2,194,737	9%	559	0	0%	0	0%
Steam	BBtu	29	2%	18	2%	29	0	0%	0	0%
Natural Gas	BBtu	299	12%	1,785	12%	302	0	0%	0	0%

Marine Corps

The MCICOM vision is to use geospatial information system (GIS) capabilities to capture, manage and analyze metering data. In FY 2011, MCICOM instituted a working group to advance its meter data management capabilities. The Marine Corps will continue to implement CIRCUITS at select pilot locations, pursue iSTAR as an enterprise solution, and conduct comparative analyses. Table 6-6 summarizes the Marine Corp's FY 2011 metering profile.

Table 6-6: FY 2011 Marine Corps Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting CDMS	% of Meters Reporting to CDMS	Consumption Reported to CDMS	% of Total Consumption
Electricity	BBTU	1,915	45%	2,444	45%	4239	0	0%	0	0%
Water	Thousand Gallons	745	36%	2,612,522	36%	2079	0	0%	0	0%
Steam	BBTU	91	43%	82	43%	212	0	0%	0	0%
Natural Gas	BBTU	411	33%	1,065	33%	1247	0	0%	0	0%

Air Force

In FY 2011, the Air Force developed a programmatic approach to implement a standard, enterprise-wide automated meter reading (AMR) solution. AMR will be deployed at large installations starting in FY 2012. Table 6-7 summarizes the Air Force's FY 2011 metering profile.

Table 6-7: FY 2011 Air Force Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting CDMS	% of Meters Reporting to CDMS	Consumption Reported to CDMS	% of Total Consumption
Electricity	BBtu	4,020	74%	15,575.9	54%	5,046	3,507	70%	13,444	47%
Water	Thousand Gallons	415	42%	-	0%	457	147	32%	0	0%
Steam	BBtu	17	71%	-	0%	36	7	19%	0	0%
Natural Gas	BBtu	1,212	64%	11,485.3	54%	1,270	891	70%	7,054	33%

Defense Agencies

The Defense Agencies continue to enhance metering data management. Table 6-8 summarizes the Defense Agencies FY 2011 metering profile. Examples of initiatives to promote metering include:

- WHS awarded a Pentagon Reservation building-level metering contract in FY 2011 and plans to install building-level meters at all applicable buildings prior to the start of FY 2013. Once the building metering initiative is complete, WHS will implement a second phase of the project to install additional sub-meters at energy intense areas (e.g., data centers), allowing for more targeted energy conservation efforts.
- NSA has implemented an aggressive program to monitor electrical usage through its Supervisory Control and Data Acquisition (SCADA) system. Hundreds of meters per year are being added to both Government-owned and leased facilities at a number of locations within the United States. These meters monitor mission-critical and high equipment concentration.
- DeCA revised its metering plan to coordinate additional metering and advanced metering with individual host installations and collect real time data for energy monitoring and analysis purposes.
- DIA installed standard meters to measure electricity, natural gas and water consumption on all its energy intensity reduction goal-subject buildings. Goal-subject buildings in which DIA pays the bill directly to the local utility, indirectly through an Installation Service Agreement (ISA), or separately as a utility charge on leased buildings.

Table 6-8: FY 2011 Defense Agencies Metering Profile

Utility	Units	Advanced Meters					Data Management			
		Total Number of Metered Buildings	% of Appropriate Buildings	Utility Quantity Metered	% Total Consumption	Total Number of Meters	Number of Meters Reporting CDMS	% of Meters Reporting to CDMS	Consumption Reported to CDMS	% of Total Consumption
Electricity	BBtu	187	22%	2012	24%	130	100	77%	2,054.45	25%
Water	Thousand Gallons	1	0%	0	0%	1	1	100%	17,0770	7%
Steam	BBtu	1	1%	0	0%	0	0	0%	0	0%
Natural Gas	BBu	17	4%	75	3%	17	6	35%	273	9%

7. Funding Energy Projects

The Department continues to invest in activities that enable the four core elements of the facility energy strategy. The Department uses both appropriations and non-Governmental third-party financing to invest in energy and water efficiency and conservation measures, as well as renewable energy projects. Appendix H contains the FY 2011 list of appropriated and non-Governmental third-party funded projects.

Energy Projects Funded by Appropriations

Appropriations are direct funding authorities through MILCON, Operation and Maintenance (O&M), and Defense Working Capital Fund (DWCF) accounts. For example, the Energy Conservation Investment Program (ECIP) is a MILCON program, centrally managed by the Office of the Secretary of Defense to fund projects that save energy or reduce defense energy costs. ECIP supports new construction of efficient energy systems and improves and modernizes existing energy systems.

Congressional appropriations amounting to over $600 million funded 873 energy efficiency, renewable energy, and water conservation projects in FY 2011 (Figure 7-1).

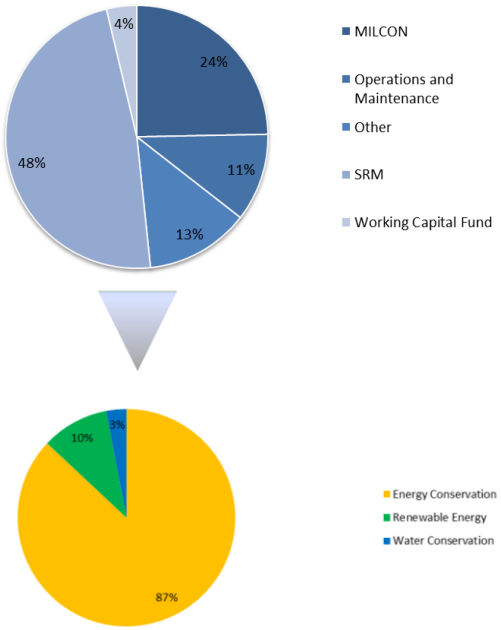


Figure 7-1: FY 2011 DoD Projects Funded by Appropriations

Table 7-1 summarizes projects funded with FY 2011 appropriations by type and includes aggregate estimates of total project costs as well as the total number of funded projects.

Table 7-1: FY 2011 DoD Appropriations[18]

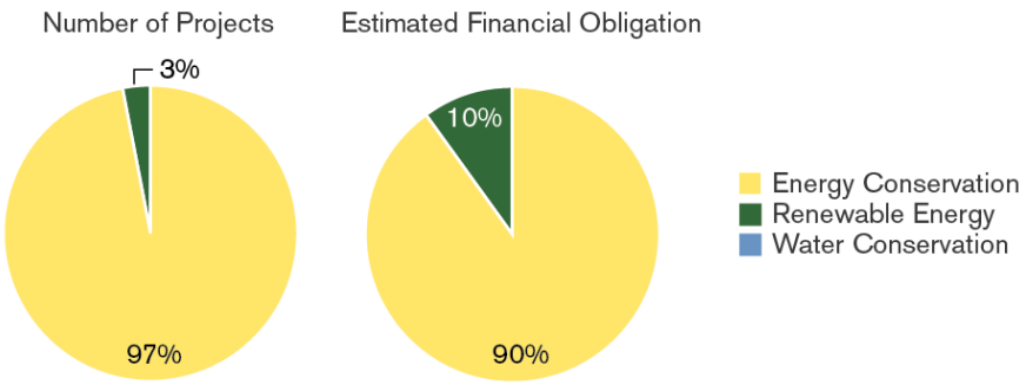
Project Type	Estimated Financial Obligation ($000)	Number of Projects
Energy Conservation	$531,905	813
Renewable Energy	$61,071	30
Water Conservation	$18,428	30
Total	**$611,404**	**873**

[18] Totals include Defense Agencies.

Army

In FY 2011, the Army spent $79 million in appropriated funds to fund 106 energy efficiency and renewable energy projects. These projects included lighting retrofits, chiller and boil replacements, and the placement of solar panels on buildings. Energy efficiency and conservation initiatives overwhelmingly dominate the project mix (Figure 7-2).

Figure 7-2: FY 2011 Army Projects Funded by Appropriations



DON

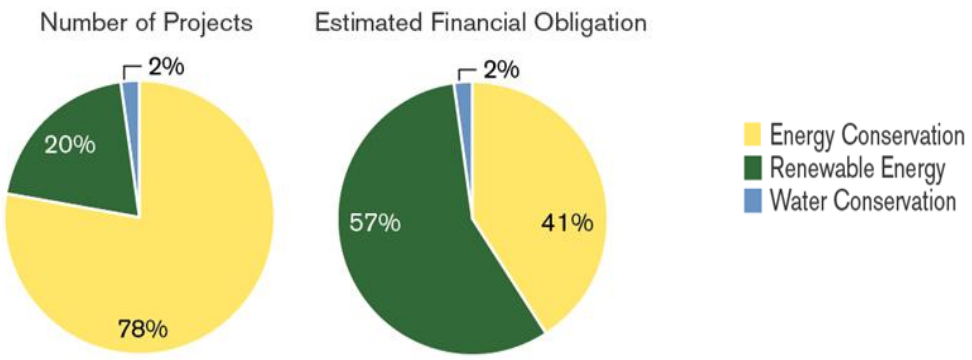
In FY 2011, DON awarded $59 million in appropriated funds to fund 45 energy efficiency, water conservation, and renewable energy projects. Table 7-2 summarizes the breakdown of appropriated projects and associated funding between the Navy and the Marine Corps.

Table 7-2: FY 2011 DoN Appropriations

Funding Account	Estimated Financial Obligation ($000)	Number of Projects
Marine Corps = 12 Projects		
Energy Conservation	$1,715	9
Renewable Energy	$30,000	3
Navy = 33 Projects		
Energy Conservation	$22,012	26
Renewable Energy	$3,513	6
Water Conservation	$1,388	1
Grand Total	$58,628	45

Of the total number of projects in FY 2011, 78 percent were energy efficiency projects, as illustrated in Figure 7-3.

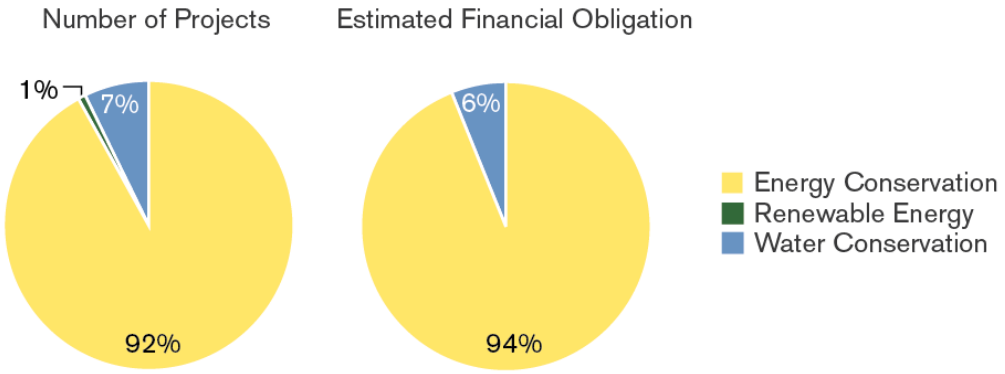
Figure 7-3: FY 2011 DoN Projects Funded by Appropriations



Air Force

In FY 2011, the Air Force spent $288 million in appropriated funds to fund 415 energy efficiency, water, and renewable energy projects. These projects included HVAC recommissioning, boiler and chiller replacements, lighting projects, and water conservation investments. As shown in Figure 7-4, energy efficiency projects dominated the supply mix, with 92 percent of the projects awarded in FY 2011, followed by water conservation and renewable energy projects, which together amounted to 8 percent of the Air Force's projects.

Figure 7-4: FY 2011 Air Force Projects Funded by Appropriations



Energy Projects Financed Through Non-Governmental Third-Party Mechanisms

The Department is increasingly relying upon non-Governmental third-party financing mechanisms such as UESCs and ESPCs. These financing strategies allow DoD to implement energy efficiency and renewable energy projects. In FY 2011, DoD awarded more than $405 million in non-Governmental third-party financed ESPCs and UESCs. Table 7-3 summarizes the total contract awarded value of ESPCs and UESCs financed in FY 2011. This section provides an overview of the Services' ESPCs and UESCs initiatives for FY 2011.

Table 7-3: FY 2011 DoD Non-Governmental Third-Party Funding

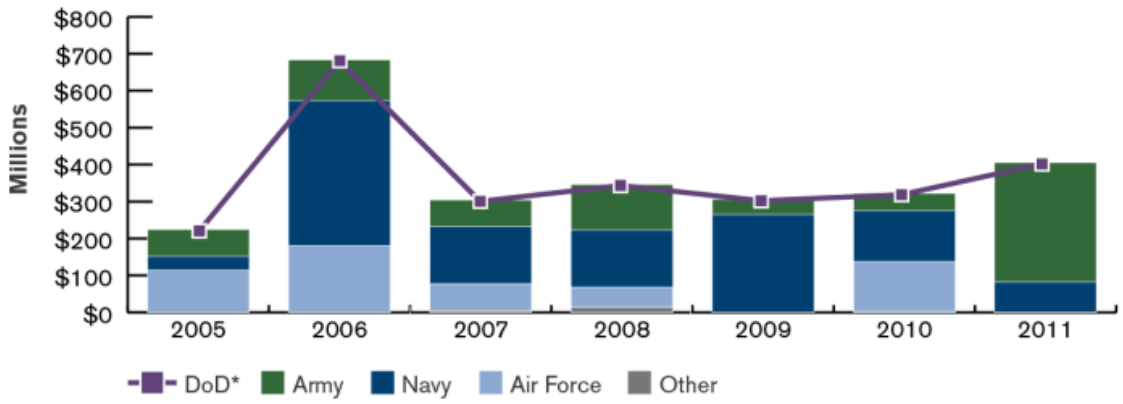
Funding Mechanism	Estimated Financial Obligation ($000)
ESPC	$207,340
UESC	$197,982
Total	**$405,322**

Funding Mechanism	Definition[19]
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 Savings 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.

[19] U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Project Funding* [online source] (Washington, D.C., 2011, accessed June 1, 2012), available from http://www1.eere.energy.gov/femp/financing/espcs.html, Internet.

Non-Governmental third-party financing remained relatively stable between FY 2007 and FY 2010. In FY 2011, the Army experienced a significant increase in awarded projects financed through non-Governmental third-party mechanisms, and DoD increased the total amount of in ESPC and UESCs awarded between FY 2010 and FY 2011[20] by $100 million (Figure 7-5).

Figure 7-5: FY 2005 - FY 2011 DoD Non-Governmental Third-Party Financing



Army

In FY 2011, 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 achieve energy reduction goals. In FY 2011, the Army awarded $324 million in ESPCs and UESCs projects (Table 7-4).

Table 7-4: FY 2011 Army Non-Governmental Third-Party Funding

ESPC	(number/Thou. $)
Number of ESPC Task/Delivery Orders awarded in fiscal year	11
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services)	$184,222
UESC	**(number/Thou. $)**
Number of UESC Task/Delivery Orders awarded in fiscal year	11
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services)	$139,490

[20] In FY 2011, Air Force did not award any ESPC or UESC projects.

Army UESC and ESPC projects awarded in FY 2011 include:

- **Redstone Arsenal**: Awarded the second UESC task order to remove additional buildings from the central steam system and install individual gas boilers/furnaces.
- **Fort Knox**: Awarded seven UESC task orders for energy conserving measures. Projected annual savings total $3.7 million.
- **Fort Campbell**: Awarded two UESC task orders for energy conservation measures. These include boiler and chiller upgrades in the central plant.
- **Tobyhanna Army Depot**: Awarded two ESPC task order modifications for HVAC upgrades and implementation of a solar photovoltaic system.

Navy and Marine Corps

In FY 2011, the DON awarded 1 ESPC task order valued at $23 million and 12 UESCs worth $58 million (Table 7-5).

Table 7-5: FY 2011 DoN Non-Governmental Third-Party Funding

ESPC	(number/Thou. $)
Number of ESPC Task/Delivery Orders awarded in fiscal year	1
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services)	$23,116
UESC	**(number/Thou. $)**
Number of UESC Task/Delivery Orders awarded in fiscal year	12
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services)	$58,492

The DON issued the following UESC and ESPC projects in FY 2011:

- **Portsmouth Naval Shipyard**: Completed the third ESPC project and installed two new variable speed compressors that serve as trim compressors to reduce energy use during lighter demand periods. Repair the steam condensate return lines serving the highest flow areas close to the power plant.
- **Naval Undersea Warfare Center Division:** Completed an ESPC project that is reducing overall energy consumption by 30 percent. The project eliminated the aging central steam system; installed efficient new heating, ventilating, and air conditioning equipment and controls; and improved the efficiency of lighting and compressed air systems. The project also installed ground source heat pumps and solar water heating for an industrial process tank.

- **The Marine Corps Service Facility at Blount Island, FL:** As part of a UESC, USMC pursued a variety of energy efficiency and renewable energy projects including chiller replacements, solar photovoltaic, ground source heat pumps, and HVAC upgrades.
- **MCB Camp Pendleton**: As part of a UESC, USMC implemented HAVC and boiler retrofits, installed energy efficient lighting and meters, and developed solar photovoltaic.

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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 productivity and leave a smaller environmental footprint. Currently, all new construction must meet the Leadership in Energy and Environmental Design (LEED) Silver (or an equivalent) standard and/or comply with the five principles of High Performance Sustainable Buildings. It also must exceed the energy efficiency standard set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) by at least 30 percent.

DUSD(I&E) is developing a new code for the construction of high performance, sustainable buildings. Based to some extent on ASHRAE 189.1, it will govern all new construction and major renovations as well as contracts for leased space. The goal is to improve building energy performance cost-effectively by prescribing the most attractive features of existing commercial codes and by requiring that the building be designed so as to reduce life-cycle costs. To assist in developing this code, DUSD(I&E) has asked the National Research Council (NRC) to evaluate the major third-party "green building" rating systems and standards. In addition, the NRC is looking at alternative ways to incorporate analysis of life-cycle costs and return on investment into capital investment decisions.

The Guiding Principles of Federal Leadership in High Performance and Sustainable Buildings (HPSB) outline five strategic principles 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 HPSB guides agencies to use integrated design principles, optimize energy performance, protect and conserve water, enhance indoor environmental quality, and reduce the environmental impact of materials.

DoD's Progress Toward Meeting ASHRAE 90.1 Standards

The Department continues to incorporate sustainable and high performance building design elements to enhance energy and water system efficiencies. In FY2011, 99 percent of new building designs, started since FY 2007, are expected to meet the ASHRAE 90.1 standard. Appendix I includes a list of all new DoD buildings constructed since 2007, and their energy consumption levels in relation to ASHRAE 90.1 standards.

Army

In 2011, all Army buildings were designed to:

- Use 30 percent less energy than ASHRAE 90.1 standards,
- Meet the U.S. Green Building Council (USGBC) LEED Silver requirements,
- Purchase Energy Star or FEMP designated equipment,
- Install metering, and
- Specify premium efficiency electric motors.

Navy

In FY 2011, the Navy designed 20 projects that were, on average, approximately 33.5 percent above the ASHRAE 90.1 standard. Additionally, the Navy has an ongoing effort to install advanced utility meters in facilities to provide energy usage data for various building types. The metering effort will allow the Navy to enhance reporting capabilities of its compliance with the ASHRAE 90.1 standard.

Marine Corps

In FY 2011, the Marine Corps incorpoated basic energy saving techniques into new building design to support compliance with the ASHRAE 90.1 standards. These efforts include:

- Siting and organizing building configuration and massing to reduce heating and cooling loads;
- Enhancing natural light as a substitute for, or complement to, electrical lighting;
- Enhancing natural ventilation whenever possible;
- Implementing efficient heating and cooling equipment to satisfy reduced loads; and
- Installing computerized building-control systems.

Air Force

In FY 2011, 83 percent of Air Force new construction projects met or exceeded the 30 percent reduction requirement. If the project did not meet the ASHRAE requirement, the Air Force used life-cycle cost analysis to evaluate the design options and determine the highest energy efficiency that is life-cycle cost effective. This approach is in accordance with 10 CFR 436. Many facilities are not able to achieve the 30 percent reduction due to intensive HVAC and ventilation requirements. These facilities include medical, industrial and electronic intensive facilities. Notable achievement of greater than or equal to 50 percent energy reduction was accomplished by 6 percent of the projects, with five projects attempting to exceed 70 percent reduction.

DoD's Progress in Meeting Green Building Standards

DODI 4170.11 and EO 13514 require new buildings to be contructed to Leadership in Energy and Environmental Design (LEED) Silver standards, where cost-effective. In FY 2011, DoD continued to add LEED buidings to its inventory (see Appendix J for a full list of projects).

Army

The Army requires that the USGBC's LEED rating system is used as the method for evaluating/self-scoring the sustainable design of Army projects, starting with the FY 2008 Military Construction program. The Army Sustainable Design and Development Policy requires new construction and major renovations to achieve a minimum of LEED Silver certification. Beginning in FY 2013, vertical construction (meeting minimum USGBC characteristics) and major renovation projects will incorporate sustainable design principles into site selection, design and construction, and must be externally

certified by the Green Building Certification Institute at the LEED-New Construction/Major Renovation Silver level. Presently, the Army has 136 LEED accredited buildings:

- 4 certified,
- 68 silver,
- 63 gold, and
- 1 platinum (Fort Belvoir Community Center-Residential Communities Initiative Project).

Navy and Marine Corps

The Navy has a total of 51 LEED certified projects. In FY 2011, the USGBC determined that 20 Navy projects were LEED certified at the following rating levels: Certified = 1, Silver = 6, Gold = 12 and Platinum = 1. The Navy currently has 497 projects registered with USGBC for LEED certification. Examples of Navy recognition in this category in FY 2011 include:

- In May 2011, the Navy held a ceremony at the National Naval Medical Center, Bethesda, MD, to recognize the LEED Gold certification of new in-patient and out-patient facilities. The America building facility provides services for cancer patients, amputees, and other out-patient clinical needs. The Arrowhead building houses emergency in-patient services. Achieving LEED Gold certification for the New Medical Center facilities was an exceptional feat; hospitals are inherently energy intensive because they operate around the clock and use high-energy major medical equipment.
- The Navy's first LEED Gold certified bachelor enlisted quarters on Naval Base Guam officially opened.
- NAVFAC Washington obtained its first LEED Gold certification. The facility was built to support Naval Surface Warfare Center Dahlgren Division at Naval Support Facility Dahlgren in Dahlgren, VA.
- Naval Station Everett, WA, earned the distinction of being the first Navy installation to benchmark all applicable buildings using the ENERGY STAR® Program's Portfolio Manager. After reviewing the benchmarking results, conducting the proper assessments, and submitting the required applications, they now hold claim to an unprecedented nine ENERGY STAR® certified buildings.

Air Force

The Air Force continues to pursue the USGBC LEED Silver certification in all new vertical construction. To date, the Air Force has:

- 35 LEED certified facilities (including one LEED Platinum facility, 10 LEED Gold facilities, and two LEED Silver hangars)
- 812 LEED Silver certified homes
- Over 300 projects registered for certification with USGBC

Understanding that education is integral to success, the Air Force developed and conducted a series of sustainable design and development and LEED workshops. Over 1,000 Air Force personnel attended the workshops at regional locations, worldwide, and approximately 125 Air Force personnel becoming LEED Accredited Professionals. The sustainable/LEED training requirement has transitioned to the more traditional Air Force education venues; both the U.S. Air Force Academy and the Air Force Institute of Technology now offer LEED courses in their curricula.

EISA 2007 Section 433 Required Reduction in Fossil Fuel Use

EISA 2007 Section 433, *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 energy consumption 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 2011, 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 such a policy, and develop appropriate follow-on implementation policy.

In an effort to understand the scope of the requirements in the proposed rule, the Air Force is conducting two sets of studies. The first set of studies will assess five projects in the FY 2012 MILCON program to determine: 1) the feasibility of meeting/exceeding the energy related Federal mandates of EPAct 2005 and EO 13423 and 2) given the state of existing technology, determine whether the EISA 2007 fossil fuel-reduction requirement can be met. The second set of studies will assess six projects in the FY 2013 MILCON program to determine the cost differential to achieve Net Zero energy using commercially available technologies. The alternatives of both studies will also be assessed from a life-cycle cost and maintainability perspective. The results of the studies will identify a path forward to achieve the zero net energy and reduction in fossil fuel-generated energy mandates.

APPENDIX A
LIST OF ENERGY ACRONYMS

Acronym	Definition
A7C	Air Force Civil Engineer
A7CAE	HQ United States Air Force, Office of the Civil Engineer, Asset Management and Operations Division, Energy Management Branch
AEMR	Annual Energy Management Report
AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environment
AFCESA	Air Force Civil Engineer Support Agency
AFERS	Air Force Energy Reporting System
AFFEC	Air Force Facility Energy Center
AFMC	Air Force Material Command
AFS	Air Force Station
AFSPC	Air Force Space Command
AFV	Alternative Fuel Vehicle
AMR	Automated Meter Reading
ANGB	Air National Guard Base
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASA (IE&E)	Assistant Secretary of the Army for Installations, Energy and Environment
ASN (EI&E)	Assistant Secretary of the Navy for Energy, Installations and Environment
BBTU	Billion British thermal units
BRAC	Base Realignment and Closure
BTU	British thermal unit
BUMED	Bureau of Medicine and Surgery
CIRCUITS	Comprehensive Utilities Information Tracking System
CNIC	Commander, Navy Installations Command
DASA (E&S)	Deputy Assistant Secretary of the Army for Energy and Sustainability
DCMA	Defense Contract Management Agency
DeCA	Defense Commissary Agency
DFAS	Defense Finance and Accounting Service
DIA	Defense Intelligence Agency
DLA	Defense Logistics Agency
DoD	Department of Defense
DOE	Department of Energy
DON	Department of the Navy
DUERS	Defense Utility Energy Reporting System
DUSD (I&E)	Deputy Under Secretary of Defense (Installations and Environment)
E85	85 percent ethanol fuel

ECIP	Energy Conservation Investment Program
EEIM	Enterprise Energy Information Management
EIA	Energy Information Agency
EISA	Energy Independence and Security Act
EMCS	Energy Management Control Systems
E.O.	Executive Order
EPA	Environmental Protection Agency
EPACT	Energy Policy Act
ESCO	Energy Service Company
ESPC	Energy Savings Performance Contract
ESPP	Energy Savings Performance Program
ESTCP	Environmental Security Technology Certification Program
EUL	Enhanced Use Leases
FEMP	Federal Energy Management Program
FES	Facility Energy Supervisor
FSRM	Facility Sustainment, Restoration, and Modernization
FY	Fiscal Year
GSA	General Services Administration
GSF	Gross Square Foot
GSHP	Ground Source Heat Pump
HCFC	Hydro chlorofluorocarbons
HFSC	Health Facilities Steering Committee
HQ	Headquarters
HQCC	Headquarters Command Complex (MDA)
HQDA	Headquarters Department of the Army
HVAC	Heating, Ventilating, and Air Conditioning
IESP	Infrastructure Energy Strategic Plan
ILA	Industrial, Landscape and Agriculture
IMCOM	Installation Management Command
ISSA	Inter-Service Support Agreement
iSTAR	Installation Statistics, Analytics and Reporting
KW	Kilowatt
KWH	Kilowatt-Hour
LCCA	Life-Cycle Cost Analysis
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LFD	Lease Facilities Division (WHS)
LSS	Lean Six Sigma
M&V	Measurement & Verification
MAJCOM	Major Command
MCAS	Marine Corps Air Station

MCLB	Marine Corps Logistics Base
MCRD	Marine Corps Recruit Depot
MDA	Missile Defense Agency
MDMS	Meter Data Management System
MEDCOM	Medical Command (DoA)
MILCON	Military Construction
MMBTU	Million British Thermal Units
MW	Megawatt, 1 million Watts
MWH	Megawatt-Hour, 1 million Watt-hours
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVSTA	Naval Station
NAWS	Naval Air Weapons Station
NDAA	National Defense Authorization Act
NGA	National Geospatial-Intelligence Agency
NREL	National Renewable Energy Laboratory
NSA	National Security Agency
NTV	Non-Tactical Vehicles
NZEI	Net Zero Energy Installation
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
OTEC	Ocean thermal energy conversion
OUSD (I&E)	Office of the Undersecretary of Defense Installations and Environment
PACAF	Pacific Air Forces
PH&RP	Pentagon Heating & Refrigeration Plant
PM	Program Management
PMRF	Pacific Missile Range Facility
POM	Program Objective Memorandum
PPA	Power Purchase Agreements
PV	Photovoltaic
QSR	Quality Surveillance Representative
RDF	Remote Delivery Facility (WHS)
REC	Renewable Energy Certificate
REM	Resource Efficiency Manager
RFP	Request for Proposal
RMCS	Refrigeration Monitoring and Control Systems
REPD	Renewable Energy Project Development
SAF/IE	Secretary of the Air Force for Installations, Environment and Logistics
SDD	Sustainable Design and Development
SECNAV	Secretary of the Navy

SERDP	Strategic Environmental Research and Development Program
SRM	Sustainment, Restoration and Modernization
TMA	TRICARE Management Agency
UESC	Utility Energy Service Contract
UFC	Unified Facilities Criteria
USACE	US Army Corp of Engineers
USAF	United States Air Force
U.S.C	United States Code
USGBC	United States Green Building Council
USMC	United States Marine Corps
WHS	Washington Headquarters Service

APPENDIX B
ENERGY GOALS AND REPORTING REQUIREMENTS

The DoD FY 2011 AEMR complies with various energy and water reporting requirements. DOE - FEMP has oversight over some of those requirements.
The FY 2011 AEMR describes the Department's progress in meeting three sets of requirements. The first set of requirements originates from the Energy Policy Act of 2005 (EPAct 2005), which amended portions of the National Energy Conservation Policy Act (NECPA) of 1978 and established energy management goals for Federal facilities and fleets in several areas.

Under EPAct 2005, agencies must:

- Install advanced metering devices in all Federal buildings by October 1, 2012 for the purposes of efficient energy use and reduction in the cost of electricity,

- Incorporate energy efficient criteria consistent with ENERGY STAR® and FEMP-designated products into their product procurement process,

- Design new Federal buildings – commercial or residential – to exceed by 30 percent performance standards specified by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) and to reflect sustainable design principles, and

- Consume renewable electricity equal to at least 3 percent of all electricity consumed from FY 2007 to FY 2009, with increases to 5 percent in FY 2010-2012, and 7.5 percent in FY 2013 and thereafter.

The second set of requirements is put forth in the Energy Independence and Security Act of 2007 (EISA 2007) and Executive Order (E.O.) 13423, "Strengthening Federal Environmental, Energy, and Transportation Management". EISA 2007 and E.O. 13423 set facility energy consumption reduction goals for all Federal agencies. More specifically, federal agencies must:

- Achieve annual reductions in energy intensity (measured as BTUs per gross square foot) relative to a FY 2003 baseline, leading to a 30 percent decrease by 2015,

- Obtain at least 5 percent of all electricity consumed from renewable sources by FY 2010, with an increase in the target to 7.5 percent by FY 2013,

- Construct all new buildings to exceed the energy efficiency standard specified in ASHRAE 90.1-2004 by at least 30 percent,

- Meter electricity consumption at 100 percent of all covered facilities by FY 2012,
- Achieve natural gas and steam metering capability by FY 2015,
- Decrease potable water consumption intensity by 2 percent annually compared to an FY 2007 baseline, leading to a 16 percent reduction from the baseline by the end of FY 2015,
- Reduce fossil fuel use in new and renovated buildings by 55 percent in FY 2010, compared to an FY 2003 baseline, and by 100 percent in FY 2030,
- Reduce annual petroleum consumption in vehicles by 20 percent, and increase annual alternative fuel consumption by 10 percent, relative to an FY 2005 baseline by FY 2015,
- Designate an energy manager for "appropriate" federal facilities covering at least 75 percent of the agency's energy use,[4] and
- Conduct facility energy and water audits for 25 percent of facilities annually and all appropriate facilities on a four year cycle.

Third, E.O. 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," expands on the energy reduction and environmental performance requirements identified in E.O. 13423 for Federal agencies. Under the new E.O., agencies must ensure that:

- All new federal buildings entering the design phase in 2020 or later are designed to achieve zero net energy[5] by 2030,
- At least 15 percent of existing agency buildings and leases (above 5,000 gross square feet) meet the Guiding Principles for High Performance and Sustainable Buildings by FY 2015 and that annual progress is being made towards 100 percent compliance across the building inventory,
- Cost-effective, innovative strategies to minimize consumption of energy, water, and materials are being pursued,
- Potable water consumption intensity is reduced 2 percent annually through FY 2020, or 26 percent by the end of FY 2020, relative to the FY 2007 baseline,
- Industrial, landscaping, and agricultural water consumption is reduced by 2 percent annually through FY 2020, or 20 percent by the end of FY 2020, against an FY 2010 baseline,

- Water reuse strategies that are consistent with state law regulating potable water consumption are identified, promoted, and implemented, and

- Extends the EISA 2007 reduction in petroleum consumption in vehicles to 30 percent by 2020.

Other Goals and Reporting Requirements

In addition to the energy and water goals and program requirements over which FEMP has oversight, DoD is subject to legislative goals and reporting requirements relevant to Facility Energy use. Accordingly, the FY 2011 AEMR also responds to the following requirements:

- U.S. Code Title 10, Section 2925, requires the DoD to submit to Congress an "Annual Department of Defense Energy Management Report," that describes progress against DoD and Federal goals, and informs Congress on the various initiatives taken to improve the Department's Facility Energy posture.

- Under U.S. Code Title 10, Section 2911(e), it is DoD's goal to produce or procure not less than 25 percent of the total quantity of facility energy consumed within its facilities from renewable energy sources during FY 2025 and each fiscal year thereafter.

- Section 2832 of the FY 2011 National Defense Authorization Act (NDAA), codified in title 10 U.S.C. §2911(b), requires DoD to provide a comprehensive Master Plan for the achievement of DoD's energy performance goals.

Title 10 U.S.C. §2925 requires DoD to submit a description and estimate of the progress made by the Military Departments to meet the certification requirements for sustainable green-building standards in Section 433 of EISA 2007. Building construction and major renovations are also required by E.O. 13514 to reflect principles of sustainable building design and maintenance. Taken together, §2925 and the E.O. require agencies to:

- Ensure all new Federal buildings, entering the design phase in 2020 or later, are designed to achieve zero net energy by 2030,
- Ensure all new construction, major renovations, or repair or alteration of Federal buildings complies with the Guiding Principles of Federal Leadership in High Performance and Sustainable Buildings (as described below),
- Ensure at least 15 percent of existing agency buildings and leases (above 5,000 gross square feet) meet the Guiding Principles by fiscal year 2015 and that the agency makes annual progress towards 100 percent compliance across its building inventory,
- Pursue cost-effective, innovative strategies (e.g., highly-reflective and vegetated roofs) to minimize consumption of energy, water, and materials,

- Manage existing building systems to reduce the consumption of energy, water, and materials, and identify alternatives to renovation that reduce existing asset deferred maintenance costs, and
- When adding assets to agency building inventories, identify opportunities to consolidate and eliminate existing assets, optimize the performance of portfolio property, reduce associated environmental impacts, and ensure that rehabilitation of Federally-owned historic buildings utilizes best practices and technologies in retrofitting to promote long-term viability of the building.

APPENDIX C
ENERGY PERFORMANCE MASTER PLAN

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1. Introduction

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 goals outlined in this Master Plan align with the Department's facility energy strategy designed to reduce energy costs and improve the energy security of fixed installations. The strategy has the following four interrelated elements (Figure 1.0):

- Reduce the demand for traditional energy through conservation and energy efficiency;
- Expand the supply of renewable energy and other forms of distributed (on-site) energy;
- Enhance the energy security of DoD installations directly (as well as indirectly, through the first two elements); and
- Leverage advanced technology.

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.

Figure 1.0: Elements of the Facility Energy Strategy

This Master Plan complies with three Congressional mandates:

- Title 10, United States Code (U.S.C.) §2911(a), which requires DoD to submit to the Congressional defense committees, energy performance goals for DoD regarding transportation systems, support systems, utilities, and infrastructure and facilities;
- Title 10, U.S.C. §2911(b), which requires DoD to provide a comprehensive Master Plan for the achievement of DoD's energy performance goals; and
- Title 10, U.S.C. §2911(e) (2), which requires DoD to establish an interim goal for Fiscal Year (FY) 2018, for the production or procurement of facility energy from renewable sources.

This Master Plan includes the following:

- A separate master plan, developed by each Military Department and Defense Agency, for the achievement of energy performance goals;
- The use of a baseline standard for the measurement of energy consumption by transportation systems, support systems, utilities, and facilities and infrastructure that is consistent for all of the military departments;
- A method of measurement of reductions or conservation in energy consumption that provides for taking into account of changes in the current size of fleets, number of facilities, and overall square footage of facility plants;

- Metrics to track annual progress in meeting energy performance goals;
- A description of specific requirements, and proposed investments, in connection with the achievement of energy performance goals reflected in the budget of the President for each fiscal year; and
- The up-to date list of energy-efficient products.

Section 3.0 provides an overview of the Master Plan requirements, and the compliance matrix in section 3.5 addresses how this Master Plan complies with the congressional mandates.

1.1 Energy Performance Goals

The Deputy Under Secretary of Defense (Installations and Environment) (DUSD(I&E)) oversees the Department's facility energy program. DUSD(I&E) collaborated with the Military Departments and Defense Agencies to develop this Master Plan. 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.

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, this Master Plan advances the DoD Facility Energy mission, vision, and strategy.

Selection Rationale for Uniform Measures

Energy Efficiency

DoD measures reductions in energy consumption using the energy intensity metric. Energy intensity represents the amount of energy consumed, in Btu, per unit of gross square foot (GSF). Section 543(a)(1) of the National Energy Conservation Policy Act (42 U.S.C. 8253(a)(1)) establishes an annual reduction goal in energy intensity of 3 percent at facilities subject to the goal (i.e., goal-subject facilities). This is equivalent to a 30 percent overall reduction by FY 2015, from the FY 2003 baseline intensity.

In FY 2011, DoD commissioned the Center for Naval Analysis (CNA) to evaluate performance indicators that measure energy consumption and efficiency and recommend a performance indicator to the DoD. The study identified seven factors and evaluated the impact each factor has on the energy a typical DoD installation consumes. These factors are square footage of facility space, building construction and demolition activity, installation population, weather, facility characteristics, energy prices and time trends. The study concluded that reducing energy usage per square foot (energy intensity) was a fair method for evaluating DoD's energy efficiency performance.

Renewable Energy

DoD is required to comply with two statutes that address renewable energy performance: 10 U.S.C. §2911(e) and the Energy Policy Act (EPAct) 2005.

- Section 203 of the EPAct 2005 measures total renewable electricity consumption against total facility electric consumption.
- 10 U.S.C. §2911(e) measures total renewable energy (electric and non-electric) production and procurement as a percent of total facility electricity consumption.

EPAct and 10 U.S.C §2911(e) treat RECs for goal attainment differently. The EPAct goal requires DoD to retain the REC to count toward goal attainment. However, retaining RECs is not a requirement to meet the 10 U.S.C. §2911(e) goal.

RECs are a valuable financial tool for the development of large scale renewable energy projects. RECs are attractive to project developers because their monetary value improves the payback of renewable energy projects. RECs can assist in making the energy produced by a renewable energy project financially competitive with other forms of energy. DoD strives to achieve an acceptable tradeoff between retaining RECs to meet its EPAct goals and allowing project developers to hold them. DoD also

believes that procuring unbundled RECs (those RECs not tied to a renewable energy project) are not a desirable substitute for renewable energy production that provides energy security for bases.

Petroleum Consumption

Section 400FF of the Energy Policy and Conservation Act (42 U.S.C. 6374 et seq.) mandates the reduction of petroleum consumption in fleet vehicles. As such, to quantify progress in reducing petroleum consumption, DoD measures and tracks annual reductions of petroleum consumption in non-tactical fleet vehicles, from a baseline established as FY 2005.

2. Energy Goals Performance Outlook

In FY 2011, the DUSD(I&E) developed this first Master Plan with input from all DoD Components. The Master Plan will be updated periodically as DoD Components submit their facility energy investment projections for the Future Years Defense Program (FYDP). Along with investment projections, the DoD Components provide an estimate of their associated energy benefits (i.e., energy savings or production) to be realized from investments. In addition, each DoD Component submits a narrative statement explaining how these investments are expected to support the Components' efforts to achieve the energy goals. The DoD Components' submissions to the President Budget, investment profile, energy benefit analyses and narratives are the basis for the creation of this Master Plan. This section provides an overview the DoD Component's progress towards the energy performance goals.

2.1. DoD Overview

The Department uses a variety of funding mechanisms to support the investments needed to achieve its strategy and meet its energy goals. Table 2.0 summarizes DoD's current energy funding mechanisms.

Table 2.0: Funding Mechanisms and Definitions

Funding Mechanism	Definition
– **Military Construction (MILCON) including the Energy Conservation Investment Program (ECIP).** – **Operation and Maintenance (O&M).** – **Defense Working Capital Fund (DWCF).**	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.
Utility Energy Savings Contracts (UESC).	A UESC offers an effective means to implement cost effective demand and conservation incentive programs. The gas or electric utility arranges funding to cover the capital cost of the project that is then repaid over the contract term from savings generated by the energy efficiency measures.
Energy Savings Performance Contracts (ESPC)[1].	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

[1] Source: U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Project Funding* [online source] (Washington, D.C., 2011, accessed June 1, 2012), available from http://www1.eere.energy.gov/femp/financing/espcs.html, Internet.

Funding Mechanism	Definition
	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.
Utility Service Contracts (USCs)[2]	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.
Energy Enhanced Use Leases (EULs)	An EUL 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; • Reinvestment in renewable facility energy or energy conservation measures of a minimum of 50 percent of proceeds (including both in-kind and cash) from any lease.

Table 2.1 summarizes the estimated energy benefit (reduction or production) needed to meet the Department's energy performance goals. The estimated benefits shown in table 2.1 are aggregated for the period of FY 2012 to FY 2017.

Table 2.1: DoD Energy Benefits (FY 2012 to FY 2017)

Performance Goal	Energy Benefit (BBtu)
Energy Efficiency (Reduction)	**49,483**
Renewable Energy (Production)	**15,000****
Existing Renewable Energy	5,282
Petroleum Consumption (Reduction)	**1,301**

***Renewable Energy production estimated to FY 2015*

[2] Source: U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Project Funding* [online source] (Washington, D.C., 2011, accessed June 1, 2012), available from http://www1.eere.energy.gov/femp/financing/espcs.html, Internet.

From FY 2012 to FY 2017, DoD expects to save over 49,000 BBtu from energy efficiency measures, attain a renewable energy production or procurement level of 15,000 BBtu and reduce petroleum consumption in fleet vehicles by 1,300 BBtu.

To gauge the magnitude of the expected benefits, the energy efficiency savings DoD would experience are enough to offset the electricity consumption of the District of Columbia for an entire year, while the forecast renewable energy production or procurement over this period could offset the electricity consumption in the District for over two years. The fuel savings over this period is enough to offset 10 percent of the District's annual fuel consumption.[3]

DoD Energy Efficiency

The Department is committed to reducing demand through conservation and improved energy efficiency initiatives. DoD primarily focuses on appropriated funds to improve energy efficiency in existing buildings; however, DoD also uses non-Governmental third party financing tools, such as ESPCs and UESCs.

Retrofit (Daylighting) – Naval Base Coronado

New Construction (LEED Gold) – Offutt Air Force Base

In addition to retrofitting existing buildings, DoD incorporates more energy-efficient designs, material, and equipment into new construction. The Department requires that all new construction projects incorporate the five guiding principles of High Performance and Sustainable Buildings (HPSB), obtain a U.S Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating of silver, and perform 30 percent better than American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 90.1. DoD's compliance with these three primary requirements will accelerate the shift towards efficient, sustainable facilities that cost less to own and operate, leave a smaller environmental footprint, and support mission operations.

As DoD strives to improve its energy efficiency, accurate and real-time facility energy information is becoming essential. The Department does a poor job of measuring its energy consumption. A large

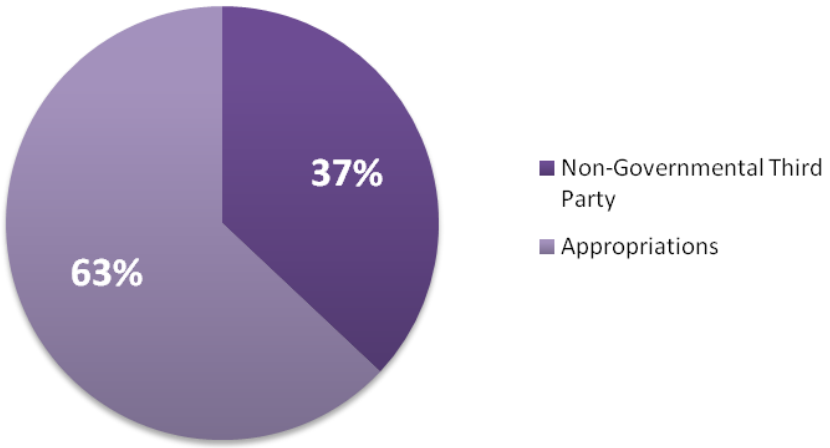
[3] Based on electricity consumption of 12,199 million kilowatt-hours (kWh) and 2,691 thousand barrels of motor gasoline consumed in the District of Columbia in 2009. Source: EIA, *State Energy Data System (SEDS): Table CT3 Total End-Use Energy Consumption Estimates, 1960-2009, District of Columbia* [on-line source] (Washington DC, 2011, accessed February 1, 2012), available from http://www.eia.gov/state/seds/hf.jsp?incfile=sep_use/tx/use_tx_DC.html&mstate=District%20of%20Columbia, Internet.

fraction of buildings are not metered, and lack the standardized processes and integrated systems needed to systematically track, analyze, and benchmark facility energy and water use and the related costs. The absence of usage and cost data reduces the efficiency of existing facility operations, and limits the Department's ability to make the right investments in new, efficiency-enhancing technology and tools.

DUSD(I&E) is updating policy on the metering of DoD facilities. In addition to lowering the threshold for buildings that must be metered, the policy will address the types of meters that can be used and establish guidelines for determining when advanced meters make financial sense. The policy will help ensure that installed meters can securely deliver data to the energy professionals in the field. DoD will continue to pursue advanced metering initiatives and the development of energy management systems to benchmark, track, and analyze energy profiles at facilities.

From FY 2012 through FY 2017, DoD plans to make investments in energy conservation measures that will provide savings of over 49,000 BBtu. Appropriations will fund 63 percent of these investments (Figure 2.0).

Figure 2.0: DoD Estimated Energy Efficiency Savings (FY 2012 to FY 2017)



Charts 2.0 and 2.1 illustrate DoD's expected progress in reducing energy intensity and energy consumption. Chart 2.0 illustrates DoD's reduction in energy intensity, and Chart 2.1 illustrates the reduction in energy consumption. These charts forecast that DoD could exceed its energy efficiency goal by FY 2015.

Chart 2.0: DoD Attainment of Energy Efficiency Goal Based on Intensity

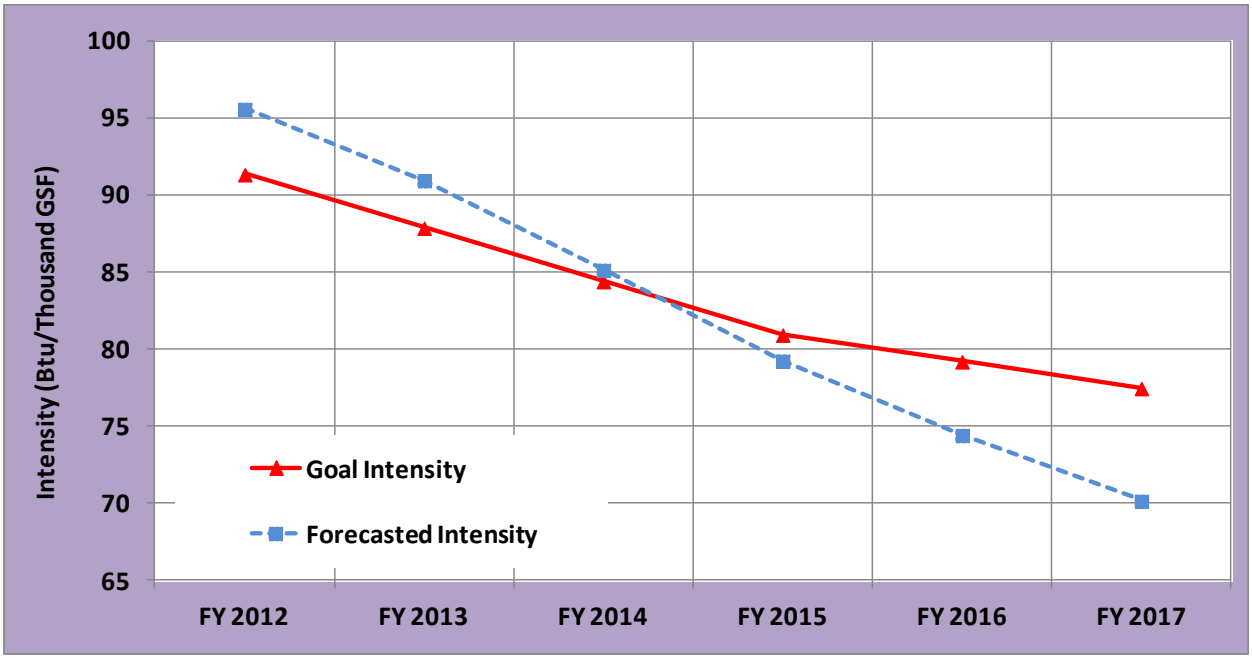
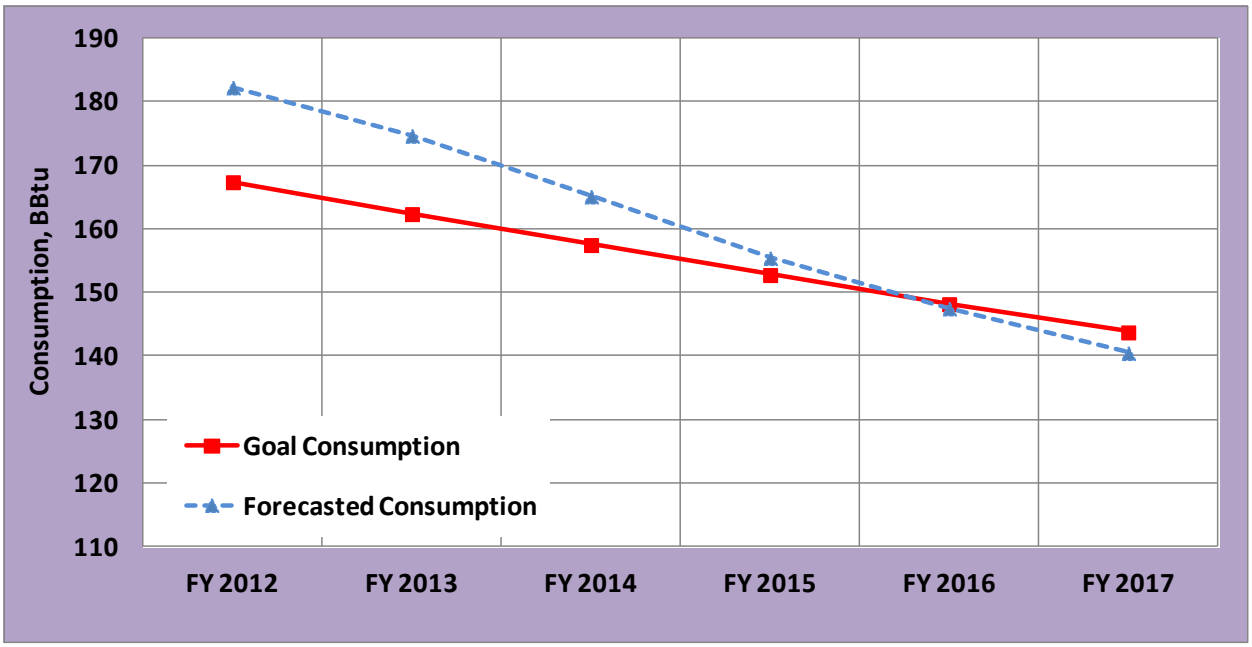


Chart 2.1: DoD Attainment of Energy Efficiency Goal Based on Consumption



DoD Renewable Energy

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 third party financing to pursue renewable energy technologies. DoD partners with private entities to enable the development of large scale renewable energy projects and relies on congressional appropriations to fund cost-effective small scale distributed generation projects.

A major focus of the Department is advanced or "smart" microgrid technology. Advanced microgrids are a "triple play" for DoD's installations. Smart microgrids and energy storage offer a more robust and cost-effective approach to ensuring installation energy security than the traditional approach of back-up generators tied to single critical loads and (limited) supplies of on-site fuel. They also facilitate the incorporation of renewable and other on-site energy generation.

The DoD Components have aggressive programs focused on increasing the renewable energy production on fixed installations. The Army Energy Initiative Task Force (EITF), the Air Force Real Property Agency (AFRPA), and the Department of the Navy's Shore Energy Office continue to seek opportunities for large scale renewable energy projects. To implement these projects, the Components implement the following strategies:

- Develop approaches to prioritize the development of large scale projects;
- Use mature renewable energy technologies;
- Capitalize on partnerships with utilities, private sector developers, State Public Utility Commissions (PUCs), Independent System Operators (ISOs) and federal agencies; and
- Take advantage of non-Governmental third party financing.

In support of efforts to achieve the renewable energy goal put forth in 10 § U.S.C. 2911(e), each Military Department has plans to develop 1 gigawatt (GW) of renewable energy capacity across it installations. To attain their respective 1 GW goal, the services expect to seek opportunities to partner with private sector developers and identify the most favorable project economics.

Challenges

The DoD Components face challenges and constraints as they pursue their aggressive renewable energy plans. These challenges include:

- **Project Economics**

Securing favorable economics and financial feasibility present another challenge to the development of renewable energy projects. Changes in the market place, requirements for state renewable portfolio standards, the value and ownership of RECs and regional electricity prices are among the various regulatory, economic and market conditions that significantly influence the interest of private sector entities. The DoD Components continue to monitor these local and regional markets to better understand project economics.

In addition, the tax incentives currently available significantly reduce net installed project costs and improve the economic feasibility of projects. However, these incentives (such as federal solar incentives), are based on income tax code and therefore are only available to private owners not entities such as DoD (as it has no income tax liability). DoD can indirectly benefit from these incentives by engaging in non-Governmental third party financing partnerships with private sector developers. Non-Governmental third party financing mechanisms such as power purchase agreements, EULs, or other contracting arrangements are more cost effective than relying on MILCON or other congressional appropriations.[4]

- **Long Lead Times**

Large scale renewable energy projects involve the engagement of multiple parties and stakeholders. These projects are inherently complex and require lengthy processes that involve multiple stages of approvals. The DoD Components and the DUSD(I&E), which oversees DoD installations energy initiatives, continue to collaborate to streamline coordination processes, standardize procedures and improve communication channels for the approval and certification of renewable energy projects.

- **Withdrawn Lands**

DoD sponsored a study that identified the potential of 7 GWs of solar power potential in the Mojave and Colorado deserts. However, the majority of the land identified in the study is land that has been withdrawn for military purposes. DoD and the Department of Interior (DOI) have signed a Memorandum of Understanding (MOU) to address withdrawn land issues which can be found at the following: http://www.defense.gov/news/d20120806idmou.pdf.

[4] ICF International, *Solar Energy Development on Department of Defense Installation in the Mojave and Colorado Deserts* [on-line source] (January 2012, accessed May 24, 2012), available from http://www.icfi.com/insights/reports/2012/full-report-solar-energy-development-on-department-of-defense-installations-mojave-colorado-deserts; Internet.

- **Technological Efficiencies and Equipment Degradation**

The Department is pursuing new opportunities to develop renewable energy projects to sustain progress towards its goal. Because the efficiency of existing renewable energy projects decreases over time, there is also an associated reduction in energy productivity. Over the years, solar panels become less efficient and the output rate of deep geothermal wells degrade. Therefore, the Department will need to continuously and aggressively pursue renewable energy projects to replenish its existing pipeline capacity.

- **Limited Transmission Access**

Limited transmission access is a factor that limits the development of large scale renewable energy projects. Transmission constraints (caused by either a lack of physical infrastructure or congestion in the existing infrastructure) create competition not only across the DoD Components, but also between DoD and other private sector entities, ISOs, PUCs or other federal agencies.

Planned Renewable Energy Investments

To meet the renewable energy goal, DoD will rely primarily on non-Governmental third party financing to fund large scale projects and expects to use appropriations to fund smaller scale projects. DoD is forecasting a need of more than $1.6 billion to support the development of renewable energy projects between FY 2012 and FY 2017.

The DoD Components have identified renewable energy opportunities across installations in more than 36 states and 6 foreign countries. The focus is on the pursuit of mature renewable energy technologies such as solar photovoltaic (PV), biomass, geothermal and wind (Figure 2.1).

Figure 2.1: DoD Planned Renewable Energy Projects

The DoD Components have identified approximately 1.9 GW of renewable energy projects planned for the period of FY 2012 to FY 2017. These projects span a variety of geographic regions and are expected to include, for the large majority, solar energy systems (e.g., solar PV and solar thermal technologies). Solar PV projects are expected to represent 58 percent of the planned renewable energy supply mix, while biomass is expected to take up 20 percent. DoD will also pursue shore wind and geothermal developments (Figure 2.2).

The DoD Components are considering other renewable energy technologies such as waste-to-energy, which could offer less intermittent sources of energy. In this regard, DoD will continue to seek partnerships with local communities and surrounding cities to take in biomass feedstock and use it to provide for the cost-effective generation of power on installations.

Figure 2.2: Planned Renewable Energy Supply Mix

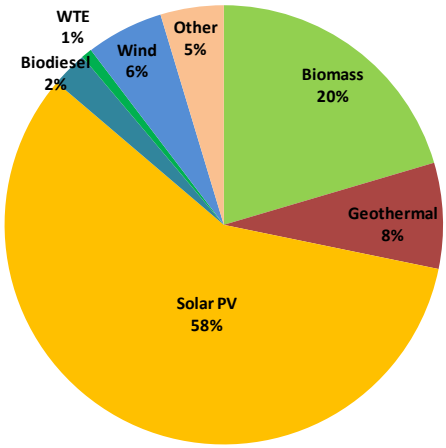
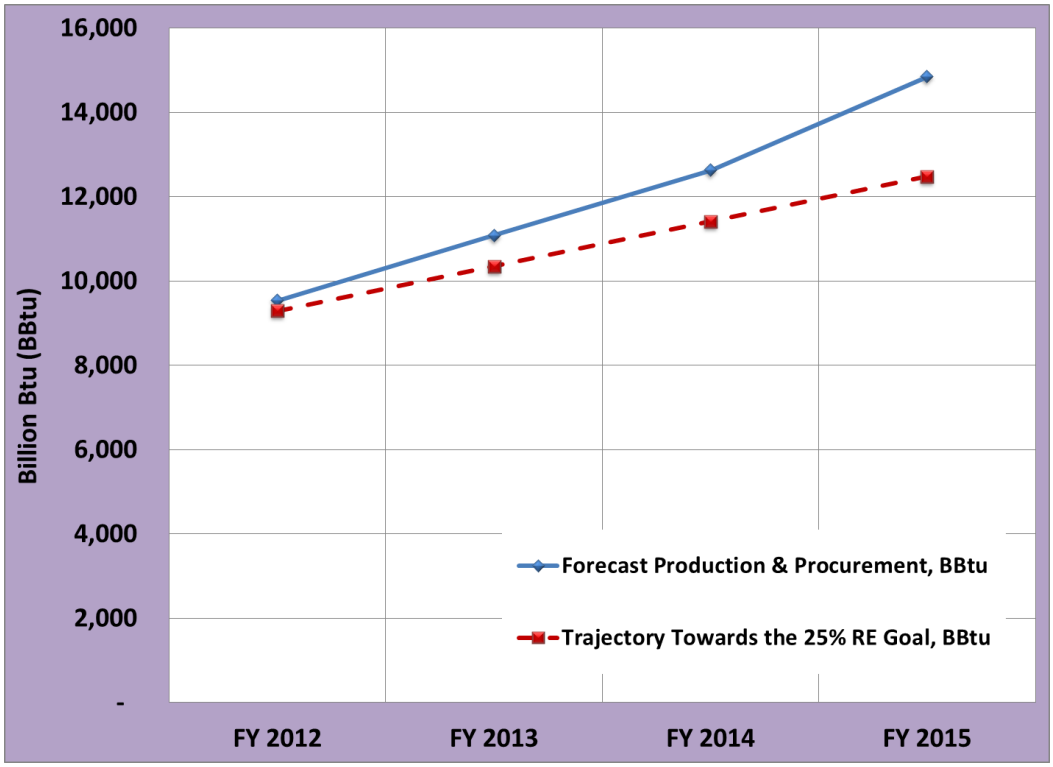


Chart 2.3 illustrates the DoD's renewable energy production forecast. By FY 2015, the Department expects to be producing or procuring more than 15,000 BBtu of renewable energy. The energy generated from planned projects is expected to increase considerably in FY 2015 and continue to exceed the goal trajectory.

Chart 2.3: DoD Forecast Renewable Energy Performance



Factors influencing the DoD renewable energy production and procurement forecast include:

- **Renewable Energy Purchases:** The renewable energy forecast assumes that energy projects on DoD installations will reduce the need for the DoD to purchase power separately from a utility (i.e., simple commodity purchase not tied to a DoD project). Therefore, the forecast assumes a constant level of purchases, consistent with the level observed in FY 2011, carried through the future years.

- **Unbundled REC purchases:** DoD does not encourage counting RECs toward the attainment of its renewable energy goal. RECs are not considered a substitute for on-site renewable energy production. The chart above assumes no REC purchases in the future years.

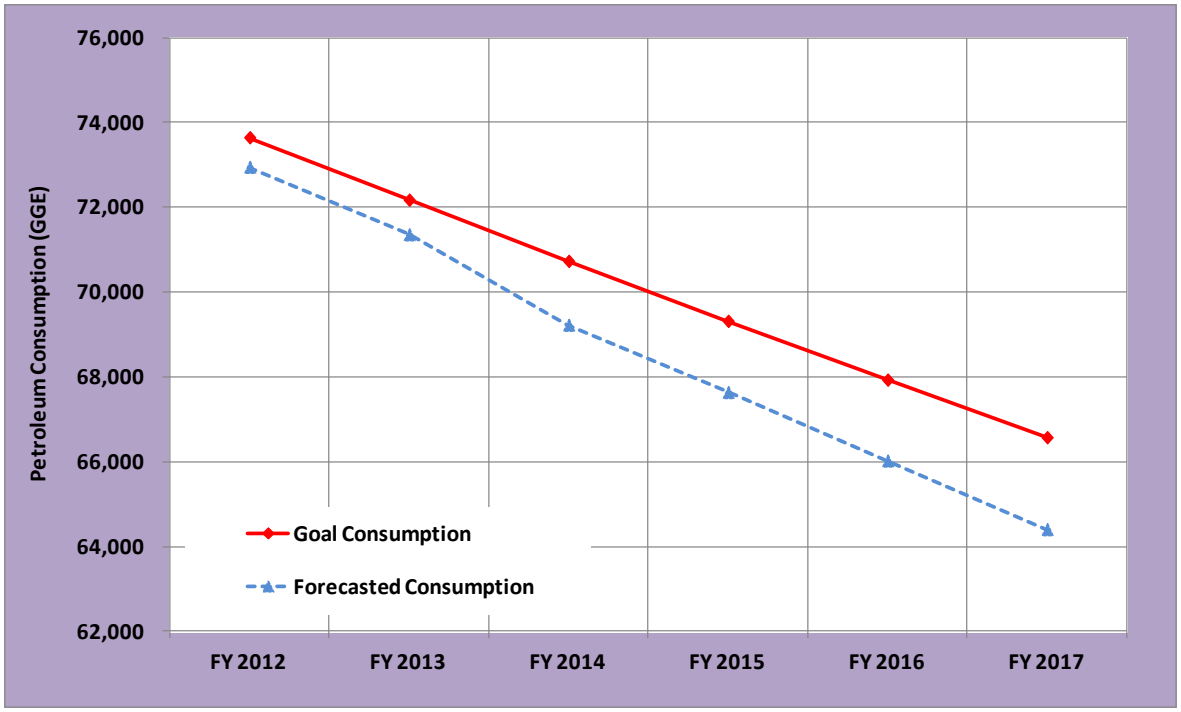
- **Degradation Factor:** As discussed above, the efficiency of renewable energy systems will naturally degrade over time. The forecast above assumes a degradation factor applicable to a multi-technology mix, dominated by solar and geothermal technologies. While the current capacity mix is dominated by geothermal, planned projects are expected to consist primarily of solar technologies.

- **Projected electricity consumption:** Attainment of the renewable energy goal is influenced by two parameters. The first parameter is the increase in production or procurement of renewable energy, and the second is a decrease in electricity consumption. The Department's historical data on electricity consumption indicates that electicity has, on average, experienced an annual increase of approximately 0.2 percent. This increase in electricity consumption introduces a challenge to the attainment of the goal. Despite efforts across DoD to reduce electricity consumption, the analysis assumes a conservative approach consistent with historical trends observed, and assumes an annual future growth of 0.2 percent in electricity consumption.

DoD Petroleum Consumption Reduction

DoD continues to invest in strategies to reduce petroleum consumption in fleet vehicles. DoD planned investments of $1.2 billion, expect to enhance fleet vehicle performance and result in an estimated petroleum consumption reduction of 3 million GGEs, between FY 2012 and FY 2017. Chart 2.4 illustrates the forecast petroleum consumption from FY 2012 to FY 2017. The chart indicates that DoD will continue to meet or exceed the petroleum consumption reduction goal.

Chart 2.4: DoD Attainment of Petroleum Consumption Reduction Goal



2.2. Army Overview

The Army's energy security vision is to create an effective and innovative Army energy posture, which enhances and ensures mission success and quality of life for soldiers, civilians and their families through "Leadership, Partnership, and Ownership".

Through the Strategic Energy Security Goals (ESGs) of the Army's Energy Security and Implementation Strategy, the Army seeks to make energy a consideration for all Army activities, reduce demand, increase efficiency, seek alternative sources, and create a culture of energy accountability while sustaining or enhancing operational capabilities.

Between FY 2012 and FY 2017, the Army expects to, save over 18,600 BBtu of energy as a result of investments in energy efficiency and conservation, achieve a level of renewable energy production or procurement of 7,900 BBtu, and save over 8 million GGEs of petroleum in its fleet vehicles. The energy efficiency savings the Army would experience are enough to offset the facility energy consumption in its buildings at West Point for 18 years. The renewable energy produced or procured over this period could offset the electricity consumption of Fort Hood for over 11 years.[5]

The following section describes in detail the Army's planned energy efficiency, renewable energy, and petroleum reduction investments and forecast performance.

Army Energy Efficiency

The Army will make extensive investments in energy security projects across all its facilities. In addition, the Army is aggressively pursuing process enhancements to accelerate and expand the use of ESPCs and UESCs at installations to finance energy efficiency projects such as lighting retrofits, chiller replacements, and installation of low cost electric saving devices.

Fort Carson (LEED Gold)

The Army plans to develop policy and guidance to conduct comprehensive energy and water evaluations. The policy will enhance energy management and installation energy awareness programs. The Army recently installed meters and issued "mock bills" to individual units to provide installations with

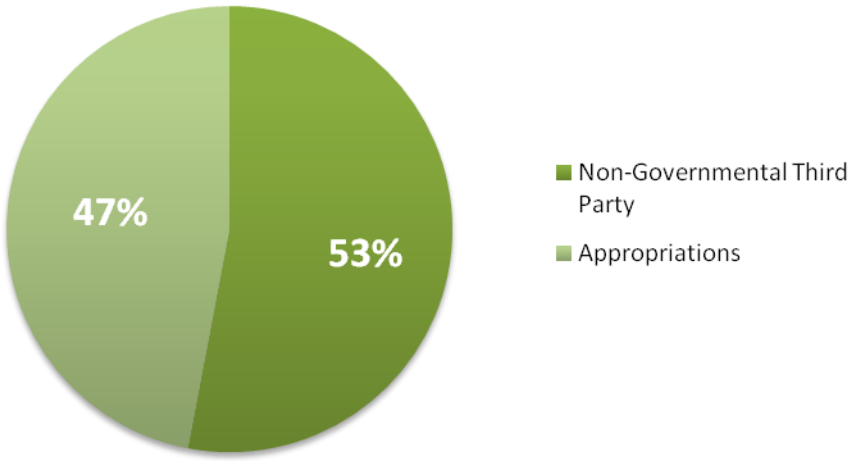
Fort Belvoir (LEED Gold)

[5] Based on 1,044 BBtu of facility energy consumption at West Point, and 1,170 BBtu of electricity consumption at Fort Hood (Army FY 2011 AEMR data submission).

information to guide occupant behavior and enhance energy efficiency. Additionally, the Army Corps of Engineers and Department of Energy (DOE) have expanded collaboration efforts to accelerate the development and propagation of technical specifications for the most energy efficient building materials and mechanical equipment.

From FY 2012 to FY 2017, the Army's planned investments of $3 billion in energy efficiency initiatives will result in estimated savings of 17,700 BBtu. Figure 2.3 illustrates the breakdown of estimated energy savings between those realized from non-Governmental third party financed projects and those funded through appropriations.

Figure 2.3: Army Energy Efficiency Savings (FY 2012 to FY 2017)



Charts 2.5 and 2.6 illustrate the projected attainment of the energy intensity goal, and the associated consumption reduction necessary to meet the Army's energy intensity goal. These charts illustrate that the Army would meet its energy intensity goal by FY 2014.

Chart 2.5: Army Energy Intensity (FY 2012 to FY 2017)

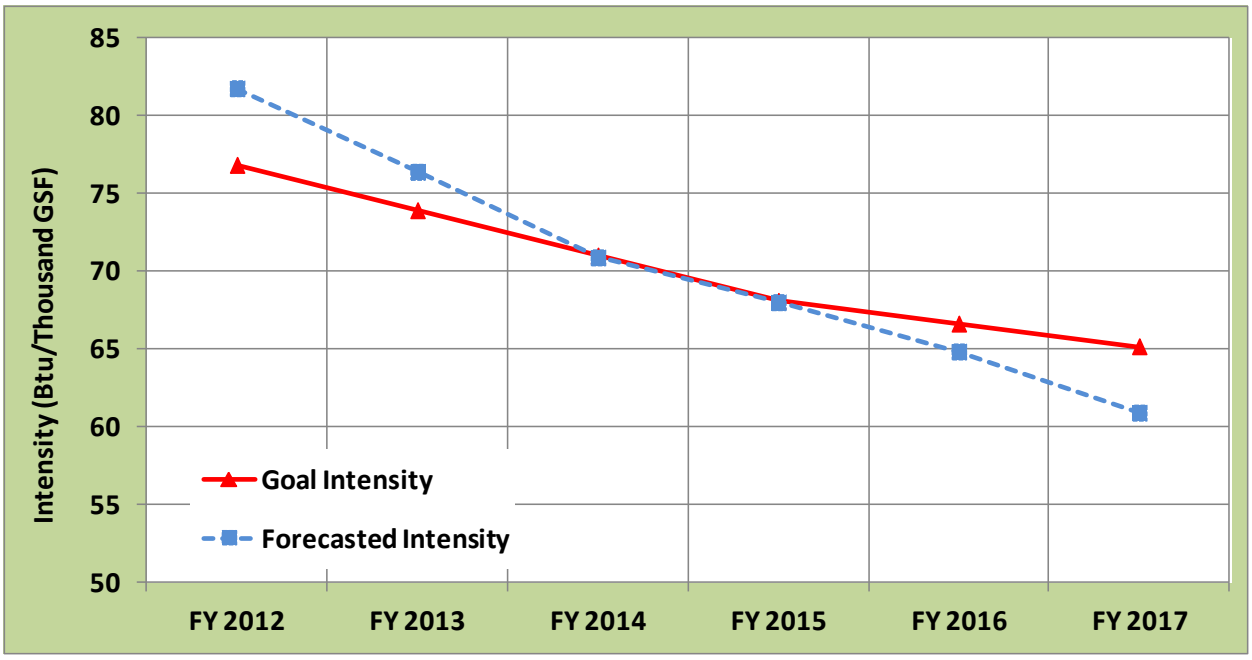
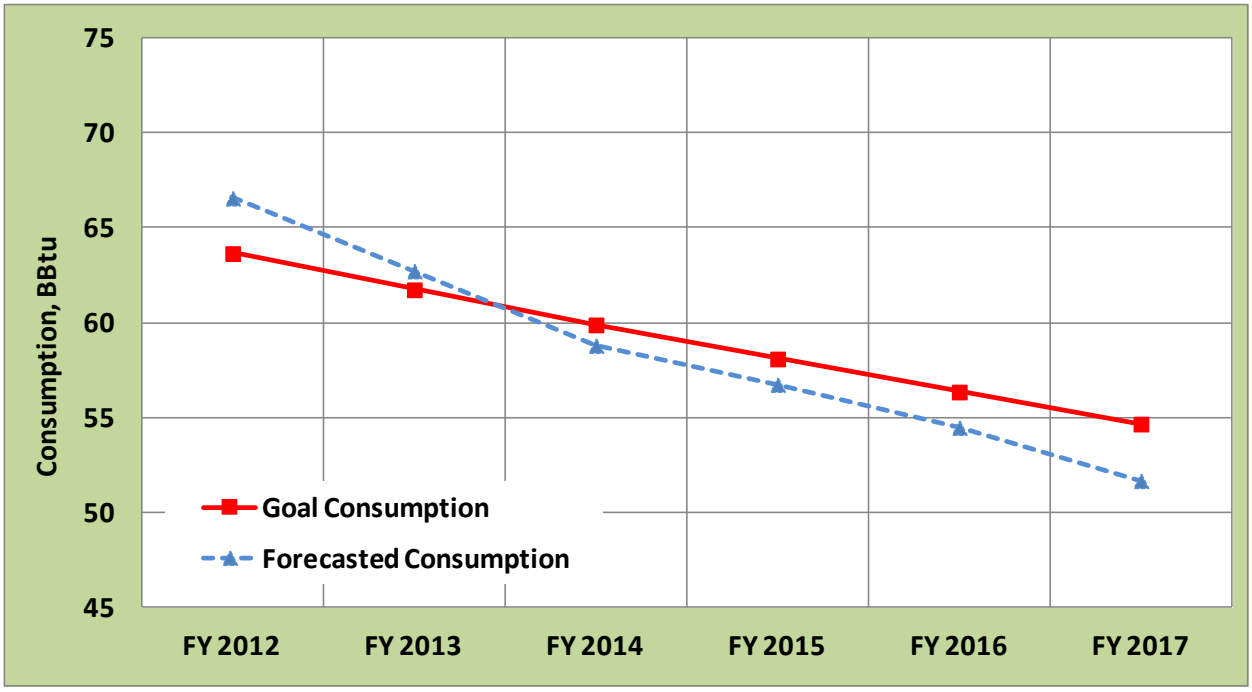


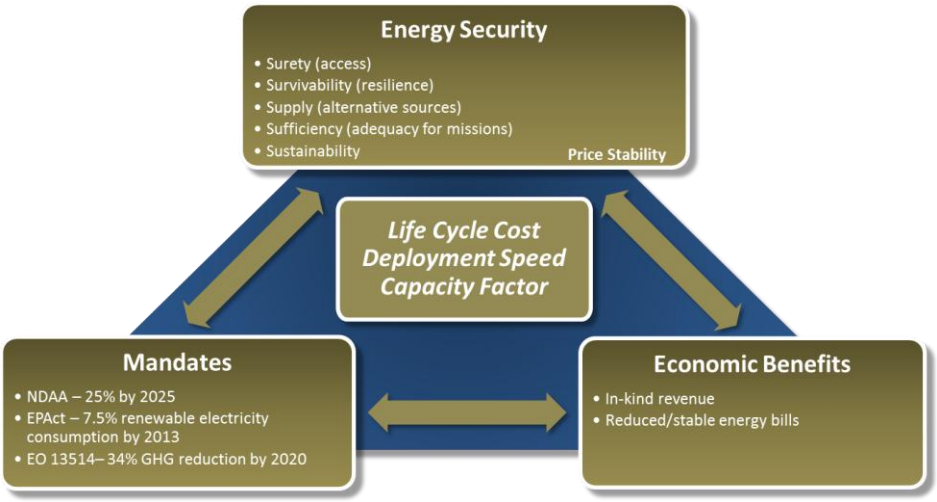
Chart 2.6: Army Energy Consumption (FY 2012 to FY 2017)



Army Renewable Energy

In September 2011, the Army established the EITF to spearhead efforts aimed at developing large scale (> 10 MW) renewable energy projects on Army installations. The mission of EITF is to secure Army installations with energy that is clean, reliable and affordable. Under the leadership of the EITF Executive Director, projects are carried from concept to implementation seeking to create a balanced enterprise approach to ensure energy security and surety of access to an energy supply, energy price stability, economic benefit and compliance with energy mandates and goals (Figure 2.4).

Figure 2.4: Army EITF Enterprise Approach



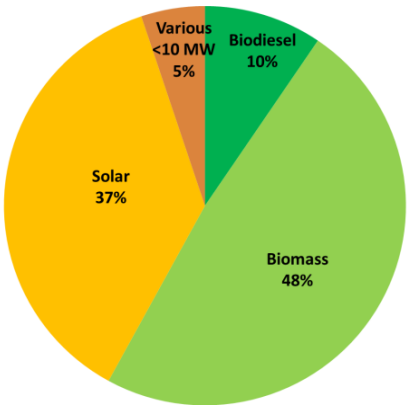
The EITF leads the Army's strategy to develop 1 GW of renewable energy by FY 2025 in support of meeting the renewable energy goal. To date, the Army has planned to pursue more than 500 MW of large scale renewable energy opportunities between FY 2012 to FY 2017. The implementation of these projects will put the Army on a path to make significant progress toward the renewable energy goal.

The Army will rely upon non-Governmental third party financing to implement large scale renewable energy projects and will continue to pursue small scale initiatives and will largely fund those with appropriations. Currently, the Army anticipates developing < 50 MW of small scale renewable energy projects between FY 2013 and FY 2020. The Army expects to capitalize on solar technologies in the southwestern United States and Hawaii and implement biomass plants in the southeastern United States, California and Washington (Figure 2.5).

Figure 2.5: Army Planned Renewable Energy Projects

Figure 2.6 illustrates the Army's anticipated technology mix. The dominant planned renewable energy technologies for the Army are biomass and solar energy for the period between FY 2012 and FY 2017.

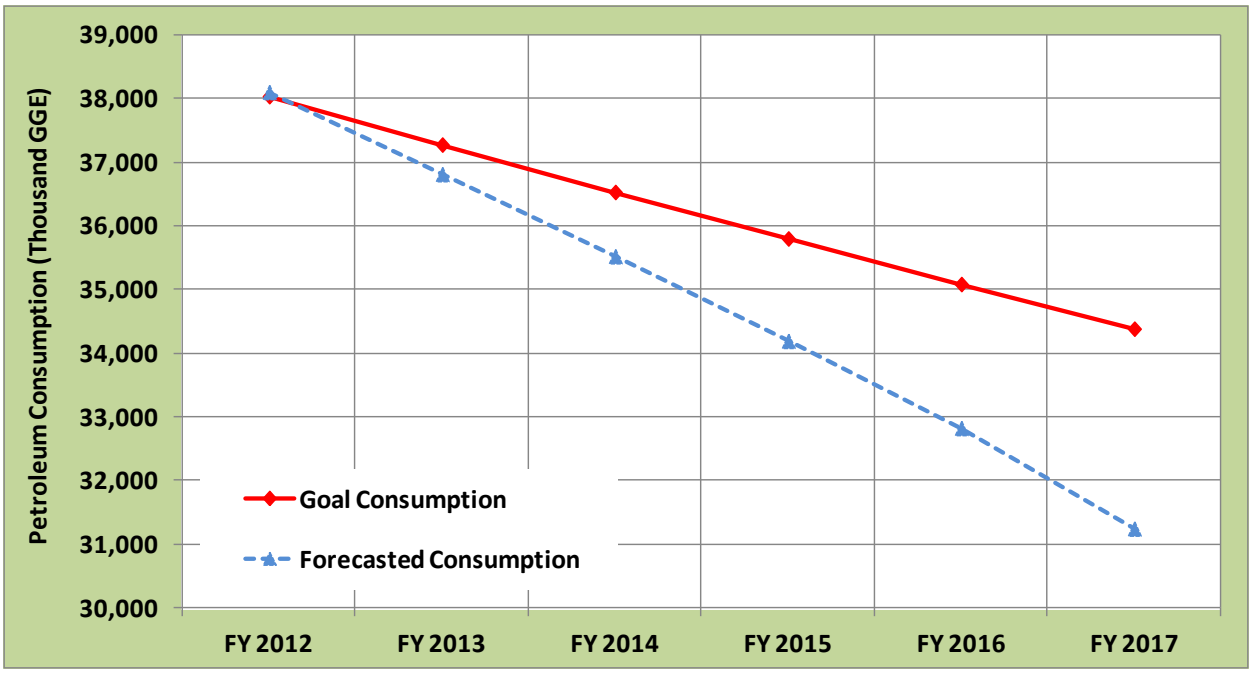
Figure 2.6: Army Planned Renewable Energy Supply Mix



Army Petroleum Consumption Reduction

The Army continues to invest to reduce petroleum consumption in fleet vehicles. The Army planned investments of $51 million to enhance fleet vehicle performance and this will result in an estimated petroleum reduction of 8 million GGEs from FY 2012 to FY 2017. Chart 2.7 illustrates the Army's performance towards the petroleum reduction goal. The Army continues to make good progress in meeting the petroleum reduction goal from FY 2012 to FY 2017.

Chart 2.7: Army Petroleum Consumption (FY 2012 to FY 2017)



In an effort to continue to reduce petroleum consumption in fleet vehicles, the Army plans to eliminate underutilized vehicles. The Army will downsize the remaining vehicles in the fleet to the smallest vehicle able to perform the mission. The Army plans to reduce its fleet by 5,000 General Services Administration (GSA) leased vehicles that are eligible for replacement. An additional 5,000 to 7,000 fleet vehicles will be identified for turn-in to GSA as they meet age or mileage criteria.

The Army also plans to increase its AFV fleet by transitioning part of its fleet to fully electric and plug-in vehicles that consist of 78 Chevrolet Volts and 20 Ford Transit Connect vehicles. Army installations are also conducting 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.

2.3. DON Overview

The sections that follow will describe separately and in detail the Navy and Marine Corps projected performance towards the energy efficiency and petroleum consumption reduction goals. The Department of the Navy as a whole established an aggressive renewable energy goal that relies on both Navy and Marine Corps investments. Section 1.2.3 describes the DON's renewable energy strategy and performance plan.

Navy

As stated in *A Navy Energy Vision for the 21st Century,* the Navy's vision is a Navy that values energy as a strategic resource; a Navy that understands how energy security is fundamental to executing our mission afloat and ashore; and a Navy that is resilient to any potential energy future. Through the effective management of energy consumption and the pursuit of energy innovation, the Navy can ensure superiority in execution of our national defense mission.

Energy performance in Navy shore facilities contributes to operational effectiveness by reducing the resources needed to sustain support operations. Future naval force success will also depend on the ability to leverage independent renewable energy sources. In addition, civilian and military personnel are critical for transforming smart practices into real and sustained changes in energy consumption over the long term. Therefore, energy security, in the form of redundancy, resiliency, and reliability, is a strategic imperative supported by three components: energy efficiency, renewable energy and sustainability, and Navy energy culture.

From FY 2012 to FY 2017, the Navy expects to save over 14,800 BBtu of energy due to energy efficiency measures, produce or procure over 8,000 BBtu in renewable energy, and save over 660 thousand GGEs. As a comparison, the energy efficiency savings the Navy would experience are enough to offset the facilities energy consumption in its buildings at the United States Naval Academy for 19 years, while the renewable energy produced or procured over this period could offset the electricity consumption of Norfolk Naval Station for more than 71.5 years.[6]

[6] Based on 762 BBtu of facility energy consumption at the United States Naval Academy, and 167,086 BBtu of electricity consumption at Norfolk Naval Station (Navy FY 2011 AEMR data submission).

Marine Corps

The U.S. Marine Corps (USMC) continues to take significant action to enhance energy performance across its installations. In March 2011, the USMC released the Marine Corps Expeditionary Energy Strategy (EES) which provide a framework that communicates the Commandant's vision for both expeditionary and installation energy management. As it applies to installations, the intent for this overarching strategy is to:

- Ensure a secure, reliable, and affordable energy and water supply to support operating forces and their families.
- Reduce lifecycle operating costs of USMC installations and manager future commodity price volatility.
- Support our nation's efforts to reduce greenhouse gas emissions and environmental impacts, reduce dependence on foreign oil, and promote conservation of water supplies.

From FY 2012 to FY 2017, USMC's investments in energy efficiency expect to generate over 2,600 BBtu in energy savings. Investments in renewable energy will enable the USMC to produce or procure over 3,900 BBtu of renewable energy. Investments in petroleum reduction measures will save the USMC 560 thousand GGEs.

For comparison, the energy efficiency savings the USMC would experience are enough to offset the facilities energy consumption in its buildings at the Marine Corps Base Quantico for 4.6 years, while the renewable energy produced or procured over this period could offset the electrical energy consumption at Twentynine Palms for over 32 years.[7]

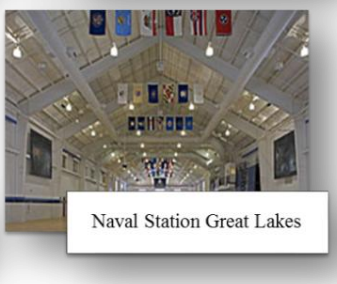
Navy Energy Efficiency

Energy efficiency is the foundation of the Navy Shore Energy Program; it is both an end goal as well as a means for deepening the impact of renewable energy efforts. The Navy's overall funding is based on the Secretary of the Navy's aggressive goal to reduce energy consumption by 50 percent by FY 2020.

Retrofits on Naval Surface Warfare Center, Corona Division

Naval Station Great Lakes

Naval Station Great Lakes

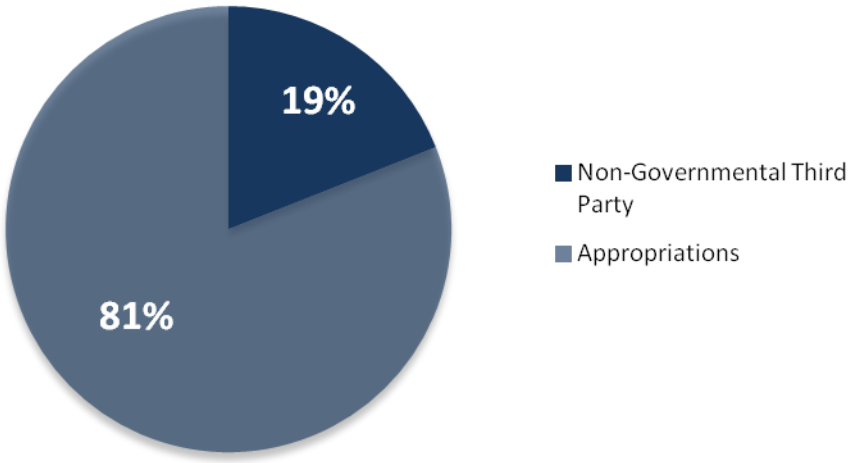

Naval Station Great Lakes

From FY 2012 to FY 2017, the Navy has plans to invest $2.8 billion in energy

[7] Based on 574 BBtu of facility energy consumption in at Quantico MCB, and 31.5 BBtu of electricity consumption at Twentynine Palms (USMC FY 2011 AEMR data submission).

efficiency initiatives, which will result in over 14,200 BBtu of estimated energy. Figure 2.7 illustrates the breakdown of energy savings generated from appropriations and non-Governmental third party financed initiatives.

Figure 2.7: Navy Energy Efficiency Savings (FY 2012 to FY 2017)



The Navy enables these investments through the implementation of a consistent and programmatic approach, which allows reduction goals to be tailored based on unique installation energy profiles. The Navy uses an energy return on investment tool (eROI) that prioritizes all proposed energy initiatives based on a benefit-to-cost ratio and identifies the projects with the highest value given budget constraints. The eROI tool optimizes a portfolio of energy projects for investments, allows the Navy to select and use the most efficient resources available, and positions the Navy to achieve the energy efficiency goal.

Charts 2.8 and 2.9 illustrate the attainment of the energy intensity goal, and the associated consumption reduction necessary to meet the energy intensity goal for the Navy. These charts illustrate that the Navy will meet its energy intensity goal by FY 2014, and continue to reduce energy intensity thereafter.

Chart 2.8: Navy Energy Intensity (FY 2012 to FY 2017)

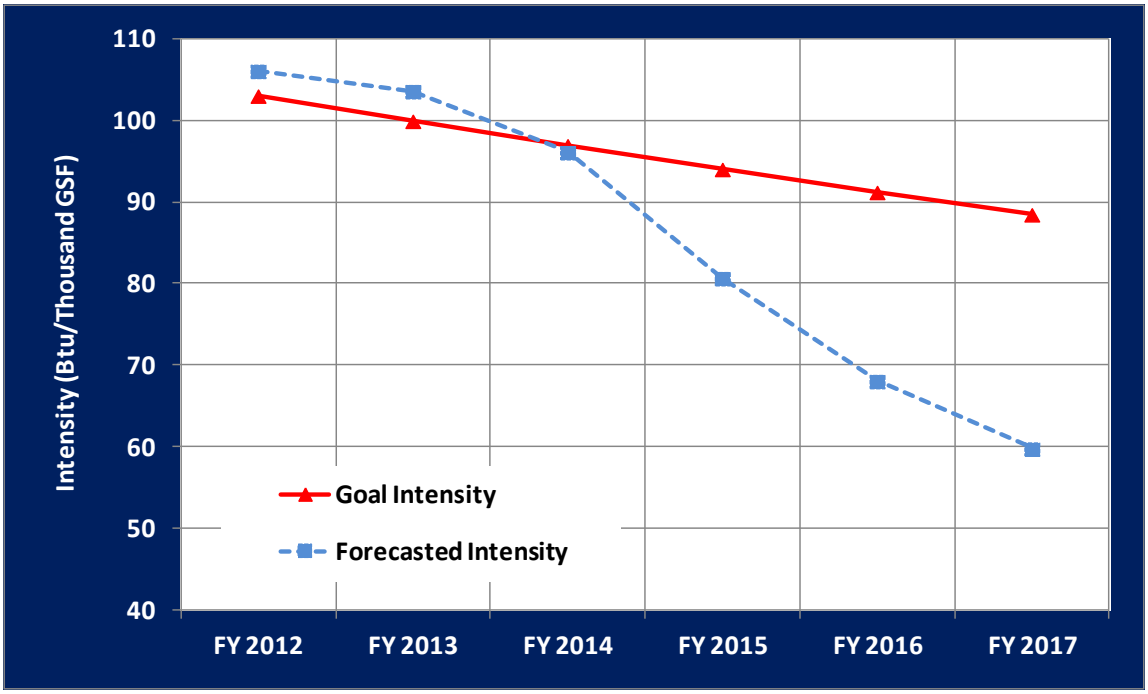
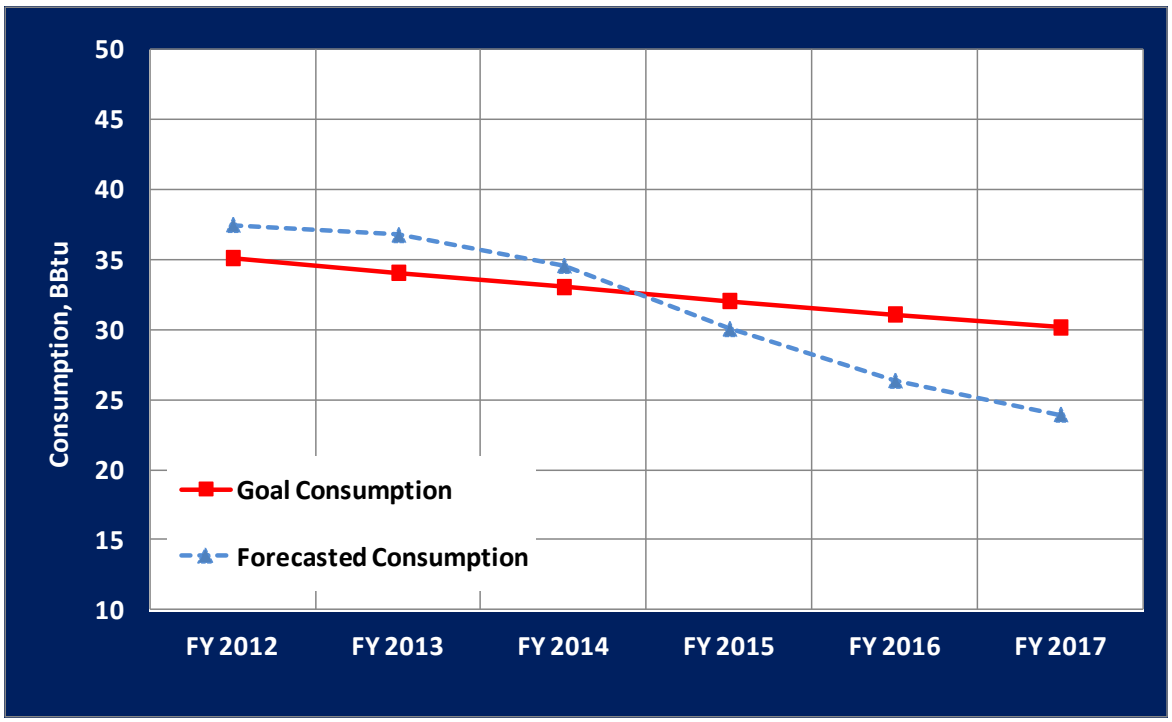
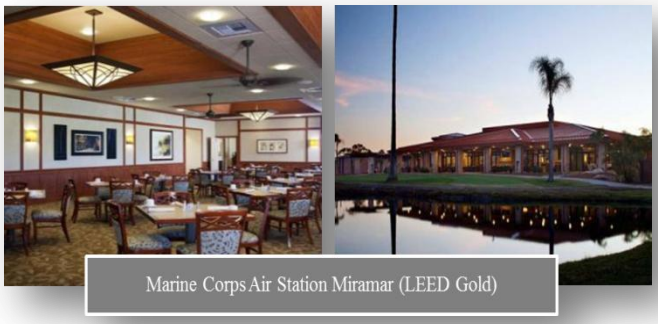


Chart 2.9: Navy Energy Consumption (FY 2012 to FY 2017)



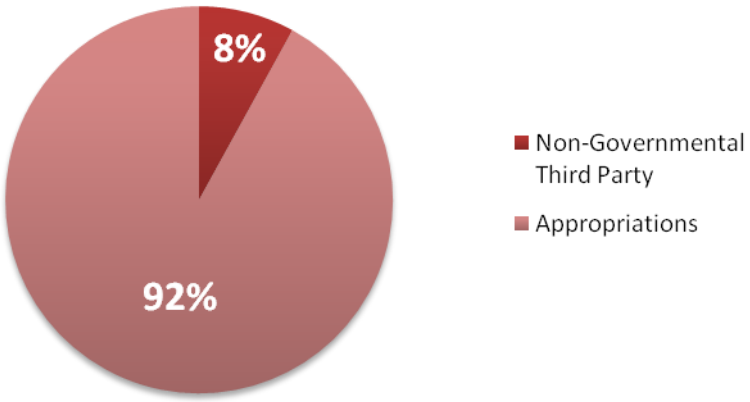
USMC Energy Efficiency

The USMC is committed to investing in initiatives that support energy efficiency at installations. The USMC expects to invest in opportunities that improve energy efficiency at existing facilities, and in new construction. In existing facilities, the USMC will pursue various traditional conservation technologies and measures such as cool roofs, daylighting, heat recovery ventilation, high efficiency chillers, occupancy sensors, premium efficiency motors, radiant heating, and variable air volume (VAV) systems. The USMC has also adopted the USGBC LEED Green Building Rating System for new construction and major renovations.


Marine Corps Air Station Miramar (LEED Gold)

The USMC plans to invest approximately $678 million in energy efficiency measures, between FY 2012 to FY 2017. These investments expect to save over 2,500 BBtu of energy. Figure 2.8 illustrates the breakdown of estimated energy savings between initiatives funded by appropriations and non-Governmental third party financing mechanisms.

Figure 2.8: USMC Energy Efficiency Savings (FY 2012 to FY2017)



Charts 2.10 and 2.11 illustrate the attainment of the energy intensity goal and the associated consumption reduction necessary to meet the energy intensity goal for the USMC. These charts show that the USMC will meet its energy intensity goal by FY 2016.

Chart 2.10: USMC Energy Intensity (FY 2012 to FY 2017)

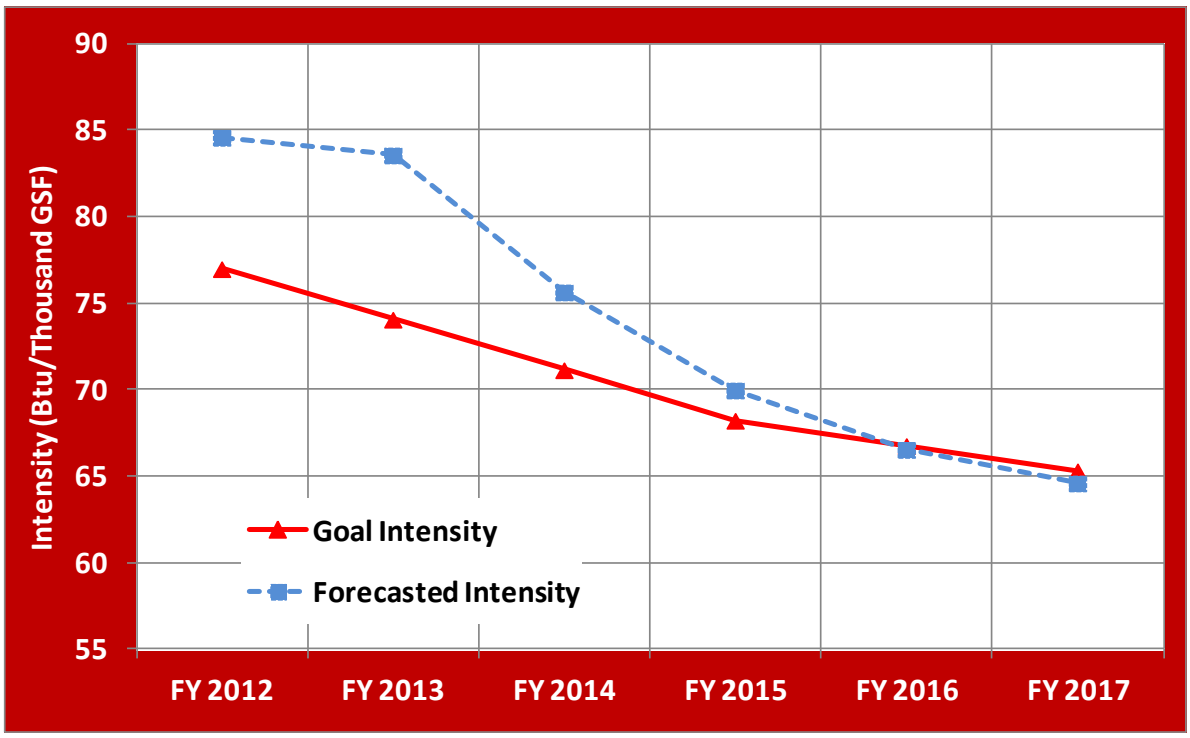
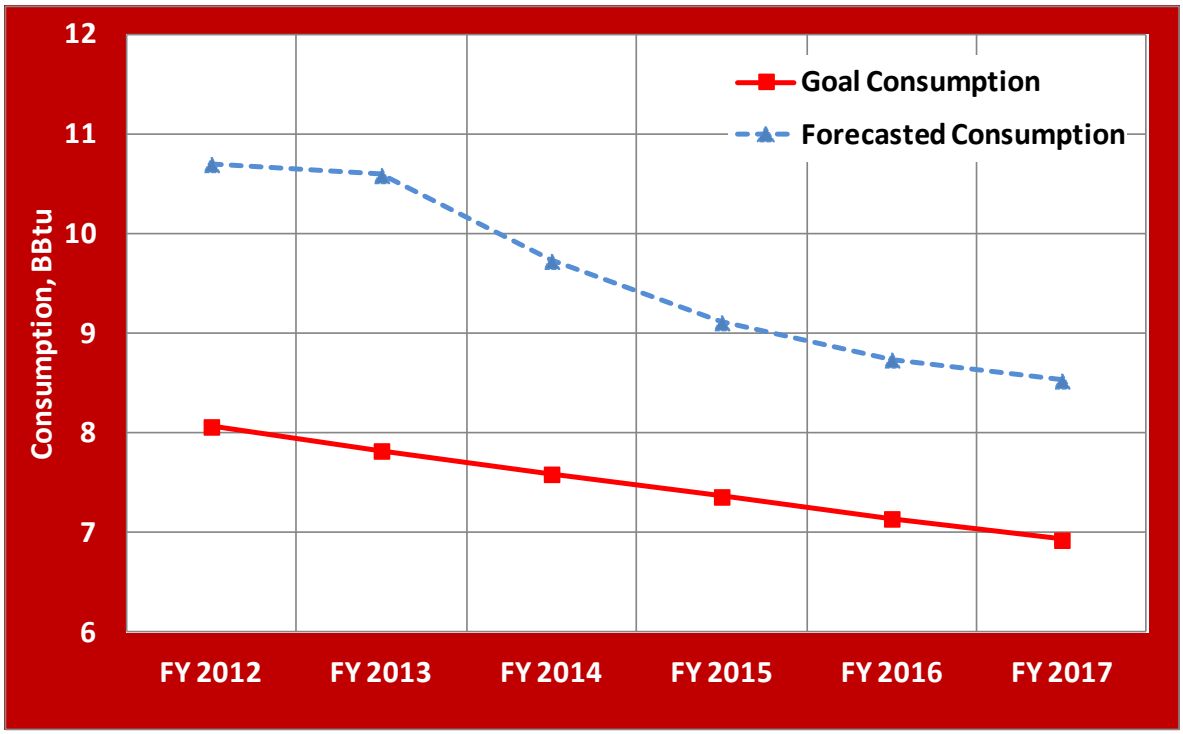


Chart 2.11: USMC Energy Consumption (FY 2012 to FY 2017)



The USMC has identified several opportunities to improve the energy efficiency at facilities. Installation leadership will oversee all new construction, major renovations, and energy system upgrades and at a minimum, evaluate the cost effectiveness of incorporating emerging technologies through architect-engineering conducted audits and energy manager conducted audits of installation facilities. The USMC is evaluating technologies for energy efficiency initiatives. Such technologies include cool roofs, solar water heating, and ground sources hear pumps. From FY 2012 to FY 2017, the USMC plans for large scale capital investments using O&M and Energy Investment Program funding.

DON Renewable Energy

On January 24, 2012, in the State of the Union address, President Obama announced that the DON is embarking on an aggressive renewable energy strategy to install 1 GW of renewable energy on or near DON installations. The DON's 1 GW initiative is designed to support the achievement of the Secretary of the Navy (SecNav)'s goal to "supply, by FY 2020, 50 percent of the energy DON consumes with alternative energy." The DON renewable energy goal is twice as aggressive as the DoD 10 U.S.C. §2911 goal. Hence, by implementing its 1 GW initiative, DON expects not only to meet the SecNav goal but also to exceed the DoD 10 U.S.C. 2911(e) goal.

The Navy already benefits from a large existing renewable capacity. China Lake's 270 MW geothermal power plant is the largest DON renewable energy project and contributes to more than 75 percent of the DON's existing capacity. However, in order to meet its renewable energy goal by FY 2020, the DON will be adding 1 GW of renewable capacity across its installations.

To that end, the DON will evaluate the viability of power purchase and leasing agreements to implement large-scale renewable energy projects in a manner that ensures mission compatibility with DON installations. Partnerships with the private sector should improve life-cycle cost effectiveness as commercial developers are able to take advantage of various tax incentives such as investment and production tax credits and accelerated depreciation.

To date, the DON has identified more than 500 MW in renewable energy opportunities planned for the period between FY 2012 to FY 2017. Implementing these projects will ensure the DON continues to exceed the 10 U.S.C. 2911(e) goal and exceed the 1 GW goal in FY 2016 and beyond.

The DON plans to meet these goals by investing in a broad portfolio of renewable energy technologies. DON will capitalize first on solar PV technologies, which will contribute to more than half of the supply mix. Geothermal will contribute 25 percent to the mix and biomass 12 percent. The DON plan also includes other technologies such as wind and solar thermal systems (Figure 2.9). Figure 2.10 illustrates the geographical diversity of planned DON projects.

Figure 2.9: DON Forecast Planned Renewable Energy Supply Mix

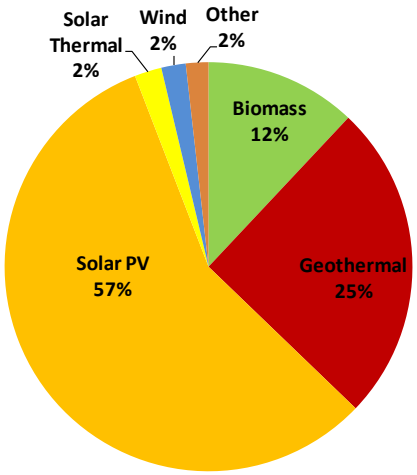


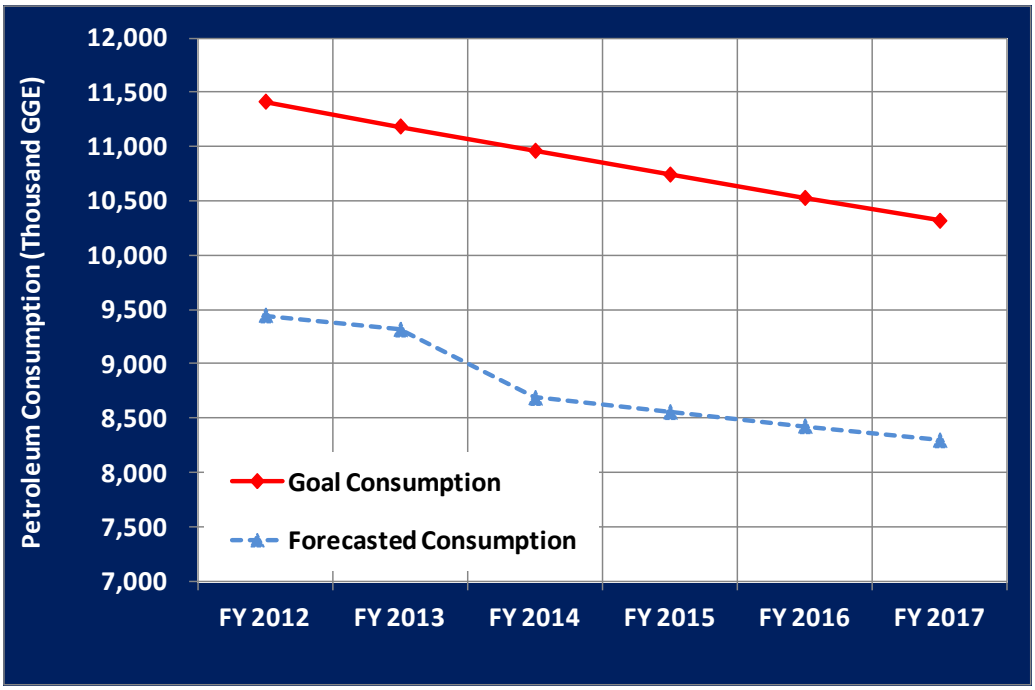
Figure 2.10: DON Planned Renewable Energy Projects

Navy Petroleum Consumption Reduction

The Navy's goals are to reduce petroleum consumption by 50 percent by 2015 and to increase alternative fuel use by 10 percent annually. To meet these goals, the Navy will focus on substituting alternative fuels for petroleum and on increasing fuel efficiency. The Navy will focus on diversification and utilization of all methods that are available in each specific geographic location because no single vehicle or fuel technology will meet this goal. A strategy the Navy will use to reduce petroleum consumption in fleet vehicles is to place AFVs based on the mission, driving conditions, and fuel availability.

The Navy's planned investments of over $948 million from FY 2012 to FY 2017 will result in petroleum reductions of over 1.4 million GGEs. Chart 2.12 illustrates the Navy's performance towards the petroleum reduction goal. The Navy will continue to meet its goal from FY 2012 to FY 2017.

Chart 2.12: Navy Petroleum Consumption (FY 2012 to FY 2017)



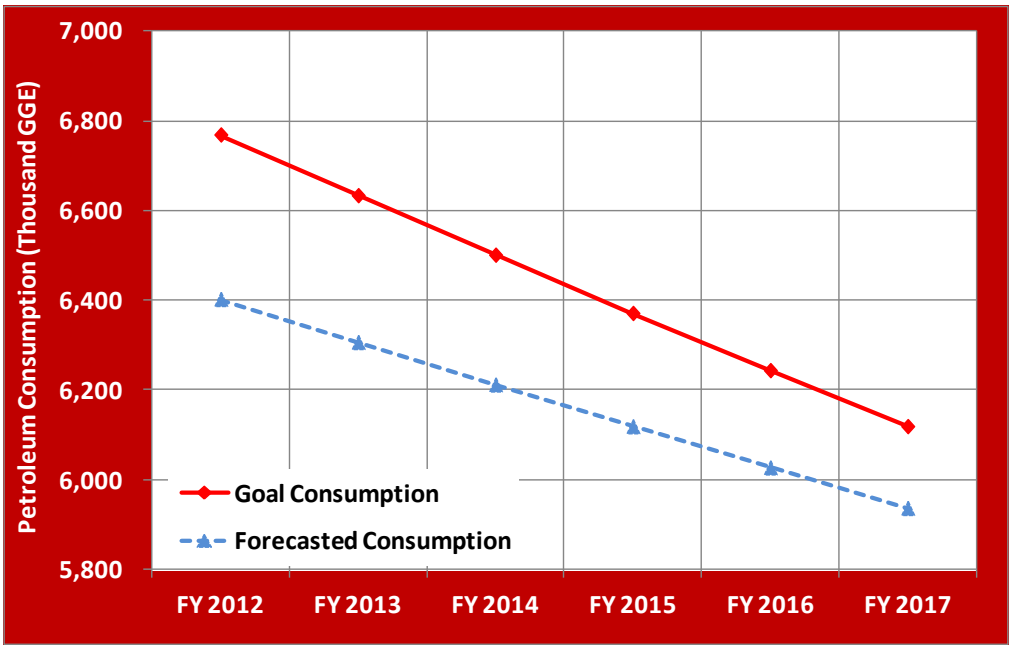
To continue to meet the petroleum reduction goal, the Navy will place no- or low-cost ethanol 85 (E85) vehicles in locations that have access to E85 fuel. The Navy plans to install AFV infrastructure, including E85, biodiesel 20 (B20), and charging stations, at more than 26 installations throughout the United States. The Navy also will place full size electric vehicles (EVs) as they become commercially available. The Navy is currently participating with GSA in an EV pilot program. The Navy is receiving 9 Chevy Volts and 2 Nissan Leafs from GSA. The Navy is also installing EV charging stations for these vehicles.

Currently, all of the Navy's EVs are neighborhood electric vehicles (NEVs). NEVs are a cost-effective solution for petroleum reduction and the Navy uses NEVs to replace conventional gasoline vehicles to the maximum extent practical. The Navy also considers NEVs to replace a sedan or larger vehicle, such as those used for carrying passengers on an installation.

USMC Petroleum Consumption Reduction

The USMC continues to invest in strategies that reduce petroleum consumption in fleet vehicles. The USMC planned investments will result in petroleum reductions of over 563 thousand GGEs from FY 2012 to FY 2017. Chart 2.13 illustrates the USMC performance towards attaining the petroleum reduction goal. The USMC continues to stay below the line, meeting the petroleum consumption reduction goal from FY 2012 to FY 2017.

Chart 2.13: USMC Petroleum Consumption (FY 2012 to FY 2017)



The USMC three part strategy for petroleum consumption reduction is to:

- Optimize the placement of AFVs with consideration for mission assurance, driving conditions and fuel availability;
- Pursue existing and leading edge alternative vehicle technologies and fuels such as hydrogen fuel cell and battery electric vehicles; and
- Coordinate and march vehicle technologies with fuel infrastructure to ensure that the alternative fuel vehicle support is in place.

Compressed natural gas vehicles and infrastructure is an example of an alternative vehicle strategy that the USMC will utilize for commercial vehicle solutions where economical. The USMC will evaluate more efficient conventional vehicles or hybrid electric vehicles where alternative fuel support (government or commercial) is not available.

2.4. Air Force Overview

The Air Force energy vision is to reduce energy demand through conservation and efficiency, increase supply through alternative energy sources, and create a culture where all Airmen "Make Energy a Consideration in All We Do."

From FY 2012 to FY 2017, the Air Force expects to save over 9,200 BBtu of energy as a result of energy efficiency measures, achieve a renewable energy production or procurement level of 9,000 BBtu and save 1.4 million GGEs.

As a comparison, Air Force energy efficiency investments planned between FY 2012 to FY 2017 could offset the facility energy consumption of all buildings at the United States Air Force Academy for 9.4 years. The planned renewable energy produced or procured over this period could also offset the electricity consumption of Andrews Air Force Base for over 128 years.[8]

Air Force Energy Efficiency

The Air Force investments programmed between FY 2012 to FY 2017, coupled with non-Governmental third party financed projects planned for the same period, support the attainment of the energy efficiency performance goal.

Between FY 2012 to FY 2017, the Air Force has planned energy efficiency investments for $1.6 billion, which will result in over 8,900 BBtu in estimated savings.

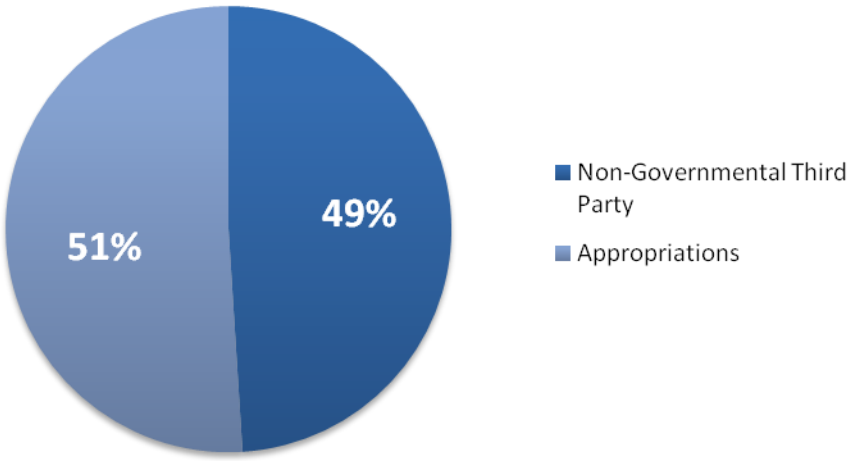
Figure 2.11 illustrates the breakdown of estimated energy savings between appropriated and non-Governmental third party financed energy efficiency initiatives.

Retrofit (Daylighting) – Ramstein AFB

New Construction (LEED Platinum) – United States Air Force Academy

[8] Based on 980 BBtu of facility energy consumption at the United States Air Force Academy, and 314 BBtu of electricity consumption at Andrews Air Force Base (Air Force FY 2011 AEMR data submission).

Figure 2.11: Air Force Energy Efficiency Savings (FY 2012 to FY 2017)



Charts 2.14 and 2.15 illustrate the attainment of the energy intensity goal and the associated consumption reduction necessary to meet the energy intensity goal for the Air Force. These charts illustrate the Air Force will not meet the energy efficiency goal during the period from FY 2012 to FY 2017.

Chart 2.14: Air Force Energy Intensity (FY 2012 to FY 2017)

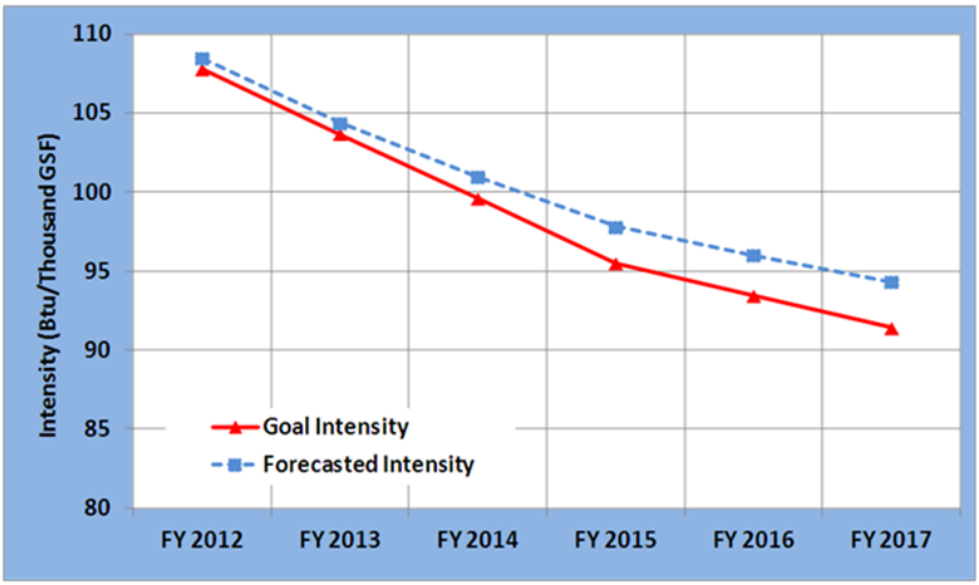
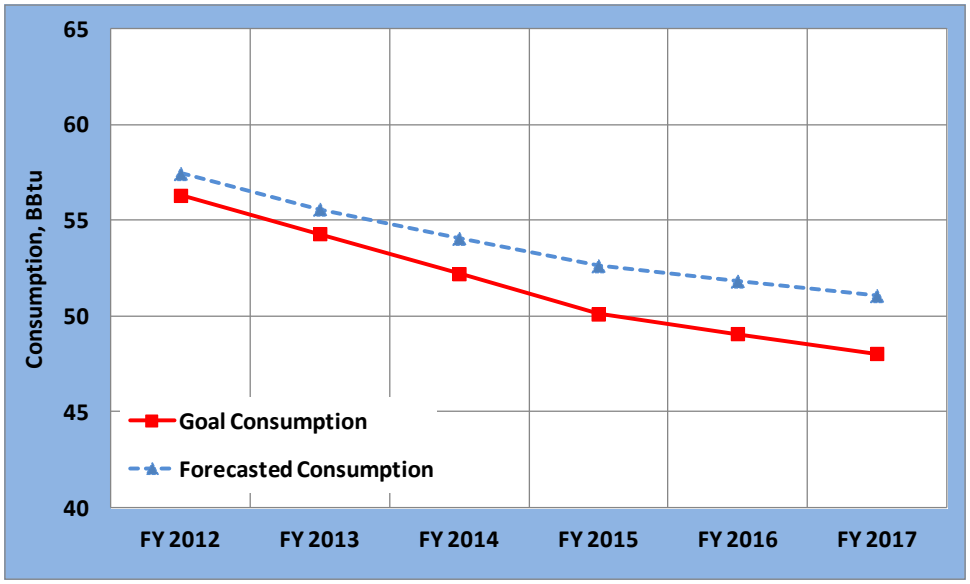


Chart 2.15: Air Force Energy Consumption (FY 2012 to FY 2017)



Air Force Renewable Energy

The Air Force renewable energy plan focuses on the development of on-base electric and non-electric renewable projects that are cost-competitive. Because of varying regional constraints on benefits from REC sales, tax rebates, and other incentives, the Air Force is moving away from funding renewable projects through appropriations and moving towards non-Governmental third party financed renewable energy projects. The Air Force's strategy is to rely on non-Governmental third party financed mechanisms to pursue large scale renewable energy projects.

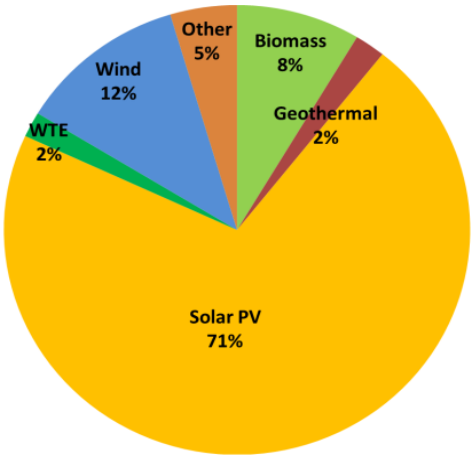
In support of the renewable energy goal, the Air Force established an aggressive "1000 MW" initiative (1 GW goal) that relies on a robust process which allows for the Air Force to manage and execute projects from concept to production. The Air Force renewable energy process typically begins with preliminary studies at the base or MAJCOM levels. These studies may be conducted in collaboration with academia, industry or private developers. Preliminary concepts and opportunities are then evaluated and selected to undergo further validation. This validation includes feasibility for specific renewable energy technologies, opportunity assessments to identify base requirements, scope, mission impact and

possible environmental issues, and business case evaluations. Renewable energy projects are selected for implementation as part of the Air Force's renewable energy project evaluation process.

The Air Force has identified 825 MW in planned renewable energy projects for the period of FY 2012 to FY 2017. The energy generated from these projects is expected to grow considerably between FY 2014 to FY 2016. By FY 2017, the Air Force expects to have made significant progress and exceed the renewable energy goal.

The Air Force will pursue a variety of renewable energy projects across installations to help meet renewable energy performance goal. The Air Force expects to focus on a variety of renewable energy technologies such as solar, wind, and biomass to achieve the goals. The Air Force will capitalize on solar PV technologies for a large majority of its planned initiatives. The remaining will consist of wind and biomass projects (Figure 2.12).

Figure 2.12: Air Force Planned Renewable Energy Supply Mix



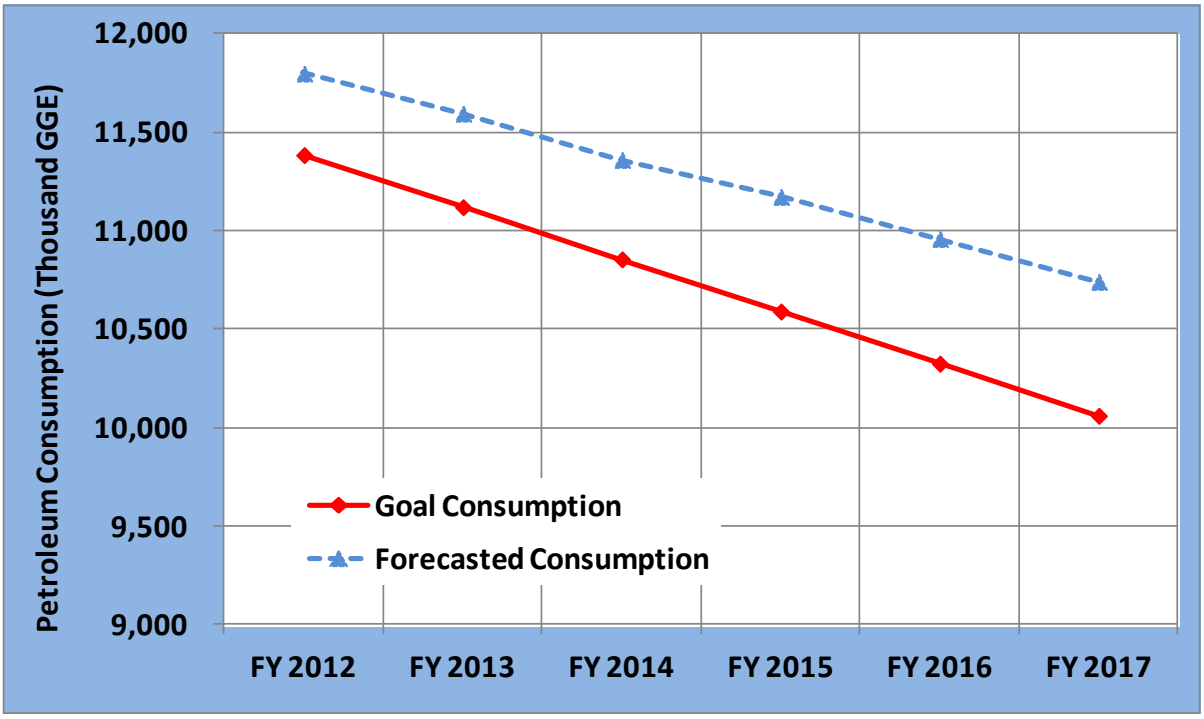
The Air Force implements renewable energy projects in a variety of geographic locations. Figure 2.13 illustrates the locations and types of renewable energy projects the Air Force expects to pursue.

Figure 2.13: Air Force Planned Renewable Energy Projects

Air Force Petroleum Consumption

The Air Force continues to make investments to reduce petroleum consumption in fleet vehicles. Between FY 2012 to FY 2017, the Air Force has planned investments of $229 million to enhance fleet vehicle performance. These will result in an estimated 1.4 million GGEs saved. Chart 2.19 illustrates the Air Force performance towards the petroleum reduction goal. While the Air Force continues to make strides in meeting the petroleum reduction goal, current forecasts show a shortfall in meeting the goal.

Chart 2.19: Air Force Petroleum Consumption (FY 2012 to FY 2017)



The Air Force strategy for petroleum consumption reduction is to give preference to procuring the most fuel-efficient and cost effective AFVs, hybrid electric vehicles, or plug-in electric vehicles. The Air Force announced that Los Angeles AFB would be the first DoD installation to have an all-electric fleet. Additionally, the Air Force is deploying radio frequency identification devices on all of its continental United States- (CONUS-) based vehicles in order to monitor and reduce vehicle idling.

The Air Force is also evaluating the logistics of relocating AFVs to areas where alternative fuels are more accessible and installing new alternative fuel infrastructure on base, depending on demand. The Air Force faces the challenge of increasing fuel consumption as a result of joint basing activities. In the future, the Air Force expects that plug-in electric and hybrid vehicles will play a significant role in meeting or exceeding the petroleum reduction goal.

2.5 Defense Agencies Overview

This section describes the investments and performance contribution of the defense agencies to attain the energy efficiency, renewable energy and petroleum reduction goals.

2.5.1 Defense Commissary Agency (DeCA) Overview

DeCA is a tenant on military installations and occupies space in a facility owned by the host military Department. DeCA may solely occupy the building or may be one of several occupants of the building and is responsible for the maintenance and operations of the portion of the facility occupied by DeCA.

The commissaries are energy intensive facilities with a fixed refrigeration load of approximately 50 percent of total energy use. DeCA's energy efficiency efforts since activation in FY 1991 resulted in commissary energy efficiencies. Most commissaries are better than the standards set for such facilities by the Environmental Protection Agency and DOE's Energy Star® program.

DeCA's energy vision is to reduce consumption through conservation and efficiency, increase supply through alternative energy sources, and create a culture where all levels of the organization make energy a consideration.

DeCA Energy Efficiency

The DeCA will invest $50 million in energy efficiency initiatives from FY 2012 to FY 2017, with a contribution to energy savings of 385 BBTU. DeCA continues to pursue energy conservation approaches that are life cycle cost effective and continues to develop and review best practices for energy efficiency opportunities that are cost effective when performing a retrofit, component replacement, major renovations, and new construction. DeCA will pursue energy efficiency technologies that reduce energy use, such as electronically commutated motors, light emitting diodes (LED) lighting fixtures, floating compressor head pressures and sub-cooling. DeCA is also investing in all-natural refrigerant technology to become one of the first ammonia-based supermarket systems in the U.S. Additionally, DeCA will invest in retrofits to install glass doors on dairy boxes, night curtains, improve system controls through Refrigeration Monitoring and Control Systems (RMCS), and its new and renovated stores continue to go beyond the requirement to be 30 percent more efficient than ASHRAE 90.1.

DeCA Renewable Energy

DeCA aims to increase the production and procurement renewable energy at facilities. From FY 2012 to FY 2017, DeCA will invest $3 million in renewable energy initiatives resulting in 61 BBTU in renewable energy production and procurement.

As a tenant, DeCA cannot purchase or take advantage of RECs. DeCA's renewable energy plan mainly focuses on the development of rooftop renewable electric and non-electric renewable projects that are cost-competitive. The renewable market will continue to be constrained by prevailing utility costs and the availability of economic incentives, such as federal, state, and local tax incentives and rebates. Due to regional and economic constraints, DeCA is moving from appropriated funding activities to the purchasing of power from non-Governmental third party financed renewable energy arrangements on rooftops. DeCA could potentially benefit by purchasing lower-cost power and dedicated renewable electric supply directly to its facilities. DeCA's primary renewable energy strategy is to pursue non-Governmental third party financed arrangements for renewable energy production or procurement.

DeCA Petroleum Consumption

DeCA is committed to meet the petroleum reduction goal. DeCA gives preference to leasing through the GSA for the most fuel efficient and cost effective AFVs and hybrid electric vehicles to meet the petroleum reduction goal. With regards to alternative fuel use, DeCA is evaluating the AFV logistics in areas where military installations have alternative fueling stations and infrastructure.

2.5.2 Defense Logistics Agency (DLA) Overview

DLA's mission to provide effective and efficient worldwide warfighter support relies heavily on a facilities infrastructure that is both effective and efficient. DLA Installation Support provides facility support services including Facility Energy Management.

DLA Energy Efficiency

DLA will invest $540 million in energy efficiency initiatives from FY 2012 to FY 2017, with a contribution to energy savings of 804 BBtu. Table 22 below highlights the energy efficiency investments and performance of DLA from FY 2012 to FY 2017.

DLA continues to improve energy efficiency through conservation measures and exploration of new energy efficient technologies. It will continue to pursue energy conservation and efficiency projects, which include lighting upgrades, energy management control systems, direct digital controls, HVAC upgrades and utility monitoring and control systems. DLA plans to target energy efficiency investments that are life cycle cost effective and contribute to the attainment of the energy efficiency performance goal.

DLA Renewable Energy

DLA currently does not have any significant renewable energy production or power purchase agreements; however, the feasibility of a large-scale photovoltaic project and a smaller wind project, for the Tracy, CA site, are currently being evaluated for a possible PPA. Also, DLA headquarters at Ft. Belvoir has reviewed several options for a solar photovoltaic system and is working through details of non-Governmental third party financing.

DLA Petroleum Consumption

DLA continues to make investments to reduce petroleum consumption in fleet vehicles. DLA will invest $3 million in DWCF funds to reduce petroleum consumption and increase fleet vehicle performance. From FY 2012 to FY 2017, DLA investments will result in petroleum reductions of 262 thousand GGEs.

2.5.3 Defense Intelligence Agency (DIA) Overview

The DIA strategy is to strengthen and unite the agency's core defense intelligence capabilities to best support warfighters and policymakers in an era of persistent international conflict and enduring U.S. fiscal challenges. The strategy's theme is "One Mission - One Team - One Agency".

The DIA mission statement is first in all-source defense intelligence to prevent strategic surprise and deliver a decision advantage to warfighters, defense planners, and policymakers. DIA deploys globally alongside warfighters and interagency partners to defend America's national security interests.

The mission of DIA's energy program is to ensure that DIA facilities have a uninterruptible and secure sources of energy and water to meet DIA's mission requirements. DIA's energy program also seeks to meet all federal, DoD and Office of the Director of National Intelligence (ODNI) requirements for both energy and water conservation and renewable energy generation.

DIA Energy Efficiency

DIA has a very active energy efficiency program, with a team of dedicated managers, engineers, and operators committed to reducing energy within the 1,325,000 square foot Defense Intelligence Analysis Center (DIAC) located on Joint Base Anacostia Bolling (JBAB), and at other DIA facilities. This team works across the agency to reduce energy from computers and data centers, heating and cooling systems, and lighting.

The DIAC is a main driver of energy intensity for the DIA. As of FY 2011, the DIAC was only 2.2 percent below the 2003 baseline year and has increased slightly in recent years. This increase has occurred despite continuous efforts to optimize energy performance, due to the more efficient use of space in renovated DIAC modules. This increased use of DIAC space allows for increased density of people and

computers and thus more energy per square foot. Based on this increasing trend of adding personnel to the DIAC as more modules are renovated, attaining the DoD energy efficiency goals will become increasingly difficult.

Over the past few years DIA has primarily funded large energy efficiency projects through the use of DoD ECIP funds. These MILCON funds are distributed from DoD for worthwhile energy efficiency projects, which have a high return on investment. DIA also pursues energy efficiency with available O&M funds.

DIA is in a multiyear process of renovating all of the 25,000 square foot modules in the original DIAC building, and will continue to renovate an average of one module each year until FY 2019. While this is not being done primarily as an energy efficiency effort, efficient lighting and heating/cooling projects are incorporated into the designs.

DIA's major strategy in FY 2012 to reduce energy intensity in the DIAC is through the use of an ESPC. In FY 2011, DIA began working with the Defense Logistics Agency Energy Office (DLA Energy) to obtain a task order under the DOE Super ESPC contract. DLA Energy provides contract office support to DoD agencies, and is looking to award this task order on DIA's behalf in 2012. The purpose of the ESPC will be to realize both energy savings and renewable energy production. DIA believes that this ESPC offers the best opportunity to obtain an investment grade energy audit and make the DIAC a state of the art facility in terms of energy efficiency, once the energy efficiency projects are completed. The cost of these energy efficiency measures will be paid from the savings realized by the ESCO engaged in the ESPC.

DIA Renewable Energy

Due to DIA's small campus size and the limited payback from purchasing renewable energy systems versus grid electricity, DIA has not aggressively pursued renewable energy technologies, such as solar PV panels. DIA's only current renewable energy sources are two permanently mounted and three temporary solar powered lights in the DIAC's north parking lots, which generate just over 2 MW hours per year of energy. This is less than 1 percent of DIA's total electrical use. In addition, DIA does not purchase RECs to attain the renewable energy goal. While these RECs would allow DIA to report higher levels of renewable energy use based on the renewable energy generated by others, there is not an interest to purchase RECs for goal attainment.

DIA intends to add renewable energy capacity on its main DIAC campus and other facilities. DIA plans to fund 40 additional solar powered parking lot lights for 4 years, for a total of 160 solar powered parking lot lights. Major efforts in renewable energy will be made beginning in FY 2017, which would include PV panels on the roof and walls of the DIAC, as well as over parking lots.

DIA Petroleum Consumption

DIA has a strong fleet vehicle petroleum use program, which actively attempts to reduce vehicle use and minimize costs. However, despite these efforts, DIA is not meeting the petroleum reduction goal. While it is DIA's intent to reduce petroleum consumption, the petroleum reduction goal has been difficult due to the increasing number of employees and mission requirements. Further, DIA now has buildings in several geographical locations, increasing GSA vehicle use at those locations.

DIA will continue to invest, as appropriate to reduce petroleum consumption. DIA is pursuing electric vehicles and recharging stations. The first electric vehicle delivery is expected in FY 2014. However, it will be difficult to attain the petroleum reduction goal due to economic challenges such as substantiating the additional cost to purchase a hybrid or electric vehicle versus the fuel savings from those purchases.

2.5.4 National Security Agency (NSA) Overview

NSA strives to support our global cryptologic mission while acting as good stewards of the environment. NSA's vision is to implement energy conservation measures as well as renewable energy initiatives to reduce electrical demand. NSA also will implement LEED practices and efficient systems in new and existing facilities in order to provide safe, secure, and productive workspaces for employees.

The core business of NSA is energy intensive, and as new communication technologies and equipment are developed, the trend will be towards using equipment with even higher energy densities. This mission environment makes it nearly impossible to meet energy intensity goals; however, at locations where sites can accommodate energy savings projects and renewable energy technologies, such as solar PV arrays, they will be employed when it is in the best interest of the government.

NSA Energy Efficiency

NSA did not meet the FY 2011 energy intensity reduction goal. This was due to a number of mission-related factors including:

- Increases in the volume, speed and complexity of modern communications which require NSA to continuously increase its collection, processing and analysis capacity;
- NSA's expanding mission which requires the constant refreshing of computers and other electronic equipment to maintain state-of-the-art capabilities; and
- The addition of new equipment to achieve greater processing speeds by continuously increasing power densities, which results in the increase of both the overall energy consumption and energy intensity in many NSA facilities.

NSA tries to mitigate increases in energy consumption by implementing aggressive energy conservation measures in existing facilities and implementing sustainable design features in new construction.

NSA is and will continue to vigorously pursue energy efficiency initiatives to ensure new facilities are built in conformance with standards and to meet energy intensity and renewable energy targets and goals, to the extent possible.

NSA has incorporated sustainable design principals into directives to our design agents for building and project designs and construction. There were three designs started in FY 2011 that included high performance sustainable requirements. These new buildings are required for NSA's expanding mission and will house state-of-the-art mission operations and high performance computer and electronic equipment.

NSA currently has seven buildings that are either LEED Silver or Gold certified, which total 500,000 square feet. There are additional buildings that total another 500,000 square feet of space that are pending LEED certification. Planned lease acquisitions and MILCON projects will result in NSA exceeding the 15 percent goal by FY 2015. In addition, NSA initiated a LEED-Existing Building certification assessment in FY 2010 of three buildings, totaling 843,000 square feet at the Headquarters complex. There is an active training program that provides training to the facilities and environmental staff in LEED-Existing Building O&M programs to further this effort.

In FY2011, NSA awarded a UESC consisting of upgrades to 13 buildings consisting of energy efficient lighting fixtures, lamps, and ballasts. The energy savings at the end of the project will pay for this initiative.

NSA uses energy audits to identify facility system life cycle issues. The NSA Energy Team and the Facility Planning Board maintains a list of energy projects and prioritizes them according to mission criticality, payback, and cost. NSA also uses a Facility Condition Index (FCI) methodology to assess infrastructure replacement projects. This methodology includes an assessment of the infrastructure systems condition and efficiency. NSA plans to integrate the NSA Headquarters maintenance management system (i.e., Maximo) with the FCI database to facilitate the identification of systems in need of replacement. In addition, an economic analysis of at least three alternatives, as required by Army Regulation 420-1, is conducted for all MILCON projects.

NSA Renewable Energy

NSA completed a renewable energy project at its Headquarters complex in FY 2011. The estimated annual energy savings is 56,000 kWh. In addition, four renewable energy projects are being implemented at the Headquarters complex to enhance safety and security on streets and parking lots. A campus-wide re-lamping effort has been awarded to upgrade 13 buildings with energy efficient lighting fixtures, lamps, and ballasts.

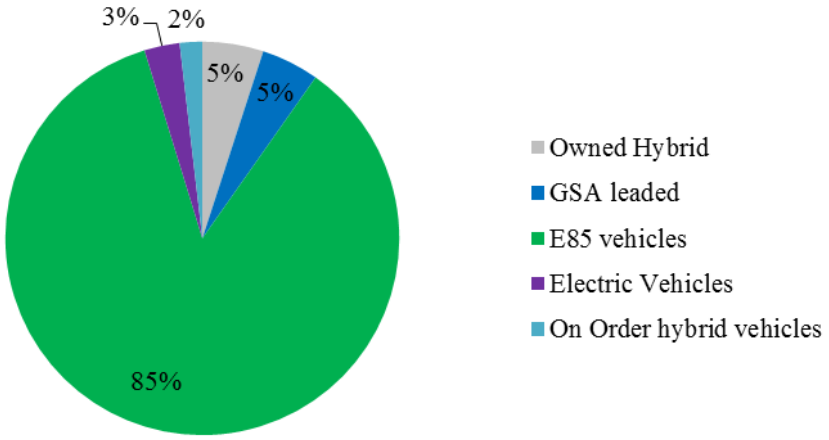
ECIP funding is another investment option consideration for two renewable energy projects. The two projects in the research phase include installing solar parking lot lighting on multiple lots at the Headquarters complex and installing a ground mounted PV array to reduce dependency on the electrical grid.

In FY 2011, NSA received $24 million of Research, Development, Test and Evaluation (RDT&E) funds to acquire and deploy a fuel cell system at its Headquarters campus. The system will operate for a period of three years. A final report will be generated to provide system performance data with regard to operational cost, power output, power quality, co-generation outputs, effectiveness, efficiency, reliability, and safety of using fuel cells at NSA facilities.

NSA Petroleum Consumption

NSA strives to be the leader in reducing petroleum consumption in fleet vehicles. NSA purchases AFVs where appropriate and cost effective. Since FY 2006, the procurement of AFVs has increased as new technologies have emerged and the availability of these types of vehicles has increased. Starting in FY 2005, with the purchase of several E85 vehicles and progressing to hybrids, NSA has dramatically increased its AFV fleet. To date, 50 percent of the NSA fleet consists of AFVs. Figure 3.0 below illustrates the breakdown of NSA's current vehicle fleet.

Figure 3.0: NSA Current Vehicle Fleet



Actions taken in FY 2011 to meet goals:

- Increase Alternative Fuel Vehicle (AFV) inventory to 50 percent of total fleet vehicles inventory (379 vehicles);
- Replace 5 standard fuel campus shuttle buses to AFV buses; and
- Acquire 100 percent of new vehicles as AFVs.

Actions planned for FY 2012 to meet goals:

- Replace 6 standard fuel campus shuttle buses to AFV buses.

2.5.5 Washington Headquarters Service (WHS) Overview

In FY 2010, WHS established the Sustainability and Energy Management Task Force (SEMTF) as a way to identify, prioritize, and track sustainability performance and objectives. The SEMTF is an integrated multidisciplinary group of stakeholders including representatives from the Pentagon Environmental Office (PEO), Pentagon Renovation Office, Pentagon Building Management Office (PBMO), Heating and Refrigeration Plant (HRP), Engineering and Technical Services Division, and Facilities Engineering Branch, among others. The SEMTF meets monthly to discuss strategies to improve energy management and reduce energy use and GHG emissions, which will improve energy security and contribute towards a long term goal of net-zero energy operation at the Pentagon Reservation.

In order to meet ambitious energy and GHG reduction goals, the SEMTF developed a comprehensive Energy Action Plan that details, prioritizes, and tracks ongoing and future energy initiatives and establishes timelines for completing each initiative. The Action Plan is being used by stakeholders at the Pentagon to identify and track progress on various energy-related efforts. The SEMTF is in the process of developing an Energy Management Plan that identifies the overarching goals and strategies for energy management. The SEMTF also established subgroups, which are working groups that meet regularly and focus on implementing certain aspects of the Action Plan. The current subgroups include:

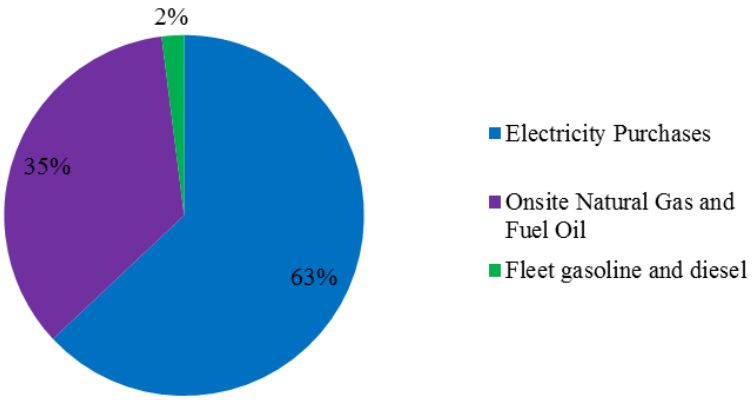
- Energy Financing subgroup – identifies funding sources for energy projects, prioritizes projects, and submits proposals for funding (e.g., ECIP);
- Combined Power and Heat (CHP) subgroup – identifies technical and financial challenges and benefits of implementing CHP (also known as co-generation) at the Pentagon and works towards a strategy for implementation;
- Green Information Technology (IT) subgroup – identifies strategies to reduce energy consumption of IT systems and develops funding and implementation strategies;
- Metering subgroup – identifies metering priorities for all involved stakeholders and implements projects for metering, submetering, and using a dashboard to track energy consumption; and
- Commissioning – implements and manages projects to ensure building equipment, controls, and systems operate as designed and meet their full life expectancy.

These subgroups have ongoing activities and WHS plans to establish additional subgroups for plug load reduction, on-site renewable energy, and water conservation in the near future.

WHS Energy Efficiency

WHS first analyzed several years of utility bills in order to prioritize the areas where energy efficiency efforts should be focused. Through the utility bill analysis, WHS found electricity purchases to be the primary source of energy consumption at the Pentagon Reservation, comprising more than 60 percent of the total energy use. The Pentagon Reservation also consumes natural gas, fuel oil and steam. These fossil fuels uses account for approximately 35 percent of energy use, while fleet energy use comprises only two percent of energy use. For this reason, the SEMTF strives to identify projects that will primarily reduce electricity consumption. Figure 3.1 illustrates the current breakdown of energy consumption by type.

Figure 3.1: WHS Current Energy Consumption by Type



WHS plans to pursue a variety of energy efficiency and conservation projects in the future. The types of energy conservation and efficiency projects which the WHS will pursue include building system and control inspections/maintenance, IT power management, metering and monitoring, interior lighting projects, and CHP technologies. WHS expects that CHP technologies will have the largest impact on attaining the energy efficiency goal, contributing more than 45 percent of total reductions from future projects.

WHS Renewable Energy

WHS has implemented solar parking lot lighting, solar hot water projects, and solar light towers, but because of WHS's large energy consumption on the Reservation, more than 250,000 MMBtu of renewable energy would be required to meet the renewable energy goal. Because WHS's facilities are located in an urban setting and electricity rates are relatively low, large renewable energy projects are neither feasible nor cost effective at the Pentagon Reservation.

However, WHS continues to investigate opportunities to implement renewable energy projects, including solar, small-scale wind, and ground source heat pumps for new facilities. It does not seem feasible to pursue large renewable energy projects on the Reservation, and goal attainment will be difficult by pursuing large scale renewable energy projects for WHS.

WHS Petroleum Consumption

In FY 2010, WHS consumed 22,000 MMBtu of fuel in WHS and Pentagon Force Protection Agency (PFPA) vehicles, as well as two Pentagon Circulator shuttle buses. WHS is currently pursuing several strategies for reducing petroleum consumption on the Reservation. These strategies include:

- Encouraging employees to use biofuels when fueling government vehicles;
- Encouraging employees to participate in DoD's National Capital Region mass transit subsidy program;
- Replacing one of the two existing Circulator shuttle buses with a hybrid shuttle bus, and if successful, replacing the remaining shuttle in the near future; and
- Developing a Transportation Management Plan for the Pentagon Reservation in FY 2011 that:
    - Reduces the number of parking spaces to increase green space and meet National Capital Planning Commission (NCPC) parking requirements;
    - Increases the number of bicycle racks; and
    - Makes the Reservation more pedestrian and biker friendly by rerouting sidewalks and traffic flow and installs electric vehicle charging stations where feasible to promote the use of electric vehicles.

While petroleum use at the Reservation accounts for a relatively small amount of energy compared to the Pentagon building use, WHS is still investigating ways to reduce petroleum consumption wherever feasible.

2.5.5 Tricare Management Activity (TMA) Overview

The mission of TMA is to support the Medical Services and Medical Treatment Facilities (MTFs) to identify, implement, and execute cost-effective, high performance energy management processes in line with federal energy use mandates and the DoD Strategic Sustainability Performance Plan (SSPP).

TMA's strategy is to:

- Develop and maintain facility portfolio data to identify areas of greatest potential improvement and to track progress over time;
- Supply technical and programmatic support to the Services for implementation, operation and management of high performance MTFs; and
- Develop strategic communications that target medical service energy managers, budget

appropriators and compliance authorities.

TMA Energy Efficiency

The TMA Health Affairs/Portfolio Planning and Management Division (HA/PPMD) will continue to support the nation's energy goals and mandates by providing services and support that address the unique aspects of healthcare operations and medical treatment facilities' specific energy challenges. Tools, resources and initiatives to improve energy performance in military medical treatment facilities will include:

- Continue to lead the medical energy steering committee to share best practices, lessons learned, and other feedback;
- Provide policy and guidelines for energy efficient operations and maintenance of MTFs;
- Provide recognition through internal awards program and seek additional recognition from external award programs;
- Assess specific facility needs, opportunities;
- Link services with resources to execute against opportunities;
- Continue to serve as ECIP budget advocate for MTF projects; and
- Provide for the foundation of reliable facility data to support all energy program areas.

TMA Renewable Energy

TMA will pursue projects in support of the DoD renewable energy goal. Some examples of major renewable energy projects for TMA include the Fort Irwin hospital replacement project that will be the first carbon neutral hospital in the DoD inventory. This hospital will consist of a 2 MW, 6.5 acre solar energy array. Another example includes the Fort Lewis-Winder Medical/Fulton Dental Clinic project that achieved LEED Gold certification and integrates a solar powered water heating system.

2.5.6 Defense Contract Management Agency (DCMA) Overview

DCMA is committed to developing and managing policies and practices to meet or exceed current Federal and DoD energy requirements in the hopes of conservation and management of rich energy resources to better serve the American people with a positive environmental and economic outcome. DCMA has two properties within its responsibility that are required to meet energy performance goals.

To meet the DoD energy performance goals, DCMA will require a robust energy management policy and a thorough analysis of existing reportable infrastructures. DCMA plans to investigate a tighter building envelope, better lighting practices, better air conditioning and heating practices, gaining solar efficiency, and better office energy use practices in these two buildings to help meet energy efficiency and renewable energy goals. Specifically, DCMA will conduct analysis at existing infrastructure in Carson, California and Bratenahl, Ohio. The facility in Carson, California has building space of 80,000 square feet, and the facility in Bratenahl, Ohio has a building space of 79,000 square feet.

DCMA will continue to make investments to reduce petroleum consumption in fleet vehicles. DCMA will invest $6,500 in O&M funds to reduce petroleum consumption and increase fleet vehicle performance from FY 2012 to FY 2017. DCMA investments will result in petroleum reductions of 2,060 GGEs from FY 2012 to FY 2017. Table 25 below highlights DCMA investments and performance to reduce petroleum consumption reduction from FY 2012 to FY 2017.

3.0 Statutory Requirements Overview

3.1 Methods of Measurement

Energy Efficiency ***(Square footage, Number of Facilities)***

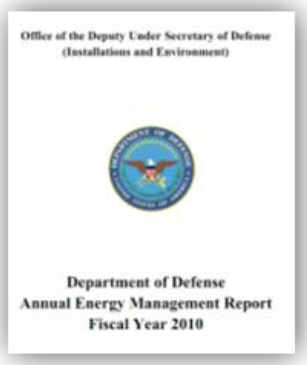
Energy efficiency is the first baseline standard of measurement that the DoD has selected as an important energy performance metric. It is determined by measuring the total energy consumption per gross square feet of facility space at DoD installations. DoD collects data on the number of facilities and the square feet of facility space. This data is used to calculate energy intensity and track its annual progress. These metrics are presented and analyzed in the DoD Annual Energy Management Report (AEMR) and collected in the Base Structure Report (BSR). DoD considers square footage and energy consumption during its evaluation of energy performance during the budgetary process. The DoD does not consider the total number of facilities since intensity is comprised of energy consumption and square footage. The number of facilities does not impact the energy efficiency performance goal. However, the number of facilities is captured in current DoD tools.

Renewable Energy ***(Square footage, Number of Facilities)***

Renewable energy use is the second baseline standard of measurement that the DoD evaluates to meet its energy performance goals. It is determined by electric and non-electric renewable energy procurement and production. Progress in renewable energy is measured by calculating the total renewable electric and non-electric procurement and production and comparing it to the total electricity consumption at DoD facilities. While square footage and the number of facilities are tracked, it would not be appropriate to align them with the renewable energy performance metric. Renewable energy use is not directly attributed to a facility or its square footage.

Large renewable energy projects could power large portions of an installation as well as different parts of the installation. Renewable energy also could provide power to the electric grid. Therefore, tracing the power from the renewable energy source to the facility (and square footage of that facility) does not contribute to meeting the renewable energy performance goal.

For the renewable energy performance goal, the DoD will collect individual project consumption data to align with renewable energy procurement and production. This will be measured against total electricity consumption, forecasted relative to funding, and reported annually in the renewable energy budget exhibits.



Petroleum Consumption (*Current Size of Fleet Vehicles*)

Petroleum consumption is the third baseline standard of measurement that the DoD has selected as an energy performance metric. It is determined by measuring gasoline and diesel consumption of fleet vehicles. This data is reported annually in the Federal Automotive Statistical Tool (FAST) which also tracks fleet size. Performance towards this goal is reported as part of the AEMR. DoD Components make assumptions of projected fleet size, procurement of higher fuel economy vehicles and the availability of alternatives in deriving their projected petroleum consumption. Therefore, the size of the fleet is a variable in the development of future projections of DoD Components petroleum consumption.

3.2 Energy Plans

The United States Army Energy Strategy for Installations

The Army Energy Strategy for Installations is based on five major initiatives supported by specific actions:

- Eliminate energy waste in existing facilities
- Increase energy efficiency in renovation and new construction
- Reduce dependence on fossil fuels
- Conserve water resources
- Improve energy security

The strategy is available at: http://army-energy.hqda.pentagon.mil/docs/strategy.pdf.

Department of the Navy's Energy Program for Security and Independence

The SECNAV has set forth five energy goals to reduce DON's overall consumption of energy, decrease its reliance on petroleum, and significantly increase its use of alternative energy. The US Navy Energy Program for Security and Independence strategic roadmap is available at:

http://greenfleet.dodlive.mil/files/2010/04/Naval_Energy_Strategic_Roadmap_100710.pdf.

Unites States Marine Corps Expeditionary Energy Strategy and Implementation Plan

The USMC Expeditionary Energy Strategy is the Marine Corps framework that communicates the Commandant of the Marine Corps' vision, mission, goals, and objectives for expeditionary and installations energy. The strategy is available at:

http://www.marines.mil/community/Documents/USMC%20Expeditionary%20Energy%20Strategy%20%20Implementation%20Planning%20Guidance.pdf.

Air Force Energy Plan

The Air Force Energy Plan supports Air Force priorities and provides links to energy goals established by the federal government. The Air Force Energy Plan is available at:

http://www.safie.hq.af.mil/shared/media/document/AFD-091208-027.pdf.

The Air Force is preparing a new energy strategy plan for release in the future.

3.3 Special Considerations

For the purpose of developing and implementing the energy performance goals and energy performance master plan, the DoD Components have taken into account the following special considerations.

	Consideration	Description
1)	Opportunities to reduce the current rate of consumption of energy.	The Department seeks opportunities to reduce the current rate of energy consumption through investments in energy conservation and efficiency technologies. It also continues to consider enterprise and Component energy management systems to collect, analyze, and benchmark facility energy, water use, and costs. The Department continues to pursue advanced metering initiatives to support opportunities to reduce the consumption of energy.
2)	Opportunities to reduce the future demand and the requirements for the use of energy.	Annually, the Components submit their facility energy investment requirements through the FYDP. The Components also include their energy benefit (savings) associated with their investments. These energy savings are an estimate for the potential or opportunity to reduce the future demand of energy. At the program level, Components conduct energy audits to identify opportunities for energy savings. The Components conduct life cycle cost analyses to determine the best opportunities to reduce the future demand of energy.
3)	Opportunities to implement conservation measures to improve the efficient use of energy.	The Components pursue conservation measures that include energy audits, energy management systems, metering, and other conservation approaches to improve the efficient use of energy. These opportunities are evaluated for cost effectiveness.
4)	Opportunities to pursue alternative energy initiatives, including the use of alternative fuels and hybrid-electric drive in military vehicles and equipment.	The Components evaluate opportunities to reduce petroleum consumption through the consumption of less petroleum fuels such as gasoline and diesel, and by increasing the number of capable biodiesel, ethanol, and electric vehicles. The Components also consider opportunities to reduce petroleum consumption by improving alternative vehicle infrastructures.
5)	Opportunities for the high-performance construction, lease, operation, and maintenance of buildings.	The Components seek opportunities to retrofit existing buildings and incorporate more energy-efficient designs, material, and equipment into new construction. The Department requires that all new construction projects incorporate the five building principles of HPSBs, obtain a USGBC LEED silver rating, and perform better than the ASHRAE 90.1 standard.
6)	Cost effectiveness, cost savings, and net present value of alternatives.	The Components consider cost effectiveness, cost savings, and the net present value of alternatives during the budget submission process. Annually, the Components submit their investments to improve energy efficiency, increase renewable energy use and decrease petroleum consumption. The Components employ tools and methodologies to consider the economics and costs of alternatives across the energy performance goals. For example, the Navy evaluates investments in energy through its energy return on investment (eROI) tool.

	Consideration	Description
7)	The value of diversification of types and sources of energy used.	The Department considers the value of diversification of types and sources of energy used in achieving its renewable energy goal. The renewable energy sections contained in this Master Plan identify the potential renewable energy projects and the portfolio mix of renewable energy sources. Currently, the Department has a diverse energy supply sustaining its operations. In the future, a diverse energy supply will continue to enhance the Department's mission effectiveness.
8)	The value of economies-of-scale associated with fewer energy types used.	The Department considers the value of economies-of-scale associated with fewer energy types when evaluating renewable energy projects. The Department uses both appropriated funds and non-Governmental third party financing to pursue renewable energy technologies. It partners with private entities to enable the development of large scale renewable energy projects and relies on congressional appropriations to fund cost-effective small scale distributed generation projects. Specifically, the value of economies-of-scale is a consideration in the development of large scale renewable energy projects.
9)	The value of the use of renewable energy sources.	In addition to reducing the demand for traditional forms of facility energy, DoD is increasing the supply of renewable and other forms of distributed (on-site) energy on installations. On-site energy is critical to making installations more energy secure. Together with smart microgrids and storage technologies, on-site energy will allow a military base to maintain its critical operations "off-grid" for weeks or months if necessary.
10)	The value of incorporating electric, hybrid-electric, and high efficiency vehicles into vehicle fleets.	The Components consider the value of incorporating electric, hybrid-electric, and high efficiency vehicles into fleet vehicles to help achieve the petroleum consumption goal. The Components also continue to increase the number of alternative fuel vehicles to decrease petroleum consumption. The petroleum consumption sections in this Master Plan describe how the Components are considering alternative fuel vehicles to reduce petroleum consumption across the Department.
11)	The potential for an action to serve as an incentive for members of the armed forces and civilian personnel to reduce energy consumption or adopt an improved energy performance measure.	It is the policy of the Department to recognize members of the armed forces and civilian personnel for energy savings or water conservation efforts. Energy conservation awards are presented to individuals, organizations, or installations that demonstrate exceptional performance in energy or water conservation. Components are also encouraged to participate in DOE's federal award programs.
12)	Opportunities for improving energy security for facility energy projects that will use renewable energy sources.	The Components consider opportunities to improve energy security for renewable energy projects. Annually, the Components report renewable energy projects that have considered energy security. The Components also report which renewable energy projects will consider energy security in the future.

3.4 Energy Efficient Product Lists

The Department of Energy's Federal Energy Management Program (FEMP) and the ENERGY STAR program set minimum energy efficiency requirements for federal purchases. Federal purchases should meet or exceed the minimum standards set by these programs. FEMP produces a Covered Product Categories List, which lists all the product categories covered by federal energy efficiency requirements. Covered Product Categories include lighting; heating, cooling, and ventilation; commercial food service equipment; appliances; IT and electronic equipment; and other product categories. This list is available at: http://www1.eere.energy.gov/femp/pdfs/eeprod_categories.pdf.

FEMP also provides guidance on purchasing, installing, and maintaining the products it covers including many ENERGY STAR products commonly used in federal facilities. The FEMP-designated efficiency requirements and associated guidance is available at: www.femp.energy.gov/coveredproducts.

ENERGY STAR also produces lists of qualified products. These lists are available at: http://www.energystar.gov/index.cfm?c=product_specs.pt_product_prod_list.

DoD has coordinated with DOE to adopt these energy efficient product lists to ensure consistency with the definitions of the terms used by other federal agencies. DoD will continue to coordinate with DOE to ensure that these energy efficient product lists are updated to account for emerging or changing technologies.

3.5 Compliance Matrix

Energy Performance Master Plan Compliance Matrix - Title 10, U.S.C. §2911		
	Subsection / Paragraph	**Page Number in Master Plan**
The Secretary of Defense 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.	(a)(1)	Table 1.0, Table 1.1, C-4
The energy performance goals shall be submitted annually not later than the date on which the President submits to Congress the budget for the next fiscal year under section 1105 of title 31 and cover that fiscal year as well as the next five, l0, and 20 years. The Secretary shall identify changes to the energy performance goals since the previous submission.	(a)(2)	Table 1.1, C-4
The Secretary of Defense 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.	(b)(1)	C-1 to C-59
A separate master plan, developed by each military department and Defense Agency, for the achievement of energy performance goals.	(b)(1)(A)	Section 3.2, C-54
The use of a baseline standard for the measurement of energy consumption by transportation systems, support systems, utilities, and facilities and infrastructure that is consistent for all of the military departments.	(b)(2)(B)	Table 1.0, C-4
A method of measurement of reductions or conservation in energy consumption that provides for the taking into account of changes in the current size of fleets, number of facilities, and overall square footage of facility plants.	(b)(2)(C)	Section 3.1, C-53
Metrics to track annual progress in meeting energy performance goals.	(b)(2)(D)	Table 1.0, C-4
A description of specific requirements, and proposed investments, in connection with the achievement of energy performance goals reflected in the budget of the President for each fiscal year (as submitted to Congress under section 1105 (a) of title 31).	(b)(2)(E)	Section 2.1, C-7 Section 2.2, C-19 Section 2.3, C-25 Section 2.4, C-35 Section 2.5, C-41

Energy Performance Master Plan Compliance Matrix		
	Subsection / Paragraph	**Page Number in Master Plan**
The up-to date list of energy-efficient products maintained under section 2915 (e)(2) of this title.	(b)(2)(F)	Section 3.4, C-57
Special Considerations.— For the purpose of developing and implementing the energy performance goals and energy performance master plan, the Secretary of Defense shall consider at a minimum the following: (1) Opportunities to reduce the current rate of consumption of energy. (2) Opportunities to reduce the future demand and the requirements for the use of energy. (3) Opportunities to implement conservation measures to improve the efficient use of energy. (4) Opportunities to pursue alternative energy initiatives, including the use of alternative fuels and hybrid-electric drive in military vehicles and equipment. (5) Opportunities for the high-performance construction, lease, operation, and maintenance of buildings. (6) Cost effectiveness, cost savings, and net present value of alternatives. (7) The value of diversification of types and sources of energy used. (8) The value of economies-of-scale associated with fewer energy types used. (9) The value of the use of renewable energy sources. (10) The value of incorporating electric, hybrid-electric, and high efficiency vehicles into vehicle fleets. (11) The potential for an action to serve as an incentive for members of the armed forces and civilian personnel to reduce energy consumption or adopt an improved energy performance measure. (12) Opportunities for improving energy security for facility energy projects that will use renewable energy sources.	(c) (1) to (c)(12)	Section 3.3, C-55
To help ensure that the goal specified in paragraph (1)(A) regarding the use of renewable energy by the Department of Defense is achieved, the Secretary of Defense shall establish an interim goal for fiscal year 2018 for the production or procurement of facility energy from renewable energy sources.	(e)(2)	Table 1.1, C-4

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APPENDIX D
DOD ENERGY PERFORMANCE SUMMARY

Energy Management Requirement	FY 2003 Btu/GSF	FY 2011 Btu/GSF	Percent Change FY 2003 - FY 2011	FY 2011 Goal Target
Reduction in energy intensity in facilities subject to the NECPA/E.O. 13423 goals	115,647	100,268	**-13.3%**	18.0%

Renewable Energy Requirement 10 U.S.C 2911(e)	Renewable Energy Produced or Procured (Bbtu)	Total Electricity Consumption (Bbtu)	Percentage	FY 2012 Goal Target
Eligible renewable electricity use as a percentage of total electricity use	8,815	104,120	**8.5%**	12.0%

Renewable Energy Requirement EPACT 2005	Renewable Electricity Use (MWH)	Total Electricity Use (MWH)	Percentage	FY 2011 Goal Target
Eligible renewable electricity use as a percentage of total electricity use	953,280.8	30,511,237.9	**3.1%**	5.0%

Water Intensity Reduction Goal	FY 2007 Gallon/GSF	FY 2011 Gallon/GSF	Percent Change FY 2007 - FY 2011	FY 2011 Goal Target
Reduction in potable water consumption intensity	59.6	**53.2**	**-10.7%**	8.0%

Metering of Electricity Use	Cumulative # of Buildings Metered	Cumulative % of Electricity Metered	Cumulative % of Appropriate Buildings Metered	FY 2012 Goal Target
Standard Electricity Meters in FY 2011	14,554	16.3%	38.5%	100%
Advanced Electricity Meters in FY 2011	13,659	39.9%	36.1%	Maximum Extent Practicable
Total Electricity Meters in FY 2011	28,213	56.2%	74.7%	

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:	**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	$964,937	$3,072,782
Investment value of ESPC Task/Delivery Orders awarded in fiscal year	$85,968	$331,019
Investment value of UESC Task/Delivery Orders awarded in fiscal year	$115,968	$536,864
Total	$1,166,873	$3,940,665

	Percentage
Total investment as a percentage of total facilty energy costs	30.3%
Financed (ESPC/UESC) investment as a percentage of total facilty energy costs	5.2%

i. NECPA/EISA Energy Goal Subject Buildings

Energy Type	Site-Delivered Btu (Billion)	Goal Building Energy Costs (thou.)
Electricity	94,697	$ 2,406,077
Fuel Oil	18,421	$ 388,139
Natural Gas	67,059	$ 469,418
LPG/Propane	1,227	$ 27,569
Coal	10,001	$ 50,054
Purch. Steam	4,446	$ 127,686
Other	1,361	$ 59,470
Total Delivered Btu (Billion Btu)	**197,212**	
Goal Building Energy Costs (thou.)		**$ 3,528,413.02**

FY 2011 Goal Subject Buildings (Thous.)	1,896,352

Btu/GSF:	103,996
Goal Building RE Credit (BBtu):	2,820
Btu/GSF w/ RE Purchase Credit:	102,509
Source Energy Savings Credit	4,249
Btu/GSF w/ RE & Source Btu Credit:	**100,268**

ii. NECPA/EISA Energy Goal Excluded Buildings

Energy Type	Site-Delivered Btu (Billion)	Goal Building Energy Costs (thou.)
Electricity	8,276	$ 276,361
Fuel Oil	561	$ 7,632
Natural Gas	1,562	$ 11,415
LPG/Propane	1	$ 10
Coal	4,256	$ 16,980
Purch. Steam	796	$ 9,663
Other		$ 46
Total Delivered Btu (Billion Btu)	15,451	
Goal Building Energy Costs (thou.)		**$ 322,106**

FY 2011 Goal Subject Buildings (Thous.)	8,924

Btu/GSF:	1,731,327
Goal Building RE Credit (BBtu):	9.2
Btu/GSF w/ RE Purchase Credit:	1,730,300
Source Energy Savings Credit	669
Btu/GSF w/ RE & Source Btu Credit:	**1,655,359**

APPENDIX E
FY 2011 ENERGY INTENSITY BY INSTALLATION

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Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
ARMY	63RD RRC - CALIFORNIA	Unknown	California	5,181	4,861	226	245	43,576	50,314	-13%	-8%	7%
ARMY	81ST REGIONAL SUPPORT COMMAND	Unknown	Unknown	5,005	4,574	255	228	50,861	49,873	2%	12%	9%
ARMY	88TH REGIONAL SUPPORT COMMAND	Unknown	Unknown	12,701	12,182	930	937	73,248	76,957	-5%	-1%	4%
ARMY	99TH REGIONAL SUPPORT COMMAND	Unknown	Unknown	7,520	6,983	428	977	56,870	139,976	-59%	-56%	8%
ARMY	ABERDEEN PROVING GROUND	Aberdeen Prov Grnd	Maryland	14,222	12,390	2,030	1,820	142,716	146,919	-3%	12%	15%
ARMY	ALABAMA NATIONAL GUARD	Unknown	Alabama	3,090	4,471	186	186	60,178	41,592	45%	0%	-31%
ARMY	ALASKA NATIONAL GUARD	Unknown	Alaska	824	334	44	60	52,926	180,449	-71%	-28%	147%
ARMY	ANNISTON ARMY DEPOT	Anniston	Alabama	9,487	9,444	935	1,051	98,519	111,263	-11%	-11%	0%
ARMY	ARIZONA NATIONAL GUARD	Unknown	Arizona	1,709	1,549	76	68	44,385	43,621	2%	12%	10%
ARMY	ARKANSAS NATIONAL GUARD	Unknown	Arkansas	4,427	6,120	301	288	68,073	47,041	45%	5%	-28%
ARMY	BLUE GRASS ARMY DEPOT	Richmond	Kentucky	4,121	3,972	177	163	42,991	41,059	5%	9%	4%
ARMY	CALIFORNIA NATIONAL GUARD	Unknown	California	6,057	7,910	236	203	38,966	25,685	52%	16%	-23%
ARMY	Camp Blanding	Jacksonville	Florida	115	115	5	5	41,243	40,429	2%	2%	0%
ARMY	CAMP HENRY	Taegu	South Korea	5,976	8,206	521	517	87,183	62,945	39%	1%	-27%
ARMY	CAMP HUMPHREYS	Camp Humphreys	South Korea	6,995	5,946	642	682	91,718	114,732	-20%	-6%	18%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
ARMY	CAMP MURRAY AGS	Unknown	Washington	334	353	13	13	39,704	36,153	10%	4%	-6%
ARMY	CAMP PENDLETON ANG	Virginia Beach	Virginia	139	148	6	8	46,144	52,293	-12%	-17%	-6%
ARMY	CAMP RED CLOUD	Uijong Bu	South Korea	10,090	9,990	1,051	1,110	104,207	111,067	-6%	-5%	1%
ARMY	CAMP ZAMA	Sagamihara	Japan	9,833	12,821	704	712	71,554	55,506	29%	-1%	-23%
ARMY	CARLISLE BARRACKS	Carlisle	Pennsylvania	1,090	1,118	128	144	117,722	128,531	-8%	-11%	-2%
ARMY	COLORADO NATIONAL GUARD	Unknown	Colorado	1,441	867	69	51	47,586	59,291	-20%	33%	66%
ARMY	COMBAT SUPPORT TRAINING CENTER AND CAMP PARKS	Dublin	California	1,334	1,064	49	52	36,650	48,816	-25%	-6%	25%
ARMY	CONNECTICUT NATIONAL GUARD	Unknown	Connecticut	1,280	1,959	76	71	59,456	36,207	64%	7%	-35%
ARMY	Corpus Christi Army Depot	CORPUS CHRISTI	Texas	2,302	2,253	359	358	155,915	158,701	-2%	0%	2%
ARMY	DELAWARE NATIONAL GUARD	Unknown	Delaware	565	916	35	28	61,176	31,000	97%	22%	-38%
ARMY	DESERET CHEMICAL DEPOT	Stockton	Utah	1,384	1,408	109	548	79,011	388,871	-80%	-80%	-2%
ARMY	DETROIT ARSENAL	Harrison Township	Michigan	1,931	1,588	298	332	154,256	209,253	-26%	-10%	22%
ARMY	DEVENS RESERVE FORCES TRAINING AREA	Ayer	Massachusetts	1,284	1,153	106	99	82,965	86,031	-4%	7%	11%
ARMY	DUGWAY PROVING GROUND	Dugway	Utah	2,269	2,943	338	307	149,143	104,336	43%	10%	-23%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
ARMY	FLORIDA NATIONAL GUARD	Unknown	Florida	3,115	2,828	121	117	38,823	41,283	-6%	4%	10%
ARMY	FORT A P HILL	Bowling Green	Virginia	1,226	1,121	71	84	58,271	75,096	-22%	-15%	9%
ARMY	FORT BELVOIR	Fort Belvoir	Virginia	11,788	9,369	991	997	84,093	106,400	-21%	-1%	26%
ARMY	FORT BENNING	Unknown	Georgia	19,859	16,788	1,588	1,395	79,982	83,066	-4%	14%	18%
ARMY	FORT BLISS	El Paso	Texas	19,086	17,849	1,535	1,626	80,412	91,113	-12%	-6%	7%
ARMY	FORT BRAGG	Fort Bragg	North Carolina	30,475	26,252	3,183	3,178	104,447	121,055	-14%	0%	16%
ARMY	FORT BUCHANAN	Fort Buchanan, Catano	Puerto Rico	2,407	2,240	132	147	54,958	65,834	-17%	-10%	7%
ARMY	FORT CAMPBELL	Fort Campbell	Kentucky	16,502	16,189	1,694	1,822	102,670	112,530	-9%	-7%	2%
ARMY	FORT CARSON	Colorado Spgs	Colorado	12,729	11,699	1,293	1,348	101,572	115,248	-12%	-4%	9%
ARMY	FORT DRUM	Fort Drum	New York	10,653	10,388	1,056	993	99,131	95,596	4%	6%	3%
ARMY	FORT GEORGE G MEADE	Fort Meade	Maryland	4,479	4,612	482	468	107,718	101,541	6%	3%	-3%
ARMY	FORT GORDON	Augusta	Georgia	8,310	8,213	995	991	119,784	120,636	-1%	0%	1%
ARMY	FORT GREELY	Delta Junction	Alaska	1,216	1,446	278	229	228,744	158,323	44%	22%	-16%
ARMY	FORT HAMILTON	New York City	New York	679	621	73	74	107,899	118,435	-9%	0%	9%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
ARMY	FORT HOOD	Killeen	Texas	23,570	21,101	1,785	2,637	75,717	124,973	-39%	-32%	12%
ARMY	FORT HUACHUCA	Fort Huachuca	Arizona	5,706	7,478	596	586	104,494	78,377	33%	2%	-24%
ARMY	FORT HUNTER LIGGETT	Fort Hunter Liggett	California	1,137	2,107	61	70	53,778	32,996	63%	-12%	-46%
ARMY	FORT INDIANTOWN GAP AGS	Unknown	Pennsylvania	266	306	15	16	56,583	53,010	7%	-7%	-13%
ARMY	FORT JACKSON	Columbia	South Carolina	10,556	9,639	1,042	1,166	98,735	120,967	-18%	-11%	10%
ARMY	FORT KNOX	Unknown	Kentucky	11,382	12,319	836	902	73,423	73,191	0%	-7%	-8%
ARMY	FORT LEAVENWORTH	Fort Leavenworth	Kansas	4,270	4,273	460	471	107,708	110,323	-2%	-2%	0%
ARMY	FORT LEE	Fort Lee	Virginia	9,655	7,772	879	816	91,076	105,032	-13%	8%	24%
ARMY	FORT LEONARD WOOD	Fort Leonard Wood	Missouri	11,190	10,599	1,568	1,579	140,165	148,987	-6%	-1%	6%
ARMY	FORT LESLEY J MCNAIR	Washington	District of Columbia	1,426	1,495	170	236	119,306	158,084	-25%	-28%	-5%
ARMY	FORT LEWIS	Tacoma	Washington	24,857	19,229	2,544	1,867	102,355	97,085	5%	36%	29%
ARMY	FORT MCCOY	Sparta	Wisconsin	6,404	6,647	518	497	80,864	74,749	8%	4%	-4%
ARMY	FORT MCPHERSON	Atlanta	Georgia	7,471	7,130	406	553	54,397	77,604	-30%	-27%	5%
ARMY	FORT MONMOUTH	Red Bank	New Jersey	5,078	4,922	282	363	55,522	73,775	-25%	-22%	3%
ARMY	FORT MONROE	Fort Monroe	Virginia	1,835	2,016	124	156	67,704	77,396	-13%	-20%	-9%

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ARMY	FORT MYER	Fort Myer	Virginia	3,618	2,605	324	369	89,551	141,679	-37%	-12%	39%
ARMY	FORT POLK	Fort Polk	Louisiana	8,091	7,636	733	816	90,614	106,857	-15%	-10%	6%
ARMY	FORT RILEY	Fort Riley	Kansas	14,225	14,403	1,185	1,147	83,301	79,629	5%	3%	-1%
ARMY	FORT RUCKER	Fort Rucker	Alabama	5,286	6,597	580	617	109,740	93,595	17%	-6%	-20%
ARMY	FORT SILL	Fort Sill	Oklahoma	12,253	13,853	1,138	1,170	92,907	84,464	10%	-3%	-12%
ARMY	FORT STEWART	Fort Stewart	Georgia	14,048	12,808	1,178	1,236	83,854	96,466	-13%	-5%	10%
ARMY	FORT WAINWRIGHT	Fort Wainwright	Alaska	6,477	7,315	2,790	2,644	430,756	361,477	19%	6%	-11%
ARMY	FORT WAYNE IAP	Fort Wayne	Indiana	386	407	46	42	119,137	102,877	16%	10%	-5%
ARMY	GEORGIA NATIONAL GUARD	Unknown	Georgia	3,433	2,880	148	153	43,180	53,183	-19%	-3%	19%
ARMY	GUAM NATIONAL GUARD	Unknown	Guam	169	172	12	10	68,462	60,523	13%	11%	-2%
ARMY	HAWAII NATIONAL GUARD	Unknown	Hawaii	1,161	948	26	25	22,786	26,685	-15%	5%	23%
ARMY	HAWTHORNE ARMY DEPOT	Hawthorne	Nevada	9,404	9,488	157	157	16,726	16,535	1%	0%	-1%
ARMY	HOLSTON ARMY AMMUNITION PLANT	Kingsport	Tennessee	1,759	1,624	152	2,046	86,513	1,259,937	-93%	-93%	8%
ARMY	IDAHO NATIONAL GUARD	Unknown	Idaho	1,667	1,904	85	101	50,967	53,255	-4%	-16%	-12%

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ARMY	ILLINOIS NATIONAL GUARD	Unknown	Illinois	2,541	4,252	174	146	68,609	34,254	100%	20%	-40%
ARMY	INDIANA NATIONAL GUARD	Unknown	Indiana	3,825	4,690	373	409	97,537	87,210	12%	-9%	-18%
ARMY	IOWA ARMY AMMUNITION PLANT	Middletown	Iowa	3,982	3,856	425	625	106,749	161,965	-34%	-32%	3%
ARMY	IOWA NATIONAL GUARD	Unknown	Iowa	2,992	3,888	181	199	60,400	51,132	18%	-9%	-23%
ARMY	JOINT SYSTEM MANUFACTURING CENTER LIMA	Lima	Ohio	1,617	1,606	529	557	327,218	347,052	-6%	-5%	1%
ARMY	KANSAS NATIONAL GUARD	Unknown	Kansas	2,065	2,932	153	133	74,154	45,494	63%	15%	-30%
ARMY	KENTUCKY NATIONAL GUARD	Unknown	Kentucky	1,785	2,362	115	122	64,643	51,693	25%	-6%	-24%
ARMY	LETTERKENNY ARMY DEPOT	Chambersburg	Pennsylvania	4,870	5,102	475	471	97,465	92,405	5%	1%	-5%
ARMY	LOUISIANA NATIONAL GUARD	Unknown	Louisiana	3,410	3,725	148	129	43,503	34,632	26%	15%	-8%
ARMY	MAINE NATIONAL GUARD	Unknown	Maine	1,153	1,681	55	52	47,548	31,101	53%	5%	-31%
ARMY	MARYLAND NATIONAL GUARD	Unknown	Maryland	1,677	2,310	71	71	42,575	30,882	38%	0%	-27%
ARMY	MASSACHUSETTS NATIONAL GUARD	Unknown	Massachusetts	2,433	2,925	79	82	32,524	27,930	16%	-3%	-17%
ARMY	MCALESTER ARMY AMMUNITION PLANT	Mcalester	Oklahoma	10,228	10,320	455	458	44,512	44,340	0%	-1%	-1%
ARMY	MICHIGAN NATIONAL GUARD	Unknown	Michigan	3,973	5,424	245	265	61,606	48,848	26%	-8%	-27%

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ARMY	MILAN ARMY AMMUNITION PLANT	Milan	Tennessee	3,520	4,239	205	197	58,290	46,567	25%	4%	-17%
ARMY	MILITARY OCEAN TERMINAL CONCORD	Concord	California	396	351	12	9	29,458	24,860	18%	34%	13%
ARMY	MILITARY OCEAN TERMINAL SUNNY POINT	Southport	North Carolina	364	326	17	17	47,005	52,905	-11%	-1%	12%
ARMY	MINNESOTA NATIONAL GUARD	Unknown	Minnesota	3,929	4,324	204	184	51,956	42,572	22%	11%	-9%
ARMY	MISSISSIPPI NATIONAL GUARD	Unknown	Mississippi	5,869	6,835	277	300	47,201	43,891	8%	-8%	-14%
ARMY	MISSOURI NATIONAL GUARD	Unknown	Missouri	2,299	3,174	146	132	63,661	41,739	53%	10%	-28%
ARMY	MONTANA NATIONAL GUARD	Unknown	Montana	1,351	1,658	76	76	56,005	45,648	23%	0%	-19%
ARMY	NATIONAL TRAINING CENTER AND FORT IRWIN	Fort Irwin	California	4,271	4,204	421	508	98,495	120,881	-19%	-17%	2%
ARMY	NEBRASKA NATIONAL GUARD	Unknown	Nebraska	1,549	2,103	80	79	51,940	37,680	38%	2%	-26%
ARMY	NEVADA NATIONAL GUARD	Unknown	Nevada	526	784	33	38	61,912	48,103	29%	-14%	-33%
ARMY	NEW HAMPSHIRE NATIONAL GUARD	Unknown	New Hampshire	586	1,028	32	32	54,677	31,434	74%	-1%	-43%
ARMY	NEW JERSEY NATIONAL GUARD	Unknown	New Jersey	1,700	2,522	174	102	102,590	40,387	154%	71%	-33%
ARMY	NEW MEXICO NATIONAL GUARD	Unknown	New Mexico	853	1,374	42	46	48,875	33,381	46%	-9%	-38%
ARMY	NEW YORK NATIONAL GUARD	Unknown	New York	3,196	5,555	187	176	58,508	31,606	85%	6%	-42%

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ARMY	NIAGARA FALLS	Unknown	New York	182	302	8	29	44,544	96,026	-54%	-72%	-40%
ARMY	NORTH CAROLINA NATIONAL GUARD	Unknown	North Carolina	1,992	2,772	76	104	38,079	37,396	2%	-27%	-28%
ARMY	NORTH DAKOTA NATIONAL GUARD	Unknown	North Dakota	1,802	1,644	112	106	62,203	64,754	-4%	5%	10%
ARMY	OHIO NATIONAL GUARD	Unknown	Ohio	3,856	3,817	135	99	34,927	26,008	34%	36%	1%
ARMY	OKLAHOMA NATIONAL GUARD	Unknown	Oklahoma	1,956	2,981	115	117	58,923	39,271	50%	-2%	-34%
ARMY	OREGON NATIONAL GUARD	Unknown	Oregon	2,198	2,820	115	96	52,090	34,193	52%	19%	-22%
ARMY	PENNSYLVANIA NATIONAL GUARD	Unknown	Pennsylvania	5,495	7,198	449	436	81,796	60,605	35%	3%	-24%
ARMY	PICATINNY ARSENAL	Dover	New Jersey	3,354	2,995	553	544	164,837	181,727	-9%	2%	12%
ARMY	PINE BLUFF ARSENAL	White Hall	Arkansas	3,528	3,575	831	936	235,424	261,880	-10%	-11%	-1%
ARMY	PRESIDIO OF MONTEREY	Monterey	California	3,607	3,434	183	186	50,727	54,192	-6%	-2%	5%
ARMY	PUERTO RICO NATIONAL GUARD	Unknown	Puerto Rico	1,580	1,472	47	46	30,044	30,940	-3%	4%	7%
ARMY	RADFORD ARMY AMMUNITION PLANT	Radford	Virginia	2,335	3,353	222	3,092	94,939	922,024	-90%	-93%	-30%
ARMY	RED RIVER ARMY DEPOT	Texarkana	Texas	7,502	7,421	691	774	92,170	104,345	-12%	-11%	1%
ARMY	REDSTONE ARSENAL	Huntsville	Alabama	13,072	13,981	1,411	1,427	107,940	102,033	6%	-1%	-7%
ARMY	RHODE ISLAND NATIONAL GUARD	Unknown	Rhode Island	748	1,500	70	64	94,196	42,681	121%	10%	-50%

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ARMY	ROCK ISLAND ARSENAL	Rock Island	Illinois	6,769	7,274	912	890	134,803	122,305	10%	3%	-7%
ARMY	SCHOFIELD BARRACKS	Wahiawa	Hawaii	13,565	13,330	888	859	65,482	64,463	2%	3%	2%
ARMY	SCRANTON ARMY AMMUNITION PLANT	Scranton	Pennsylvania	387	387	34	512	88,564	1,322,171	-93%	-93%	0%
ARMY	SIERRA ARMY DEPOT	Herlong Sierra Ord-D	California	5,169	5,090	163	162	31,581	31,836	-1%	1%	2%
ARMY	SOLDIER SYSTEMS CENTER	Natick	Massachusetts	978	977	126	141	129,247	144,310	-10%	-10%	0%
ARMY	SOUTH CAROLINA NATIONAL GUARD	Unknown	South Carolina	2,934	3,217	123	127	41,811	39,420	6%	-3%	-9%
ARMY	SOUTH DAKOTA NATIONAL GUARD	Unknown	South Dakota	1,123	1,726	68	76	60,231	43,857	37%	-11%	-35%
ARMY	TENNESSEE NATIONAL GUARD	Unknown	Tennessee	2,790	4,314	134	133	47,934	30,789	56%	1%	-35%
ARMY	TEXAS NATIONAL GUARD	Unknown	Texas	3,571	4,678	178	198	49,751	42,414	17%	-10%	-24%
ARMY	TOBYHANNA ARMY DEPOT	Unknown	Pennsylvania	4,483	4,586	609	554	135,845	120,779	12%	10%	-2%
ARMY	TOOELE ARMY DEPOT	Tooele	Utah	2,608	2,599	77	90	29,460	34,735	-15%	-15%	0%
ARMY	US ARMY ADELPHI LABORATORY CENTER	Hyattsville	Maryland	1,162	1,164	202	207	173,891	178,235	-2%	-3%	0%
ARMY	US ARMY GARRISON ANSBACH	Ansbach	Germany	6,867	7,289	335	327	48,746	44,888	9%	2%	-6%
ARMY	US ARMY GARRISON BAMBERG	Bamberg	Germany	5,387	5,420	281	299	52,112	55,198	-6%	-6%	-1%

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ARMY	US ARMY GARRISON BAUMHOLDER	Baumholder	Germany	7,929	8,096	460	528	57,954	65,230	-11%	-13%	-2%
ARMY	US ARMY GARRISON BENELUX	Brussels	Belgium	1,998	1,885	121	151	60,513	80,258	-25%	-20%	6%
ARMY	US ARMY GARRISON GRAFENWOEHR	Grafenwohr	Germany	19,516	20,162	1,154	1,207	59,127	59,851	-1%	-4%	-3%
ARMY	US ARMY GARRISON HEIDELBERG	Heidelberg	Germany	10,658	11,394	544	579	51,040	50,796	0%	-6%	-6%
ARMY	US ARMY GARRISON HOHENFELS	Hohenfels	Germany	4,344	5,702	298	303	68,624	53,141	29%	-2%	-24%
ARMY	US ARMY GARRISON KAISERSLAUTERN	Kaiserlautern	Germany	13,879	13,026	778	714	56,032	54,788	2%	9%	7%
ARMY	US ARMY GARRISON LIVORNO	Livorno	Italy	2,399	2,681	114	117	47,379	43,759	8%	-3%	-11%
ARMY	US ARMY GARRISON MANNHEIM	Mannheim	Germany	10,557	11,516	496	579	46,950	50,255	-7%	-14%	-8%
ARMY	US ARMY GARRISON MIAMI	Miami	Florida	228	224	13	31	55,257	138,366	-60%	-59%	2%
ARMY	US ARMY GARRISON SCHINNEN	Schinnen	Netherlands	1,200	1,261	38	48	31,436	37,697	-17%	-21%	-5%
ARMY	US ARMY GARRISON SCHWEINFURT	Schweinfurt	Germany	6,301	6,617	304	325	48,186	49,114	-2%	-7%	-5%
ARMY	US ARMY GARRISON STUTTGART	Stuttgart	Germany	8,430	8,703	594	602	70,447	69,198	2%	-1%	-3%
ARMY	US ARMY GARRISON VICENZA	Vicenza	Italy	3,961	3,721	414	341	104,547	91,725	14%	21%	6%
ARMY	US ARMY GARRISON WIESBADEN	Wiesbaden	Germany	11,091	11,942	627	689	56,492	57,681	-2%	-9%	-7%
ARMY	US ARMY KWAJALEIN ATOLL	Majuro Atoll	Marshall Islands	3,177	3,184	876	903	275,824	283,451	-3%	-3%	0%

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ARMY	US VIRGIN ISLANDS NATIONAL GUARD	Unknown	U.S Virgin Islands	223	204	4	6	18,192	31,260	-42%	-36%	10%
ARMY	UTAH NATIONAL GUARD	Unknown	Utah	1,712	2,304	80	85	46,584	36,823	27%	-6%	-26%
ARMY	VERMONT NATIONAL GUARD	Unknown	Vermont	1,078	1,406	59	52	54,923	36,898	49%	14%	-23%
ARMY	VIRGINIA NATIONAL GUARD	Unknown	Virginia	4,384	3,661	224	216	51,047	58,942	-13%	4%	20%
ARMY	WASHINGTON DC NATIONAL GUARD	Unknown	District of Columbia	917	714	50	55	55,014	77,098	-29%	-8%	28%
ARMY	WASHINGTON NATIONAL GUARD	Unknown	Washington	1,379	1,841	61	63	44,068	34,212	29%	-4%	-25%
ARMY	WATERVLIET ARSENAL	Unknown	New York	2,097	2,044	356	346	169,799	169,477	0%	3%	3%
ARMY	WEST POINT MILITARY RESERVATION	West Point	New York	7,563	7,960	1,043	969	137,958	121,757	13%	8%	-5%
ARMY	WEST VIRGINIA NATIONAL GUARD	Unknown	West Virginia	1,844	2,747	140	141	76,077	51,188	49%	0%	-33%
ARMY	WISCONSIN NATIONAL GUARD	Unknown	Wisconsin	2,396	2,853	188	163	78,330	57,269	37%	15%	-16%
ARMY	WYOMING NATIONAL GUARD	Unknown	Wyoming	1,067	1,073	89	111	83,522	103,270	-19%	-20%	-1%
ARMY	YONGSAN GARRISON	Seoul	South Korea	8,356	8,330	1,117	1,145	133,732	137,426	-3%	-2%	0%
ARMY	YUMA PROVING GROUND	Yuma	Arizona	1,706	1,674	147	149	85,870	89,141	-4%	-2%	2%
NAVY	NAVHOSP CAMP PENDLETON CA	Camp Pendleton	California	791	750	117	242	148,297	323,128	-54%	-52%	5%

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NAVY	SPAWARSYSCEN SAN DIEGO CA	San Diego	California	3,120	3,120	105	204	33,498	65,500	-49%	-49%	0%
NAVY	SUBASE NEW LONDON CT	Groton	Connecticut	3,265	3,021	784	1,262	240,251	417,739	-42%	-38%	8%
NAVY	WPNSTA EARLE COLTS NECK NJ	Colts Neck	New Jersey	1,127	1,236	108	180	96,061	145,894	-34%	-40%	-9%
NAVY	NAVSTA PEARL HARBOR HI	Pearl Harbor	Hawaii	19,444	10,843	725	529	37,281	48,783	-24%	37%	79%
NAVY	NAVSUPPU SARATOGA SPRINGS NY	Saratoga Spring	New York	205	215	7	9	33,556	43,223	-22%	-26%	-5%
NAVY	NSF DIEGO GARCIA	Unknown	Diego Garcia	2,478	2,605	566	700	228,347	268,643	-15%	-19%	-5%
NAVY	NAF ATSUGI JA	FPO	Japan	5,556	4,406	614	572	110,516	129,740	-15%	7%	26%
NAVY	NAVSTA MAYPORT FL	Mayport	Florida	2,275	2,923	189	283	83,295	96,820	-14%	-33%	-22%
NAVY	PMRF BARKING SANDS HI	Kehaka	Hawaii	695	695	71	80	101,904	115,283	-12%	-12%	0%
NAVY	NAVSTA GUANTANAMO BAY CU	FPO	Cuba	6,566	6,329	1,337	1,440	203,693	227,566	-10%	-7%	4%
NAVY	NAS OCEANA VA	Virginia Beach	Virginia	7,247	7,247	730	802	100,722	110,638	-9%	-9%	0%
NAVY	JEB LITTLE CREEK-FORT STORY VA	Virginia Beach	Virginia	4,505	4,505	596	650	132,271	144,224	-8%	-8%	0%
NAVY	SINGAPORE AREA COORDINATOR	Unknown	Singapore	617	617	26	28	41,901	45,478	-8%	-8%	0%
NAVY	NAWS CHINA LAKE CA	China Lake	California	4,682	4,370	551	556	117,688	127,211	-7%	-1%	7%

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NAVY	CBC GULFPORT MS	Gulfport	Mississippi	4,564	4,567	183	198	40,133	43,265	-7%	-7%	0%
NAVY	NSA NEW ORLEANS LA	New Orleans	Louisiana	2,520	2,520	165	178	65,539	70,568	-7%	-7%	0%
NAVY	NOSC SOUTHWEST SAN DIEGO CA	San Diego	California	470	470	16	17	34,494	36,536	-6%	-6%	0%
NAVY	NAVSTA ROTA SP	FPO	Spain	3,810	3,513	249	243	65,264	69,046	-5%	3%	8%
NAVY	FRC EAST CHERRY POINT NC	Cherry Point	North Carolina	1,926	1,903	582	603	302,198	316,998	-5%	-4%	1%
NAVY	NSA ORLANDO FL	Orlando	Florida	303	303	25	26	82,677	86,561	-4%	-4%	0%
NAVY	CFA CHINHAE	Chinhae	South Korea	348	348	31	32	88,739	91,868	-3%	-3%	0%
NAVY	NSA PANAMA CITY FL	Panama City Beach	Florida	1,576	1,527	149	149	94,325	97,625	-3%	0%	3%
NAVY	NSA MID SOUTH MILLINGTON TN	Millington	Tennessee	2,562	2,548	234	241	91,462	94,517	-3%	-3%	1%
NAVY	NAS JOINT RESERVE BASE, NOLA	Unknown	Louisiana	604	591	27	27	44,273	45,677	-3%	-1%	2%
NAVY	NSA BAHRAIN	FPO	Bahrain	2,306	2,306	228	234	99,072	101,637	-3%	-3%	0%
NAVY	NRL WASHINGTON DC	Washington	District of Columbia	3,616	3,616	994	1,013	274,885	280,080	-2%	-2%	0%
NAVY	NAVBASE VENTURA CTY PT MUGU CA	Point Mugu	California	12,234	11,528	468	447	38,251	38,809	-1%	5%	6%
NAVY	NAS PATUXENT RIVER MD	Patuxent Bay	Maryland	9,198	9,198	1,135	1,150	123,442	125,044	-1%	-1%	0%
NAVY	NSA NORFOLK VA	Norfolk	Virginia	3,848	3,516	572	526	148,618	149,463	-1%	9%	9%

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NAVY	WV ABL MINERAL CO	Mineral	Colorado	1,129	1,129	641	643	567,631	569,795	0%	0%	0%
NAVY	CFA SASEBO JA	FPO	Japan	4,014	4,015	337	338	84,035	84,169	0%	0%	0%
NAVY	NOSC MIDWEST	Great Lakes	Illinois	1,453	1,453	30	30	20,563	20,546	0%	0%	0%
NAVY	NAVHOSP OKINAWA JA	FPO	Japan	627	627	68	68	108,139	108,024	0%	0%	0%
NAVY	NOSC MIDSOUTH	Unknown	Unknown	398	398	23	23	57,857	57,789	0%	0%	0%
NAVY	NOSC MIDLANT WASHINGTON DC	Norfolk	Virginia	716	716	80	80	111,772	111,566	0%	0%	0%
NAVY	NOSC NORTHWEST EVERETT WA	Everett	Washington	325	325	34	34	104,677	104,465	0%	0%	0%
NAVY	NOSC NE NEWPORT RI	Newport	Rhode Island	451	451	31	31	68,435	68,284	0%	0%	0%
NAVY	NSA CRANE IN	Crane	Indiana	5,876	5,876	836	833	142,304	141,774	0%	0%	0%
NAVY	NAS JRB NEW ORLEANS LA	New Orleans	Louisiana	2,305	2,137	187	172	80,972	80,616	0%	8%	8%
NAVY	NAS WHITING FIELD MILTON FL	Milton	Florida	1,285	1,266	133	130	103,434	102,783	1%	2%	2%
NAVY	NAVHOSP TWENTYNINE PALMS CA	Twentynine Palms	California	208	208	32	32	155,288	152,913	2%	2%	0%
NAVY	NAVSTA EVERETT WA	Everett	Washington	1,532	1,425	160	146	104,344	102,401	2%	10%	8%
NAVY	NSA MONTEREY CA	Monterey	California	1,820	1,799	171	165	93,694	91,601	2%	3%	1%

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NAVY	NAS MERIDIAN MS	Meridian	Mississippi	1,604	1,604	191	186	118,986	116,063	3%	3%	0%
NAVY	NAVSTA NEWPORT RI	Newport	Rhode Island	5,930	4,066	763	498	128,677	122,480	5%	53%	46%
NAVY	NAS WHIDBEY ISLAND WA	Oak Harbor	Washington	3,963	3,752	485	435	122,292	115,922	5%	11%	6%
NAVY	NSA NAPLES IT	FPO	Italy	5,293	5,092	445	405	84,016	79,573	6%	10%	4%
NAVY	NSA SOUDA BAY GR	FPO	Greece	468	467	35	33	75,754	71,493	6%	6%	0%
NAVY	NAS PENSACOLA FL	Pensacola	Florida	10,204	9,795	1,217	1,095	119,308	111,799	7%	11%	4%
NAVY	NAS LEMOORE CA	Lemoore	California	6,579	6,334	453	409	68,881	64,522	7%	11%	4%
NAVY	NIOC SUGAR GROVE WV	Sugar Grove	West Virginia	263	263	16	15	60,806	56,297	8%	8%	0%
NAVY	NAS SIGONELLA IT	FPO	Italy	4,277	5,077	283	308	66,069	60,635	9%	-8%	-16%
NAVY	NAVBASE GUAM	FPO	Guam	8,633	8,433	510	456	59,087	54,059	9%	12%	2%
NAVY	NAS KINGSVILLE TX	Kingsville	Texas	1,154	1,154	118	107	102,541	92,652	11%	11%	0%
NAVY	NAS JRB FORT WORTH TX	Fort Worth	Texas	3,237	4,136	296	326	91,516	78,801	16%	-9%	-22%
NAVY	NAF EL CENTRO CA	El Centro	California	1,096	1,106	75	64	68,328	57,612	19%	18%	-1%
NAVY	NSS NORFOLK NAVAL SHIPYARD VA	Norfolk	Virginia	7,568	7,568	1,128	907	149,107	119,802	24%	24%	0%
NAVY	WPNSTA YORKTOWN VA	Yorktown	Virginia	5,850	5,850	256	205	43,819	35,043	25%	25%	0%

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NAVY	NAVSTA NORFOLK VA	Norfolk	Virginia	15,724	15,724	2,179	1,619	138,586	102,939	35%	35%	0%
NAVY	NAVBASE SAN DIEGO CA	San Diego	California	7,057	7,057	378	276	53,513	39,137	37%	37%	0%
NAVY	WPNSTA SEAL BEACH CA	Seal Beach	California	2,176	1,705	106	56	48,663	32,626	49%	90%	28%
NAVY	NAS FALLON NV	Fallon	Nevada	2,137	2,397	239	178	111,883	74,143	51%	35%	-11%
NAVY	NAVBASE CORONADO SAN DIEGO CA	San Diego	California	12,869	10,248	918	453	71,372	44,234	61%	103%	26%
NAVY	NAVSTA GREAT LAKES IL	Great Lakes	Illinois	10,394	8,884	1,920	1,010	184,738	113,708	62%	90%	17%
NAVY	NAS JACKSONVILLE FL	Jacksonville	Florida	8,784	5,566	998	389	113,661	69,949	62%	156%	58%
NAVY	NAVMAG INDIAN ISLAND WA	Indian Island	Washington	346	297	23	12	67,746	39,125	73%	102%	16%
NAVY	NAS KEY WEST FL	Key West	Florida	3,016	3,633	365	225	121,107	62,009	95%	62%	-17%
NAVY	NAVBASE POINT LOMA CA	San Diego	California	2,861	2,812	372	171	129,950	60,787	114%	118%	2%
NAVY	NAS CORPUS CHRISTI TX	Corpus Christi	Texas	3,171	2,929	738	199	232,781	67,988	242%	271%	8%
AIR FORCE	166 AIRLIFT WING	Unknown	Delaware	377	310	25	29	67,440	92,160	-27%	-11%	22%
AIR FORCE	ABRAHAM LINCOLN CAPITAL AIRPORT	Springfield	Illinois	312	315	26	27	82,942	84,700	-2%	-3%	-1%
AIR FORCE	ALPENA CO REG APT	Alpena	Michigan	518	547	47	48	90,297	87,293	3%	-2%	-5%

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AIR FORCE	ALTUS AIR FORCE BASE	Unknown	Oklahoma	2,682	2,654	246	241	91,800	90,981	1%	2%	1%
AIR FORCE	ANDERSEN AF BASE	Yigo	Guam	49	49	4	4	83,551	89,401	-7%	-7%	0%
AIR FORCE	ANDREWS AIR FORCE BASE	Andrews AFB	Maryland	361	166	17	18	48,241	106,449	-55%	-2%	117%
AIR FORCE	ANDREWS AIR FORCE BASE	Andrews AFB	Maryland	492	494	38	39	78,240	106,449	-27%	-1%	0%
AIR FORCE	ANDREWS AIR FORCE BASE	Andrews AFB	Maryland	5,644	7,854	598	644	105,986	106,449	0%	-7%	-28%
AIR FORCE	ARNOLD	Unknown	Tennessee	1,346	1,888	923	971	686,025	514,456	33%	-5%	-29%
AIR FORCE	ATLANTIC CITY IAP	Unknown	New Jersey	487	454	67	50	136,963	109,819	25%	34%	7%
AIR FORCE	AVIANO AIR BASE	Aviano AB	Italy	4,178	6,047	314	287	75,089	47,470	58%	9%	-31%
AIR FORCE	BANGOR IAP	Unknown	Maine	533	533	54	49	101,285	92,424	10%	10%	0%
AIR FORCE	BARKSDALE AIR FORCE BASE	Barksdale AFB	Louisiana	5,151	5,045	425	446	82,493	88,382	-7%	-5%	2%
AIR FORCE	BARNES MAP (ANG)	Unknown	Massachusetts	465	416	49	48	105,970	114,652	-8%	3%	12%
AIR FORCE	BEALE AF BASE	Beale AFB	California	3,091	2,941	220	240	71,331	81,773	-13%	-8%	5%
AIR FORCE	BIRMINGHAM APRT	Unknown	Alabama	346	363	33	36	96,095	99,243	-3%	-8%	-5%
AIR FORCE	BOISE AIR TERML	Unknown	Idaho	569	529	36	35	63,617	66,591	-4%	3%	8%
AIR FORCE	BRADLEY IAP	Unknown	Connecticut	312	385	27	28	87,090	71,991	21%	-2%	-19%

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AIR FORCE	BUCKLEY AFB	Aurora	Colorado	574	567	57	133	100,098	234,061	-57%	-57%	1%
AIR FORCE	BUCKLEY AFB	Aurora	Colorado	1,220	3,080	158	649	129,807	210,714	-38%	-76%	-60%
AIR FORCE	BURLINGTON INTERNATIONAL AIRPORT	South Burlington	Vermont	463	448	30	32	65,821	70,451	-7%	-3%	3%
AIR FORCE	CAMP PERRY ANG	Port Clinton	Ohio	103	116	3	7	32,369	58,508	-45%	-51%	-11%
AIR FORCE	CANNON AIR FORCE BASE	Cannon AFB	New Mexico	2,506	2,520	259	277	103,436	109,877	-6%	-6%	-1%
AIR FORCE	CHANNEL ISLANDS ANG STATION	Unknown	California	345	345	14	14	39,530	41,731	-5%	-5%	0%
AIR FORCE	CHARLESTON AFB	Unknown	South Carolina	8,713	4,323	804	327	92,279	75,554	22%	146%	102%
AIR FORCE	CHARLOTTE/DOUGLAS INTERNATIONAL AIRPORT	Charlotte	North Carolina	552	531	38	39	69,380	74,225	-7%	-3%	4%
AIR FORCE	CHEYENNE REGIONAL APT	Unknown	Wyoming	388	394	45	43	115,719	109,324	6%	4%	-2%
AIR FORCE	COLUMBUS	Unknown	Mississippi	1,532	1,471	178	175	115,953	118,986	-3%	1%	4%
AIR FORCE	DAVIS MONTHAN AFB	Tucson	Arizona	4,571	4,554	351	403	76,692	88,456	-13%	-13%	0%
AIR FORCE	DES MOINES INTERNATIONAL AIRPORT	Unknown	Iowa	439	413	27	42	61,294	100,991	-39%	-36%	6%
AIR FORCE	DOBBINS AIR RESERVE BASE	Unknown	Georgia	925	925	85	113	92,365	122,024	-24%	-24%	0%

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AIR FORCE	DOVER AFB	Unknown	Delaware	3,892	3,429	1,001	479	257,299	139,657	84%	109%	14%
AIR FORCE	DULUTH INTERNATIONAL AIRPORT	Unknown	Minnesota	505	506	55	62	109,368	121,772	-10%	-10%	0%
AIR FORCE	DYESS AIR FORCE BASE	Abilene	Texas	3,357	3,274	279	322	82,997	98,353	-16%	-13%	3%
AIR FORCE	EARECKSON AS	Adak Station	Alaska	2,884	2,093	461	269	159,691	128,753	24%	71%	38%
AIR FORCE	EDWARDS AFB	Unknown	California	6,960	8,675	602	909	86,456	104,790	-17%	-34%	-20%
AIR FORCE	EGLIN AFB	Valparaiso	Florida	10,074	8,866	1,144	1,112	113,587	125,444	-9%	3%	14%
AIR FORCE	EIELSON	Unknown	Alaska	291	291	6	26	19,192	89,379	-79%	-79%	0%
AIR FORCE	EIELSON	Unknown	Alaska	7,798	6,771	2,088	2,426	267,744	358,336	-25%	-14%	15%
AIR FORCE	ELLINGTON FIELD	Unknown	Texas	488	482	37	43	75,686	89,154	-15%	-14%	1%
AIR FORCE	ELLSWORTH AFB	Ellsworth AFB	South Dakota	4,280	7,283	503	670	117,635	91,966	28%	-25%	-41%
AIR FORCE	ELMENDORF AFB	Unknown	Alaska	10,860	7,961	1,406	1,309	129,494	164,460	-21%	7%	36%
AIR FORCE	EWVRA-SHEPHERD FIELD	Unknown	West Virginia	652	629	87	78	132,994	124,261	7%	11%	4%
AIR FORCE	F E WARREN AFB	Cheyenne	Wyoming	3,093	3,098	372	382	120,375	123,341	-2%	-3%	0%
AIR FORCE	FAIRCHILD AIR FORCE BASE	Unknown	Washington	4,435	4,128	475	487	107,160	118,030	-9%	-2%	7%

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AIR FORCE	FAIRCHILD AIR FORCE BASE	Unknown	Washington	443	487	27	25	61,217	51,335	19%	8%	-9%
AIR FORCE	FORBES FIELD ANG	Topeka	Kansas	432	430	50	48	114,627	112,260	2%	2%	0%
AIR FORCE	FORT SAM HOUSTON	San Antonio	Texas	13,044	10,465	1,335	1,066	102,330	101,900	0%	25%	25%
AIR FORCE	FRANCIS S. GABRESKI AIRPORT(ANG)	Westhampto n Beach	New York	360	338	39	15	109,125	42,979	154%	170%	6%
AIR FORCE	FRESNO YOSEMITE INTERNATIONAL ANG	Fresno	California	418	335	19	24	45,536	71,329	-36%	-20%	25%
AIR FORCE	FT SMITH MAP	Fort Smith	Arkansas	418	389	23	29	55,163	74,983	-26%	-21%	8%
AIR FORCE	GEN MITCHELL IAP (ANGB)	Unknown	Wisconsin	354	335	34	36	96,246	108,379	-11%	-6%	6%
AIR FORCE	GENERAL WAYNE A. DOWNING PEORIA INTERNATIONAL AIRPORT	Peoria	Illinois	417	417	36	36	86,801	85,349	2%	2%	0%
AIR FORCE	GOODFELLOW AFB	Unknown	Texas	2,440	2,232	211	217	86,628	97,077	-11%	-2%	9%
AIR FORCE	GPT BIL REG APT ANG	Gulfport	Mississippi	613	610	35	35	56,677	56,755	0%	0%	1%
AIR FORCE	GRAND FORKS AFB	Grand Forks AFB	North Dakota	5,670	5,699	465	656	81,988	115,097	-29%	-29%	-1%
AIR FORCE	GREAT FALLS IAP	Unknown	Montana	450	444	51	51	112,380	114,957	-2%	-1%	1%
AIR FORCE	GRISSOM ARB	Unknown	Indiana	1,049	1,049	120	120	113,995	114,214	0%	0%	0%
AIR FORCE	HANCOCK FIELD	Unknown	New York	476	507	44	42	93,202	83,836	11%	4%	-6%

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AIR FORCE	HANSCOM AFB	Bedford	Massachusetts	2,555	3,072	531	471	207,755	153,191	36%	13%	-17%
AIR FORCE	HARRISBURG IAP ANG	Middletown	Pennsylvania	319	379	25	27	78,113	70,258	11%	-6%	-16%
AIR FORCE	HECTOR IAP	Fargo	North Dakota	491	458	41	39	83,538	85,330	-2%	5%	7%
AIR FORCE	HICKAM AFB	Hickam AFBase	Hawaii	843	870	33	37	39,402	42,529	-7%	-10%	-3%
AIR FORCE	HILL	Unknown	Utah	12,760	12,908	2,209	2,230	173,096	172,785	0%	-1%	-1%
AIR FORCE	HOLLOMAN	Holloman AFB	New Mexico	5,421	5,248	509	506	93,895	96,454	-3%	1%	3%
AIR FORCE	HOMESTEAD AIR RESERVE BASE	Homestead	Florida	987	1,018	65	73	66,293	71,900	-8%	-11%	-3%
AIR FORCE	HULMAN FLD	Unknown	Indiana	374	374	46	36	124,045	95,684	30%	30%	0%
AIR FORCE	HURLBURT FIELD	Unknown	Florida	4,428	4,247	479	466	108,199	109,644	-1%	3%	4%
AIR FORCE	INCIRLIK AB	Adana	Turkey	4,660	5,673	271	311	58,160	54,811	6%	-13%	-18%
AIR FORCE	IZMIR AIR STATION	Izmir	Turkey	164	142	8	12	50,421	86,465	-42%	-33%	15%
AIR FORCE	JACKSON IAP, THOMPSON FIELD	Flowood	Mississippi	555	559	49	53	88,665	95,564	-7%	-8%	-1%
AIR FORCE	JACKSONVILLE IAP	Unknown	Florida	424	425	25	27	58,288	62,823	-7%	-7%	0%
AIR FORCE	JEFFERSON BARRACKS ANGS	Unknown	Missouri	202	195	12	11	58,010	55,143	5%	9%	4%
AIR FORCE	JOE FOSS FIELD	Unknown	South Dakota	413	416	38	35	91,937	83,835	10%	9%	-1%

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AIR FORCE	KADENA AIR BASE	Kadena Air Base Okinawa	Japan	24,720	24,090	1,363	1,412	55,134	58,606	-6%	-3%	3%
AIR FORCE	KEESLER AFB	Biloxi	Mississippi	7,030	7,030	717	749	101,987	106,564	-4%	-4%	0%
AIR FORCE	KEY FIELD	Meridian	Mississippi	385	396	36	39	93,540	99,488	-6%	-9%	-3%
AIR FORCE	KIRTLAND	Kirtland AFB	New Mexico	321	318	20	25	61,424	78,616	-22%	-21%	1%
AIR FORCE	KIRTLAND	Kirtland AFB	New Mexico	7,526	7,437	643	737	85,383	99,148	-14%	-13%	1%
AIR FORCE	KLAMATH FALLS AIRPORT-KINGSLEY FIELD (ANG)	Unknown	Oregon	496	500	33	38	66,522	76,173	-13%	-13%	-1%
AIR FORCE	KUNSAN AIR BASE	Kunsan	South Korea	3,867	3,646	383	369	98,916	101,270	-2%	4%	6%
AIR FORCE	LACKLAND AIR FORCE BASE	Unknown	Texas	15,394	16,270	2,085	2,197	135,428	135,034	0%	-5%	-5%
AIR FORCE	LAJES FIELD	Lajesfield	Portugal	2,575	2,775	97	107	37,538	38,723	-3%	-10%	-7%
AIR FORCE	LAMBERT-ST LOUIS	Unknown	Missouri	428	422	26	34	60,451	80,850	-25%	-24%	1%
AIR FORCE	LANGLEY AFB	Langley AFB	Virginia	11,431	5,519	1,363	734	119,198	133,074	-10%	86%	107%
AIR FORCE	LAUGHLIN AIR FORCE BASE	Unknown	Texas	1,990	1,961	150	169	75,415	86,313	-13%	-11%	1%
AIR FORCE	LINCOLN MUNICIPAL AIRPORT	Unknown	Nebraska	339	346	34	34	100,145	99,288	1%	-1%	-2%
AIR FORCE	LITTLEROCK AFB	Unknown	Arkansas	3,351	3,294	356	331	106,237	100,395	6%	8%	2%

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AIR FORCE	LITTLEROCK AFB	Unknown	Arkansas	3,351	3,294	356	331	106,347	100,395	6%	8%	2%
AIR FORCE	LOS ANGELES AFB	El Segundo	California	1,192	1,192	96	105	80,701	88,018	-8%	-8%	0%
AIR FORCE	LOUISVILLE IAP-STANDIFORD FL	Unknown	Kentucky	384	391	27	31	69,221	80,419	-14%	-15%	-2%
AIR FORCE	LUIS MUNOZ MARIN IAP	Carolina	Puerto Rico	475	449	45	30	94,316	67,210	40%	48%	6%
AIR FORCE	LUKE AIR FORCE BASE	Luke AFB	Arizona	3,739	3,739	291	281	77,719	75,049	4%	4%	0%
AIR FORCE	MACDILLAFB	Unknown	Florida	4,782	4,774	501	559	104,743	117,041	-11%	-10%	0%
AIR FORCE	MALMSTROM	Malmstrom AFB	Montana	3,116	3,114	504	526	161,685	168,810	-4%	-4%	0%
AIR FORCE	MANSFIELD LAHM MUNICIPAL AIRPORT	Unknown	Ohio	342	293	36	34	104,216	115,492	-10%	5%	17%
AIR FORCE	MARCH AIR RESERVE BASE	Unknown	California	286	1,821	21	125	72,615	68,471	6%	-83%	-84%
AIR FORCE	MARCH AIR RESERVE BASE	Unknown	California	2,601	1,821	206	125	79,159	68,471	16%	65%	43%
AIR FORCE	MARTIN STATE AIRPORT	Middle River	Maryland	422	399	30	27	71,223	67,252	6%	12%	6%
AIR FORCE	MAXWELL AFB	Maxwell AFB	Alabama	6,183	4,443	730	404	118,027	90,912	30%	81%	39%
AIR FORCE	MCCONNELL	Wichita	Kansas	3,619	659	368	82	101,751	124,136	-18%	350%	449%
AIR FORCE	MCCONNELL	Wichita	Kansas	634	659	81	82	128,338	124,136	3%	-1%	-4%
AIR FORCE	MCENTIRE JOINT NATIONAL GUARD	Unknown	South Carolina	420	420	38	40	89,936	94,641	-5%	-5%	0%

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	BASE											
AIR FORCE	MCGHEE TYSON AIRPORT	Louisville	Tennessee	673	672	71	74	106,132	109,808	-3%	-3%	0%
AIR FORCE	MCGUIRE AFB	McGuire AFB	New Jersey	12,850	12,851	1,534	1,065	119,362	226,698	-47%	44%	0%
AIR FORCE	MCGUIRE AFB	McGuire AFB	New Jersey	425	425	52	96	122,746	226,698	-46%	-46%	0%
AIR FORCE	MEMPHIS IAP	Unknown	Tennessee	586	595	51	48	86,352	80,501	7%	6%	-1%
AIR FORCE	MINN-ST PAUL	Minneapolis	Minnesota	736	739	66	79	90,099	106,521	-15%	-16%	0%
AIR FORCE	MINN-ST PAUL	St-Paul	Minnesota	455	454	39	35	84,932	76,780	11%	11%	0%
AIR FORCE	MINOT AFB	Minot AFB	North Dakota	8,101	7,599	914	772	112,854	101,586	11%	18%	7%
AIR FORCE	MISAWA AIR BASE	Misawa AFB	Japan	7,429	9,157	1,123	1,319	151,118	144,015	5%	-15%	-19%
AIR FORCE	MOFFETT FIELD	Moffett Field	California	415	430	18	19	42,764	44,698	-4%	-8%	-3%
AIR FORCE	MONTGOMERY REGIONAL AIRPORT ANG BASE	Montgomery	Alabama	502	515	38	33	75,755	63,722	19%	16%	-3%
AIR FORCE	MOODY AIR FORCE BASE	Moody AFB	Georgia	2,701	2,710	228	232	84,440	85,776	-2%	-2%	0%
AIR FORCE	MORON AB	Moron AB	Spain	728	777	29	26	39,288	33,149	19%	11%	-6%
AIR FORCE	MT HOME AFB	Unknown	Idaho	3,210	5,363	360	520	112,024	97,035	15%	-31%	-40%
AIR FORCE	NASHVILLE IAP	Unknown	Tennessee							3%	3%	0%

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				471	471	27	27	57,953	56,491			
AIR FORCE	NELLIS AIR FORCE BASE	Las Vegas	Nevada	9,214	5,897	743	494	80,645	83,699	-4%	51%	56%
AIR FORCE	NIAGARA FALLS	Unknown	New York	764	628	95	79	123,720	125,094	-1%	20%	22%
AIR FORCE	NORTH HIGHLANDS ANG STATION	North Highlands	California	134	202	7	10	49,358	49,107	1%	-33%	-34%
AIR FORCE	OFFUTTAIRFORCEBSE	Offutt A.F.B.	Nebraska	5,656	6,258	899	914	158,885	146,027	9%	-2%	-10%
AIR FORCE	OSAN	Osan AFB	South Korea	7,963	8,374	739	682	92,822	81,470	14%	8%	-5%
AIR FORCE	OTIS ANG BASE	Otis ANGB, Mashpee	Massachusetts	695	680	77	71	110,767	103,970	7%	9%	2%
AIR FORCE	PATRICK	Patrick AFB	Florida	5,901	3,184	807	291	136,832	91,514	50%	177%	85%
AIR FORCE	PEASE ANGB NEWHAMPSHIRE	Portsmouth	New Hampshire	477	516	65	72	136,411	140,408	-3%	-10%	-8%
AIR FORCE	PETERSON AFB	Colorado Spgs	Colorado	6,841	3,580	2,663	614	389,310	171,394	127%	334%	91%
AIR FORCE	PGH IAP ARS	Unknown	Pennsylvania	510	535	50	47	98,049	87,181	12%	7%	-5%
AIR FORCE	PITTSBURGH IAP (ANG)	Unknown	Pennsylvania	443	443	56	57	126,564	128,224	-1%	-1%	0%
AIR FORCE	PORTLAND IAP OR	Unknown	Oregon	813	793	75	70	92,081	88,667	4%	7%	3%
AIR FORCE	QUONSET STATE AIRPORT	Unknown	Rhode Island	401	418	47	47	117,459	113,491	3%	-1%	-4%
AIR FORCE	RAF ALCONBURY	Cambridge	United Kingdom	1,607	2,128	149	181	92,700	84,841	9%	-17%	-24%

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AIR FORCE	RAF CROUGHTON	Unknown	United Kingdom	690	1,164	122	119	177,448	101,967	74%	3%	-41%
AIR FORCE	RAF FAIRFORD	Fairford	United Kingdom	1,482	1,534	47	64	31,441	42,001	-25%	-28%	-3%
AIR FORCE	RAF LAKENHEATH	Lakenheath	United Kingdom	7,999	7,979	604	650	75,506	81,473	-7%	-7%	0%
AIR FORCE	RAF MILDENHALL	Mildenhall	United Kingdom	3,046	3,146	335	332	110,028	105,661	4%	1%	-3%
AIR FORCE	RAMSTEIN AIR BASE	Ramstein	Germany	15,978	18,577	1,021	1,358	63,920	73,095	-13%	-25%	-14%
AIR FORCE	RANDOLPH AIR FORCE BASE	Unknown	Texas	4,213	4,136	370	404	87,726	97,759	-10%	-9%	2%
AIR FORCE	RENO TAHOE INT'L AIRPORT	Reno	Nevada	390	424	31	36	79,882	85,667	-7%	-14%	-8%
AIR FORCE	RICKENBACKER	Unknown	Ohio	534	547	49	46	92,028	83,524	10%	8%	-2%
AIR FORCE	ROBINS AIR FORCE BASE	Robins AFB	Georgia	742	741	40	50	53,849	67,476	-20%	-20%	0%
AIR FORCE	ROBINS AIR FORCE BASE	Robins AFB	Georgia	12,619	11,820	1,905	1,944	150,991	164,440	-8%	-2%	7%
AIR FORCE	ROSECRANS MAP/139AG	St. Joseph	Missouri	365	357	13	26	34,860	72,287	-52%	-51%	2%
AIR FORCE	SALT LAKE CITY IAP	Salt Lake City	Utah	479	470	54	52	112,495	109,822	2%	4%	2%
AIR FORCE	SAVANNAH/HILTON HEAD IAP	Garden City	Georgia	872	866	46	44	53,125	50,508	5%	6%	1%
AIR FORCE	SCHENECTADY ANG MAP	Unknown	New York	428	400	43	42	99,572	104,273	-5%	2%	7%
AIR FORCE	SCHRIEVER AFB	Colorado Spgs	Colorado	2,227	1,911	426	459	191,210	240,053	-20%	-7%	17%

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AIR FORCE	SCOTT AFB	Belleville	Illinois	345	343	20	34	57,530	99,125	-42%	-42%	1%
AIR FORCE	SCOTT AFB	Belleville	Illinois	5,076	5,125	574	649	113,170	126,663	-11%	-12%	-1%
AIR FORCE	SELFRIDGE AIR NATIONAL GUARD BASE	Unknown	Michigan	1,453	2,604	156	271	107,156	104,189	3%	-43%	-44%
AIR FORCE	SEYMOUR JOHNSON AIR FORCE BS	Seymour Johnson AFB	North Carolina	3,204	4,735	297	388	92,778	81,963	13%	-23%	-32%
AIR FORCE	SHAW AIR FORCE BASE	Shaw AFB	South Carolina	3,356	2,948	314	306	93,593	103,939	-10%	3%	14%
AIR FORCE	SHEPPARD AFB	Unknown	Texas	7,912	7,874	691	829	87,350	105,327	-17%	-17%	0%
AIR FORCE	SIOUX GATEWAY APT / COL BUD DAY FIELD (ANG)	Sioux City	Iowa	472	489	41	46	86,949	94,970	-8%	-12%	-3%
AIR FORCE	SKY HARBOR IAP	Unknown	Arizona	276	277	20	21	73,399	74,714	-2%	-2%	0%
AIR FORCE	SPANGDAHLEM	Spangdahlem AB	Germany	8,535	8,875	527	538	61,787	60,582	2%	-2%	-4%
AIR FORCE	SPRINGFIELD BECKLEY	Springfield	Ohio	446	443	36	41	80,991	92,523	-12%	-12%	1%
AIR FORCE	STEWART IAP	Unknown	New York	830	829	47	103	56,076	124,271	-55%	-55%	0%
AIR FORCE	TINKER AFB	Oklahoma City	Oklahoma	18,794	18,910	3,276	3,163	174,303	167,248	4%	4%	-1%
AIR FORCE	TOLEDO/EXP APRT	Swanton	Ohio	337	337	26	24	76,463	71,112	8%	7%	0%
AIR FORCE	TRAVIS AFB	Fairfield	California	6,377	6,782	537	585	84,250	86,312	-2%	-8%	-6%

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AIR FORCE	TRUAX ANG BASE	Unknown	Wisconsin	479	449	37	35	76,756	77,126	0%	6%	7%
AIR FORCE	TUCSON IAP ARZ	Tucson	Arizona	639	640	36	49	55,707	76,233	-27%	-27%	0%
AIR FORCE	TULSA IAP	Tulsa	Oklahoma	369	369	40	39	108,767	107,042	2%	2%	0%
AIR FORCE	TYNDALL AFB	Unknown	Florida	4,162	4,216	392	409	94,167	96,913	-3%	-4%	-1%
AIR FORCE	U S A F ACADEMY	Air Force Academy	Colorado	6,402	6,353	980	986	153,056	155,188	-1%	-1%	1%
AIR FORCE	VANCE AIR FORCE BASE	Unknown	Oklahoma	1,463	1,369	126	121	85,864	88,098	-3%	4%	7%
AIR FORCE	VANDENBERG MAIN BASE	Lompoc	California	5,310	6,581	658	918	123,921	139,494	-11%	-28%	-19%
AIR FORCE	VOLK ANG BASE	Camp Douglas	Wisconsin	665	663	53	50	79,513	75,367	6%	6%	0%
AIR FORCE	W K KELLOGG AIRPORT	Battle Creek	Michigan	404	404	56	52	137,889	128,914	7%	7%	0%
AIR FORCE	WESTOVER ARB	Unknown	Massachusetts	1,432	1,432	188	179	131,189	124,733	5%	5%	0%
AIR FORCE	WHITE SANDS MISSLE RANGE	Unknown	New Mexico	4,708	4,425	394	460	83,733	104,029	-20%	-14%	6%
AIR FORCE	WHITEMAN	Unknown	Missouri	4,890	5,021	720	699	147,255	139,284	6%	3%	-3%
AIR FORCE	WILL ROGERS WORLD AIRPORT	Unknown	Oklahoma	373	371	26	29	69,346	78,185	-11%	-11%	0%
AIR FORCE	WILLOW GROVE	Horsham	Pennsylvania	642	495	42	44	64,670	88,961	-27%	-6%	30%
AIR FORCE	WRIGHT-PATTERSON AFB	Wright-Patterson	Ohio	15,203	14,602	2,881	2,861	189,480	195,938	-3%	1%	4%

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		AFB										
AIR FORCE	YEAGER APRT	Unknown	West Virginia	285	296	34	30	120,705	99,693	21%	16%	-4%
AIR FORCE	YOKOTA AB	Yokota AFB	Japan	10,101	10,273	1,352	1,444	133,825	140,562	-5%	-6%	-2%
AIR FORCE	YOUNGSTOWN JOINT AIR RESERVE STATION	Vienna	Ohio	682	720	81	67	118,065	92,654	27%	21%	-5%
USMC	MCLB ALBANY GA	Albany	Georgia	6,914	6,623	364	407	52,657	61,383	-14%	-10%	4%
USMC	MCB CAMP PENDLETON CA	Camp Pendleton	California	18,627	16,625	986	984	52,934	59,162	-11%	0%	12%
USMC	MCSF BLOUNT ISLAND FL	Blount Island	Florida	911	915	34	38	37,300	41,510	-10%	-11%	0%
USMC	MCAGCC TWENTYNINE PALMS CA	Twentynine Palms	California	6,605	6,009	884	874	133,838	145,513	-8%	1%	10%
USMC	MCRD PARRIS ISLAND SC	Parris Island	South Carolina	4,197	3,829	624	595	148,643	155,486	-4%	5%	10%
USMC	MCB CAMP LEJEUNE NC	Camp Lejeune	North Carolina	20,914	20,656	2,783	2,838	133,066	137,406	-3%	-2%	1%
USMC	MCRD SAN DIEGO CA	San Diego	California	2,527	2,547	273	283	108,118	111,168	-3%	-4%	-1%
USMC	MCAS BEAUFORT SC	Beaufort	South Carolina	2,627	2,563	188	188	71,537	73,258	-2%	0%	2%
USMC	MCAS CHERRY PT NC	Cherry Poiunt	North Carolina	6,347	6,026	745	721	117,423	119,599	-2%	3%	5%
USMC	MARCORSUPACT KANSAS CITY MO	Kansas City	Missouri	370	370	37	37	98,935	98,803	0%	0%	0%

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USMC	MARFORRES NEW ORLEANS	New Orleans	Louisiana	503	503	78	78	155,322	154,948	0%	0%	0%
USMC	FIRST MCD GARDEN CITY LI NY	Long Island	New York	166	166	72	71	431,614	430,482	0%	0%	0%
USMC	MARBKS WASHINGTON DC	Washington	District of Columbia	623	623	50	50	80,546	80,249	0%	0%	0%
USMC	MCAS YUMA AZ	Yuma	Arizona	2,751	2,693	203	197	73,651	73,144	1%	3%	2%
USMC	MCB HAWAII	Kaneohe Bay	Hawaii	6,168	6,147	346	342	56,017	55,616	1%	1%	0%
USMC	MCLB BARSTOW CA	Barstow	California	3,557	3,557	265	262	74,437	73,688	1%	1%	0%
USMC	MCAS MIRAMAR	San Diego	California	5,436	5,506	280	273	51,420	49,590	4%	2%	-1%
USMC	MCMWTC BRIDGEPORT CA	Bridgeport	California	326	326	40	37	123,571	114,132	8%	8%	0%
USMC	CG MCB CAMP BUTLER JA	FPO	Japan	16,817	18,494	1,167	1,176	69,414	63,568	9%	-1%	-9%
USMC	MCAS IWAKUNI JA	FPO	Japan	5,414	5,468	641	591	118,399	108,048	10%	8%	-1%
USMC	MCB QUANTICO VA	Quantico	Virginia	7,743	6,974	1,010	793	130,402	113,765	15%	27%	11%
WHS	WASHINGTON HEADQUARTERS	Pentagon, Arlington	Virginia	7,727	8,238	1,392	1,416	180,211	171,934	5%	-2%	-6%
DCMA	DCMA(1)	Unknown	California	80	80	8	9	103,863	108,363	-4%	-4%	0%
DCMA	DCMA(2)	Unknown	Ohio	79	79	12	12	151,906	150,900	1%	1%	0%
DeCA	ABERDEEN PROVING GROUND	Aberdeen Prov Grnd	Maryland	62	62	11	11	178,631	181,395	-2%	-2%	0%

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DeCA	ALTUS AIR FORCE BASE	Unknown	Oklahoma	58	58	8	8	142,741	143,070	0%	0%	0%
DeCA	ANDERSEN AF BASE	Yigo	Guam	122	102	8	14	64,144	139,505	-54%	-45%	20%
DeCA	ANDREWS AIR FORCE BASE	Andrews AFB	Maryland	113	113	16	18	139,300	157,967	-12%	-12%	0%
DeCA	ARNOLD	Unknown	Tennessee	23	23	5	5	214,495	205,225	5%	5%	0%
DeCA	AVIANO AIR BASE	Aviano AB	Italy	64	64	11	11	164,114	172,431	-5%	-5%	0%
DeCA	BANGOR IAP	Unknown	Maine	29	29	5	5	180,724	177,276	2%	2%	0%
DeCA	BARKSDALE AIR FORCE BASE	Barksdale AFB	Louisiana	104	104	7	8	66,656	76,556	-13%	-13%	0%
DeCA	BEALE AF BASE	Beale AFB	California	75	75	9	9	121,448	125,008	-3%	-3%	0%
DeCA	BEALE AF BASE	Beale AFB	California	63	88	11	13	176,342	142,989	23%	-11%	-28%
DeCA	BEALE AF BASE	Beale AFB	California	88	63	13	11	152,341	176,342	-14%	20%	39%
DeCA	BOLLING AIR FORCE BASE	Unknown	District of Columbia	72	72	12	11	165,548	156,609	6%	6%	0%
DeCA	BUCKLEY AFB	Aurora	Colorado	77	77	13	13	171,182	171,802	0%	0%	0%
DeCA	CAMP CASEY	Camp Casey	South Korea	13	13	3	3	260,525	260,525	0%	0%	0%
DeCA	CAMP HENRY	Taegu	South Korea	8	8	2	2	206,467	225,472	-8%	-8%	0%
DeCA	CAMP HENRY	Taegu	South Korea	54	54	4	3	76,873	64,067	20%	20%	0%

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DeCA	CAMP HUMPHREYS	Camp Humphreys	South Korea	19	19	4	5	226,235	269,648	-16%	-16%	0%
DeCA	CAMP RED CLOUD	Uijong Bu	South Korea	11	11	2	1	138,249	73,364	88%	88%	0%
DeCA	CAMP RED CLOUD	Uijong Bu	South Korea	10	10	1	1	96,231	123,149	-22%	-22%	0%
DeCA	CAMP ZAMA	Sagamihara	Japan	2	2	0	1	264,530	315,589	-16%	-16%	0%
DeCA	CAMP ZAMA	Sagamihara	Japan	13	13	2	2	130,030	130,030	0%	0%	0%
DeCA	CAMP ZAMA	Sagamihara	Japan	282	282	11	11	38,239	40,340	-5%	-5%	0%
DeCA	CAMP ZAMA	Sagamihara	Japan	4	67	0	6	61,972	87,707	-29%	-96%	-94%
DeCA	CAMP ZAMA	Sagamihara	Japan	67	4	6	0	87,707	61,972	42%	2332%	1619%
DeCA	CANNON AIR FORCE BASE	Cannon AFB	New Mexico	58	58	13	7	227,377	117,858	93%	93%	0%
DeCA	CARLISLE BARRACKS	Carlisle	Pennsylvania	23	23	5	4	206,022	191,399	8%	8%	0%
DeCA	CARLISLE BARRACKS	Carlisle	Pennsylvania	60	60	8	7	126,589	110,738	14%	14%	0%
DeCA	CBC GULFPORT MS	Gulfport	Mississippi	31	31	8	8	267,333	264,097	1%	1%	0%
DeCA	CHARLESTON AFB	Unknown	South Carolina	86	86	16	17	180,205	198,573	-9%	-9%	0%
DeCA	COLUMBUS	Unknown	Mississippi	49	49	3	3	67,619	61,551	10%	10%	0%
DeCA	COMBAT SUPPORT TRAINING CENTER	Dublin	California	8	8	2	2	214,359	196,667	9%	9%	0%

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	AND CAMP PARKS											
DeCA	COMFLEACT SASEBO JA	Sasebo	Japan	24	20	5	3	219,000	131,638	66%	102%	21%
DeCA	COMFLEACT SASEBO JA	Sasebo	Japan	20	24	3	5	130,677	197,750	-34%	-46%	-18%
DeCA	COMFLEACT YOKOSUKA JA	Yokosuka	Japan	86	86	14	15	165,938	174,128	-5%	-5%	0%
DeCA	DAVIS MONTHAN AFB	Tucson	Arizona	115	115	14	16	124,539	138,508	-10%	-10%	0%
DeCA	DOVER AFB	Unknown	Delaware	78	78	6	7	78,787	89,185	-12%	-12%	0%
DeCA	DUGWAY PROVING GROUND	Dugway	Utah	18	18	3	2	149,696	99,061	51%	51%	0%
DeCA	DYESS AIR FORCE BASE	Abilene	Texas	80	80	9	9	112,907	117,333	-4%	-4%	0%
DeCA	EDWARDS AFB	Unknown	California	60	60	7	8	119,989	126,629	-5%	-5%	0%
DeCA	EGLIN AFB	Valparaiso	Florida	107	107	13	16	120,513	152,373	-21%	-21%	0%
DeCA	EIELSON	Unknown	Alaska	42	42	10	3	236,071	76,295	209%	209%	0%
DeCA	ELLSWORTH AFB	Ellsworth AFB	South Dakota	72	72	13	15	184,504	200,370	-8%	-8%	0%
DeCA	ELMENDORF AFB	Unknown	Alaska	105	105	18	19	169,571	176,210	-4%	-4%	0%
DeCA	F E WARREN AFB	Cheyenne	Wyoming	77	77	10	11	124,286	136,698	-9%	-9%	0%
DeCA	FAIRCHILD AIR FORCE BASE	Unknown	Washington	85	85	12	12	136,542	142,593	-4%	-4%	0%

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DeCA	FLEET ACTIVITIES CHINHAE KS	Chinhae	South Korea	11	11	1	1	115,752	127,522	-9%	-9%	0%
DeCA	FORT BELVOIR	Fort Belvoir	Virginia	129	129	20	21	152,171	166,825	-9%	-9%	0%
DeCA	FORT BENNING	Unknown	Georgia	3	3	0	0	142,265	146,409	-3%	-3%	0%
DeCA	FORT BENNING	Unknown	Georgia	118	118	14	13	118,589	110,313	8%	8%	0%
DeCA	FORT BLISS	El Paso	Texas	123	123	26	23	214,168	188,197	14%	14%	0%
DeCA	FORT BRAGG	Fort Bragg	North Carolina	95	95	13	13	132,691	134,653	-1%	-1%	0%
DeCA	FORT BRAGG	Fort Bragg	North Carolina	118	118	26	21	215,684	174,478	24%	24%	0%
DeCA	FORT BUCHANAN	Fort Buchanan, Catano	Puerto Rico	95	95	14	14	144,133	145,879	-1%	-1%	0%
DeCA	FORT CAMPBELL	Fort Campbell	Kentucky	111	111	18	22	166,522	203,486	-18%	-18%	0%
DeCA	FORT CARSON	Colorado Spgs	Colorado	102	102	13	13	131,688	126,488	4%	4%	0%
DeCA	FORT DETRICK	Frederick	Maryland	58	58	6	7	95,117	123,631	-23%	-23%	0%
DeCA	FORT DETRICK	Frederick	Maryland	3,259	39	1,148	8	352,303	201,915	74%	14377%	8197%
DeCA	FORT DRUM	Fort Drum	New York	83	83	14	15	168,007	181,353	-7%	-7%	0%
DeCA	FORT GEORGE G MEADE	Fort Meade	Maryland	118	118	25	23	212,551	198,458	7%	7%	0%

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DeCA	FORT GORDON	Augusta	Georgia	92	92	13	13	139,465	142,512	-2%	-2%	0%
DeCA	FORT GREELY	Delta Junction	Alaska	25	25	4	4	165,951	142,128	17%	17%	0%
DeCA	FORT HAMILTON	New York City	New York	50	50	10	10	192,531	196,643	-2%	-2%	0%
DeCA	FORT HOOD	Killeen	Texas	128	128	21	16	164,147	122,856	34%	34%	0%
DeCA	FORT HOOD	Killeen	Texas	106	106	19	17	175,148	156,731	12%	12%	0%
DeCA	FORT HUACHUCA	Fort Huachuca	Arizona	78	78	13	12	168,472	156,533	8%	8%	0%
DeCA	FORT JACKSON	Columbia	South Carolina	130	130	16	18	125,108	136,108	-8%	-8%	0%
DeCA	FORT KNOX	Unknown	Kentucky	122	122	15	17	123,668	138,556	-11%	-11%	0%
DeCA	FORT LEAVENWORTH	Fort Leavenworth	Kansas	74	74	13	11	171,171	149,948	14%	14%	0%
DeCA	FORT LEE	Fort Lee	Virginia	242	81	32	13	132,098	160,375	-18%	147%	200%
DeCA	FORT LEE	Fort Lee	Virginia	81	242	11	22	134,250	90,832	48%	-51%	-67%
DeCA	FORT LEONARD WOOD	Fort Leonard Wood	Missouri	71	71	13	13	189,897	183,191	4%	4%	0%
DeCA	FORT LEWIS	Tacoma	Washington	105	105	14	15	137,676	138,190	0%	0%	0%
DeCA	FORT MCCOY	Sparta	Wisconsin	16	16	4	4	245,149	235,730	4%	4%	0%
DeCA	FORT MCPHERSON	Atlanta	Georgia	69	69	2	2	34,585	28,809	20%	20%	0%

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DeCA	FORT MCPHERSON	Atlanta	Georgia	25	25	4	5	179,350	180,429	-1%	-1%	0%
DeCA	FORT MONMOUTH	Red Bank	New Jersey	54	54	8	10	147,803	178,007	-17%	-17%	0%
DeCA	FORT MYER	Fort Myer	Virginia	74	74	7	7	96,660	97,496	-1%	-1%	0%
DeCA	FORT POLK	Fort Polk	Louisiana	82	82	13	12	154,796	148,003	5%	5%	0%
DeCA	FORT RILEY	Fort Riley	Kansas	68	68	16	13	232,706	194,118	20%	20%	0%
DeCA	FORT RUCKER	Fort Rucker	Alabama	85	85	11	10	123,239	117,713	5%	5%	0%
DeCA	FORT SAM HOUSTON	Unknown	Texas	104	104	17	16	162,693	151,318	8%	8%	0%
DeCA	FORT SILL	Fort Sill	Oklahoma	102	102	10	12	100,837	115,467	-13%	-13%	0%
DeCA	FORT STEWART	Fort Stewart	Georgia	95	58	14	9	143,705	148,648	-3%	58%	64%
DeCA	FORT STEWART	Fort Stewart	Georgia	58	95	9	12	154,159	127,443	21%	-26%	-39%
DeCA	FORT WAINWRIGHT	Fort Wainwright	Alaska	104	104	20	8	190,855	80,771	136%	136%	0%
DeCA	GOODFELLOW AFB	Unknown	Texas	57	57	8	8	146,341	138,520	6%	6%	0%
DeCA	GRAND FORKS AFB	Grand Forks AFB	North Dakota	41	41	6	6	139,913	137,974	1%	1%	0%
DeCA	HANSCOM AFB	Bedford	Massachusetts	73	73	12	12	164,889	167,950	-2%	-2%	0%
DeCA	HICKAM AFB	Hickam AFBase	Hawaii	115	115	15	17	133,041	145,692	-9%	-9%	0%

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DeCA	HILL	Unknown	Utah	87	87	12	13	142,574	145,152	-2%	-2%	0%
DeCA	HOLLOMAN	Holloman AFB	New Mexico	69	69	9	9	126,793	132,662	-4%	-4%	0%
DeCA	INCIRLIK AB	Adana	Turkey	67	67	4	7	59,109	103,485	-43%	-43%	0%
DeCA	KADENA AIR BASE	Kadena Air Base Okinawa	Japan	87	87	12	10	138,044	111,252	24%	24%	0%
DeCA	KEESLER AFB	Biloxi	Mississippi	98	98	17	12	170,788	126,926	35%	35%	0%
DeCA	KIRTLAND	Kirtland AFB	New Mexico	108	108	17	15	159,144	140,940	13%	13%	0%
DeCA	KUNSAN AIR BASE	Kunsan	South Korea	16	16	4	5	259,862	294,980	-12%	-12%	0%
DeCA	LACKLAND AIR FORCE BASE	Unknown	Texas	117	117	17	17	144,465	147,360	-2%	-2%	0%
DeCA	LAJES FIELD	Lajesfield	Portugal	58	58	6	5	98,590	89,806	10%	10%	0%
DeCA	LANGLEY AFB	Langley AFB	Virginia	103	103	12	19	119,767	180,365	-34%	-34%	-1%
DeCA	LAUGHLIN AIR FORCE BASE	Unknown	Texas	75	75	6	4	73,580	50,910	45%	45%	0%
DeCA	LITTLEROCK AFB	Unknown	Arkansas	100	100	13	14	130,715	137,501	-5%	-5%	0%
DeCA	LOS ANGELES AFB	El Segundo	California	75	75	9	8	118,980	108,026	10%	10%	0%
DeCA	LUKE AIR FORCE BASE	Luke AFB	Arizona	102	102	14	12	136,792	113,701	20%	20%	0%

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DeCA	MACDILLAFB	Unknown	Florida	171	171	20	19	117,286	108,773	8%	8%	0%
DeCA	MALMSTROM	Malmstrom AFB	Montana	68	68	11	10	160,161	150,264	7%	7%	0%
DeCA	MARCH AIR RESERVE BASE	Unknown	California	117	117	17	18	144,026	156,784	-8%	-8%	0%
DeCA	MARINE CORPS BASE QUANTICO VA	Quantico	Virginia	88	88	16	15	182,807	173,477	5%	5%	0%
DeCA	MAXWELL AFB	Maxwell AFB	Alabama	66	66	8	7	114,768	105,529	9%	9%	0%
DeCA	MAXWELL AFB	Maxwell AFB	Alabama	87	87	14	15	163,161	173,540	-6%	-6%	0%
DeCA	MCAGCC TWENTYNINE PALMS CA	Twentynine Palms	California	57	57	6	5	99,951	84,496	18%	18%	0%
DeCA	MCAS CHERRY POINT NC	Cherry Point	North Carolina	59	59	8	9	141,695	146,623	-3%	-3%	0%
DeCA	MCAS IWAKUNI JA	Iwakuni	Japan	32	32	7	6	223,318	182,054	23%	23%	0%
DeCA	MCAS MIRAMAR	San Diego	California	91	91	13	13	147,135	148,214	-1%	-1%	0%
DeCA	MCAS YUMA AZ	Yuma	Arizona	34	34	5	5	141,389	149,563	-5%	-5%	0%
DeCA	MCB CAMP LEJEUNE NC	Camp Lejeune	North Carolina	76	46	12	3	157,321	73,766	113%	250%	64%
DeCA	MCB CAMP LEJEUNE NC	Camp Lejeune	North Carolina	46	76	6	13	129,101	169,650	-24%	-54%	-39%
DeCA	MCB CAMP PENDLETON CA	Camp Pendleton	California	113	113	14	14	124,989	121,566	3%	3%	0%

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DeCA	MCB CAMP PENDLETON CA	Camp Pendleton	California	20	20	4	4	214,116	222,321	-4%	-4%	0%
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Zukeran	Japan	31	31	7	7	215,595	214,293	1%	1%	0%
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Zukeran	Japan	59	59	11	11	181,192	182,363	-1%	-1%	0%
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Zukeran	Japan	31	31	7	7	217,525	223,349	-3%	-3%	0%
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Zukeran	Japan	291	291	13	14	44,559	46,548	-4%	-4%	0%
DeCA	MCB HAWAII KANEOHE	Kaneohe	Hawaii	77	77	12	12	156,307	158,218	-1%	-1%	0%
DeCA	MCCONNELL	Wichita	Kansas	56	56	10	9	184,847	153,210	21%	21%	0%
DeCA	MCGUIRE AFB	McGuire AFB	New Jersey	103	103	18	18	172,010	171,369	0%	0%	0%
DeCA	MCLB ALBANY GA	Albany	Georgia	37	37	6	7	159,403	177,430	-10%	-10%	0%
DeCA	MCLB BARSTOW CA	Barstow	California	22	22	3	5	146,394	213,254	-31%	-31%	0%
DeCA	MCRD BEAUFORT PI SC	Parris Island	South Carolina	44	44	3	5	76,979	113,320	-32%	-32%	0%
DeCA	MCSPTACT KANSAS CITY MO	Belton	Missouri	24	24	5	4	192,782	174,333	11%	11%	0%
DeCA	MINOT AFB	Minot AFB	North Dakota	56	56	9	9	162,493	154,659	5%	5%	0%
DeCA	MISAWA AIR BASE	Misawa AFB	Japan	82	82	18	20	213,119	247,208	-14%	-14%	0%
DeCA	MOODY AIR FORCE BASE	Moody AFB	Georgia	44	44	8	7	181,897	157,721	15%	15%	0%

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DeCA	MT HOME AFB	Unknown	Idaho	54	54	7	7	134,348	129,809	3%	3%	0%
DeCA	NAF ATSUGI JA	Atsugi	Japan	32	32	5	5	158,847	164,899	-4%	-4%	0%
DeCA	NAF EL CENTRO CA	El Centro	California	13	13	2	2	170,356	163,235	4%	4%	0%
DeCA	NAS BRUNSWICK ME	Brunswick	Maine	35	35	6	6	167,315	162,212	3%	3%	0%
DeCA	NAS CORPUS CHRISTI TX	Corpus Christi	Texas	46	46	9	9	194,957	194,243	0%	0%	0%
DeCA	NAS FALLON NV	Fallon	Nevada	40	40	5	5	125,916	126,337	0%	0%	0%
DeCA	NAS JACKSONVILLE FL	Jacksonville	Florida	88	88	18	15	200,794	174,093	15%	15%	0%
DeCA	NAS JRB FT WORTH TX	Fort Worth	Texas	93	93	7	6	78,369	64,159	22%	22%	0%
DeCA	NAS KEY WEST FL	Stock Island	Florida	21	21	5	5	211,455	218,263	-3%	-3%	0%
DeCA	NAS KINGSVILLE TX	Kingsville	Texas	15	15	3	2	186,549	162,228	15%	15%	0%
DeCA	NAS LEMOORE CA	Lemoore NAS	California	44	44	7	7	155,505	151,473	3%	3%	0%
DeCA	NAS MERIDIAN MS	Meridian	Mississippi	32	32	6	5	201,481	173,467	16%	16%	0%
DeCA	NAS OCEANA VA	Virginia Beach	Virginia	110	110	19	19	173,528	173,874	0%	0%	0%
DeCA	NAS PATUXENT RIVER MD	Patuxent River	Maryland	56	56	10	11	173,022	188,256	-8%	-8%	0%
DeCA	NAS PENSACOLA FL	Pensacola	Florida	74	74	12	13	166,319	172,418	-4%	-4%	0%

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DeCA	NAS SIGONELLA IT	Sigonella Sicily	Italy	68	68	10	11	151,979	156,610	-3%	-3%	0%
DeCA	NAS WHIDBEY ISLAND WA	Whidbey Island NAS	Washington	66	66	10	10	144,256	148,428	-3%	-3%	0%
DeCA	NAS WHITING FLD MILTON FL	Milton	Florida	22	22	5	3	214,442	154,837	38%	38%	0%
DeCA	NATIONAL TRAINING CENTER AND FORT IRWIN	Fort Irwin	California	57	57	9	9	150,991	158,000	-4%	-4%	0%
DeCA	NAVAL BASE KITSAP BREMERTON WA	Bangor	Washington	61	61	10	9	164,083	154,623	6%	6%	0%
DeCA	NAVAL BASE KITSAP BREMERTON WA	Bangor	Washington	48	48	6	6	134,175	128,262	5%	5%	0%
DeCA	NAVAL STATION GREAT LAKES IL	Great Lakes	Illinois	60	60	12	12	200,584	198,765	1%	1%	0%
DeCA	NAVAL STATION NEWPORT RI	Newport	Rhode Island	46	32	9	10	195,269	301,959	-35%	-8%	43%
DeCA	NAVAL SUPPORT ACTIVITY CRANE	Crane	Indiana	8	8	1	1	132,981	141,715	-6%	-6%	0%
DeCA	NAVBASE CORONADO	San Diego	California	78	46	9	9	120,033	184,351	-35%	10%	69%
DeCA	NAVBASE CORONADO	San Diego	California	46	78	8	10	179,423	123,879	45%	-14%	-41%
DeCA	NAVBASE GUAM	Agana	Guam	57	57	10	11	173,688	193,911	-10%	-10%	0%
DeCA	NAVBASE GUAM	Agana	Guam	187	187	16	17	87,177	88,656	-2%	-2%	0%
DeCA	NAVBASE SAN DIEGO CA	San Diego	California	128	128	17	16	135,221	127,722	6%	6%	0%

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DeCA	NAVBASE VENTURA CTY PT MUGU CA	Point Mugu	California	65	65	9	8	138,622	130,573	6%	6%	0%
DeCA	NAVPHIBASE LITTLE CREEK VA	Norfolk	Virginia	100	100	17	17	165,313	172,300	-4%	-4%	0%
DeCA	NAVSTA EVERETT WA	Everett	Washington	60	60	9	8	153,279	134,378	14%	14%	0%
DeCA	NAVSTA MAYPORT FL	Jacksonville	Florida	71	71	12	10	162,997	140,305	16%	16%	0%
DeCA	NAVSTA NORFOLK VA	Norfolk	Virginia	79	79	13	13	164,038	161,622	1%	1%	0%
DeCA	NAVSTA PEARL HARBOR HI	Pearl Harbor	Hawaii	98	98	14	15	145,644	152,570	-5%	-5%	0%
DeCA	NAVSTA ROTA SP	Rota	Spain	50	50	8	7	151,900	139,040	9%	9%	0%
DeCA	NAVSUBASE NEW LONDON CT	Groton	Connecticut	28	28	4	5	156,143	169,105	-8%	-8%	0%
DeCA	NAVSUBASE NEW LONDON CT	Groton	Connecticut	46	46	11	13	246,290	284,206	-13%	-13%	0%
DeCA	NAVSUPPACT MIDSOUTH MEMPHIS TN	Millington	Tennessee	61	61	11	10	179,508	170,187	5%	5%	0%
DeCA	NAVSUPPACT NAPLES IT	Naples	Italy	85	85	13	13	154,681	152,087	2%	2%	0%
DeCA	NAVSUPPACT NORFOLK NSY	Portsmouth	Virginia	50	50	9	7	171,925	150,149	15%	15%	0%
DeCA	NAVSUPPU SARATOGA SPRINGS NY	Saratoga Spgs	New York	22	22	4	4	188,299	174,332	8%	8%	0%
DeCA	NAWS CHINA LAKE	China Lake	California	24	24	4	4	182,909	168,343	9%	9%	0%

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DeCA	NELLIS	Las Vegas	Nevada	130	130	16	16	124,477	120,728	3%	3%	0%
DeCA	NSA SOUTH POTOMAC	Dahlgren	Virginia	15	15	3	3	180,791	195,532	-8%	-8%	0%
DeCA	NSY PORTSMOUTH	Kittery	Maine	28	28	5	6	193,077	228,330	-15%	-15%	0%
DeCA	OFFUTTAIRFORCEBSE	Offutt A.F.B.	Nebraska	120	120	19	19	156,195	156,997	-1%	-1%	0%
DeCA	OSAN	Osan AFB	South Korea	103	103	7	10	69,850	93,861	-26%	-26%	0%
DeCA	PATRICK	Patrick AFB	Florida	103	103	11	11	106,434	107,106	-1%	-1%	0%
DeCA	PETERSON AFB	Colorado Spgs	Colorado	102	102	15	15	144,411	142,711	1%	1%	0%
DeCA	PICATINNY ARSENAL	Dover	New Jersey	22	22	4	4	192,000	185,318	4%	4%	0%
DeCA	PRESIDIO OF MONTEREY	Monterey	California	111	111	10	10	88,983	89,612	-1%	-1%	0%
DeCA	RAF ALCONBURY	Cambridge	United Kingdom	77	77	12	11	158,617	139,302	14%	14%	0%
DeCA	RAF CROUGHTON	Unknown	United Kingdom	20	20	3	4	168,683	214,776	-21%	-21%	0%
DeCA	RAF LAKENHEATH	Lakenheath	United Kingdom	112	68	11	11	98,529	161,032	-39%	0%	63%
DeCA	RAF MENWITH HILL	Harrogate	United Kingdom	34	34	5	5	141,822	150,375	-6%	-6%	0%
DeCA	RAF MILDENHALL	Mildenhall	United Kingdom	14	14	1	1	90,362	55,435	63%	63%	0%
DeCA	RAMSTEIN AIR BASE	Ramstein	Germany	56	56	4	5	66,167	85,983	-23%	-23%	0%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
DeCA	RAMSTEIN AIR BASE	Ramstein	Germany	178	52	23	6	131,741	114,692	15%	290%	240%
DeCA	RAMSTEIN AIR BASE	Ramstein	Germany	73	59	8	10	111,426	163,974	-32%	-15%	25%
DeCA	RAMSTEIN AIR BASE	Ramstein	Germany	41	41	2	2	58,067	56,265	3%	3%	0%
DeCA	RAMSTEIN AIR BASE	Ramstein	Germany	59	73	10	7	174,306	99,937	74%	40%	-20%
DeCA	RANDOLPH AIR FORCE BASE	Unknown	Texas	97	97	16	16	168,363	164,550	2%	2%	0%
DeCA	REDSTONE ARSENAL	Huntsville	Alabama	81	81	13	13	161,261	160,371	1%	1%	0%
DeCA	ROBINS AIR FORCE BASE	Robins AFB	Georgia	70	70	18	12	261,743	165,933	58%	58%	0%
DeCA	ROCK ISLAND ARSENAL	Rock Island	Illinois	33	33	3	3	97,174	99,339	-2%	-2%	0%
DeCA	SCHOFIELD BARRACKS	Wahiawa	Hawaii	92	92	13	13	138,667	136,100	2%	2%	0%
DeCA	SCOTT AFB	Belleville	Illinois	114	114	22	21	190,652	182,003	5%	5%	0%
DeCA	SELFRIDGE AIR NATIONAL GUARD BASE	Unknown	Michigan	76	76	7	7	90,456	97,265	-7%	-7%	0%
DeCA	SEYMOUR JOHNSON AIR FORCE BS	Seymour Johnson AFB	North Carolina	66	66	10	11	147,378	162,943	-10%	-10%	0%
DeCA	SHAW AIR FORCE BASE	Shaw AFB	South Carolina	61	61	9	9	149,298	146,954	2%	2%	0%
DeCA	SHEPPARD AFB	Unknown	Texas	81	81	10	10	129,577	123,429	5%	5%	0%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
DeCA	SPANGDAHLEM	Spangdahlem AB	Germany	63	63	8	8	121,389	122,352	-1%	-1%	0%
DeCA	SPANGDAHLEM	Spangdahlem AB	Germany	44	44	3	4	73,061	87,385	-16%	-16%	0%
DeCA	SUBASE KINGS BAY GA	Kings Bay	Georgia	53	53	8	6	154,274	117,741	31%	31%	0%
DeCA	TINKER AFB	Oklahoma City	Oklahoma	87	87	13	17	154,194	191,745	-20%	-20%	0%
DeCA	TOBYHANNA ARMY DEPOT	Unknown	Pennsylvania	22	22	3	4	119,161	183,758	-35%	-35%	0%
DeCA	TRAVIS AFB	Fairfield	California	97	97	21	14	219,098	145,461	51%	51%	0%
DeCA	TYNDALL AFB	Unknown	Florida	76	76	9	10	118,011	124,794	-5%	-5%	0%
DeCA	U S A F ACADEMY	Air Force Academy	Colorado	67	67	13	14	190,520	204,510	-7%	-7%	0%
DeCA	US ARMY GARRISON ANSBACH	Ansbach	Germany	43	38	5	3	107,957	67,895	59%	83%	15%
DeCA	US ARMY GARRISON ANSBACH	Ansbach	Germany	38	43	2	5	49,952	125,081	-60%	-65%	-13%
DeCA	US ARMY GARRISON BAMBERG	Bamberg	Germany	47	47	5	5	112,669	112,797	0%	0%	0%
DeCA	US ARMY GARRISON BAUMHOLDER	Baumholder	Germany	32	32	6	6	183,827	177,864	3%	3%	0%
DeCA	US ARMY GARRISON BENELUX	Brussels	Belgium	48	48	9	8	187,175	171,523	9%	9%	0%
DeCA	US ARMY GARRISON GRAFENWOEHR	Grafenwohr	Germany	14	52	1	7	82,808	127,608	-35%	-83%	-74%
DeCA	US ARMY GARRISON GRAFENWOEHR	Grafenwohr	Germany	55	14	12	1	224,480	93,361	140%	873%	305%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
DeCA	US ARMY GARRISON GRAFENWOEHR	Grafenwohr	Germany	52	55	8	8	152,409	147,027	4%	-3%	-6%
DeCA	US ARMY GARRISON HEIDELBERG	Heidelberg	Germany	789	58	24	11	30,452	195,616	-84%	111%	1258%
DeCA	US ARMY GARRISON HEIDELBERG	Heidelberg	Germany	58	789	13	25	229,630	31,586	627%	-46%	-93%
DeCA	US ARMY GARRISON HOHENFELS	Hohenfels	Germany	38	38	5	6	137,827	155,550	-11%	-11%	0%
DeCA	US ARMY GARRISON LIVORNO	Livorno	Italy	26	26	4	4	145,411	149,380	-3%	-3%	0%
DeCA	US ARMY GARRISON MANNHEIM	Mannheim	Germany	64	64	10	9	153,227	142,086	8%	8%	0%
DeCA	US ARMY GARRISON SCHINNEN	Schinnen	Netherlands	24	24	5	5	212,331	219,829	-3%	-3%	0%
DeCA	US ARMY GARRISON SCHWEINFURT	Schweinfurt	Germany	51	51	9	9	171,772	173,326	-1%	-1%	0%
DeCA	US ARMY GARRISON STUTTGART	Stuttgart	Germany	18	18	2	2	113,561	129,894	-13%	-13%	0%
DeCA	US ARMY GARRISON STUTTGART	Stuttgart	Germany	5	64	1	5	182,300	83,858	117%	-82%	-92%
DeCA	US ARMY GARRISON STUTTGART	Stuttgart	Germany	64	5	6	1	89,595	236,006	-62%	362%	1116%
DeCA	US ARMY GARRISON VICENZA	Vicenza	Italy	55	55	12	11	228,832	201,334	14%	14%	0%
DeCA	US ARMY GARRISON WIESBADEN	Wiesbaden	Germany	62	62	10	10	165,110	155,753	6%	6%	0%
DeCA	VANCE AIR FORCE BASE	Unknown	Oklahoma	34	34	7	7	213,917	197,096	9%	9%	0%
DeCA	VANDENBERG MAIN BASE	Lompoc	California	83	83	6	6	77,431	67,742	14%	14%	0%

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DeCA	WEST POINT MILITARY RESERVATION	West Point	New York	73	73	12	13	169,077	172,792	-2%	-2%	0%
DeCA	WHITE SANDS MISSLE RANGE	Unknown	New Mexico	32	32	5	5	150,750	167,656	-10%	-10%	0%
DeCA	WHITEMAN	Unknown	Missouri	61	61	9	9	146,101	146,891	-1%	-1%	0%
DeCA	WRIGHT-PATTERSON AFB	Wright-Patterson AFB	Ohio	123	123	18	20	147,252	160,176	-8%	-8%	0%
DeCA	YOKOTA AB	Yokota AFB	Japan	81	81	23	21	285,027	252,695	13%	13%	0%
DeCA	YONGSAN GARRISON	Seoul	South Korea	8	183	1	20	69,671	106,563	-35%	-97%	-96%
DeCA	YONGSAN GARRISON	Seoul	South Korea	183	8	17	1	93,462	131,912	-29%	1480%	2130%
DeCA	YUMA PROVING GROUND	Yuma	Arizona	23	23	4	4	174,100	168,338	3%	3%	0%
DECA	CHARLESTON AFB	Unknown	South Carolina	64	52	12	3	190,071	59,073	222%	295%	23%
DECA	EGLIN AFB	Valparaiso	Florida	63	54	13	7	203,760	136,079	50%	75%	17%
DECA	FORT LEWIS	Tacoma	Washington	148	103	17	13	114,867	128,701	-11%	28%	44%
DECA	INCIRLIK AB	Adana	Turkey	15	63	2	12	110,488	193,239	-43%	-87%	-77%
DECA	LANGLEY AFB	Langley AFB	Virginia	103	15	18	2	169,695	155,521	9%	661%	598%
DECA	MOFFETT FIELD (NASA)	Mountain View	California	52	14	3	1	64,233	73,369	-12%	218%	264%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
DECA	NAS JRB NEW ORLEANS LA	Belle Chasse	Louisiana	47	26	6	5	122,897	204,380	-40%	9%	81%
DECA	ROCK ISLAND ARSENAL	Rock Island	Illinois	54	64	7	11	136,061	178,413	-24%	-35%	-15%
DECA	US ARMY GARRISON KAISERSLAUTERN	Kaiserlautern	Germany	52	28	5	2	100,004	59,148	69%	211%	84%
DFAS	DFAS LI	Limestone	Maine/US	141	141	11	14	81,289	97,337	-16%	-16%	0%
DIA	DLOC Warehouse	Hyattsville	Maryland	267	267	27	20	102,037	74,745	37%	37%	0%
DIA	Joint Base Anacostia Bolling	Washington	District of Columbia	1,325	1,325	299	290	225,495	218,920	3%	3%	0%
DLA	DEFENSE DISTR DEPOT SAN JOAQUIN	French Camp	California	9,342	9,342	240	268	25,644	28,645	-10%	-10%	0%
DLA	DEFENSE DISTRIBUTION DEPOT SUSQUEHANNA	New Cumberland	Pennsylvania	7,474	6,792	512	492	68,515	72,485	-5%	4%	10%
DLA	DEFENSE SUPPLY CENTER COLUMBUS	Columbus	Ohio	3,684	4,552	370	365	100,370	80,111	25%	1%	-19%
DLA	Defense Supply Center Richmond (DSCR)	Richmond	Virginia	6,544	6,734	283	293	43,202	43,537	-1%	-4%	-3%
NGA	Bethesda	Bethesda	Maryland	1,327	1,327	214	219	160,979	164,766	-2%	-2%	0%
NGA	WNY	DC	District of Columbia	647	647	139	164	215,216	254,024	-15%	-15%	0%
NGA	St Louis	St. Louis	Mississippi	819	819	135	138	165,304	167,855	-2%	-2%	0%

Component	Installation Name	City	State / Country	FY 2011 Gross Square Footage ('000 Sqft) Goal Subject	FY 2010 Gross Square Footage (000' Sqft) Goal Subject	FY 2011 Total Goal Subject Site Delivered BTU (Billion)	FY 2010 Total Goal Subject Site Delivered BTU (Billion)	FY2011 Intensity BTU/SF	FY2010 Intensity BTU/SF	% Change in Intensity	% Change in Consumption	% Change in GSF
NGA	Reston	Reston	Virginia	675	675	121	154	178,716	228,319	-22%	-22%	0%
NGA	Arnold	St. Louis	Mississippi	281	281	126	122	447,879	434,548	3%	3%	0%
NSA	FORT GEORGE G MEADE	Fort Meade	Maryland	6,096	9,790	1,939	2,808	318,089	286,849	11%	-31%	-38%
TMA	FORT DETRICK	Frederick	Maryland	39	3,359	8	1,179	216,146	350,992	-38%	-99%	-99%
TMA	NAVHOSP BEAUFORT SC	Beaufort	South Carolina	438	438	84	105	192,689	239,890	-20%	-20%	0%
TMA	NAVHOSP GUAM	Naval Supply Depot	Guam	407	407	53	62	129,683	151,477	-14%	-14%	0%
TMA	NAVMEDCEN BREMERTON WA	Bremerton	Washington	394	394	91	86	231,548	217,579	6%	6%	0%
TMA	NAVMEDCEN PORTSMOUTH VA	Portsmouth	Virginia	2,175	2,150	412	408	189,368	189,811	0%	1%	1%
TMA	NAVMEDCEN SAN DIEGO CA	San Diego	California	2,041	2,029	283	291	138,723	143,334	-3%	-3%	1%
TMA	WALTER REED ARMY MEDICAL CENTER	Washington, DC	District of Columbia	4,781	4,306	840	882	175,602	204,736	-14%	-5%	11%

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APPENDIX F
HOUSE ARMED SERVICE COMMITTEE LETTER ON DOD'S RENEWABLE ENERGY GOAL

IKE SKELTON, MISSOURI, CHAIRMAN
JOHN SPRATT, SOUTH CAROLINA
SOLOMON P. ORTIZ, TEXAS
GENE TAYLOR, MISSISSIPPI
NEIL ABERCROMBIE, HAWAII
SILVESTRE REYES, TEXAS
VIC SNYDER, ARKANSAS
ADAM SMITH, WASHINGTON
LORETTA SANCHEZ, CALIFORNIA
MIKE McINTYRE, NORTH CAROLINA
ROBERT A. BRADY, PENNSYLVANIA
ROBERT ANDREWS, NEW JERSEY
SUSAN A. DAVIS, CALIFORNIA
JAMES R. LANGEVIN, RHODE ISLAND
RICK LARSEN, WASHINGTON
JIM COOPER, TENNESSEE
JIM MARSHALL, GEORGIA
MADELEINE Z. BORDALLO, GUAM
BRAD ELLSWORTH, INDIANA
PATRICK J. MURPHY, PENNSYLVANIA
HANK JOHNSON, GEORGIA
CAROL SHEA-PORTER, NEW HAMPSHIRE
JOE COURTNEY, CONNECTICUT
DAVID LOEBSACK, IOWA
JOE SESTAK, PENNSYLVANIA
GABRIELLE GIFFORDS, ARIZONA
NIKI TSONGAS, MASSACHUSETTS
GLENN NYE, VIRGINIA
CHELLIE PINGREE, MAINE
LARRY KISSELL, NORTH CAROLINA
MARTIN HEINRICH, NEW MEXICO
FRANK M. KRATOVIL, JR., MARYLAND
ERIC J.J. MASSA, NEW YORK
BOBBY BRIGHT, ALABAMA
SCOTT MURPHY, NEW YORK
DAN BOREN, OKLAHOMA

HOUSE COMMITTEE ON ARMED SERVICES

U.S. House of Representatives

Washington, DC 20515–6035

ONE HUNDRED ELEVENTH CONGRESS

HOWARD P. "BUCK" McKEON, CALIFORNIA
ROSCOE G. BARTLETT, MARYLAND
MAC THORNBERRY, TEXAS
WALTER B. JONES, NORTH CAROLINA
W. TODD AKIN, MISSOURI
J. RANDY FORBES, VIRGINIA
JEFF MILLER, FLORIDA
JOE WILSON, SOUTH CAROLINA
FRANK A. LoBIONDO, NEW JERSEY
ROB BISHOP, UTAH
MICHAEL TURNER, OHIO
JOHN KLINE, MINNESOTA
MIKE ROGERS, ALABAMA
TRENT FRANKS, ARIZONA
BILL SHUSTER, PENNSYLVANIA
CATHY McMORRIS RODGERS, WASHINGTON
K. MICHAEL CONAWAY, TEXAS
DOUG LAMBORN, COLORADO
ROB WITTMAN, VIRGINIA
MARY FALLIN, OKLAHOMA
DUNCAN HUNTER, CALIFORNIA
JOHN C. FLEMING, LOUISIANA
MIKE COFFMAN, COLORADO
THOMAS J. ROONEY, FLORIDA
TODD RUSSELL PLATTS, PENNSYLVANIA

ERIN C. CONATON, STAFF DIRECTOR

May 13, 2010

Dr. Ashton B. Carter
Under Secretary of Defense for Acquisition, Technology & Logistics
3000 Defense Pentagon, 3E673
Washington, DC 20301

Dear Secretary Carter:

We write regarding one of the Department of Defense's (DOD) most aggressive and long term energy goals: to produce or procure 25 percent renewable energy in DOD facilities by 2025. We are aware of concerns of ambiguity surrounding the terms included in the goal, such as "produce," "procure," and "consumes," and elements used in the calculation, such as non-electric energy.

We understand that, as originally conceived by the Department of Defense and prior to codification by section 2852 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (Public Law 109-364), this goal was calculated by dividing the total amount of renewable energy consumed by facilities, including electric and non-electric renewable sources, by the total electricity consumed by those facilities. The committee is aware that, as codified by section 2852 of Public Law 109-364, non-electric renewable energy, such as thermal energy, was excluded from contributing to this goal. The committee supports the inclusion of non-electric renewable energy towards this goal. For this reason, section 2842 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84) amended section 2852 of Public Law 109-364 to include non-electric renewable energy in the definition of renewable energy and in the goal. The committee did not intend for any changes to impact the use of facility electric energy as the denominator for the calculation of this goal.

We support the Department's efforts to comply with the goal to produce or procure renewable energy such that it accounts for 25 percent of the Department's facility electrical consumption by fiscal year 2025. We encourage the Secretary of Defense to promulgate

Secretary Carter
May 13, 2010
Page 2

implementing guidance that clarifies the terms and elements of the goal consistent with the goal's original intent and as the Secretary deems appropriate.

Sincerely,

SOLOMON P. ORTIZ
Chairman
Readiness Subcommittee

J. RANDY FORBES
Ranking Member
Readiness Subcommittee

SPO/JRF:er

COMMITTEE ON ARMED SERVICES
U.S. House of Representatives
Washington, DC 20515–6035
OFFICIAL BUSINESS

M.C.

Dr. Ashton B. Carter
Under Secretary of Defense for Acquisition,
Technology & Logistics
3000 Defense Pentagon, 3E673
Washington, DC 20301

VIA COURIER

APPENDIX G

FY 2011 RENEWABLE ENERGY POTENTIAL

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						(G)reen = Compatible (A)mber = Limited Compatibility (R)ed = Not Compatible N/A = Not Evaluated					(G)reen = Favorable (A)mber = Limited (R)ed = Not Favorable N/A= Not yet evaluated					Gthm = Geothermal GSHP = Ground Source Heat Pump				
DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	ALTUS AFB	OK	2	-	241,463	A	A	R	A	N/A	N/A	A	N/A	N/A	N/A		372			
Air Force	Cape Cod AFS	MA		-	58,756	N/A	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A		31,384			
Air Force	EARECKSON AS (ARWS)	AK	-	-	307,124	R	A	R	A	N/A	N/A	A	N/A	N/A	N/A		28,463			
Air Force	EIELSON AFB	AK	188	2,545,987	2,426,296	R	A	R	A	N/A	N/A	A	N/A	N/A	N/A	1,900	8,035			
Air Force	KIRTLAND AFB	NM	-	-	737,366	G	G	R	G	N/A	N/A	A	N/A	N/A	N/A		251,069	1,330,680		
Air Force	MCCONNELL AFB	KS	150	-	364,654	A	G	G	A	N/A	N/A	A	N/A	N/A	G		55,943			150

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	VANDENBERG AFB	CA	3,324	78,459	918,009	G	G	G	G	N/A	N/A	A	N/A	N/A	N/A		502,137			
Air Force	ASCENSION AAS		24,208	-	200,266	N/A	N/A	N/A	N/A	N/A	A	G	N/A	N/A	N/A	894	24,208			
Air Force	F E WARREN AFB	WY	29,770	174,376	382,109	R	A	R	A	N/A	N/A	G	N/A	N/A	N/A		48,123			
Air Force	CHEYENNE MOUNTAIN AFS	CO	-	-	118,832	G	G	R	G	N/A	A	N/A	N/A	N/A	N/A	7,472				
Air Force	DAVIS MONTHAN AFB	AZ	4,904	19,161	402,830	G	A	R	G	N/A	A	N/A	A	N/A	N/A	99,682		188,301		
Air Force	EDWARDS AFB	CA	-	-	683,886	G	G	G	G	N/A	A	N/A	N/A	N/A	N/A	3,176,726				

						(G)reen = Compatible (A)mber = Limited Compatibility (R)ed = Not Compatible N/A = Not Evaluated					(G)reen = Favorable (A)mber = Limited (R)ed = Not Favorable N/A= Not yet evaluated					Gthm = Geothermal GSHP = Ground Source Heat Pump				
DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	EGLIN AFB	FL	-	-	1,167,112	A	R	G	R	N/A	A	N/A	A	N/A	N/A	5,500		538,004		
Air Force	GOODFELLOW AFB	TX	9	-	216,676	A	G	A	G	N/A	A	N/A	A	N/A	N/A	11,000		118,362		
Air Force	LACKLAND AFB	TX	777	-	2,196,997	A	G	A	G	N/A	A	N/A	N/A	N/A	N/A					
Air Force	LOS ANGELES AFB	CA	1,767	-	104,918	G	G	G	G	N/A	A	N/A	N/A	N/A	N/A	4,132				
Air Force	LUKE AFB	AZ	2,031	-	280,607	G	A	R	G	N/A	A	N/A	N/A	N/A	N/A	118,898				
Air Force	MARCH AIR RESERVE BASE	CA	2,498	-	124,685	G	G	G	G	N/A	A	N/A	N/A	N/A	N/A	2,498				

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	MCGUIRE AFB	NJ	241	281,920	1,065,636	A	A	R	R	N/A	A	N/A	N/A	N/A	N/A	75,443		238,840		
Air Force	MORON AB	Spain	-	-	25,757	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A					
Air Force	MT HOME AFB	ID	-	-	520,398	R	R	R	A	N/A	A	N/A	N/A	A	N/A	580			134,501	
Air Force	NELLIS AFB	NV	116,479	-	493,572	G	G	R	G	N/A	A	N/A	N/A	A	G	227,563			134,501	
Air Force	RAF MILDENHALL	United Kingdom	-	-	332,410	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A	317				
Air Force	SCHRIEVER AFB	CO	31	43,219	458,741	G	G	R	G	N/A	A	N/A	N/A	N/A	N/A	137,490				

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	SHEPPARD AFB	TX	-	-	829,348	A	G	A	G	N/A	A	N/A	N/A	N/A	N/A	15,354				
Air Force	TRAVIS AFB	CA	-	-	585,368	G	G	G	G	N/A	A	N/A	N/A	N/A	N/A	34,372				
Air Force	U S A F ACADEMY	CO	819	-	985,909	G	G	R	G	N/A	A	N/A	N/A	N/A	N/A	46,113				
Air Force	BUCKLEY AFB	CO	198	-	648,998	G	G	R	G	N/A	G	N/A	N/A	N/A	N/A	8,250				
Air Force	ANDREWS AFB	MD	-	-	644,307	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			402,616		
Air Force	ARNOLD AFB	TN	-	446,444	971,293	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	AVIANO AIR BASE	Italy	1,087	-	287,053	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					1,087
Air Force	BARKSDALE AFB	LA	469	-	445,888	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	BEALE AFB	CA	-	-	240,493	G	G	G	G	N/A	N/A	N/A	A	N/A	N/A			95,645		
Air Force	BOLLING AFB	DC	-	-	176,739	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	BUCKLEY ANNEX	CO	-	-	100,382	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CANNON AFB	NM	-	-	276,889	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	CAPE CANAVERAL	FL	-	-	465,284	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	Cavalier	ND		-	259,082	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CHARLESTON AFB	SC	19,171	-	326,619	R	R	A	R	N/A	N/A	N/A	N/A	N/A	G					19,171
Air Force	CLEAR AIR FORCE STATION	AK	-	721,055	833,271	R	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	COLUMBUS AFB	MS	-	-	175,029	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	CREECH AFB	NV	-	-	88,058	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	DOBBINS AIR RESERVE BASE	GA	-	-	112,872	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	DOVER AFB	DE	-	331,262	478,885	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	DYESS AFB	TX	1,212	-	322,009	A	G	A	G	N/A	N/A	N/A	A	N/A	N/A			145,262		
Air Force	ELLSWORTH AFB	SD	-	-	669,786	A	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	ELMENDORF AFB	AK	-	-	1,309,269	R	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A				171,938	
Air Force	FAIRCHILD AFB	WA	-	-	487,226	A	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	GRAND FORKS AFB	ND	-	-	655,935	A	G	A	A	N/A	N/A	N/A	N/A	N/A	N/A					1,074
Air Force	GRISSOM ARB	IN	-	-	119,811	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	GUNTER AFB	AL	-	-	311,947	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	HICKAM AFB	HI	583	-	297,191	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A	583				
Air Force	HILL AFB	UT	469,335	756,776	2,230,315	A	R	R	G	N/A	N/A	N/A	G	N/A	N/A			157,338		
Air Force	HOLLOMAN AFB	NM	-	-	506,191	G	G	R	G	N/A	N/A	N/A	N/A	A	N/A				134,501	

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	HOMESTEAD AFRC	FL	3	-	73,194	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A			63,122		
Air Force	HURLBURT FIELD	FL	-	-	465,659	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A			16,739		
Air Force	INCIRLIK AB	Turkey	2,579	-	310,943	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	IZMIR AIR STATION	Turkey	-	-	12,278	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	KADENA AIR BASE	Japan	10	-	1,411,818	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	KEESLER AFB	MS	-	-	749,144	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	KUNSAN AIR BASE	South Korea	1,153	-	369,231	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		154			991
Air Force	L G HANSCOM AFB	MA	-	421,825	470,603	A	A	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LAJES FIELD	Portugal	-	-	107,455	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LANGLEY AFB	VA	316	-	734,438	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					446
Air Force	LAUGHLIN AFB	TX	0	-	169,260	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	LITTLEROCK AFB	AR	-	-	330,701	R	R	A	A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	MACDILLAFB	FL	-	-	558,753	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MALMSTROM AFB	MT	-	188,875	525,673	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					1,091
Air Force	MAXWELL AFB	AL	-	-	403,923	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MCCHORD AFB	WA	-	-	519,669	A	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MINN-ST PAUL IAP	MN	-	-	78,719	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	1,515				
Air Force	MINOT AFB	ND	31,679	-	771,950	A	G	A	A	N/A	N/A	N/A	N/A	N/A	G					20,878

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	MISAWA AIR BASE	Japan	-	840,332	1,318,749	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MOLOKAI AFS	HI	-	-	2,261	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	MOODY AFB	GA	2,314	-	232,454	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A	1,344				970
Air Force	NEW BOSTON	NH	-	-	25,162	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	NIAGARA FALLS AFRB	NY	-	-	78,559	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	OFFUTT AFB	NE	45,404	-	913,838	A	A	A	A	N/A	N/A	N/A	N/A	N/A	G					45,404

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	ONIZUKA AFB	CA	-	-	74,004	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	OSAN AFB	South Korea	-	-	682,230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	PATRICK AFB	FL	158	-	291,380	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A			358,260		
Air Force	PETERSON AFB	CO	-	-	613,589	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	PILLAR POINT AFS	CA	-	-	46,642	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	PITTSBURGH IAP	PA	-	-	6,085	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	POPE AFB	NC	-	-	166,093	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	RAF ALCONBURY	United Kingdom	-	-	180,542	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	RAF CROUGHTON	United Kingdom	-	-	118,690	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	RAF FAIRFORD	United Kingdom	-	-	64,429	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	RAF LAKENHEATH	United Kingdom	-	-	650,075	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	RAMSTEIN AIR BASE	Germany	-	-	1,357,893	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

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Air Force	RANDOLPH AIR FORCE BASE	TX	-	-	404,331	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	ROBINS AFB	GA	-	384,947	1,943,683	A	R	A	R	N/A	N/A	N/A	A	N/A	N/A			618,705		
Air Force	SANTA YNEZ PEAK	CA	-	-	305	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	SCOTT AFB	IL	-	-	649,148	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A			404,322		
Air Force	SEYMOUR JOHNSON AFB	NC	-	-	388,095	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	SHAW AFB	SC	-	-	306,412	R	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	SPANGDAHLEM	Germany	-	-	537,669	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,692				
Air Force	THULE AIR BASE	Greece	-	3,223,545	908,904	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	TINKER AFB	OK	-	1,371,523	3,162,655	A	A	R	A	N/A	N/A	N/A	A	N/A	N/A	1,795		171,342		
Air Force	TONOPAH RANGE	NV	-	-	214,536	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Air Force	TYNDALL AFB	FL	93	-	408,584	A	R	G	R	N/A	N/A	N/A	N/A	N/A	G	447		390,674		17,633
Air Force	VANCE AFB	OK	-	-	120,606	A	A	R	A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Air Force	WESTOVER ARB	MA	-	-	178,617	A	A	R	R	N/A	N/A	N/A	N/A	N/A	N/A			14,347		
Air Force	WHITEMAN AFB	MO	7,873	-	699,343	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					2,488
Air Force	WRIGHT-PATTERSON AFB	Ohio	-	1,153,161	2,861,093	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					5,385
Air Force	YOKOTA AB	Japan	-	541,951	1,443,993	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					6,685
Air Force	YOUNGSTOWN JOINT AIR RESERVE STATION	Ohio	-	-	66,711	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					12,812
Army	63RD RSC	CA	-	29,554	244,618	G	G	G	G	N/A	A	A	A	A	G	8,374	8,260			3,792

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	81ST RSC	AL	-	107,426	228,159	R	R	A	R	N/A	A	A	A	A	G	3,495	3,065			3,813
Army	88TH RSC	MN	-	725,506	937,570	A	G	G	R	N/A	A	A	A	A	G	24,242	29,890			9,461
Army	99TH RSC	PA	-	29,297	977,491	A	G	G	R	N/A	A	A	A	A	G	13,823	31,816			6,227
Army	ABERDEEN PG	MD	-	1,492,284	2,337,592	A	A	A	R	N/A	A	A	A	A	G	145,790	186,564			10,695
Army	ADELPHI LABORATORY CTR	MD	-	43,552	207,497	A	A	A	R	N/A	A	A	A	A	G	1,966	6,789			888
Army	ALABAMA ARNG	AL	-	71,498	185,986	R	R	A	A	N/A	A	A	A	A	G	16	17			11,594

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	ALASKA ARNG	AK	-	42,958	60,273	G	A	R	G	N/A	A	A	A	A	G	65	76			864
Army	ARIZONA ARNG	AZ	1,607	19,602	67,583	R	A	R	A	N/A	A	A	A	A	G	34,983	28,756			3,982
Army	AR ARNG	AR	-	138,001	287,931	G	R	A	G	N/A	A	A	A	A	G	-	-			15,815
Army	BLUE GRASS ARMY DEPOT	KY	-	116,117	163,107	R	R	A	R	N/A	A	A	A	A	G	34,944	49,354			3,117
Army	CALIFORNIA ARNG	CA	-	170,777	203,199	G	G	G	G	N/A	A	A	A	A	G	7,651	7,547			20,257
Army	CARLISLE BARRACKS	PA	-	51,990	143,721	A	G	G	R	N/A	A	A	A	A	G	741	1,705			756

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	COLORADO ARNG	CO	284	42,498	51,411	A	G	R	R	N/A	A	A	A	A	G	30	30			2,194
Army	CONNECTICUT ARNG	CT	-	46,982	70,935	A	A	A	R	N/A	A	A	A	A	G	87	86			5,276
Army	CORPUS CHRISTI AD	TX	-	68,392	357,633	A	G	A	G	N/A	A	A	A	A	G	-	-			1,772
Army	DELAWARE ARNG	DE	113	18,030	28,399	A	R	G	R	N/A	A	A	A	A	G	331	436			2,355
Army	DESERET CHEMICAL DEPOT	UT	-	263,881	547,581	A	R	R	G	N/A	A	A	A	A	G	63,226	51,973			1,051
Army	DEVENS RFTA	MA	-	74,948	99,202	A	A	R	R	N/A	A	A	A	A	G	-	-			952

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	DUGWAY PROVING GROUND	UT	-	163,262	307,100	A	R	R	G	N/A	A	A	A	A	G	1,155	1,733	436	10,911	1,712
Army	FLORIDA ARNG	FL	41	24,632	116,775	A	R	G	R	N/A	A	A	A	A	G	826	568			7,125
Army	FORT A P HILL	VA	285	51,745	84,195	A	A	G	R	N/A	A	A	A	A	G	165,158	162,914			913
Army	FORT BELVOIR	VA	-	268,366	997,060	A	A	G	R	N/A	A	A	A	A	G	25,238	18,789			6,768
Army	FORT BENNING	GA	-	465,547	1,394,801	A	R	A	R	N/A	A	A	A	A	G	1,386	1,348	58,049		11,211
Army	FORT BLISS	TX	-	560,767	1,626,505	A	G	A	G	N/A	A	A	A	A	G	42,747	231,067		34,660	11,705

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT BRAGG	NC	-	1,440,417	3,178,472	A	A	G	R	N/A	A	A	A	A	G	110,479	11,553	15,276		2,000
Army	FORT CAMPBELL	KY	620	769,721	1,821,999	R	R	A	R	N/A	A	A	A	A	G	220,783	286,558			11,730
Army	FORT DETRICK	MD	-	1,178,176	1,170,059	A	A	A	R	N/A	A	A	A	A	G	2,701	3,366			2,590
Army	FORT DRUM	NY	-	750,318	993,152	A	A	R	R	N/A	A	A	A	A	G	210,155	483,701			7,798
Army	FORT EUSTIS	VA	-	334,064	643,669	A	G	A	R	N/A	A	A	A	A	G	22,170	26,555			4,083
Army	FORT GEORGE MEADE	MD	-	266,329	468,380	A	A	G	R	N/A	A	A	A	A	G	10,550	12,598			3,345

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT GORDON	GA	9	229,796	990,981	A	A	A	R	N/A	A	A	A	A	G	1,500	10,000			50,000
Army	FORT GREELY	AK	-	183,441	228,953	A	R	A	R	N/A	A	A	A	A	G	1,926	5,199		55,032	852
Army	FORT HAMILTON	NY	-	6,601	73,557	R	A	R	A	N/A	A	A	A	A	G	369	696			482
Army	FORT HOOD	TX	-	787,443	2,637,508	A	G	A	R	N/A	A	A	A	A	G	584,721	1,291,983			15,771
Army	FORT HUACHUCA	AZ	2,320	238,971	586,219	A	G	A	G	N/A	A	A	A	A	G	105,135	343,173	45,828	17,458	4,166
Army	FORT HUNTER LIGGETT	CA	-	38,475	69,535	G	A	N/A	G	N/A	A	A	A	A	G	-	-			837

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT IRWIN	CA	1,066	126,786	508,267	G	G	G	G	N/A	A	A	A	A	G	577,667	186,009		148,396	3,253
Army	FORT JACKSON	SC	-	574,684	1,166,177	G	G	G	G	N/A	A	A	A	A	G	122,386	145,991			7,177
Army	FORT KNOX	KY	175,353	938,243	902,121	R	R	A	R	N/A	A	A	A	A	G	220,783	275,096			8,746
Army	FORT LEAVENWORTH	KS	-	205,513	471,490	R	R	A	A	N/A	A	A	A	A	G	1,155	12,131			2,931
Army	FORT LEE	VA	-	338,168	816,441	A	G	G	A	N/A	A	A	A	A	G	162,902	1,733			21,000
Army	FORT LEONARD WOOD	MO	-	800,640	1,579,324	A	A	G	R	N/A	A	A	A	A	G	1,386	83,184	43,646		8,195

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT LEWIS	WA	-	1,247,976	1,867,055	G	A	G	G	N/A	A	A	A	A	G		115,533	27,279	76,380	47,011
Army	FORT MCCLELLAN ARNG	AL	-	-	-	A	A	G	R	N/A	A	A	A	A	G	40,659	48,614			-
Army	FORT MCCOY	WI	-	393,670	496,900	R	R	A	A	N/A	A	A	A	A	G	275,152	368,846			15,784
Army	FORT MCNAIR	VA	-	66,921	236,363	R	A	G	R	N/A	A	A	A	A	G	-	-			1,154
Army	FORT MCPHERSON	GA	-	253,607	553,408	N/A	A	G	N/A	N/A	A	A	A	A	G	4,922	4,517			18,773
Army	FORT MONMOUTH	NJ	-	214,710	363,169	A	R	A	R	N/A	A	A	A	A	G	2,278	3,954			3,798

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT MONROE	VA	-	69,519	156,057	A	A	R	R	N/A	A	A	A	A	G	1,552	1,225			5,186
Army	FORT MYER	VA	-	156,301	369,118	A	A	G	R	N/A	A	A	A	A	G	2,804	2,213			6,559
Army	FORT POLK	LA	502	145,811	816,113	A	A	G	R	N/A	A	A	A	A	G	454,773	523,362			6,047
Army	FORT RICHARDSON	AK	-	795,412	330,583	A	R	A	R	N/A	A	A	A	A	G	67,735	133,629			6,544
Army	FORT RILEY	KS	-	638,811	1,147,047	R	A	R	A	N/A	A	A	A	A	G	13,450	20,796			8,621
Army	FORT SAM HOUSTON	TX	-	333,273	1,066,591	R	R	A	R	N/A	A	A	A	A	G	81,077	94,971			7,078

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	FORT SILL	OK	-	502,963	1,170,263	A	G	A	G	N/A	A	A	A	A	G	270,630	740,418			10,979
Army	FORT STEWART	GA	-	502,139	1,235,754	A	A	R	R	N/A	A	A	A	A	G	682,681	612,189			9,349
Army	FORT WAINWRIGHT	AK	-	3,345,772	2,644,208	G	R	A	G	N/A	A	A	A	A	G	6,268	9,628	4,365		16,621
Army	GEORGIA ARNG	GA	-	31,784	153,184	A	A	G	G	N/A	A	A	A	A	G	298	205			7,263
Army	HAWAII ARNG	HI	60	1,385	25,304	G	A	R	G	N/A	A	A	A	A	G	425	314			2,431
Army	HOLSTON AAP (GOCO)	TN	-	1,431,380	2,046,188	R	G	R	A	N/A	A	A	A	A	G	12,317	11,493			1,313

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	IDAHO ARNG	ID	-	51,840	101,411	A	G	R	R	N/A	A	A	A	A	G	3,398	3,351			4,880
Army	ILLINOIS ARNG	IL	-	141,937	145,663	R	R	R	R	N/A	A	A	A	A	G	110	252			10,925
Army	INDIANA ARNG	IN	5	233,552	409,063	A	R	R	R	N/A	A	A	A	A	G	-	-			12,002
Army	IOWA AAP (GOCO)	IA	-	677,242	624,558	R	G	G	R	N/A	A	A	A	A	G	41,383	71,437			3,016
Army	IOWA ARNG	IA	-	89,859	198,827	A	R	A	R	N/A	A	A	A	A	G	144	236			10,057
Army	KANSAS ARNG	KS	14	96,172	133,407	A	G	G	A	N/A	A	A	A	A	G	66	114			7,517

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	KENTUCKY ARNG	KY	922	84,441	122,115	A	G	G	A	N/A	A	A	A	A	G	911	1,498			6,208
Army	LAKE CITY AAP (GOCO)	MO	-	651,599	-	R	G	G	R	N/A	A	A	A	A	G	9,458	20,779			2,217
Army	LETTERKENNY ARMY DEPOT	PA	-	307,841	471,505	A	G	G	R	N/A	A	A	A	A	G	35,556	41,086			3,784
Army	LIMA JSMC	OHIO	-	361,792	557,418	R	R	A	A	N/A	A	A	A	A	G	645	994			1,240
Army	LOUISIANA ARNG	LA	-	44,137	129,025	A	A	G	R	N/A	A	A	A	A	G	-	-			11,226
Army	MAINE ARNG	ME	-	48,756	52,284	A	G	G	R	N/A	A	A	A	A	G	2,003	3,293			4,299

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	MARYLAND ARNG	MD	-	45,205	71,344	A	R	G	A	N/A	A	A	A	A	G	94	155			6,037
Army	MASSACHUSETTS ARNG	MA	-	66,210	81,701	A	R	A	R	N/A	A	A	A	A	G	24	39			7,693
Army	MCALESTER AAP	OK	-	334,715	457,613	A	A	A	R	N/A	A	A	A	A	G	119,906	183,987			7,957
Army	MICHIGAN ARNG	MI	-	189,985	264,976	A	A	A	R	N/A	A	A	A	A	G	1,486	3,420			14,309
Army	MILAN AAP (GOCO)	TN	-	130,562	197,411	A	A	R	R	N/A	A	A	A	A	G	49,883	63,607			2,718
Army	MINNESOTA ARNG	MN	-	127,921	184,250	A	A	R	A	N/A	A	A	A	A	G	2,442	8,994			11,112

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	MISSISSIPPI ARNG	MS	-	93,776	300,054	A	G	A	R	N/A	A	A	A	A	G	99	97			17,462
Army	MISSOURI ARNG	MO	-	74,048	132,498	A	R	R	G	N/A	A	A	A	A	G	1,339	2,311			8,655
Army	MT ARNG	MT	278	50,567	75,692	R	G	G	A	N/A	A	A	A	A	G	40,779	112,629			4,255
Army	MOT SUNNY POINT	NC	-	36,779	17,251	A	R	A	R	N/A	A	A	A	A	G	26,641	35,038			251
Army	NEBRASKA ARNG	NE	-	40,310	79,251	A	A	G	G	N/A	A	A	A	A	G	167	411			5,482
Army	NEVADA ARNG	NV	-	23,570	37,718	A	G	A	A	N/A	A	A	A	A	G	1,271	1,045			2,018

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	NEW HAMPSHIRE ARNG	NH	-	26,518	37,201	A	A	G	R	N/A	A	A	A	A	G	-	-			2,646
Army	NEW JERSEY ARNG	NJ	3,242	111,337	101,865	G	A	A	G	N/A	A	A	A	A	G	-	-			6,481
Army	NEW MEXICO ARNG	NM	-	24,252	45,871	A	G	R	R	N/A	A	A	A	A	G	38,647	71,161			3,297
Army	NEW YORK ARNG	NY	-	150,034	175,583	A	R	R	R	N/A	A	A	A	A	G	1,442	2,370			14,633
Army	NORTH CAROLINA ARNG	NC	-	59,567	103,675	G	A	R	G	N/A	A	A	A	A	G	89	88			7,125
Army	NORTH DAKOTA ARNG	ND	-	83,590	106,465	A	G	R	R	N/A	A	A	A	A	G	102	188			4,218

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	OHIO ARNG	OHIO	354	66,192	99,282	A	G	A	R	N/A	A	A	A	A	G	1,822	4,193			9,983
Army	OKLAHOMA ARNG	OK	-	54,191	117,083	A	R	A	R	N/A	A	A	A	A	G	90	124			12,974
Army	OREGON ARNG	OR	3	69,400	96,437	A	A	G	A	N/A	A	A	A	A	G	2,148	1,695			7,254
Army	PARKS CSTC	CA	-	25,291	51,946	A	G	A	R	N/A	A	A	A	A	G	454,045	447,878			841
Army	PENNSYLVANIA ARNG	PA	-	310,327	436,272	A	R	G	A	N/A	A	A	A	A	G	76	100			18,188
Army	PINE BLUFF ARSENAL	AR	-	663,014	936,289	A	G	G	R	N/A	A	A	A	A	G	30,840	40,561			2,765

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	PRESIDIO OF MONTEREY	CA	4	109,303	186,118	G	G	G	G	N/A	A	A	A	A	G	5,006	3,527			2,141
Army	RADFORD AAP (GOCO)	VA	-	2,894,746	3,091,618	A	G	G	R	N/A	A	A	A	A	G	13,144	14,818			8,545
Army	RED RIVER ARMY DEPOT	TX	11,108	564,812	774,428	G	A	R	G	N/A	A	A	A	A	G	44,853	57,315			5,684
Army	RHODE ISLAND ARNG	RI	-	32,716	64,025	G	G	G	G	N/A	A	A	A	A	G	655	862			2,236
Army	ROCK ISLAND ARSENAL	IL	60,304	612,381	889,732	A	A	G	R	N/A	A	A	A	A	G	1,326	3,402			4,861
Army	SCRANTON AAP	PA	-	345,689	511,719	A	G	A	G	N/A	A	A	A	A	G	24	40			298

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	SOLDIER SYSTEMS CTR, NATICK	MA	-	85,623	141,009	R	R	R	R	N/A	A	A	A	A	G	-	608			755
Army	SOUTH CAROLINA ARNG	SC	-	43,287	126,837	R	G	G	R	N/A	A	A	A	A	G	1,910	1,413			7,603
Army	SOUTH DAKOTA ARNG	SD	102	51,590	75,705	A	G	G	R	N/A	A	A	A	A	G	2	5			4,460
Army	TENNESSEE ARNG	TN	-	63,516	132,844	G	G	G	G	N/A	A	A	A	A	G	1,553	2,552			11,087
Army	TEXAS ARNG	TX	1,260	47,277	198,447	A	A	R	R	N/A	A	A	A	A	G	9,906	12,214			12,007
Army	TOBYHANNA ARMY DEPOT	PA	-	353,117	553,963	A	R	A	A	N/A	A	A	A	A	G	2,116	5,065			3,449

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	TOOELE ARMY DEPOT	UT	2,387	45,329	90,285	R	A	R	R	N/A	A	A	A	A	G	72,878	64,186			2,014
Army	USAG DETROIT ARSENAL	MI	-	223,705	332,326	A	R	R	G	N/A	A	A	A	A	G	527	840			1,218
Army	USAG HAWAII	HI	-	40,412	859,528	R	G	G	R	N/A	A	A	A	A	G	26,574	1,733			9,842
Army	USAG MIAMI	FL	-	217	31,003	A	G	R	R	N/A	A	A	A	A	G	76	73			585
Army	UTAH ARNG	UT	3,447	59,335	84,850	A	R	R	R	N/A	A	A	A	A	G	190	188			1,768
Army	VERMONT ARNG	VT	-	43,099	51,883	A	R	R	R	N/A	A	A	A	A	G	1,141	1,876			3,602

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	VIRGINIA ARNG	VA	-	108,064	215,825	A	A	G	G	N/A	A	A	A	A	G	279	275			9,019
Army	WASHINGTON ARNG	WA	161	45,090	68,110	A	N/A	N/A	R	N/A	A	A	A	A	G	583	958			4,878
Army	WATERVLIET ARSENAL	NY	-	242,710	346,443	R	A	G	R	N/A	A	A	A	A	G	289	539			1,537
Army	WEST POINT MIL RESERVATION	NY	-	853,806	969,270	A	G	A	R	N/A	A	A	A	A	G	-	60,415			5,701
Army	WEST VIRGINIA ARNG	WV	-	80,214	140,632	A	G	A	R	N/A	A	A	A	A	G	935	1,844			7,664
Army	WHITE SANDS MISSILE RANGE	NM	290	132,156	460,424	A	R	R	R	N/A	A	A	A	A	G	42,747	24,262		65,469	3,153

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	WISCONSIN ARNG	WI	-	132,935	163,403	A	G	R	R	N/A	A	A	A	A	G	83	110			7,339
Army	WYOMING ARNG	WY	-	50,840	110,818	R	A	G	A	N/A	A	A	A	A	G	24,208	19,103			2,748
Army	YUMA PROVING GROUND	AZ	2,739	7,528	149,264	R	A	N/A	A	N/A	A	A	A	A	G	57,767	1,733		109,115	1,305
Army	FORT CARSON	CO	10,070	739,936	1,359,361	A	G	G	R	N/A	G	A	A	A	G	1,320,497	68,165	23,107	87,292	8,458
Army	FORT RUCKER	AL	-	187,493	617,568	A	G	G	A	N/A	G	A	A	A	G	29,200	145,506	29,200		4,177
Army	REDSTONE ARSENAL	AL	-	932,852	1,980,924	R	R	A	A	N/A	G	A	A	A	G	56,900	89,540	56,900		56,900

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	ANNISTON ARMY DEPOT	AL	-	584,338	1,050,898	R	R	A	R	N/A	G	G	G	G	G	26,300	40,303	26,300		26,300
Army	HAWTHORNE AAP (GOCO)	NV	-	130,061	156,895	G	R	A	G	N/A	G	G	G	G	G	212,581	434,699		54,557	7,271
Army	PICATINNY ARSENAL	NJ	-	410,586	590,536	G	A	R	G	N/A	G	G	A	G	G	12,367	17,427			2,389
Army	SIERRA ARMY DEPOT	CA	-	120,962	162,057	R	R	A	R	N/A	G	G	A	G	G	538,004	73,630		508,115	3,874
Army	Camp Henry	South Korea	1	-	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Army	Camp Humphries	South Korea	0	-	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Army	USAG Grafenwoehr	GERMANY	119	-	-	A	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Army	USAG Kwajalein Atoll	MARSHALL ISLANDS	506	-	-	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Army	USAG Mannheim	GERMANY	54	-	-	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Army	USAG Schweinfurt	GERMANY	50	-	-	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Army	Yongsan Garrison	South Korea	3,782	-	-	A	A	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
DCMA	DCMA (1)	CA	-	-	8,454	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DCMA	DCMA (2)	OH	-	-	10,887	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
DeCA	ABERDEEN PROVING GROUND	MD	-	-	11,290	A	A	A	A	N/A	A	R	R	R	R	837	-	-	-	-
DeCA	ALTUS AIR FORCE BASE	OK	-	-	8,266	N/A	A	R	N/A	N/A	A	R	R	R	R	950	-	-	-	-
DeCA	ANDREWS AIR FORCE BASE	MD	-	-	17,915	A	N/A	N/A	R	N/A	A	R	R	R	R	1,525	-	-	-	-
DeCA	ARNOLD AIR STATION	TN	-	-	4,759	N/A	A	A	N/A	N/A	A	R	R	R	R	347	-	-	-	-
DeCA	ARTILLERY KASERNE	Germany	-	-	1,167	N/A	R	R	N/A	N/A	A	R	R	R	R	122	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	ASKREN MANOR FAM HSG	Germany	-	-	8,810	A	N/A	N/A	R	N/A	A	R	R	R	R	456	-	-	-	-
DeCA	AVIANO AIR BASE	Italy	-	-	11,112	A	N/A	N/A	R	N/A	A	R	R	R	R	385	-	-	-	-
DeCA	BANGOR INTERNATIONAL AIRPORT (ANG)	ME	-	-	5,142	R	A	A	A	N/A	A	R	R	R	R	303	-	-	-	-
DeCA	BARKSDALE AIR FORCE BASE	LA	-	-	7,469	N/A	R	A	N/A	N/A	A	R	R	R	R	1,707	-	-	-	-
DeCA	BEALE AIR FORCE BASE	CA	-	-	9,411	N/A	G	G	N/A	N/A	A	R	R	R	R	1,238	-	-	-	-
DeCA	BITBURG FAMILY HOUSING ANNEX	Germany	-	-	7,575	A	N/A	N/A	G	N/A	A	R	R	R	R	568	-	-	-	-

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DeCA	BOLLING AIR FORCE BASE	DC	-	-	11,247	A	N/A	N/A	R	N/A	A	R	R	R	R	859	-	-	-	-
DeCA	BUCKLEY AIR FORCE BASE	CO	-	-	13,303	N/A	G	R	N/A	N/A	A	R	R	R	R	1,157	-	-	-	-
DeCA	CAMP DARBY	Italy	-	-	3,952	G	N/A	N/A	G	N/A	A	R	R	R	R	316	-	-	-	-
DeCA	CAMP EDERLE	Italy	-	-	10,990	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	489	-	-	-	-
DeCA	CAMP WALKER	South Korea	-	-	3,433	A	N/A	N/A	R	N/A	A	R	R	R	R	640	-	-	-	-
DeCA	CAMP ZAMA	Japan	-	-	1,677	A	N/A	N/A	R	N/A	A	R	R	R	R	116	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	CANNON AIR FORCE BASE	NM	-	-	6,869	R	G	R	R	N/A	A	R	R	R	R	1,132	-	-	-	-
DeCA	CARLISLE BARRACKS	PA	-	-	6,630	R	G	G	R	N/A	A	R	R	R	R	716	-	-	-	-
DeCA	CBC GULFPORT MS	MS	-	-	8,159	N/A	R	A	N/A	N/A	A	R	R	R	R	369	-	-	-	-
DeCA	CHARLESTON AIR FORCE BASE	SC	-	-	17,146	A	R	A	R	N/A	A	R	R	R	R	1,290	-	-	-	-
DeCA	CHIEVRES AIRBASE	Belgium	-	-	8,277	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	248	-	-	-	-
DeCA	COLUMBUS AIR FORCE BASE	MS	-	-	3,013	R	R	A	R	N/A	A	R	R	R	R	732	-	-	-	-

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DeCA	COMFLEACT SASEBO JA	Japan	-	-	4,746	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	215	-	-	-	-
DeCA	COMFLEACT SASEBO JA	Japan	-	-	2,531	G	N/A	N/A	G	N/A	A	R	R	R	R	236	-	-	-	-
DeCA	COMFLEACT YOKOSUKA JA	Japan	-	-	6,278	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	1,887	-	-	-	-
DeCA	COMFLEACT YOKOSUKA JA	Japan	-	-	14,968	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	1,028	-	-	-	-
DeCA	DAHLONEGA	GA	-	-	424	N/A	R	A	N/A	N/A	A	R	R	R	R	43	-	-	-	-
DeCA	DAVIS-MONTHAN AIR FORCE BASE	AZ	-	-	15,914	A	A	R	R	N/A	A	R	R	R	R	2,576	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	DOVER AIR FORCE BASE	DE	-	-	6,789	A	R	G	G	N/A	A	R	R	R	R	937	-	-	-	-
DeCA	DUGWAY PROVING GROUND	UT	-	-	2,544	G	R	R	G	N/A	A	R	R	R	R	271	-	-	-	-
DeCA	DYESS AIR FORCE BASE	TX	-	-	9,333	A	G	A	R	N/A	A	R	R	R	R	1,309	-	-	-	-
DeCA	EAST CAMP GRAFENWOEHR	Germany	-	-	8,119	A	N/A	N/A	R	N/A	A	R	R	R	R	128	-	-	-	-
DeCA	EDWARDS AIR FORCE BASE	CA	-	-	7,650	R	G	G	A	N/A	A	R	R	R	R	1,264	-	-	-	-
DeCA	EGLIN AIR FORCE AUXILIARY FIELD #9	FL	-	-	12,233	G	R	G	G	N/A	A	R	R	R	R	946	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	EGLIN AIR FORCE BASE	FL	-	-	16,281	G	R	G	G	N/A	A	R	R	R	R	1,597	-	-	-	-
DeCA	EIELSON AIR FORCE BASE	AK	-	-	3,196	A	A	R	A	N/A	A	R	R	R	R	376	-	-	-	-
DeCA	ELLSWORTH AIR FORCE BASE	SD	-	-	14,524	A	A	R	G	N/A	A	R	R	R	R	867	-	-	-	-
DeCA	ELMENDORF AIR FORCE BASE	AK	-	-	18,502	A	A	R	R	N/A	A	R	R	R	R	942	-	-	-	-
DeCA	FAIRCHILD AIR FORCE BASE	WA	-	-	11,867	A	A	G	R	N/A	A	R	R	R	R	485	-	-	-	-
DeCA	FLEET ACTIVITIES CHINHAE KS	South Korea	-	-	1,440	A	N/A	N/A	G	N/A	A	R	R	R	R	135	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT BELVOIR	VA	-	-	21,482	A	A	G	G	N/A	A	R	R	R	R	1,732	-	-	-	-
DeCA	FORT BENJAMIN HARRISON	IN	-	-	7,351	G	R	A	G	N/A	A	R	R	R	R	646	-	-	-	-
DeCA	FORT BENNING GA	GA	-	-	13,155	A	R	A	R	N/A	A	R	R	R	R	1,761	-	-	-	-
DeCA	FORT BLISS	TX	-	-	22,712	A	G	A	R	N/A	A	R	R	R	R	2,748	-	-	-	-
DeCA	FORT BRAGG	NC	-	-	12,837	N/A	A	G	N/A	N/A	A	R	R	R	R	1,425	-	-	-	-
DeCA	FORT BRAGG	NC	-	-	20,635	R	A	G	R	N/A	A	R	R	R	R	1,767	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT BUCHANAN	Puerto Rico	-	-	15,045	G	N/A	N/A	G	N/A	A	R	R	R	R	1,705	-	-	-	-
DeCA	FORT CAMPBELL	TN	-	-	22,500	A	R	R	R	N/A	A	R	R	R	R	1,652	-	-	-	-
DeCA	FORT CARSON	CO	-	-	12,866	A	G	R	R	N/A	A	R	R	R	R	1,976	-	-	-	-
DeCA	FORT DETRICK	MD	-	-	7,930	A	A	A	R	N/A	A	R	R	R	R	470	-	-	-	-
DeCA	FORT DRUM	NY	-	-	15,015	A	G	A	R	N/A	A	R	R	R	R	990	-	-	-	-
DeCA	FORT EUSTIS	VA	-	-	13,210	A	A	G	R	N/A	A	R	R	R	R	1,381	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT GEORGE G MEADE	MD	-	-	26,087	A	A	A	R	N/A	A	R	R	R	R	1,411	-	-	-	-
DeCA	FORT GORDON	GA	-	-	14,325	A	R	A	R	N/A	A	R	R	R	R	1,378	-	-	-	-
DeCA	FORT GREELY	AK	-	-	3,508	A	A	R	G	N/A	A	R	R	R	R	148	-	-	-	-
DeCA	FORT HAMILTON	NY	-	-	9,899	A	G	A	G	N/A	A	R	R	R	R	602	-	-	-	-
DeCA	FORT HOOD	TX	-	-	15,697	G	G	A	G	N/A	A	R	R	R	R	2,101	-	-	-	-
DeCA	FORT HOOD	TX	-	-	19,415	G	G	A	G	N/A	A	R	R	R	R	1,737	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT HUACHUCA	AZ	-	-	12,141	G	A	R	G	N/A	A	R	R	R	R	1,623	-	-	-	-
DeCA	FORT HUNTER LIGGETT	CA	-	-	1,668	R	G	G	R	N/A	A	R	R	R	R	117	-	-	-	-
DeCA	FORT JACKSON	SC	-	-	16,731	A	R	A	A	N/A	A	R	R	R	R	1,943	-	-	-	-
DeCA	FORT KNOX	KY	-	-	16,882	A	R	A	R	N/A	A	R	R	R	R	1,457	-	-	-	-
DeCA	FORT LEAVENWORTH	KS	-	-	11,135	A	G	G	R	N/A	A	R	R	R	R	888	-	-	-	-
DeCA	FORT LEE	VA	-	-	23,420	A	A	G	R	N/A	A	R	R	R	R	2,886	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT LEE	VA	-	-	12,953	A	A	G	G	N/A	A	R	R	R	R	966	-	-	-	-
DeCA	FORT LEONARD WOOD	MO	-	-	13,004	A	A	G	R	N/A	A	R	R	R	R	1,061	-	-	-	-
DeCA	FORT LEWIS	WA	-	-	14,510	A	A	G	R	N/A	A	R	R	R	R	628	-	-	-	-
DeCA	FORT MCCOY	WI	-	-	3,754	A	A	G	R	N/A	A	R	R	R	R	190	-	-	-	-
DeCA	FORT MYER	VA	-	-	7,228	A	A	G	A	N/A	A	R	R	R	R	886	-	-	-	-
DeCA	FORT POLK	LA	-	-	12,200	R	R	A	R	N/A	A	R	R	R	R	1,232	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT RILEY	KS	-	-	13,200	A	G	G	G	N/A	A	R	R	R	R	1,016	-	-	-	-
DeCA	FORT RUCKER	AL	-	-	10,033	A	R	A	A	N/A	A	R	R	R	R	1,274	-	-	-	-
DeCA	FORT SAM HOUSTON	TX	-	-	15,804	A	G	A	R	N/A	A	R	R	R	R	1,717	-	-	-	-
DeCA	FORT SILL	OK	-	-	12,784	R	A	R	A	N/A	A	R	R	R	R	1,670	-	-	-	-
DeCA	FORT STEWART	GA	-	-	12,044	A	R	A	G	N/A	A	R	R	R	R	1,554	-	-	-	-
DeCA	FORT WAINWRIGHT	AK	-	-	19,286	N/A	A	R	N/A	N/A	A	R	R	R	R	937	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FRANCIS E WARREN AIR FORCE BASE	WY	-	-	10,584	G	A	R	G	N/A	A	R	R	R	R	1,157	-	-	-	-
DeCA	GERMERSHEIM ARMY DEPOT	Germany	-	-	24,931	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	7,077	-	-	-	-
DeCA	GOODFELLOW AIR FORCE BASE	TX	-	-	7,918	A	G	A	A	N/A	A	R	R	R	R	1,025	-	-	-	-
DeCA	GRAND FORKS AIR FORCE BASE	ND	-	-	5,601	N/A	G	A	N/A	N/A	A	R	R	R	R	493	-	-	-	-
DeCA	HAINERBERG HSG AND SHOP CTR	Germany	-	-	9,638	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	555	-	-	-	-
DeCA	HANSCOM AIR FORCE BASE	MA	-	-	12,344	R	A	R	R	N/A	A	R	R	R	R	879	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	HICKAM AIR FORCE BASE	HI	-	-	16,819	N/A	G	R	N/A	N/A	A	R	R	R	R	2,415	-	-	-	-
DeCA	HILL AIR FORCE BASE	UT	-	-	12,583	G	R	R	G	N/A	A	R	R	R	R	1,299	-	-	-	-
DeCA	HOHENFELS TNG AREA	Germany	-	-	5,942	A	N/A	N/A	R	N/A	A	R	R	R	R	343	-	-	-	-
DeCA	HOLLOMAN AIR FORCE BASE	NM	-	-	9,109	A	G	R	R	N/A	A	R	R	R	R	1,437	-	-	-	-
DeCA	HUNTER ARMY AIRFIELD	GA	-	-	8,577	N/A	R	A	N/A	N/A	A	R	R	R	R	862	-	-	-	-
DeCA	INCIRLIK AIR BASE ADANA	Turkey	-	-	6,956	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	904	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	IZMIR AIR STATION	Turkey	-	-	2,300	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	177	-	-	-	-
DeCA	KADENA AIR BASE	Japan	-	-	9,670	G	N/A	N/A	G	N/A	A	R	R	R	R	1,039	-	-	-	-
DeCA	KAPAUN ADMINISTRATION ANX	Germany	-	-	4,851	G	N/A	N/A	G	N/A	A	R	R	R	R	506	-	-	-	-
DeCA	KATTERBACH KASERNE	Germany	-	-	5,024	R	N/A	N/A	R	N/A	A	R	R	R	R	389	-	-	-	-
DeCA	KEESLER AIR FORCE BASE	MS	-	-	12,423	A	R	A	R	N/A	A	R	R	R	R	477	-	-	-	-
DeCA	KELLEY BARRACKS-GERGE44F	Germany	-	-	2,200	A	N/A	N/A	R	N/A	A	R	R	R	R	163	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	KIRTLAND AIR FORCE BASE	NM	-	-	15,174	A	G	R	G	N/A	A	R	R	R	R	2,575	-	-	-	-
DeCA	KUNSAN AIR BASE	South Korea	-	-	4,771	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	193	-	-	-	-
DeCA	KURE PIER 6	Japan	-	-	581	A	N/A	N/A	R	N/A	A	R	R	R	R	20	-	-	-	-
DeCA	LACKLAND AIR FORCE BASE	TX	-	-	17,205	A	G	A	R	N/A	A	R	R	R	R	1,919	-	-	-	-
DeCA	LAJES FIELD	Portugal	-	-	5,205	A	N/A	N/A	R	N/A	A	R	R	R	R	866	-	-	-	-
DeCA	LANGLEY AIR FORCE BASE	VA	-	-	18,611	G	A	G	G	N/A	A	R	R	R	R	1,542	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	LAUGHLIN AIR FORCE BASE	TX	-	-	3,971	A	G	A	R	N/A	A	R	R	R	R	1,231	-	-	-	-
DeCA	LITTLE ROCK AIR FORCE BASE	AR	-	-	13,789	G	R	A	G	N/A	A	R	R	R	R	1,495	-	-	-	-
DeCA	LUKE AIR FORCE BASE	AZ	-	-	11,606	A	A	R	G	N/A	A	R	R	R	R	2,441	-	-	-	-
DeCA	MACDILL AIR FORCE BASE	FL	-	-	18,579	N/A	R	G	N/A	N/A	A	R	R	R	R	2,553	-	-	-	-
DeCA	MALMSTROM AIR FORCE BASE	MT	-	-	9,892	G	G	A	G	N/A	A	R	R	R	R	815	-	-	-	-
DeCA	MARCH AIR RESERVE BASE	CA	-	-	18,276	A	G	G	R	N/A	A	R	R	R	R	2,090	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MARINE CORPS BASE QUANTICO VA	VA	-	-	15,266	N/A	A	G	N/A	N/A	A	R	R	R	R	1,052	-	-	-	-
DeCA	MAXWELL AIR FORCE BASE	AL	-	-	14,220	A	R	A	G	N/A	A	R	R	R	R	1,300	-	-	-	-
DeCA	MAXWELL AIR FORCE BASE GUNTER ANNEX	AL	-	-	6,968	A	R	A	R	N/A	A	R	R	R	R	987	-	-	-	-
DeCA	MCAGCC TWENTYNINE PALMS CA	CA	-	-	4,162	G	G	G	G	N/A	A	R	R	R	R	1,357	-	-	-	-
DeCA	MCAS CHERRY POINT NC	NC	-	-	8,688	G	A	G	G	N/A	A	R	R	R	R	886	-	-	-	-
DeCA	MCAS IWAKUNI JA	Japan	-	-	5,890	A	N/A	N/A	R	N/A	A	R	R	R	R	309	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MCAS MIRAMAR	CA	-	-	13,459	A	G	G	R	N/A	A	R	R	R	R	1,900	-	-	-	-
DeCA	MCAS YUMA AZ	AZ	-	-	5,052	A	A	R	R	N/A	A	R	R	R	R	807	-	-	-	-
DeCA	MCB CAMP LEJEUNE NC	NC	-	-	12,825	G	A	G	G	N/A	A	R	R	R	R	1,130	-	-	-	-
DeCA	MCB CAMP LEJEUNE NC	NC	-	-	3,402	A	A	G	R	N/A	A	R	R	R	R	689	-	-	-	-
DeCA	MCB CAMP PENDLETON CA	CA	-	-	13,779	N/A	G	G	N/A	N/A	A	R	R	R	R	1,863	-	-	-	-
DeCA	MCB CAMP PENDLETON CA	CA	-	-	4,498	N/A	G	G	N/A	N/A	A	R	R	R	R	333	-	-	-	-

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	-	-	6,747	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	339	-	-	-	-
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	-	-	10,746	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	634	-	-	-	-
DeCA	MCB HAWAII KANEOHE	HI	-	-	12,167	N/A	G	R	N/A	N/A	A	R	R	R	R	1,379	-	-	-	-
DeCA	MCCHORD AIR FORCE BASE	WA	-	-	18,175	A	A	G	A	N/A	A	R	R	R	R	883	-	-	-	-
DeCA	MCCLELLAN AIR FORCE BASE	CA	-	-	11,154	A	G	G	G	N/A	A	R	R	R	R	1,040	-	-	-	-
DeCA	MCCLELLAN AIR FORCE BASE	CA	-	-	12,583	A	G	G	R	N/A	A	R	R	R	R	1,315	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MCCONNELL AIR FORCE BASE	KS	-	-	6,579	R	G	G	A	N/A	A	R	R	R	R	835	-	-	-	-
DeCA	MCGUIRE AIR FORCE BASE	NJ	-	-	17,652	R	A	R	R	N/A	A	R	R	R	R	1,231	-	-	-	-
DeCA	MCLB ALBANY GA	GA	-	-	6,506	R	R	A	A	N/A	A	R	R	R	R	603	-	-	-	-
DeCA	MCLB BARSTOW CA	CA	-	-	4,695	G	G	G	G	N/A	A	R	R	R	R	395	-	-	-	-
DeCA	MCRD/BEAUFORT PI, SC	SC	-	-	5,011	A	R	A	R	N/A	A	R	R	R	R	661	-	-	-	-
DeCA	MCSPTACT KANSAS CITY MO	MO	-	-	4,010	A	A	G	R	N/A	A	R	R	R	R	352	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	MENWITH HILL	United Kingdom	-	-	5,170	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	205	-	-	-	-
DeCA	MINOT AIR FORCE BASE	ND	-	-	8,726	N/A	G	A	N/A	N/A	A	R	R	R	R	675	-	-	-	-
DeCA	MISAWA AIR BASE	Japan	-	-	20,385	G	N/A	N/A	G	N/A	A	R	R	R	R	739	-	-	-	-
DeCA	MOFFETT FIELD	CA	-	-	3,068	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	854	-	-	-	-
DeCA	MOODY AIR FORCE BASE	GA	-	-	7,296	N/A	R	A	N/A	N/A	A	R	R	R	R	657	-	-	-	-
DeCA	MOUNTAIN HOME AIR FORCE BASE	ID	-	-	6,949	G	R	R	G	N/A	A	R	R	R	R	800	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAF ATSUGI JA	Japan	-	-	5,286	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	383	-	-	-	-
DeCA	NAF EL CENTRO CA	CA	-	-	2,109	R	G	G	A	N/A	A	R	R	R	R	232	-	-	-	-
DeCA	NAS BRUNSWICK ME	ME	-	-	5,753	A	A	A	R	N/A	A	R	R	R	R	-	-	-	-	-
DeCA	NAS CORPUS CHRISTI TX	TX	-	-	8,975	A	G	A	R	N/A	A	R	R	R	R	552	-	-	-	-
DeCA	NAS FALLON NV	NV	-	-	4,839	A	G	R	R	N/A	A	R	R	R	R	725	-	-	-	-
DeCA	NAS JACKSONVILLE FL	FL	-	-	14,228	N/A	R	G	N/A	N/A	A	R	R	R	R	1,318	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAS JRB FT WORTH TX	TX	-	-	6,006	N/A	G	A	N/A	N/A	A	R	R	R	R	1,387	-	-	-	-
DeCA	NAS KEY WEST FL	FL	-	-	4,650	A	R	G	G	N/A	A	R	R	R	R	318	-	-	-	-
DeCA	NAS KINGSVILLE TX	TX	-	-	2,389	N/A	G	A	N/A	N/A	A	R	R	R	R	176	-	-	-	-
DeCA	NAS LEMOORE CA	CA	-	-	6,689	R	G	G	A	N/A	A	R	R	R	R	792	-	-	-	-
DeCA	NAS MERIDIAN MS	MS	-	-	5,480	A	R	A	A	N/A	A	R	R	R	R	378	-	-	-	-
DeCA	NAS NORTH ISLAND SAN DIEGO CA	CA	-	-	9,695	N/A	G	G	N/A	N/A	A	R	R	R	R	1,404	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAS NORTH ISLAND SAN DIEGO CA	CA	-	-	9,359	A	G	G	A	N/A	A	R	R	R	R	691	-	-	-	-
DeCA	NAS OCEANA VA	VA	-	-	19,111	N/A	A	G	N/A	N/A	A	R	R	R	R	1,643	-	-	-	-
DeCA	NAS PATUXENT RIVER MD	MD	-	-	10,516	A	A	A	R	N/A	A	R	R	R	R	668	-	-	-	-
DeCA	NAS PENSACOLA FL	FL	-	-	12,722	G	R	G	G	N/A	A	R	R	R	R	1,103	-	-	-	-
DeCA	NAS SIGONELLA IT	Italy	-	-	10,659	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	773	-	-	-	-
DeCA	NAS WHIDBEY ISLAND WA	WA	-	-	9,820	A	A	G	R	N/A	A	R	R	R	R	395	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAS WHITING FLD MILTON FL	FL	-	-	3,643	A	R	G	R	N/A	A	R	R	R	R	328	-	-	-	-
DeCA	NATIONAL TRAINING CENTER AND FORT IRWIN	CA	-	-	8,927	R	G	G	R	N/A	A	R	R	R	R	1,351	-	-	-	-
DeCA	NAVAL BASE KITSAP BREMERTON WA	WA	-	-	9,465	G	A	G	G	N/A	A	R	R	R	R	457	-	-	-	-
DeCA	NAVAL BASE KITSAP BREMERTON WA	WA	-	-	6,095	G	A	G	G	N/A	A	R	R	R	R	355	-	-	-	-
DeCA	NAVAL STATION GREAT LAKES IL	IL	-	-	11,906	N/A	G	G	N/A	N/A	A	R	R	R	R	716	-	-	-	-
DeCA	NAVAL STATION NEWPORT RI	RI	-	-	8,666	G	R	R	G	N/A	A	R	R	R	R	385	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAVAL SUPPORT ACTIVITY CRANE	IN	-	-	1,135	G	R	A	G	N/A	A	R	R	R	R	97	-	-	-	-
DeCA	NAVAL SUPPORT ACTIVITY WASH	MD	-	-	5,274	A	A	A	R	N/A	A	R	R	R	R	347	-	-	-	-
DeCA	NAVAL WEAPONS STATION CHASN	SC	-	-	11,536	N/A	R	A	N/A	N/A	A	R	R	R	R	952	-	-	-	-
DeCA	NAVBASE GUAM	Guam	-	-	11,037	R	N/A	N/A	A	N/A	A	R	R	R	R	1,021	-	-	-	-
DeCA	NAVBASE GUAM	Guam	-	-	16,605	R	N/A	N/A	R	N/A	A	R	R	R	R	3,358	-	-	-	-
DeCA	NAVBASE VENTURA CTY PT MUGU CA	CA	-	-	8,451	A	G	G	R	N/A	A	R	R	R	R	1,161	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAVPHIBASE LITTLE CREEK VA	VA	-	-	17,298	N/A	A	G	N/A	N/A	A	R	R	R	R	1,200	-	-	-	-
DeCA	NAVSTA EVERETT WA	WA	-	-	8,112	N/A	A	G	N/A	N/A	A	R	R	R	R	361	-	-	-	-
DeCA	NAVSTA MAYPORT FL	FL	-	-	9,967	G	R	G	G	N/A	A	R	R	R	R	1,062	-	-	-	-
DeCA	NAVSTA NORFOLK VA	VA	-	-	12,407	A	A	G	R	N/A	A	R	R	R	R	1,175	-	-	-	-
DeCA	NAVSTA ROTA SP	Spain	-	-	6,954	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	792	-	-	-	-
DeCA	NAVSTA SAN DIEGO CA	CA	-	-	16,300	A	G	G	R	N/A	A	R	R	R	R	2,098	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAVSUBASE NEW LONDON CT	NY	-	-	4,762	A	G	A	R	N/A	A	R	R	R	R	337	-	-	-	-
DeCA	NAVSUBASE NEW LONDON CT	CT	-	-	12,945	A	A	A	R	N/A	A	R	R	R	R	545	-	-	-	-
DeCA	NAVSUPPACT MIDSOUTH MEMPHIS TN	TN	-	-	10,426	G	R	R	G	N/A	A	R	R	R	R	732	-	-	-	-
DeCA	NAVSUPPACT NAPLES IT	Italy	-	-	12,943	A	N/A	N/A	R	N/A	A	R	R	R	R	891	-	-	-	-
DeCA	NAVSUPPACT NORFOLK NSY	VA	-	-	7,495	A	A	G	R	N/A	A	R	R	R	R	746	-	-	-	-
DeCA	NAVSUPPU SARATOGA SPRINGS NY	NY	-	-	3,833	N/A	G	A	N/A	N/A	A	R	R	R	R	240	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NAWCADLKE NON-NIF LAKEHURST NJ	NJ	-	-	3,215	A	A	R	G	N/A	A	R	R	R	R	220	-	-	-	-
DeCA	NAWS CHINA LAKE	CA	-	-	4,068	R	G	G	A	N/A	A	R	R	R	R	506	-	-	-	-
DeCA	NELLIS AIR FORCE BASE	NV	-	-	15,681	R	G	R	A	N/A	A	R	R	R	R	2,718	-	-	-	-
DeCA	NSA ANDERSON	Guam	-	-	14,250	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	1,831	-	-	-	-
DeCA	NSA SOUTH POTOMAC	VA	-	-	3,011	N/A	A	G	N/A	N/A	A	R	R	R	R	184	-	-	-	-
DeCA	NSY PORTSMOUTH	NH	-	-	6,451	N/A	R	R	N/A	N/A	A	R	R	R	R	338	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	OFFUTT AIR FORCE BASE	NE	-	-	18,775	G	A	A	G	N/A	A	R	R	R	R	1,787	-	-	-	-
DeCA	ORD MILITARY COMMUNITY	CA	-	-	9,975	N/A	G	G	N/A	N/A	A	R	R	R	R	1,830	-	-	-	-
DeCA	OSAN AIR BASE	South Korea	-	-	8,471	R	N/A	N/A	R	N/A	A	R	R	R	R	1,232	-	-	-	-
DeCA	PANZER KASERNE-GERGE643	Germany	-	-	1,248	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	47	-	-	-	-
DeCA	PATCH BARRACKS	Germany	-	-	5,394	A	N/A	N/A	R	N/A	A	R	R	R	R	577	-	-	-	-
DeCA	PATRICK AIR FORCE BASE	FL	-	-	10,992	G	R	G	G	N/A	A	R	R	R	R	1,534	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	PATRICK HENRY VILLAGE FAM HSG	Germany	-	-	12,705	A	N/A	N/A	G	N/A	A	R	R	R	R	521	-	-	-	-
DeCA	PETERSON AIR FORCE BASE	CO	-	-	14,603	A	G	R	R	N/A	A	R	R	R	R	1,529	-	-	-	-
DeCA	PICATINNY ARSENAL	NJ	-	-	4,105	A	A	R	R	N/A	A	R	R	R	R	296	-	-	-	-
DeCA	RAF ALCONBURY	United Kingdom	-	-	10,841	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	461	-	-	-	-
DeCA	RAF CROUGHTON	United Kingdom	-	-	4,859	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	117	-	-	-	-
DeCA	RAF LAKENHEATH	United Kingdom	-	-	11,015	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	409	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	RAF MILDENHALL	United Kingdom	-	-	765	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	83	-	-	-	-
DeCA	RAMSTEIN AIR BASE	Germany	-	-	7,290	A	N/A	N/A	G	N/A	A	R	R	R	R	654	-	-	-	-
DeCA	RAMSTEIN AIR BASE	Germany	-	-	2,279	R	N/A	N/A	R	N/A	A	R	R	R	R	363	-	-	-	-
DeCA	RAMSTEIN STORAGE ANNEX	Germany	-	-	22,202	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	1,593	-	-	-	-
DeCA	RANDOLPH AIR FORCE BASE	TX	-	-	15,924	A	G	A	R	N/A	A	R	R	R	R	1,591	-	-	-	-
DeCA	REDSTONE ARSENAL	AL	-	-	12,974	A	R	A	R	N/A	A	R	R	R	R	1,209	-	-	-	-

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	REED WALTER AMC FOREST GLEN	DC	-	-	3,930	A	N/A	N/A	G	N/A	A	R	R	R	R	693	-	-	-	-
DeCA	ROBINS AIR FORCE BASE	GA	-	-	11,655	N/A	R	A	N/A	N/A	A	R	R	R	R	1,214	-	-	-	-
DeCA	ROCK ISLAND ARSENAL	IL	-	-	3,270	N/A	G	G	N/A	N/A	A	R	R	R	R	398	-	-	-	-
DeCA	SAGAMI GENERAL DEPOT	Japan	-	-	6,278	R	N/A	N/A	A	N/A	A	R	R	R	R	1,887	-	-	-	-
DeCA	SAGAMI GENERAL DEPOT	Japan	-	-	242	G	N/A	N/A	G	N/A	A	R	R	R	R	35	-	-	-	-
DeCA	SAGAMIHARA FAMILY HOUSING AREA	Japan	-	-	5,886	G	N/A	N/A	G	N/A	A	R	R	R	R	602	-	-	-	-

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DeCA	SCHINNEN EMMA MINE	Netherlands	-	-	5,277	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	144	-	-	-	-
DeCA	SCHOFIELD BARRACKS	HI	-	-	12,512	A	G	R	R	N/A	A	R	R	R	R	1,649	-	-	-	-
DeCA	SCOTT AIR FORCE BASE	IL	-	-	20,685	N/A	G	G	N/A	N/A	A	R	R	R	R	1,359	-	-	-	-
DeCA	SEMBACH ADMIN ANNEX (WING HQ)	Germany	-	-	5,997	R	N/A	N/A	R	N/A	A	R	R	R	R	469	-	-	-	-
DeCA	SEYMOUR JOHNSON AIR FORCE BASE	NC	-	-	10,698	A	A	G	G	N/A	A	R	R	R	R	981	-	-	-	-
DeCA	SHAW AIR FORCE BASE	SC	-	-	8,901	N/A	R	A	N/A	N/A	A	R	R	R	R	905	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	SHEPPARD AIR FORCE BASE	TX	-	-	9,957	A	G	A	G	N/A	A	R	R	R	R	1,206	-	-	-	-
DeCA	SMITH BARRACKS	Germany	-	-	5,936	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	286	-	-	-	-
DeCA	SOUTH CAMP VILSECK	Germany	-	-	6,617	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	465	-	-	-	-
DeCA	SPANGDAHLEM AIR BASE	Germany	-	-	3,819	A	N/A	N/A	A	N/A	A	R	R	R	R	228	-	-	-	-
DeCA	STORCK BARRACKS	Germany	-	-	1,595	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	338	-	-	-	-
DeCA	SUBASE KINGS BAY GA	GA	-	-	7,876	G	R	A	G	N/A	A	R	R	R	R	785	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	SULLIVAN BARRACKS	Germany	-	-	9,068	R	N/A	N/A	R	N/A	A	R	R	R	R	575	-	-	-	-
DeCA	TINKER AIR FORCE BASE	OK	-	-	16,688	G	A	R	G	N/A	A	R	R	R	R	1,301	-	-	-	-
DeCA	TOBYHANNA ARMY DEPOT	PA	-	-	4,066	G	G	G	G	N/A	A	R	R	R	R	263	-	-	-	-
DeCA	TRAVIS AIR FORCE BASE	CA	-	-	14,038	A	G	G	R	N/A	A	R	R	R	R	1,442	-	-	-	-
DeCA	TYNDALL AIR FORCE BASE	FL	-	-	9,629	A	R	G	A	N/A	A	R	R	R	R	1,141	-	-	-	-
DeCA	US ARMY GARRISON MICHIGAN (SELFRIDGE)	MI	-	-	7,370	N/A	N/A	N/A	N/A	N/A	A	R	R	R	R	906	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	USAF ACADEMY	CO	-	-	13,650	G	G	R	G	N/A	A	R	R	R	R	997	-	-	-	-
DeCA	VANCE AIR FORCE BASE	OK	-	-	6,760	N/A	A	R	N/A	N/A	A	R	R	R	R	513	-	-	-	-
DeCA	VANDENBERG AIR FORCE BASE	CA	-	-	5,642	N/A	G	G	N/A	N/A	A	R	R	R	R	1,245	-	-	-	-
DeCA	VOGELWEH FAMILY HOUSING ANNEX	Germany	-	-	9,602	A	N/A	N/A	R	N/A	A	R	R	R	R	525	-	-	-	-
DeCA	WARNER BARRACKS	Germany	-	-	5,278	A	N/A	N/A	G	N/A	A	R	R	R	R	420	-	-	-	-
DeCA	WEST POINT MIL RESERVATION	NY	-	-	12,004	G	G	A	G	N/A	A	R	R	R	R	875	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	WHITE SANDS MISSLE RANGE NM	NM	-	-	5,807	A	G	R	R	N/A	A	R	R	R	R	765	-	-	-	-
DeCA	WHITEMAN AIR FORCE BASE	MO	-	-	8,921	N/A	A	G	N/A	N/A	A	R	R	R	R	726	-	-	-	-
DeCA	WRIGHT PATTERSON AIR FORCE BASE	OH	-	-	19,706	N/A	R	G	N/A	N/A	A	R	R	R	R	1,471	-	-	-	-
DeCA	YUMA PROVING GROUND	AZ	-	-	3,828	A	A	R	R	N/A	A	R	R	R	R	544	-	-	-	-
DeCA	CAMP CARROLL	South Korea	-	-	1,827	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP CASEY	South Korea	-	-	3,292	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	CAMP HUMPHREYS	South Korea	-	-	5,174	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP RED CLOUD	South Korea	-	-	727	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CAMP STANLEY	South Korea	-	-	1,179	G	N/A	N/A	G	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	CHARLES E KELLY SPT FACILITY	PA	-	-	4,423	N/A	G	G	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	FORT GILLEM	GA	-	-	1,975	R	R	A	A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	FORT MCPHERSON/GILLEM	GA	-	-	4,512	A	R	A	R	N/A	R	R	R	R	R	-	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	FORT MONMOUTH	NJ	-	-	9,560	R	A	R	A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	LOS ANGELES AIR FORCE BASE	CA	-	-	8,077	A	G	G	R	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	-	-	6,979	A	N/A	N/A	R	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	MCB CAMP S D BUTLER OKINAWA JA	Japan	-	-	13,527	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	NAVAL SUPPORT ACTIVITY ATHENS	GA	-	-	1,047	N/A	R	A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	NAVSTA PEARL HARBOR HI	HI	-	-	15,028	G	G	R	G	N/A	R	R	R	R	R	-	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DeCA	NSA NEW ORLEANS LA	LA	-	-	4,605	A	R	A	R	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	RAF FAIRFORD	United Kingdom	-	-	3,430	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	YOKOTA AIR BASE	Japan	-	-	27,381	G	N/A	N/A	G	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	YONGSAN GARRISON	South Korea	-	-	1,084	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
DeCA	YONGSAN GARRISON	South Korea	-	-	18,549	G	N/A	N/A	G	N/A	R	R	R	R	R	-	-	-	-	-
DFAS	DFAS Limestone	ME		-	7,726,132	G	A	A	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DFAS	DFAS Rome	NY	-		33,182	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
DIA	Joint Base Anacostia Bolling (JBAB)	DC	7		287,564	N/A	N/A	N/A	N/A	N/A	G	A	R	R	G	30,000	300			160
DLA	DLA Distribution - San Joaquin	CA	-	-	264,898	G	G	G	G	N/A	G	G	G	G	G	349,703	38,856	-	-	388,559
DLA	DLA Land and Maritime	Ohio	-	-	360,303	A	R	G	R	N/A	G	G	G	G	G	245,091	-	367,636	-	612,727
DLA	DLA HQC - Fort Belvoir	VA	-	-	-	A	A	G	R	N/A	G	G	G	G	G	47,823	-	71,734	-	119,556
DLA	DLA Pacific	HI	-	-	-	A	G	R	R	N/A	G	G	G	G	G	10,461	-	4,483	-	14,945

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
DLA	DLA Aviation	VA	-	-	290,469	A	A	G	R	N/A	G	G	G	G	G	173,357	-	260,035	-	433,392
DLA	DLA Distribution - Susquehanna	PA	-	-	492,386	A	G	G	R	N/A	G	G	G	G	G	179,335	-	269,002	-	448,337
DLA	DLA Distribution - Mechanicsburg	PA	-	-	-	N/A	G	G	N/A	N/A	G	G	G	G	G	89,667	-	134,501	-	224,168
DLA	DLA Troop Support	PA	-	-	-	A	G	G	R	N/A	G	G	G	G	G	11,956	-	17,933	-	29,889
DLA	DLA Disposition Services	MI	-	-	-	A	G	A	R	N/A	G	G	G	G	G	4,483	-	10,461	-	14,945
DLA	DLA Europe & Africa	Germany	-	-	-	G	N/A	N/A	G	N/A	G	G	G	G	G	17,933	-	41,845	-	59,778

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Marine Corps	MCLB ALBANY	GA	N/A	N/A	406,601	N/A	R	A	N/A	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCLB BARSTOW	CA	N/A	N/A	263,251	A	G	G	R	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCRD PARRIS ISLAND	SC	N/A	N/A	595,413	A	R	A	R	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCRD SAN DIEGO CA	CA	N/A	N/A	284,238	A	G	G	R	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCSF BLOUNT ISLAND	FL	N/A	N/A	37,982	R	R	G	A	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	CAMP ALLEN	VA	N/A	N/A	25,664	R	A	G	A	N/A	A	R	A	R	A	N/A	N/A	N/A	N/A	N/A

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Marine Corps	CAMP MUJUK	South Korea	N/A	N/A	N/A	G	N/A	N/A	G	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	HDQTRS 4TH MARDIV NEW ORLEANS	LA	N/A	N/A	N/A	A	R	A	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	HDQTRS 4TH MAW NEW ORLEANS LA	LA	N/A	N/A	N/A	A	R	A	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MARBKS WASHINGTON DC	DC	N/A	N/A	47,240	R	N/A	N/A	A	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MARCORPS DIST 1	NY	N/A	N/A	71,462	A	G	A	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MARCORRESFOR NEW ORLEANS LA	LA	N/A	N/A	N/A	A	R	A	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Marine Corps	MCAGCC TWENTYNINE PALMS	CA	12,306	1,076,616	1,088,922	N/A	G	G	N/A	N/A	A	R	A	A	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCAS BEAUFORT	SC	3,010	187,805		N/A	R	A	N/A	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCAS CHERRY POINT	NC	621	720,807		R	A	G	R	N/A	A	A	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCAS IWAKUNI	Japan	-	508,712		G	N/A	N/A	G	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCAS MIRAMAR	CA	1,508	273,094		A	G	G	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCAS YUMA	AZ	590	197,023		G	A	R	G	N/A	A	R	A	A	G	N/A	N/A	N/A	N/A	N/A

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Marine Corps	MCB CAMP BUTLER	Japan	-	1,175,926		G	N/A	N/A	G	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCB CAMP LEJEUNE	NC	2,669	2,838,576		N/A	A	G	N/A	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCB CAMP PENDLETON	CA	4,330	983,695		R	G	G	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCB HAWAII	HI	130	341,961		A	G	R	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCB QUANTICO	VA	96	793,534		G	A	G	G	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A
Marine Corps	MCSPTACT KANSAS CITY MO	MO	N/A	N/A	N/A	A	A	G	R	N/A	A	R	A	R	G	N/A	N/A	N/A	N/A	N/A

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	AEGIS TRAREDCEN DAHLGREN VA	VA	-	-	49,810	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	AFRADBIORSCHINS T BETHESDA MD	MD	-	-	33,538	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	BRDENCLINIC GUAM	GUAM	-	-	1,163	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	CBC GULFPORT MS	MS	2,559	-	197,591	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	COMFLEACT CHINHAE KS	Korea	7	-	31,970	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	COMFLEACT Okinawa	JAPAN	253	-		A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	COMFLEACT SASEBO JA	JAPAN	-	-	561,222	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	COMFLEACT YOKOSUKA JA	JAPAN	1	-	419,235	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	COMNAVDIST WASHINGTON DC	DC	-	-	584,678	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	DOD SCHOOLS GUANTANAMO BAY	Cuba	-	-	31,473	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	FISC YOKOSUKA JA	JAPAN	-	-	12,379	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	LANTORDCOM DET CHARLESTON SC	SC	150	-	469,629	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	LANTORDCOM DET EARLE COLTS NECK NJ	NJ	-	-	180,325	G	A	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	LANTORDCOM YORKTOWN VA	VA	-	-	205,003	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAF ATSUGI JA	JAPAN	40	-	646,912	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	2,467				
Navy	NAF EL CENTRO CA	CA	1,650	-	63,719	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS BRUNSWICK ME	ME	-	-	135,915	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS CORPUS CHRISTI TX	TX	6,909	-	199,136	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAS FALLON NV	NV	4,320	-	177,721	A	G	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JACKSONVILLE FL	FL	6,605	-	507,089	G	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JRB FORT WORTH TX	TX	76	-	325,920	A	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JRB NEW ORLEANS LA	LA	-	-	172,277	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS JRB WILLOW GROVE PA	PA	-	-	57,111	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS KEY WEST FL	FL	3,375	-	225,279	N/A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAS KINGSVILLE TX	TX	4,350	-	112,147	G	G	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS LEMOORE CA	CA	818	-	430,658	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	14,620				
Navy	NAS MERIDIAN MS	MS	2,303	-	186,165	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS OCEANA VA	VA	3,711	-	801,792	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-				
Navy	NAS PENSACOLA FL	FL	1,166	-	1,095,068	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAS SIGONELLA IT	ITALY	1,024	-	307,845	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A	2,806				

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAS WHIDBEY ISLAND WA	WA	3,708	-	434,938	R	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					14,698
Navy	NAS WHITING FIELD MILTON FL	FL	1,024	-	130,123	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAIRENGCEN LAKEHURST NJ	NJ	-	-	319,362	A	A	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAIRWARCENWPNDIV CHINA LAKE CA	CA	4,301,490	-	562,639	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	98,948				
Navy	NAVAMBCARECEN GROTON CT	CT	-	-	33,948	N/A	A	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAMBCARECEN NEWPORT RI	RI	-	-	31,827	A	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVAVNDEPOT CHERRY PT NC	NC	-	-	603,247	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAVNDEPOT JACKSONVILLE FL	FL	-	-	514,827	G	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVAVNDEPOT NORTH ISLAND CA	CA	-	-	291,113	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVBASE CORONADO SAN DIEGO CA	CA	8,397	-	831,735	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A	5,356				
Navy	NAVBASE GUAM	GUAM	256	-	580,736	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		26,311			
Navy	NAVBASE POINT LOMA	CA	1,821	-	303,965	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVBASE SAN DIEGO CA	CA	6,320	-	1,545,161	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVBASE VENTURA COUNTY	CA	11,288	-	472,436	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A		4,606			
Navy	NAVCOMTELSTA JACKSONVILLE DET KEY WEST FL	FL	-	-	1,259	N/A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVCONBRIG CHARLESTON SC	SC	-	-	27,098	A	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVDENCEN SOUTHWEST SAN DIEGO CA	CA	-	-	11,981	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVDENFACBR LEMOORE CA	CA	-	-	1,703	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVEODTECHDIV INDIAN HEAD MD	MD	-	-	44,593	A	A	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC FAR EAST	JAPAN	-	-	2,509,822	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC HAWAII	HI	2,397	-	17,879	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC MARIANAS	GUAM	-	-	50,765	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC MIDWEST	IL	-	-	785,467	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC SOUTHEAST PENSACOLA DET	FL	-	-	129,532	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVFAC SOUTHWEST	CA	-	-	18,364	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVFAC WASHINGTON DC	DC	-	-	8,411	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP CAMP PENDLETON CA	CA	-	-	242,346	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP CORPUS CHRISTI TX	TX	-	-	60,136	R	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP GREAT LAKES IL	IL	-	-	214,867	A	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP GUANTANAMO BAY CU	Cuba	-	-	38,659	R	N/A	N/A	A	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVHOSP JACKSONVILLE FL	FL	-	-	130,789	A	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP LEMOORE CA	CA	-	-	42,707	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP NAPLES IT	ITALY	-	-	43,957	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP OAK HARBOR WA	WA	-	-	23,680	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP OKINAWA JA	JAPAN	-	-	67,731	A	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP PENSACOLA FL	FL	-	-	51,878	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVHOSP ROTA SP	SPAIN	-	-	65,920	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP TWENTYNINE PALMS CA	CA	-	-	31,806	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVHOSP YOKOSUKA JA	JAPAN	-	-	18,136	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVICP PHILADELPHIA PA	PA	-	-	229,890	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVJNTSERVACT NS TOKYO JA	JAPAN	-	-	54,282	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVMAG INDIAN ISLAND WA	WA	-	-	11,620	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVMEDCLINIC ANNAPOLIS MD	MD	-	-	10,285	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVMEDCLINIC KEY WEST FL	FL	-	-	8,411	A	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVMEDCLINIC PATUXENT RIVER MD	MD	-	-	5,624	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVOBSY WASHINGTON DC	DC	-	-	30,131	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRADSTA T JIM CREEK OSO WA	WA	-	-	43,233	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRADTRANFAC SADDLEBUNCH KEYS	FL	-	-	1,457	A	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVRESREDCOM MIDLANT WASHINGTON DC	VA	-	-	79,881	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESREDCOM MIDSOUTH	TN	-	-	23,000	N/A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESREDCOM MIDWEST	IL	-	-	29,854	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESREDCOM NE NEWPORT RI	RI	-	-	30,796	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESREDCOM NORTHWEST EVERETT WA	WA	-	-	33,951	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVRESREDCOM SOUTHWEST SAN DIEGO CA	CA	-	-	17,172	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVSHIPREPFAC YOKOSUKA JA	JAPAN	-	-	57,657	R	N/A	N/A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA BREMERTON	WA	-	-	252,960	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA EVERETT WA	WA	1,948	-	333,300	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA GREAT LAKES IL	IL	-	-	1,010,181	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA GUANTANAMO BAY CU	Cuba	16,341	-	1,440,267	R	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	4,794				
Navy	NAVSTA NEWPORT RI	RI	-	-	498,002	G	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A	4,298				

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVSTA NORFOLK VA	VA	396	-	1,618,606	N/A	A	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,055				
Navy	NAVSTA PEARL HARBOR HI	HI	24,204	-	1,253,072	G	G	R	G	N/A	N/A	N/A	N/A	N/A	N/A	15,328				
Navy	NAVSUPPACT BAHHRAIN	Bahrain	-	-	234,374	G	N/A	N/A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSUPPACT MID SOUTH MILLINGTON TN	TN	-	-	240,829	A	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSUPPACT NAPLES IT	ITALY	1,535	-	405,186	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	1,584				
Navy	NAVSUPPACT NEW ORLEANS LA	LA	-	-	177,831	A	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVSUPPACT SOUDA BAY GR	Greece	1,024	-	33,387	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	4,152				
Navy	NAVSUPPFAC DIEGO GARCIA	Diego Garcia	7	-	699,815	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN CARDEROCKDIV BETHESDA MD	MD	978	-	186,881	R	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN DET BAYVIEW ID	ID	-	-	16,939	N/A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN DET DANIA FL	FL	-	-	1,709	G	R	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSURFWARCEN DIV PORT HUENEME CA	CA	-	-	35,198	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NAVUNSEAWARCEN DET AUTEC ANDROS ISLAND BAHAMAS	AA	44	-	204,687	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVUNSEAWARCENDIV NEWPORT RI	RI	-	-	190,073	N/A	R	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVUSEAWARCENDIV KEYPORT WA	WA	-	-	207,540	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVWPNSTA SEAL BEACH CA	CA	-	-	55,627	N/A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAWC AD PATUXENT RIVER MD	MD	-	-	1,150,155	G	A	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NIOC SUGAR GROVE WV	WV	-	-	14,806	G	R	R	G	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NOPF WHIDBEY ISLAND	WA	-	-	12,662	A	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NRL WASHINGTON DC	DC	-	-	1,012,770	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA ATHENS	GA	-	-	44,928	N/A	R	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA CRANE IN	IN	-	-	833,065	G	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA MECHANICSBURG PA	PA	-	-	386,829	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA NORFOLK VA	VA	2,004	-	525,513	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					8,224

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NSA ORLANDO FL	FL	1,535	-	26,228	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSA PANAMA CITY FL	FL	1,024	-	149,073	N/A	R	G	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSD MONTEREY CA	CA	174	-	164,791	R	G	G	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSU SARATOGA SPRINGS NY	NY	-	-	9,293	R	G	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DET WHITE SANDS NM	NM	-	-	13,802	N/A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DIV CORONA CA	CA	-	-	53,058	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NSWC DIV DAHLGREN VA	VA	-	-	519,006	R	A	G	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC DIV INDIAN HEAD MD	MD	-	-	1,427,294	R	A	A	A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWC PT HUENEME DET SAN DIEGO	CA	-	-	5,898	R	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSWCCD SSES PHILADELPHIA PA	PA	-	-	143,873	G	G	G	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSY PEARL HARBOR HI	HI	-	-	128,243	A	G	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSY PORTSMOUTH NH	NH	-	-	130,321	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NTTC Corry Station	FL	11,998	-		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NUWC NEWPORT NE DETS	RI	-	-	2,625	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	PACMISRANFAC HAWAREA BARKING SANDS HI	HI	-	-	80,122	A	G	R	A	N/A	N/A	N/A	N/A	N/A	N/A	3,071				
Navy	PSNS AND IMF BREMERTON	WA	32,950	-	1,687,427	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	SINGAPORE AREA COORDINATOR	Singapore	-	-	28,060	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	SPAWARSYSCEN SAN DIEGO CA	CA	12,590	-	204,359	A	G	G	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	SUBASE BANGOR WA	WA	33,782	-	712,261	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	768				19,251
Navy	SWFLANT KINGS BAY GA	GA	-	-	246,942	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	TRIREFFAC KINGS BAY GA	GA	-	-	131,727	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	TRITRAFAC KINGS BAY GA	GA	-	-	71,204	A	R	A	G	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	UNISERUOFHEASC N BETHESDA MD	MD	-	-	162,353	N/A	A	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	USNA ANNAPOLIS MD	MD	1,025	-	733,526	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	WV ABL MINERAL CO	WV	-	-	643,299	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAB LITTLE CREEK VA	VA		-	748,210	G	A	G	G	N/A	N/A	N/A	N/A	N/A	N/A	2,850				
Navy	NAVFAC MID-ATLANTIC	VA	-	-	2,492,378	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA MAYPORT FL	FL	1,024	-	512,704	A	R	G	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NAVSTA ROTA SP	SPAIN		-	317,514	A	N/A	N/A	R	N/A	N/A	N/A	N/A	N/A	N/A	51				
Navy	NAVSUPACT PORTSMOUTH	NH	-	-	899,672	A	R	R	R	N/A	N/A	N/A	N/A	N/A	N/A	3,466				

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
Navy	NSB KINGS BAY GA	GA	-	-	366,398	A	R	A	R	N/A	N/A	N/A	N/A	N/A	N/A	2,191				
Navy	NSB NEW LONDON CT	CT	-	-	1,433,127	A	A	A	R	N/A	N/A	N/A	N/A	N/A	N/A					
Navy	NSY NORFOLK VA	VA	1,048,698	-	1,059,133	A	A	G	R	N/A	N/A	N/A	N/A	N/A	N/A	358				
NGA	7500 GEOINT Drive	VA	-	-	-	N/A	N/A	N/A	N/A	N/A	G	A	R	G	R	1	-	-	0	-
NGA	Arnold	MI	-	-	122,129	R	A	G	R	N/A	R	R	R	R	R	-	-	-	-	-
NGA	St Louis	MI	-	-	137,465	A	A	G	G	N/A	R	R	R	R	R	-	-	-	-	-

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			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
NGA	WNY	DC	-	-	164,374	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
NGA	Reston	VA	-	-	154,026	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
NGA	Bethesda	VA	-	-	218,620	N/A	N/A	N/A	N/A	N/A	R	R	R	R	R	-	-	-	-	-
NSA	Fort Meade	MD	-	-	2,243,566	R	G	G	R	N/A	G	R	R	G	G					
TMA	NH Bremerton	WA	-	-	85,726	A	R	A	R	N/A	A	R	R	R	R	2,236	-	-	-	-
TMA	NMC San Diego	CA	-	-	290,789	A	G	R	R	N/A	G	R	R	R	R	22,860	-	-	-	-

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DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
TMA	NMC Portsmouth	VA	-	-	408,094	G	A	G	G	N/A	G	R	R	R	G	36,618	-	-	-	10,454
TMA	NNMC Bethesda	MD	-	-	789,841	N/A	R	A	N/A	N/A	G	R	R	R	R	56,021	-	-	-	-
TMA	NH Beaufort	SC	-	-	105,072	A	G	G	R	N/A	G	R	R	R	G	7,932	-	-	-	10,454
TMA	NH Guam	MI	-	-	61,651	A	G	G	R	N/A	G	R	R	R	G	4,827	-	-	-	2,335
TMA	Walter Reed	DC	-	-	881,593	R	R	G	A	N/A	R	R	R	R	R	-	-	-	-	-
WHS	Washington Headquarters	VA	-	498,821	1,416,359	A	A	G	R	N/A	G	A	A	R	A	N/A	N/A	N/A	N/A	N/A

						(G)reen = Compatible (A)mber = Limited Compatibility (R)ed = Not Compatible N/A = Not Evaluated					(G)reen = Favorable (A)mber = Limited (R)ed = Not Favorable N/A= Not yet evaluated					Gthm = Geothermal GSHP = Ground Source Heat Pump				
DoD Component	Installation	State / Country	2010 Annual Energy Production (MMBTU)		2010 Annual Energy Consumption (MMBtu)	Resource Abundance/Economic and Regulatory Environment/Financial Incentives					Mission Compatibility					Renewable Energy Potential: Estimated Annual Production (MMBtu)				
			Renewable	Conventional		Solar	Wind	Bio	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP	Solar	Wind	Biomass	Gthm	GSHP
WHS	Hybla Valley	VA	-	3,219	15,833	N/A	N/A	N/A	N/A	N/A	G	A	R	R	A	N/A	N/A	N/A	N/A	N/A
WHS	Court of Military Appeals	DC	-	-	3,821	N/A	N/A	N/A	N/A	N/A	G	A	R	R	A	N/A	N/A	N/A	N/A	N/A

APPENDIX H
LIST OF ENERGY PROJECTS FUNDED BY APPROPRIATIONS

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Project	Estimate of Financial Obligation ($000)
ARMY	
Energy Conservation	**76,419**
Advanced Steam Metering	500
Bldg 402 HVAC Upgrade	1,200
Building 122- Lighting projects	89
Building 314- Various ECMs projects	398
Building 452- Various ECMs projects	1,119
Building 950- Re-commissioning project	60
Building Envelope	2,600
CFL Lighting, Housing	242
Chiller and a/c Replacements	1,800
Chiller Replacement	1,100
CIF-Windows, Insulation, and lighting	2,100
CONTROLS	3,000
Controls Optimization	1,100
DDC retrofits	3,500
DFAC-Hybrid Cooling	300
DHW boilers in the SSQ	26
Digital heating controls	32
Doors & Windows, 5460	432
Efficient Lighting	405
EWSP11 Install Light control System	19
EWSP11 Replace obstruction lights at Airfield against LED lights	30
EWSP11 Replace pumps with high- efficiency Energy Star equipment	187
EWSP11PH2 Replace Heat Control System in Bldg. # 6501	155
EWSP11PH2 Replace Heat Control System in Bldg. # 6506	50
EWSP11PH2 Replace Main Operation Station Equipment of UEMCS, Bldg. # 5817	300
Expand UMCS to various facilities	500
Green Home Conversion	31
GYM-Hybrid Cooling	500
HVAC occupancy scheduling	466
HVAC Recommissioning, Various Bldgs	1,290
HVAC UPGRADES	5,100
Improve SHW Distribution and Storage System	5
Infrared Heat in Building 1290	85
Install 10 High-Speed Doors, Misc Bldgs	-
Install EIFS on Wilcox Barrack	664
Install Exterior Insulation	730
Install Heat Exchanger	150
Install Occupancy Sensors	110
Install programmable thermostats on 325 units	140
Install radiant heating in motorpools	1,900
Insulate Hot Water Tanks	6
Insulation in the SSQ	25
Integrate LONWorks Controls into UMCS	500
LED Lights	198
Lighting for cross walks	500
Lighting Retrofits	2,950
Main Cantonment Generator Imprv	90
Occupancy sensors various bldgs	100
Occupancy Sensors-Post wide	400
Optimize AHU in USDB	63

Project	Estimate of Financial Obligation ($000)
Optimize Ventilation, Chem Lab	435
Phase II-High Bay Lighting Retrofits	946
Programmable Thermostats	110
RCx Holland, 16th MP, M and N areas	1,300
Relamp Building 25, 3rd fl	177
Repair Laterals & Mains for H Area	5,000
Repair/Renovate CEP 82nd Cooling, Bldg C-6039, piping replaced to Valve Pit #8	3,400
Repair/Renovate CEP 82nd Heating, Bldg C-2337	1,800
Repair/Renovate CEP at COSCOM, Bldg N-6002	1,700
Repair/Renovate CEP at SOCOM, Bldg E-2823	2,200
Repair/Renovate CEP H-Area Cooling Bldg H-6240	2,200
Repair/Renovate CEP SAAF Cooling, Bldg P-4041	500
Repair/Renovate CMA Chiller Equipment D3529	3,100
Repair/Replace Windows	2,000
Replace 3 Air Handlers	-
Replace 350 ton Chiller	1,000
Replace B122 HVAC DDC System & Dampers/Valves	90
Replace concrete windows	300
Replace Cooling Towers	500
Replace Exit Signs	119
Replace Incandescent Bulbs	10
Replace Incandescent Floods w/LEDs	290
Replace Laterals and Mains in C & D area	3,300
Replace Lighting Controls	200
Replace metal halide lighting	198
Replace Metal Halide Lighting with T5	-
Replace North & South A/C Units, B25	330
Replace pumps with high- efficiency Energy Star equipment	345
Replace roof at PXTRA	350
Replace Roof, Building 36	135
Replace Thermostats	968
Replace Unit Heaters	495
Replace Windows, B110	898
Retro-Commission 1st BCT/CEP HW/CW Distribution System	900
Retro-Commission E-Area Bldgs	1,200
Retrofit Street Lights with Energy Fixtures	363
Upgrade TRIDIUM	125
Water Chiller	23
Water supply set points	39
Weather Stripping	181
Window Upgrade	845
Windows & Insulation	1,100
Renewable Energy	**2,618**
Build Project 830 - Water Treatment Plant Improvement	569
Building 330 - Photovoltaic System installation	53
Ground Source Heat Pumps and Solar Hot Water (Housing)	350
Install PV Roof System, Bldg 250	20
Install solar panels, Bldg 2234	40
Install solar panels, Bldg 681	40
Install Solar Thermal Roof 735,740,745	450
Install solar thermal roof system, Bldgs 101&3305	460
Installation of Solar heating system	106

Project	Estimate of Financial Obligation ($000)
Tucker Pool Solar heating	300
Twin Lions Solar heating and pool cover	230
NAVY	
Energy Conservation	**22,012**
BEQ Occupancy Sensors	192
Condensate heat recovery from steam system at Bullard Hall - Bldg 233	126
Demand Response Lighting Project	373
Elastomeric Coating	572
Faucet aerator retrofit	2
HID Retrofit	699
HVAC UPGRADES	400
Install Coolerado Coolers - 02020 - Tech Val Program	20
Install EIFS Insulation System - 01092 - Tech Val Program	67
Install Turbocor Air-Cooled Chiller - 01384 - Tech Val Program	195
LED street lighting project	680
LPA Pressure/Flow Control Stations	1,016
MMRPe Replace Static Converters - Design Phase	5,429
Museum HVAC and Chiller upgrades	6,558
Repaired and Restored base-wide DDC system to service	72
Replace 10-ton packaged HVAC unit and associated exterior ductwork	26
Replace Boiler #14 with High Efficiency Boiler - Bldg #14530	3,000
Replace Lighting at Various Bldgs to LED	175
Replace room controls in 4012-series BQs	36
Retrofit HPS Street Lights	297
Street & parking lot lighting, chiller replacement Bldg 380 FB & boiler replacement Bldg 230 SB	821
Upgrade HPS to HIF Lights w/ Occupancy Sensors	228
Upgrade Mirage Club HVAC system: replace large packaged units, exterior and interior ductwork, and replace 3 front window AC units with ductless split units.	681
Upgrade NEX Parking Lot Lighting	17
Variable Frequency Drives	329
Renewable Energy	**3,513**
50kw PV - B5039	396
50kw PV - B508	398
50kw PV - Tategami	512
Install Roof Mounted Concentrated PV Solar Power Gen. - 30KW - ESTCP	799
Install Solar Hot Water - Design phase	708
PV roof projects at 326 and 193	700
Water Conservation	**1,388**
Turf Reduction/Irrigation Replacement - Admin Bldg #00001 & 01193	1,388
AIR FORCE	
Energy Conservation	**271,528**
(NRG) INSTALL INSULATION DIESEL ENGINE REPAIR SHOP B-1701	252
(NRG) REPAIR HVAC, RED BANK CLUB, B.942	1,144
(NRG) REPLACE BOILERS, CONSOLIDATED BRIG, B.3107	1,220
(NRG) UPGRADE LIGHTING B-610/B-225	204
ADD EFFICIENT LIGHTING AND CONTROLS	266
ADD Solar Photovoltaic Power System, BLDG 11	193
AIR INFILTRATION MITIGATION PILOT PROJECT	60
AJXF09155902 (IDC) REPAIR/UPGRADE EXTERIOR LIGHTS DORM BLDGS 1600/24/31/57	650
AJXF101526 CONSTRUCT 150LF OF 4" GAS MAIN TO NEW VISITOR CTR BLDG 1582	50
BASEWIDE INTERIOR LIGHTING UPGRADES	352

Project	Estimate of Financial Obligation ($000)
Building Automation System, B602 and B703	220
BUILDING ENVELOPE IMPROVEMENTS MULTI FACS	1,044
CERAMIC ROOF COAT(Tier II)5108, 5280, 8006, 8008, 8080, 9190	221
Cns (Install) ERV's, Multi Facs	64
Concentrated Solar Air Conditioning for Buildings (project EW-201018)	1,400
CONST SOLAR THERMAL HOT WATER SYS, B571	106
Const/Install Solar Swimming Pool Heater, PAFB	100
Convert Multi-Zone AHU to VAV Systems at Bldg 380	513
CRWU073004 - SECURITY FORCES OPERATIONS FACILITY (Funded FY11)	9,300
DBEH031537 - REPAIR NORTH WING, HGR "D"	900
DBEH111544 - Repair Lighting Various Facilities	287
DBEH111545 - Repair Boilers Various Facilities	334
DDC UPGRADE MULTIPLE FACILITIES	396
Demand Response load shedding by re-programming EMCS systems for earlier night setback. Additional task for Siemens Service Contract AJXF 11-0948 (Annual electricity cost saving because of using this program is estimated $80,000)	35
Destratification Fans - TWCF	520
Develop Automated Demand Response Capability	100
EISA 432 NRG EFFICIENCY MEASURES - UPGRADE LGHTNG CONTROL	101
EISA 432 NRG EFFICIENCY MEASURES - UPGRADE MECHANICAL SYSTEM	1,197
EMCS Expansion	147
EMCS Recommission & Enhanced Functionality, Phase 1	937
ENER- RPR INSULATION AND LIGHTING VARIOUS FACILITIES	743
Energy - Replace Air Handler	154
ENERGY CONS: APPLY COOL COATING TO DARK ROOFS	790
ENERGY CONS: Building automation system - B937	105
ENERGY CONS: Digital Controls and VFD	3,225
ENERGY CONS: Efficiency Improvements	345
ENERGY CONS: HVAC RETRO COMMISSION	114
ENERGY CONS: HVAC RETRO-COMMISSIONING PH 1 (Mult Fac)	2,830
ENERGY CONS: IMPROVE BUILDING EFFICIENCY - B122	160
ENERGY CONS: INSTALL OCCUPANCY SENSORS	446
ENERGY CONS: KEY CARDS AT VOQS & TLF	321
ENERGY CONS: Lighting Retrofit	1,478
ENERGY CONS: RECONF HEATING FACILITIES	1,080
ENERGY CONS: REPAIR BOILER ROOM, FAC. 13265	51
ENERGY CONS: REPAIR BOILER ROOMS BLDGS. 1032, 1048	116
ENERGY CONS: REPAIR BOILER ROOMS F 898, 1014, 1163, AREA F (NRG)	139
Energy Cons: Repair Steam Traps In Contingency Dorm (B2264)	350
ENERGY CONS: REPL HEATING PLANT	250
ENERGY CONS: Replace Absorption Chillers, Various Bldgs	3,500
ENERGY CONS: Replace Absorption Chillers, YCC	2,110
ENERGY CONS: REPLACE EXIT SIGN LIGHTING, BASEWIDE (NRG)	220
Energy Cons: Replace Heat Recovery Unit at CDC (B5182)	200
ENERGY CONS: REPLACE INTERIOR LIGHTING, BLDG 250 (NRG)	400
ENERGY CONS: REPLACE LIGHTING MULTI FAC	257
ENERGY CONS: REPLACE OVERHEAD DOORS (EISA)	154
ENERGY CONS: Replace Street Lighting Base wide	871
ENERGY CONS: Time-of-Day Digital Controls	424
ENERGY CONS: UPGRADE EMCS	694
ENERGY CONS: UPGRADE FITNESS CENTER HEATING SYS	100
Energy Cons: Upgrade Lighting (B3213)	300

Project	Estimate of Financial Obligation ($000)
Energy Conservation Measures, Base Pool	191
ENERGY RADIANT HEAT PANEL SYSTEMS	2,152
ENERGY UPGRADE TO DORMITORIES RETROFIT PLMB,LTG,MECH SYS	144
Energy Upgrade to Mission Support Facilities - 1	867
ENERGY UPGRADES, B457	1,740
Energy: Add DDC System	458
Energy: Energy Improvements	520
Energy: Expand EMCS	144
Energy: Install Smart Meters	1,968
Energy: Multi Enrg Cons Meas	589
Energy: Multi Ergy Consv Meas	1,278
Energy: Repair Chiller B 1256	146
Energy: Replace Air Cond	91
Energy: Replace Chillers	484
Energy: Replace Pneumatic Ctl	280
Energy: Replace Roof B 101	287
Energy: Rpr DDC System	2,194
Energy: Rpr EIS Facility P-46	300
Energy: Upgrade DDC & Meters	1,893
Energy: Upgrade DDC System	645
Energy: Upgrade Lighting Ctls	212
Energy: Whole Building Energy	1,201
Energy: Energy Improvements	499
Energy: Install Geothermal Sys	786
Energy: Install M2G Boiler Ctl	46
Energy: Install Smart Meters	168
Energy: Insulate Hangars	202
Energy: Modify Lighting B 26	172
Energy: Multi-Fac Improvmnts	856
Energy: NRG Cons Meas B20	989
Energy: Repair Multiple HVAC	452
Energy: Repl Parking Lot Lites	85
ENERGY: REPLACE AIRFIELD LIGHTING WITH LED	473
Energy: Replace Boiler B 904	157
Energy: Retrofit Lighting Sys	219
Energy: Rpr Building Envelopes	443
Energy: Rpr Lighting & Ctls	211
Energy: Upgrade Heat	416
Energy: Upgrade Taxiway Lites	217
ENERGY-INSTALL HVAC FOR COMM RMS, BLDGS 320/328	387
Energy-Install Smart Meters	209
ENERGY-RPL TAXIWAY LIGHTING W/LED LIGHTS	201
EXPAND EMCS BASEWIDE	1,505
FACILITY RETRO-COMMISSIONING	223
FTEV06-1028, Repair Ops Group, Bldg 90140	907
FTEV10-5001, Repair Commando Fitness Cntr	1,082
HAS Energy Improvements, Ph 3	2,230
HVAC Modifications Multi Facs	333
HVAC SCHEDULING/CONTROLS MULTI FACS	186
HVAC Upgrades for Facs 203, 204 & 864	700
INSTALL DAYLIGHT CONTROLS BASE FACILITIES	430
INSTALL DEDICATED HEAT RECOVERY CHILLERS FAC 6965	240

Project	Estimate of Financial Obligation ($000)
INSTALL DEMAND VENTILATION CONTROLS PHASE 2	125
Install Destratification Fans O&M	216
Install HVAC for COMM Rms	282
Install Ice Tank Storage System; 4 Projects for 4 Facilities	1,600
INSTALL LED TAXIWAY LIGHTS	23
INSTALL NEW HIGH BAY LIGHT FIXTURES, B3001	57
INSTALL PFC CAPACITORS, MULTI	130
Install Programmable Energy Fixtures (Multi)	400
Install Smart Meters	590
INSTALL SOLAR WALL B4455	194
INSTALL VARIABLE SPEED DRIVES ON WATER PUMP MOTORS	507
Insulate Oil Storage Tanks & Repair Refractory	3,503
INSULATE RADOME SUPPORT STRUCTURE, B203	251
INTERIOR/EXTERIOR LIGHTING IMPROVEMENT MULTI FAC	380
Leak Detection and Repair of Natural Gas Lines - Basewide	100
Light Motion Sensors B7445	8
Lighting System Upgrades at Various Buildings (48)	338
Lighting Upgrade - TWCF	71
Lighting Upgrades, 1500-Series Buildings	254
Lighting Upgrades, 1800-Series Buildings	172
MAINTAIN INSULATION BASE BLDGS (8 FACILITIES)	723
MAINTAIN INTERIOR LIGHTING (44 BASE FACILITIES)	2,030
MC WATER GENERATOR AVEK LINE	650
MHMV 100153 Install VOQ Room Occupancy Sensors, VOQ, 8 ea	218
NRG CONS: CONVERT HIGH BAY LIGHTING TO ENERGY EFF FITTINGS	194
NRG CONSERVATION: INSULATE ROOF/CEILING SPACES	113
NRG: INST DDC FOR HVAC AND CASS AIR VFD (Docks 1-14)	3,180
NRG: INSTALL TUBE BUNDLE HEATERS ON STEAM PLANT BOILERS	272
NRG: REPLACE BOILERS, FAC 156, 435 AND 517	780
NRG: REPLACE MECHANICAL STEAM TRAPS	1,034
NRG: REPLACE STREET LIGHTING	292
NRG: RETROFIT LIGHTING T12 TO T8	485
NRG: RPL LAMPS AND PAINT FLOORS IN B-2 DOCKS 13-14	667
NRG: RPL LAMPS IN B-2 DOCKS 1-9	2,951
NRG: RPR PLUMBING FIXTURES ON BASE	2,402
NRG-Energy Cons: Repair Building Envelope Basewide	620
Occupancy Sensors B7535	20
REAPAIR VARIOUS FACILITIES FOR ENERGY CONSERVATION	867
Recommission Buildings, Buildings 300/400	580
Recommission Chillers / Upgrade Controls SOCOM Bldg 501	131
RE-COMMISSION HVAC SYSTEMS BASE WIDE	801
RECOMMISSION HVAC UNITS, MULTI	105
RECONFIGURE RADOME ECU DUCTING, OLI & AKN	240
RENEWABLE: INSTALL PHOTOVOLTAIC SYSTEM #2128	215
RENEWABLE: INSTALL SOLAR THERMAL SYSTEM	114
RENEWABLE: REPAIR SOLAR WATER HEATING SYSTEM	100
Renewable: Repair Water Heaters, Solar, Various	510
Renovate B743 for RPA Training Ph II	1,500
RENOVATE FITNESS CENTER FOR ENERGY CONSERVATION, B588	107
Repair Energy Monitoring System	1,500
Repair - Variable Frequency Drive, Multi Fac.	167
Repair AHU #2, TEL IV, Facility 95151	102

Project	Estimate of Financial Obligation ($000)
Repair AHU AF Museum, 41109	175
Repair and Optimize Exhaust System	696
Repair B/252 Base Exchange Lighting & HVAC Systems, LAAFB.	200
Repair B1005 Upgrade Interior Lighting	275
Repair Boiler Systems	170
Repair Boiler Systems- N Docks	1,200
Repair Boiler/HVAC Systems - S Docks	1,700
REPAIR BOILERS WITH ENERGY EFFICIENT UNITS	220
Repair Boilers, Multi Facilities	841
REPAIR BUILDING ENVELOPE, MULTIPLE FACILITIES	235
Repair by Replace Hot/Cold Aisle HVAC, Server Racks B400	575
Repair by Replace Pump Controller Assemblies B720	131
Repair by Replace Toilets/Urinals with Low FLow Units B400	111
Repair by Replace Toilets/Urinals with Low FLow Units B720	109
Repair by Upgrading VAV AHU's, Basement B400	221
Repair Chiller and Chilled Water Pumps B28	337
Repair Chiller, Fac. 2308 Repair insulation	230
Repair Civil Engr, Bldg 5002	1,082
Repair DDC	3,134
REPAIR DEMAND VENTILATION CONTROLS, MULTI FAC	102
REPAIR DOORS & INSULATION-SECURITY FORCES TRAINING(517)(R/M)	351
Repair EMCS	2,956
REPAIR EMCS/CONTROLS MULTI FACS	625
Repair Energy Conservation Lighting Controls B/252,272&286.	208
Repair Energy Efficiency, Multiple Facilities	2,019
Repair Energy Mgmt Controls Phase 2	550
REPAIR ENVELOPE, INSULATION/WINDOWS, MULTI FACS	219
REPAIR FACILITY ENVELOPE	300
REPAIR HEATING PLANTS AND SYSTEMS, MULT FACILITIES	1,256
Repair HID Lighting Multi Fac Creech AFB	150
Repair HVAC (ERV) - Bldg 194	500
Repair HVAC (GSHP)- Bldg 870	700
REPAIR HVAC CONTROLS SYSTEMS 4216, 5204, 6030B, 11902, Dorms	908
Repair HVAC Controls, Bldg 49904	210
REPAIR HVAC CONTROLS, MULTIPLE FACILITIES	501
Repair HVAC Efficiency, B1	131
Repair HVAC in Rms 131, 134, & 267 for AFISR at B2000	130
Repair HVAC Insulation, Multi	135
REPAIR HVAC MOTOR, MULTI FAC	255
REPAIR HVAC SYSTEM, SFS HQ, BLDG 5006	640
Repair HVAC Systems Multi Facilities	433
Repair HVAC VAV Terminals, F.10, 328, 945	120
Repair HVAC w/ Destratification Fans F789/790/791	377
Repair HVAC, Bldg 200	40
Repair HVAC, Zone 4, B 7359	1,424
REPAIR HVAC-DESTRATIFICATION FANS-HANGARS (R/M)	245
Repair Industrial Area Lighting	210
REPAIR INEFFICIENT FUEL SYSTEMS, VARIOUS BUILDINGS	108
Repair Infrastructure E Wing AFPC B499	4,950
REPAIR INSTALL MULTI-FAC EMCS CONTROL SYSTEM	1,235
Repair Lighting & Controls, MOC	1,300
Repair Lighting (B1000 - B11000)	225

Project	Estimate of Financial Obligation ($000)
REPAIR LIGHTING- DAYLIGHTING CONTROLS PH 2	500
REPAIR LIGHTING FOR AMMO AREA	162
Repair Lighting w Occupancy Sensors - Mult Facs	905
REPAIR LIGHTING W/ OCCUPANCY SENSORS PH2	612
Repair Lighting w/Fiuorescent Lighting Systems, Multi-Facs	217
REPAIR LIGHTING W/OCCUPANCY SENSORS	570
Repair Lighting, Energy Conservation Measures	185
REPAIR LIGHTING, MULTIPLE FACILITIES	2,711
Repair Lighting, Various Facilities	538
Repair Plumbing Fixtures, Multiple Facilities	177
Repair Pool Heating Sys with Passive Solar	750
Repair Retro-Comissioning of HVAC Systems (B1000 - B11000)	276
Repair Retro-Commissionin of HVAC Systems (B101)	100
Repair Roof Bldg 2000	641
Repair Roof, B313	332
REPAIR ROTARY FUEL BURNER, BLDG 1401	115
Repair Shellbank Fitness Center, Energy Deficiencies, F.226	455
Repair Steam & Condensate Lines	1,467
Repair Steam & Condensate Lines Barksdale St JB26-JB27	1,413
Repair Steam & Condensate Lines Eglin Street JB18 to JB20	1,361
Repair Steam & Condensate Lines Eglin Street JB69-B1618	1,230
REPAIR THERMOSTAT, MULTI FAC	298
REPAIR VACANCY SENSORS IN COMMON AREAS OF DORMS	173
REPAIR VFD ON HVAC MOTORS	230
Repair Windows, Improve Energy Efficiency, B7535	160
REPAIR, Water Efficiency Retrofit, SERE VQ 1252	115
REPAIR/MAINTAIN MULT BLDGS TO REDUCE ENERGY LEAKAGE	1,104
Repair/Recommission HVAC Systems 13 Base Bldgs	518
Repair/Renovate Rms 344/345, B 2000	200
REPAIR/REPLACE HOT WATER BOILERS, MULTIPLE FACILITIES	1,000
Repair/Replace Motors with Premium Efficiency Motors	146
Repair/Replace Windows	2,470
RepairHVAC w/ Destratification Fans, Multi Facs	464
REPAIT/RENOVATE WATER HEATING WITH SOLAR	618
REPL EXT LIGHTS, GUNTER ANNEX - Replace existing High Pressure Sodium (HPS) / Metal Halide (MH) outdoor lighting with more energy efficient T-5 High Output (HO) fluorescent light fixtures.	200
REPL EXT LIGHTS, MAXWELL	440
REPL HW BOILER, LODGING BLDG 1017	160
Replace Air Cond - Ph B	159
Replace Boilers/Upgrade Controls Multi Facs	651
Replace existing High Intensity Discharge (HID) outdoor lighting with more energy efficient T-5 HO light fixtures.	440
Replace High Bay Lighting 3,4,5,7,16,40,41,61,71,72,84	319
REPLACE HIGH BAY LIGHTING 3-BAY HANGAR B649 (R/M)	177
Replace Interior Lighting Warehouse 1	400
REPLACE INTERIOR/EXTERIOR LIGHTING, WAREHOUSE 1	410
REPLACE STANDALONE THERMOSTATS BASEWIDE	150
Replace Steam Boilers with Gas Infrared and Heat Pumps	356
REPLACE STEAM LINE FROM F/20167 TO S-147	240
Replace Taxiway Light Fixtures	750
Replace Transformers at Various Facilities (18)	289

Project	Estimate of Financial Obligation ($000)
Replace two 500 ton chillers, B 2014	1,033
Replace Unit Heaters with Infrared Heaters at Bldg 110	100
REPLACEMENT LIGHTING FY11	880
REPR ACORN LIGHTING IN PARKING LOT	333
REPR LAN-BASED DIRECT DIGITAL CONTROLS	780
REPR LIGHTING WITH DAYLIGHTING CONTROLS	690
Retro Commissioning	362
RETRO COMMISSIONING HVAC; MULTI SITES, MULTI FACILITIES	286
Retro Commissioning Multiple Locations	4,550
Retro-commission 3 BLDGS	274
Retro-commission B600 & B838	241
Retro-Commission HVAC at Various Bldg (23)	1,244
RETROCOMMISSION HVAC SYSTEMS	478
Retrocommission HVAC, MFAC	623
RETRO-COMMISSION MULTI-FACILITIES	353
Retro-commission multiple facilities	256
Retro-Commissioning	353
Retro-Commissioning Project	2,430
Retrofit Lighting 24 Facilities	1,540
Retrofit Lighting Bldg 4055	127
Retrofit Taxiway Lighting to LED	475
Rpr (Replace) Boilers/Hot Water Heaters, Multi Facs	379
Rpr (Replace) Boilers/Hot Water Heaters, Multi Facs Phase 5	633
Rpr (Replace) High Bay Relamp, Multi Facs	270
Rpr (Replace) HVAC TLFs	439
RPR CHILLER TIE IN TES HANGAR B1600	1,600
RPR Compressors Test Cell B1888	66
RPR FACILITY LIGHTING, MULTI-FACs	490
RPR HIGHBAY LIGHTING FOR ENERGY SAVINGS, MULTIPLE FACILITIES	408
RPR HVAC B1609	197
RPR HVAC B4493 Gym Heat Pump	29
Rpr Insulation and Lighting	742
RPR Lighting Mission Control B1408	166
RPR LIGHTING WITH OCCUPANCY SENSORS, MULTI FAC	114
Rpr NRG Heat/Cooling-Arnold & Harmon	154
Rpr NRG Lighting-Aerolab & Cdt Chapel	114
Rpr NRG Lighting-Amn Dining & Dorm	122
Rpr NRG Lighting-Hgr 9234 & Veh Mnt	142
Rpr NRG Optimize EMCS-Multi Bldgs	2,200
Rpr Retro-Commission Multi Facs	525
Rpr Roof Mitchell Hall B2300	64
RPR SMART CONTROLS DX UNITS BASE WIDE	525
RPR STEAM TRAPS	250
RPR Upgrade Lighting in Bays B3804	438
RPR WINDOWS SOLAR TREATMENT, MULTI	110
RPR/INST ENERGY EFFICIENT LIGHTING, GYMNASIUM, B/826/827	167
Rpr/Renovate Rms 114/116/117/118, B2007	542
RPR: Install Light Circuits, Bldgs 5500, 7437, & 8500	110
RPR: Install Programmable Thermostats Multi Bldg	104
RPR: Perform Retro-Commissioning on Multiple Facilities	1,485
RPR: Repair HVAC System in Bldgs 730 and 6817	121
RPR: Replace Lighting w/Energy Efficient Units, Multi Bldg	2,691

Project	Estimate of Financial Obligation ($000)
Solar Hot Water	49
Special Devices	735
STEAM & CONDENSAT LINE RPLCMNT B1305 MIT LL MH #7	5,575
SXHT043000 - Weapons Maintenance Facility	3,000
SXHT053001 - AIR FORCE TECHNICAL APPLICATIONS CENTER	
TDKA 112504 Sustain cooling towers B1844. Replaced facility HVAC cooling towers enabling free cooling and improving chiller efficiency FY10 Award FY10-11 Construction	292
TDKA074036B - National Security Space Institute (In Construction)	16,000
TDKA093005 - RAIDRS SPACE CONTROL FACILITY (Funded FY11)	14,280
TDKA102515 Repair heat water and domestic hot water system Base Gym FY10 Award/Construction	180
TDKA113007 - CONSTRUCT CHILD DEVELOPMENT CENTER (Construction Complete scheduled 15 Dec 11)	9,200
UPGRADE AGE SHOP LIGHTING BLDG 1171	151
UPGRADE BOILER CONTROLS MULTI FACS	441
Upgrade EMCS O&M Multi Facs	2,300
UPGRADE HANGAR LIGHTING BLDG 1166	161
UPGRADE HVAC & INSTALL LIGHTING, BLDGS 710/714	300
Upgrade HVAC Controls MFAC	392
UPGRADE HVAC SYS HANGAR 280/282	3,700
Upgrade HVAC/ Scheduling Multiple Facilities	1,666
Upgrade Lighting Air Freight Terminal 977	400
UPGRADE LIGHTING FOR ENERGY CONSERVATION 20 FACILITIES	582
UPGRADE LIGHTING MULTI FACS	1,293
Upgrade Lighting O&M FACs	1,200
UPGRADE LIGHTING WAREHOUSE BLDG 5326	87
Upgrade Lighting, Bldg 641	70
Upgrade Lighting, MFAC	189
UPGRADE LIGHTING, SITEWIDE	211
VDYD101116 Bldg 1940 cool roof/daylighting	204
VNVP 101118 AHU's Chillers and Humidifiers, PMEL, B1362	475
Water Distribution/Repair Stm & Cond Griffiss St JB68-65	1,345
XUMU101459A NRG: Demand Response Automation	800
XUMU111160B NRG: Upgrade HVAC with Programmable Thermostats	16
XUMU111354B NRG: Upgrade Pool Boilers	800
YXTK031816 - Repair/Replace Cooler, Package Store	201
Renewable Energy	**195**
4,000 Watt Wind Turbine	15
Dormitory (FBNV073004)	-
Fire Crash Rescue Station (FBNV963007)	-
Roof-top Solar	180
Water Conservation	**17,040**
ADD WATER EFFICIENT FIXTURES	181
DBEH061558 - Repair Potable Water Lines, Port Area (LET)	425
DBEH111511 - Repair Water Distribution, North CCAFS	1,270
ENERGY: Xeriscape Dorm 19 854 855	150
GLEN111409 - Repair by Replace Toilets/Urinals with Low FLow Units B400	135
Himberg Swimming Pool Cover	26
Install low flow showerheads and faucet aerators in dorms	100
Install Water Conservation Devices, Multiple Facilities	281
MHMV 070051 Const non-potable water storage tank	-
MNT WATER LEAK SURVEY MAIN BASE & AFRL	215

Project	Estimate of Financial Obligation ($000)
NRG: RPR WATER LINE 5TH ST AND SOUTH OF CHAPEL	360
Renovate Restrooms B7535	821
Repair Water Distribution, North CCAFS (LET)	2,000
REPAIR WATER LEAKS III	350
Repair Water Line/Leak Detection	525
Repair Water Lines 9,000, 10,000 areas	1,147
REPAIR/DEVELOP LEAKING WATER LINES, AREA 1&2	690
REPAIR/DEVELOP LEAKING WATER LINES, AREA 3&4	743
Rpr Men's Shower & Locker Rms-Warhawk Fitness Center B2418	85
SXHT111000 - Repair Water Dist Sys, N. Pumps B209	631
WATER CONS: GUEST HOUSING	115
WATER CONS: INSTALL LOW FLOW WATER FIXTURES, DORMS (NRG)	543
WATER CONS: Replace Water Fixtures	249
Water Conservation Measures at Various Bldgs (50)	761
WATER LEAK DETECTION SURVEY AND REPAIRS	101
WATER LEAK REPAIR ZONE #20	2,053
WATER LEAK REPAIR ZONE #21	2,053
Water Leak Survey/Repair	750
XERISCAPE TLFs AND PARKING AREA	280
MARINE CORPS	
Energy Conservation	**1,008**
REPLACE DEHUMIDIFIERS AND ROLL-UP DOORS	916
REPLACE LIGHTING IN BLDG 250	93
DECA	
Energy Conservation	**8,740**
DeCA Energy Audits	931
ECM Motor retrofit in Walk in Coolers	627
Install night curtains on open display cases	2,384
Lighting efficiency improvements	3,645
Optimize Refrig & HVAC Controls	712
Upgrade building automation systems	441
DLA	
Energy Conservation	**115,049**
Add motion Sensors to last 30% of T5HO lights in building 82	58
Add motion Sensors to last 30% of T5HO lights in building 83	58
Add motion Sensors to last 30% of T5HO lights in building 84	58
Add motion Sensors to last 30% of T5HO lights in building 85	58
Add motion Sensors to last 30% of T5HO lights in building 87	58
Add Roof Insulation, Building 16A	513
Add Roof Insulation, Building 20	205
Bldg 400 boiler replacement and natural gas conversion	485
Building 315 HVAC unit replacement and conversion to Natural gas (94% Eff cond boiler)	105
Building 316 HVAC unit replacement and conversion to Natural gas (94% Eff cond boiler)	75
Building 34 Chiller Replacement	160
Conversion of building 300 to Natural gas and replace HVAC equipment	158
Convert Bldg 87 from steam to hot water and replace HVAC, control systems and solar wall (ER 40% efficient)	2,125
DDC Headquarters	98,000
Design/Build Parking Lot LED Lighting Repairs	400
EDC admin Cafeteria refrigeration system replacement	85

Project	Estimate of Financial Obligation ($000)
Evaluate Control System Bldg 20	12
Install Energy Management Control System	80
Install Lights and Occupancy Sensors, Building 179 and 286	259
Install Occupancy Sensors on Existing Lights, Building 28	61
Lighting Building 50 (T5HO w/ Motion sensors)	243
Lighting Building 51 (T5HO w/ Motion sensors)	243
Lighting Building 52, Bay 4 & 5 (T5HO w/ Motion sensors)	25
Lighting Building 55 (T5HO w/ Motion sensors)	525
Lighting Building 56 (T5HO w/ Motion sensors)	322
Lighting Control Upgrades, multiple bldgs.	775
Perform Energy Audit Air Compressors	137
Replace Boiler, Building 16	129
Replace Boiler, Building 21	236
Replace HVAC Control Systems, Bldgs 10&11	518
Replace Lights & Install Controls Bldg 19	243
Replace Perimeter/Street Lights with LED	1,240
Replace Windows, Building 100	495
Replace Windows, Building 28	105
WH14 Roof Repairs (With cool roof SRI 79%)	3,400
WH15 Roof Repairs (With cool roof SRI 79%)	3,400
Renewable Energy	**200**
Install Solar Domestic Water Heater	140
Solar Water Heating (Gym, BLDG 33 D-Bay)	60
NSA	
Energy Conservation	**23,575**
Green Roofs	22,475
Investment Grade Audits	1,100
Renewable Energy	**24,544**
Campus Renewable Energy Projects	300
Fuel Cell	24,000
Kent Island Solar Array	160
N33 Solar Parking Lot Lighting design	84
TMA	
Energy Conservation	**6,168**
Interior lighting controls for B1 Quarterdeck	1
Interior lighting controls for B17 lobbies	2
LED Lighting upgrades to interior and exterior lighting	6
Occupancy Sensors Controls for B01 Restrooms	8
Replace boilers with smaller system including higher efficiency condensing boilers	6,152
Vending miser installation	0
WHS	
Energy Conservation	**6,700**
Building metering and energy dashboard	4,100
Inspecting, repairing, and recommissioning building systems and controls	2,600
DoD Total	**611,404**

LIST OF NON-GOVERNMENTAL THIRD PARTY FUNDED ENERGY PROJECTS

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Project Type	Estimate of Financial Obligation ($000)
ARMY	
ESPC	
Energy Conservation	
APG ESPC Project 5 modified	23,100
ESPC II projects	11,600
UESC	
Energy Conservation	
160th SOAR	3,300
Bldg Weatherization, lighting, controls (2003, 2008, 2020, 2021, 2027, 2109)	1,200
Bldg Weatherization, lighting, controls (1401, 2001, 2007, 2012, 2013, 2014, 2015, 2019, 2026, 9190)	700
Boiler Plant Improvements Controls and pipe insulation3152,3292,9576,9996,2162	440
Building 5700 HVAC Project	900
Conservation Voltage Regulation	600
Lighting and HVAC	1,400
PRECC Ph 4	6,300
Steam Decentralization – Meter Group B	14,700
Steam Trap Monitoring	2,300
TVA Ph 4	6,900
NAVY	
ESPC	
Energy Conservation	
HVAC, Lights, water	12,279
UESC	
Energy Conservation	
Bldg 24 HVAC Upgrade	2,694
Boiler controls, air field lighting audit and steam to hot water conversion	2,417
BPA Phase 5	4,988
BPA Phase 6	5,005
Compressor controls, cooling tower replacement, and lighting	
FEI - CNIC	660
FEI - CNIC 9 Buildings	2,729
Lights, Water, HVAC and retrocommissioning	2,203
Motors, Lighting, steam traps, vending misers and chillers	6,633
VFDs, DDC, Lighting, HVAC and Chillers	4,850
Install Hybrid Coolerado Cooler - 02308 - CEC PIER Research Program	22

MARINE CORPS	
UESC	
Energy Conservation	
HVAC, Lights, Chillers, Solar and GSHP	5,206
Phase 14: DDC, HVAC, Boiler Retrofits, Retro-Commissioning, Lighting, meters, and PV	5,159
NSA	
UESC	
Energy Conservation	
Capacity Reduction	10,000
DoD Total	**138,284**

APPENDIX I
MILITARY CONSTRUCTION PROJECTS INCORPORATING ASHRAE

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Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	DRBS Storage Facility	AGANA,GU	2010	30%		2012	TBD
Air Force	Upgrade ASOS Facilities	ALBEMARLE,NC	2009	41%		2014	TBD
Air Force	Replace Troop Quarters	ALPENA, MI	2006	36%		2012	TBD
Air Force	CONSOL DIGITAL AIRPORT SURVEILL RADAR/RAPCON FAC	ALTUS AFB Altus City, OK	2009	36%		2011	TBD
Air Force	C-17 Sheet Metal/Composite Shop	ALTUS AFB Altus City, OK	2007	30%		2010	TBD
Air Force	NW FIELD COMMANDO WARRIOR OPERATIONS FACILITY	ANDERSEN AFB Yigo, Guam	2010	20%	Yes	2011	TBD
Air Force	NW Field Technical Training Facility	ANDERSEN AFB Yigo, Guam	2007	30%		2010	TBD
Air Force	NW Field Combat Support Vehicle Maint Facility	ANDERSEN AFB Yigo, Guam	2010	30%		2011	TBD
Air Force	Combat Communications Maintenance Facility	ANDERSEN AFB Yigo, Guam	2007	30%		2011	TBD
Air Force	STRATEGIC PLANNING AND DEVELOPMENT FACILITY	ANDREWS AFB Camp Spring, MD	2007	30%		2011	TBD
Air Force	CONSTRUCT NEW MUNITIONS STORAGE AREA (MSA) (TFI)	ANDREWS AFB Camp Spring, MD	2009	30%		TBD	TBD
Air Force	NCR Relocation - Administration Facility	ANDREWS AFB Camp Spring, MD	2007	47%		2011	TBD
Air Force	BRAC - Administration Facility	ANDREWS AFB Camp Spring, MD	2007	47%		2011	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	Administration Facility Addition	ANDREWS AFB Camp Spring, MD	2008	47%		2011	TBD
Air Force	Ambulatory Care Center	ANDREWS AFB Camp Spring, MD	2010	31%		TBD	TBD
Air Force	Dental Clinic	ANDREWS AFB Camp Spring, MD	2009	35%		TBD	TBD
Air Force	BRAC - HQ & Readiness Center	ANDREWS, Camp Spring, MD	2006	30%		2011	TBD
Air Force	Replace Munitions Complex	ANDREWS, Camp Spring, MD	2008	31%		2012	TBD
Air Force	TFI-ASOS Beddown	ATLANTIC CITY, NJ	2008	30%		2010	TBD
Air Force	Munitions Admin Fac	ATLANTIC CITY, NJ	2006	47%		2011	TBD
Air Force	Ops and Training Facility	ATLANTIC CITY, NJ	2004	77%		2011	TBD
Air Force	ADAL Weapon Release Facility	AURORA,CO	2008	37%		2011	TBD
Air Force	Alert Crew Headquarters	AURORA,CO	2004	38%		2011	TBD
Air Force	Air Support Operations Squadron	AVIANO AB Pordenone, Italy	2010	18%	Yes	TBD	TBD
Air Force	Dormitory 144PN	AVIANO AB Pordenone, Italy	2010	18%	Yes	TBD	TBD
Air Force	F-16 Mission Training Center	AVIANO AB Pordenone, Italy	2011	20%	Yes	TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	TFI - C-27 Conversion - Squadron Operations Facility	BALTIMORE,MD	2010	30%		TBD	TBD
Air Force	Replace Operations and Medical Training Facility	BALTIMORE,MD	2009	41%		TBD	TBD
Air Force	Replace Hangar/Shops	BANGOR, ME	2008	43%		2013	TBD
Air Force	Mission Support Group Complex	BARKSDALE AFB Bossier City, LA	2011	21%	Yes	TBD	TBD
Air Force	SECURITY FORCES COMPLEX	BARKSDALE AFB Bossier City, LA	2009	28%	Yes	2011	TBD
Air Force	Weapons Load Crew Training Facility	BARKSDALE AFB Bossier City, LA	2010	30%		TBD	TBD
Air Force	BRAC - EOD Facility	BARNES, MA	2006	32%		2011	TBD
Air Force	TFI - cNAF Beddown - Upgrade Building 6923	Battle Creek, MI	2008	39%		2012	TBD
Air Force	Wing Operations and Training Facility	BEAL, CA	2011	30%		TBD	TBD
Air Force	Child Development Center	BEALE AFB Marysville, CA	2009	17%	Yes	TBD	TBD
Air Force	Mobility Processing Center	BIRMINGHAM, AL	2006	42%		2011	TBD
Air Force	KC-135 Alert Crew Quarters	BIRMINGHAM,AL	2009	30%		2012	TBD
Air Force	Joint Air Defense Operations Center	BOLLING AFB Washington, DC	2009	30%		TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	TFI - Upgrade Engine Shop	BRADLEY, CT	2007	58%		2011	TBD
Air Force	BRAC CONSTRUCT MISSISSIPPI GATE ADDITIONAL LANE	BUCKLEY AFB Denver, CO	2008	TBD		2011	TBD
Air Force	SECURITY FORCES OPERATIONS FACILITY	BUCKLEY AFB Denver, CO	2010	30%		TBD	TBD
Air Force	Security Forces/Comm Fac	BURLINGTON, VT	2007	52%		2012	TBD
Air Force	ADAL Fire Crash/Rescue Station	BURLINGTON, VT	2007	53%		2011	TBD
Air Force	BRAC - BULLIS Medical Field Training Complex	CAMP BULLIS San Antonio, TX	2008	30%		2010	TBD
Air Force	NSSTTC	CAMP GUERNSEY Guernsey, WY	2010	48%		TBD	TBD
Air Force	CONSOLIDATED COMMUNICATIONS FACILITY	CANNON AFB Clovis, NM	2007	30%		TBD	TBD
Air Force	ADAL Child Development Center	CANNON AFB Clovis, NM	2008	30%		TBD	TBD
Air Force	Child Development Center	CANNON AFB Clovis, NM	2009	30%		TBD	TBD
Air Force	Dormitory (96 Rm)	CANNON AFB Clovis, NM	2009	TDB		TBD	TBD
Air Force	UAS SQUADRON OPS FACILITY	CANNON AFB Clovis, NM	2010	TDB		TBD	TBD
Air Force	SATELLITE OPERATIONS SUPPORT FACILITY	CAPE CANAVERAL AS Cape Canaveral, FL	2009	30%		TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	Add to and Alter Avionics/ECM Shop	CARSWELL,TX	2009	30%		2012	TBD
Air Force	Security Forces Training Facility	CARSWELL,TX	2008	37%		2011	TBD
Air Force	C-17 Flight Simulator Addition	CHARLESTON AFB Charleston, SC	2008	30%		2010	TBD
Air Force	FIRE/RESCUE STATION	CHARLESTON AFB Charleston, SC	2011	30%		TBD	TBD
Air Force	CIVIL ENGINEER COMPLEX (TFI) - PHASE 1	CHARLESTON AFB Charleston, SC	2011	30%		TBD	TBD
Air Force	PRIME BEEF "S Teams" Beddown	CHARLOTTE,NC	2008	36%		2012	TBD
Air Force	Replace Fire Crash Rescue Station	CHARLOTTE,NC	2008	48%		2010	TBD
Air Force	TFI - C 130 Squad Ops	CHEYENNE, WY	2004	68%		2011	TBD
Air Force	BRAC - Add to Squad Ops - Active Duty Associate	CHEYENNE, WY	2006	68%		2011	TBD
Air Force	Add to Squadron Operations	CHEYENNE,WY	2009	30%		2011	TBD
Air Force	AIRCRAFT FUEL SYSTEMS MAINTENANCE DOCK	COLUMBUS AFB Columbus, MS	2010	20%	Yes	2012	TBD
Air Force	Child Development Center	COLUMBUS AFB Columbus, MS	2007	22%	Yes	2011	TBD
Air Force	UAS Operations Facility	CREECH AFB Indian Springs, NV	2008	30%		TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	UAS Dining Hall	CREECH AFB Indian Springs, NV	2007	30%		2011	TBD
Air Force	UAS Flight Simulator and Academics Facility	CREECH AFB Indian Springs, NV	2008	30%		2011	TBD
Air Force	UAS 432 Wing HQ Mission Support Facility	CREECH AFB Indian Springs, NV	2007	30%		2011	TBD
Air Force	UAS Airfield Fire/Crash Rescue Station	CREECH AFB Indian Springs, NV	2010	30%		TBD	TBD
Air Force	TFI-Predator Beddown- FOC	DAVIS, AZ	2006	31%		2011	TBD
Air Force	AMARG HANGAR	DAVIS-MONTHAN AFB Tucson, AZ	2010	26%	Yes	TBD	TBD
Air Force	Dormitory (144 RM)	DAVIS-MONTHAN AFB Tucson, AZ	2009	30%		TBD	TBD
Air Force	HC-130J Simulator Facility	DAVIS-MONTHAN AFB Tucson, AZ	2009	30%		TBD	TBD
Air Force	HC-130J Squadron Operations Facility	DAVIS-MONTHAN AFB Tucson, AZ	2009	30%		TBD	TBD
Air Force	EC-130H Simulator/Training Operations	DAVIS-MONTHAN AFB Tucson, AZ	2011	30%		TBD	TBD
Air Force	HC-130J Joint Use Fuel Cell	DAVIS-MONTHAN AFB Tucson, AZ	2011	30%		TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	FIRE/CRASH RESCUE STATION	DAVIS-MONTHAN AFB Tucson, AZ	2009	31%		2011	TBD
Air Force	HC-130J AGE Maintenance Facility	DAVIS-MONTHAN AFB Tucson, AZ	2010	32%		TBD	TBD
Air Force	HC-130J Aerial Delivery Facility	DAVIS-MONTHAN AFB Tucson, AZ	2010	35%		TBD	TBD
Air Force	HC-130J Parts Store	DAVIS-MONTHAN AFB Tucson, AZ	2010	35%		TBD	TBD
Air Force	Add to and Alter Security Forces Facility	DES MOINES,IA	2009	30%		2011	TBD
Air Force	Construct New GCA Center	DOBBINS, Atlanta, GA	2007	20%	Yes	2011	TBD
Air Force	Construct New Control Tower	DOBBINS, Atlanta, GA	2009	30%		2011	TBD
Air Force	Chapel Center	DOVER AFB Dover, DE	2010	30%		TBD	TBD
Air Force	C-17 Cargo MTF Phase 2	DOVER AFB Dover, DE	2010	30%		TBD	TBD
Air Force	C-5M Formal Training Unit Facility	DOVER AFB Dover, DE	2011	30%		TBD	TBD
Air Force	C-5 CARGO AIRCRAFT MAINTENANCE TRAINING FACILITY, PH 1	DOVER AFB Dover, DE	2009	32%		TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	Fitness Center	DOVER AFB Dover, DE	2008	42%		TBD	TBD
Air Force	CONSOLIDATED COMMUNICATIONS FACILITY	DOVER AFB, Dover, DE	2009	16%	Yes	TBD	TBD
Air Force	Replace Fuel Cell Hangar	DULUTH, MN	2008	34%		2010	TBD
Air Force	C-130J ALTER HANGAR	DYESS AFB Abilene, TX	2009	10%	Yes	2011	TBD
Air Force	C-130 MULTIPURPOSE MAINTENANCE HANGAR	DYESS AFB Abilene, TX	2009	20%	Yes	TBD	TBD
Air Force	C-130J ADD/ALTER FLIGHT SIMULATOR FACILITY	DYESS AFB Abilene, TX	2010	TDB		TBD	TBD
Air Force	BRAC - Dental Clinic Replacement	EGLIN AFB Valporiso, FL	2008	28%	Yes	2011	TBD
Air Force	BRAC - CONSTRUCT NEW CIVIL ENGINEER FACILITY	EGLIN AFB Valporiso, FL	2009	23%	Yes	2011	TBD
Air Force	BRAC - ADD/ALTER SECURITY FORCES FACILITY	EGLIN AFB Valporiso, FL	2009	23%	Yes	2011	TBD
Air Force	F-35 POL OPS FACILITY	EGLIN AFB Valporiso, FL	2009	25%	Yes	2010	TBD
Air Force	BRAC - EGLIN ADD/ALT SCHOOL AGE FACILITY	EGLIN AFB Valporiso, FL	2009	30%		2011	TBD
Air Force	BRAC - F-35 (JSF) Renovate Maintenance Dock B1344(3797)	EGLIN AFB Valporiso, FL	2008	30%		2010	TBD
Air Force	BRAC - MC CNST JSF Munitions MX Phase I	EGLIN AFB Valporiso, FL	2008	30%		TBD	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
Air Force	F-35 Fuel Cell Maint Hangar	EGLIN AFB Valporiso, FL	2010	30%		TBD	TBD
Air Force	BRAC - F-35 (JSF) Renovate Maintenance Dock B1318	EGLIN AFB Valporiso, FL	2008	30%		2010	TBD
Air Force	F-35 Student Dormitory	EGLIN AFB Valporiso, FL	2008	30%		TBD	TBD
Air Force	BRAC - JSF Marine Corps/Navy Hangar (3548)	EGLIN AFB Valporiso, FL	2007	30%		TBD	TBD
Air Force	Child Development Center	EGLIN AFB Valporiso, FL	2009	34%		TBD	TBD
Air Force	F-35 Squadron Operations/AMU/Hangar	EGLIN AFB Valporiso, FL	2007	34%		TBD	TBD
Air Force	BRAC - Eglin MCP Child Development Center	EGLIN AFB Valporiso, FL	2009	34%		TBD	TBD
Air Force	BRAC - EGLIN MCP NEW FITNESS CENTER	EGLIN AFB Valporiso, FL	2009	37%		2011	TBD
Air Force	BRAC - JSF F-35 Tech Training Dining Facility	EGLIN AFB Valporiso, FL	2008	38%		2011	TBD
Air Force	BRAC - F-35 Integrated TRNG Center Academics BLG	EGLIN AFB Valporiso, FL	2007	39%		2011	TBD
Air Force	F-35 DUKE CONTROL TOWER	EGLIN AFB Valporiso, FL	2009	54%		2011	TBD
Air Force	DORMITORY (96 RM)	EGLIN AFB Valporiso, FL	2009	77%		TBD	TBD
Air Force	STOVL SIMULATED CARRIER PRACTICE LANDING	EGLIN AFB Valporiso, FL	2009	TBD		TBD	TBD

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Air Force	Dormitory (168 RM)	EIELSON AFB Fairbanks, AK	2010	30%		TBD	TBD
Air Force	Construct 90 New MFHUs	EIELSON AFB Fairbanks, AK	2008	50%		TBD	TBD
Air Force	Replace 129 MFHU	EIELSON AFB Fairbanks, AK	2007	50%		TBD	TBD
Air Force	REPLACE MILITARY FAMILY HOUSING - PHASE 4 (CURRENT MISSION)	EIELSON AFB Fairbanks, AK	2009	50%		TBD	TBD
Air Force	TFI - ASOS Beddown	ELLINGTON, TX	2006	30%		2011	TBD
Air Force	TFI - Alter UAV Hangar	ELLINGTON, TX	2008	31%		TBD	TBD
Air Force	ADD/ALT DEPLOYMENT CENTER	ELLSWORTH AFB Box Elder, SD	2010	33%		TBD	TBD
Air Force	Base Engineer Admin Facility	ELLSWORTH AFB Box Elder, SD	2008	44%		2011	TBD
Air Force	F-22 Flight Simulator	ELMENDORF AFB Anchorage, AK	2008	16%	Yes	2011	TBD
Air Force	F-22 ADD/ALTER WEAPONS RELEASE SYSTEMS SHOP & AME (TFI)	ELMENDORF AFB Anchorage, AK	2009	26%	Yes	2013	TBD
Air Force	F-22 Field Training Detachment	ELMENDORF AFB Anchorage, AK	2009	26%	Yes	2011	TBD
Air Force	Level 1 Confinement Facility	ELMENDORF AFB Anchorage, AK	2011	30%		TBD	TBD

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Air Force	AEROMEDICAL SERVICES/MENTAL HEALTH CLINIC	ELMENDORF AFB Anchorage, AK	2010	30%		TBD	TBD
Air Force	RAILHEAD OPERATIONS FACILITY	ELMENDORF AFB Anchorage, AK	2010	30%		2012	TBD
Air Force	F-22 Corrosion Control / LO MX / Composite RPR F	ELMENDORF AFB Anchorage, AK	2008	30%		2011	TBD
Air Force	Brigade Combat Team (Light) Complex	ELMENDORF AFB Anchorage, AK	2010	34%		TBD	TBD
Air Force	F-22 7-Bay Aircraft Shelter	ELMENDORF AFB Anchorage, AK	2007	38%		TBD	TBD
Air Force	6 Bay AMU/Squad Ops	ELMENDORF AFB Anchorage, AK	2007	38%		2011	TBD
Air Force	F-22 WEAPONS LOAD TRAINING FACILITY	ELMENDORF AFB Anchorage, AK	2009	38%		2011	TBD
Air Force	BRAC-Ops and Training Fac	ELMENDORF, Anchorage, AK	2007	44%		2011	TBD
Air Force	BRAC-Medical Training Facility	ELMENDORF, Anchorage, AK	2007	50%		2010	TBD
Air Force	Refueling Vehicle Maintenance Facility	FAIRCHILD AFB Spokane, WA	2010	30%		TBD	TBD
Air Force	WING HEADQUARTERS	FAIRCHILD AFB Spokane, WA	2010	30%		TBD	TBD
Air Force	SERE Force Support Complex, Phase-1	FAIRCHILD AFB Spokane, WA	2010	30%		TBD	TBD
Air Force	Physiological Training Facility	FAIRCHILD AFB Spokane, WA	2008	40%		2010	TBD

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Air Force	FITNESS CENTER	FAIRCHILD AFB Spokane, WA	2009	45%		TBD	TBD
Air Force	SERE FORCE SUPPORT COMPLEX, PHASE 2	FAIRCHILD AFB Spokane, WA	2010	TDB		TBD	TBD
Air Force	TFI - cNAF Beddown - Upgrade Facilities	FALMOUTH,MA	2011	30%		TBD	TBD
Air Force	Replace Ops and Training /ADAL DGS	FALMOUTH,MA	2009	35%		2011	TBD
Air Force	Replace Ops and Training /ADAL DGS	FALMOUTH,MA	2008	48%		2012	TBD
Air Force	Fire Crash and Rescue Station	FARGO, ND	2004	35%		2011	TBD
Air Force	20th Air Support Operations Squadron Complex	Fort Drum Watertown, NY	2010	30%		TBD	TBD
Air Force	Joint Air Ground Center	Fort Hood Kileen, TX	2009	30%		2011	TBD
Air Force	TFI-Predator LRE Beddown	FORT HUA,AZ	2008	30%		TBD	TBD
Air Force	Replace Troop Training Qtrs	FORT IND, PA	2008	52%		2011	TBD
Air Force	Air Support Operations Center	FORT RILEY Junction City, KS	2011	42%		TBD	TBD
Air Force	BRAC - TRI-Service Research Facility	FORT SAM HOUSTON San Antonio, TX	2008	16%	Yes	2011	TBD
Air Force	Advance Individual Trainee (AIT) Barracks (300 RM)	FORT SAM HOUSTON	2011	30%		2014	TBD

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		San Antonio, TX					
Air Force	BRAC - FSH METC Medical Instruction Facilities (INCR 1)	FORT SAM HOUSTON San Antonio, TX	2008	30%		2010	TBD
Air Force	BRAC - FSH METC Medical Instruction Facilities (INCR 2)	FORT SAM HOUSTON San Antonio, TX	2008	30%		2010	TBD
Air Force	BRAC - FSH METC MEDICAL INSTRUCTION FACILITIES (INCR 3)	FORT SAM HOUSTON San Antonio, TX	2008	30%		2011	TBD
Air Force	BRAC - FSH METC Dining Facilities (2 @ 2400 PN), INCR 1	FORT SAM HOUSTON San Antonio, TX	2007	30%		2009	TBD
Air Force	BRAC – FSH METC Student Dorm 1 (1200PN)	FORT SAM HOUSTON San Antonio, TX	2007	30%		2010	TBD
Air Force	BRAC – FSH METC Student Dorm 2 (1200PN)	FORT SAM HOUSTON San Antonio, TX	2007	30%		2010	TBD
Air Force	BRAC – FSH METC Student Dorm 3 (1200PN)	FORT SAM HOUSTON San Antonio, TX	2008	30%		2011	TBD
Air Force	BRAC - FSH METC Physical Fitness Center	FORT SAM HOUSTON San Antonio, TX	2009	30%		2010	TBD
Air Force	BRAC-JOINT BASE SAN ANTONIO HEADQUARTERS FACILITY	FORT SAM HOUSTON San	2009	30%		2011	TBD

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		Antonio, TX					
Air Force	BRAC-502 ABW BOS ADMINISTRATION FACILITY	FORT SAM HOUSTON San Antonio, TX	2009	30%		2011	TBD
Air Force	BRAC-Const ACP & VCC at SAMMC-N	FORT SAM HOUSTON San Antonio, TX	2011	30%		2011	TBD
Air Force	BRAC-STUDENT ACTIVITY CENTER	FORT SAM HOUSTON San Antonio, TX	2010	30%		TBD	TBD
Air Force	BRAC - A-10 Fuel Cell/Corr Ctl	FORT SMITH, AR	2007	30%		2009	TBD
Air Force	Acft Shelters/fuel stands	FORT WAYNE, IN	2008	30%		2011	TBD
Air Force	A-10 Flight Simulator Addition	FORT WAYNE,IN	2010	30%		2011	TBD
Air Force	A-10 Facility Conversion - Munitions Complex	FORT WAYNE,IN	2011	30%		TBD	TBD
Air Force	A10 Conversion Add and Alter Aircraft Shops Bldg 734	FORT WAYNE,IN	2010	30%		TBD	TBD
Air Force	Security Forces Facility	FORT WORTH, TX	2004	37%		2011	TBD
Air Force	BRAC Construct Overwatch ESF/GOV/POV Ck, Canopy and GH	FRANCIS E WARREN AFB Cheyenne, WY	2008	21%	Yes	2011	TBD

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Air Force	ADAL Missile Service Complex	FRANCIS E WARREN AFB Cheyenne, WY	2009	32%		2011	TBD
Air Force	Renovate Historic Dormitory	FRANCIS E WARREN AFB Cheyenne, WY	2007	51%		2011	TBD
Air Force	Replace Squadron Operations Facility	FRESNO,CA	2009	31%		2012	TBD
Air Force	Replace Civil Engineer Complex	FT SMITH,AR	2009	34%		2011	TBD
Air Force	Consolidated Learning Center	GOODFELLOW AFB San Angelo, TX	2010	24%	Yes	2011	TBD
Air Force	JOINT INTEL TECHNICAL TRAINING FACILITY PHASE 1 (TFI)	GOODFELLOW AFB San Angelo, TX	2008	30%		TBD	TBD
Air Force	STUDENT DORMITORY (100 RM)	GOODFELLOW AFB San Angelo, TX	2009	32%		TBD	TBD
Air Force	ADAL Fitness Center	GOODFELLOW AFB San Angelo, TX	2009	40%		2010	TBD
Air Force	STUDENT DORMITORY (200 RM)	GOODFELLOW AFB San Angelo, TX	2009	52%		2011	TBD
Air Force	FIRE STATION	GRAND FORKS AFB Grand Forks, ND	2009	16%	Yes	2011	TBD
Air Force	CONSOLIDATED SECURITY FORCES FACILITY	GRAND FORKS AFB Grand Forks, ND	2010	30%		TBD	TBD
Air Force	Control Tower/Rapcon	GRAND FORKS AFB Grand Forks, ND	2007	42%		2010	TBD

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Air Force	CONTROL TOWER	Grissom, IN	2009	30%		2012	TBD
Air Force	TFI-Reaper IOC/FOC	HANCOCK, NY	2008	29%	Yes	2010	TBD
Air Force	MENTAL HEALTH CLINIC ADDITION	HANSCOM AFB Bedford, MA	2009	30%		TBD	TBD
Air Force	Construct Acquisition Mgt Facility, Phase I	HANSCOM AFB Bedford, MA	2008	31%		2010	TBD
Air Force	F-22 FIGHTER ALERT FACILITY	HICKAM AFB Honolulu, HI	2009	30%		TBD	TBD
Air Force	GROUND CONTROL TOWER	HICKAM AFB Honolulu, HI	2010	30%		TBD	TBD
Air Force	TFI - F-22 Upgrade Munitions Complex	HICKAM, HI	2008	20%	Yes	TBD	TBD
Air Force	TFI - F-22 Flight Simulator Facility	HICKAM, HI	2008	33%		TBD	TBD
Air Force	BRAC-Flight Simulator Facility	HICKAM, HI	2006	34%		2011	TBD
Air Force	TFI -F-22 Hangar/Sq Ops /AMU	HICKAM, HI	2008	40%		2013	TBD
Air Force	TFI - F-22 Weapons Load Crew Training Facility	HICKAM, HI	2010	42%		TBD	TBD
Air Force	TFI- F-22 LO/Composite Rep Fac	HICKAM, HI	2007	60%		2011	TBD
Air Force	BRAC - Renovate LANTIRN CIRF, Building 584 & 578	HILL AFB Ogden, UT	2008	14%	Yes	2011	TBD

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Air Force	BRAC - Alter BLDG. 295 for BRAC Engine CIRF	HILL AFB Ogden, UT	2008	16%	Yes	2011	TBD
Air Force	F-22 Heavy Maintenance Facility and Composite Back Shop	HILL AFB Ogden, UT	2008	25%	Yes	TBD	TBD
Air Force	Child Development Center	HILL AFB Ogden, UT	2009	26%	Yes	TBD	TBD
Air Force	F-22 Radar Cross Section Testing Fac	HILL AFB Ogden, UT	2009	30%		TBD	TBD
Air Force	Munition Maintenance Facility	HILL AFB Ogden, UT	2008	30%		2011	TBD
Air Force	Hydraulic Flight Control Facility	HILL AFB Ogden, UT	2007	30%		2010	TBD
Air Force	THREE-BAY FIRE STATION	HILL AFB Ogden, UT	2009	40%		2011	TBD
Air Force	Child Development Center	HOLLOMAN AFB Alamogordo, NM	2011	30%		TBD	TBD
Air Force	FIRE/CRASH RESCUE STATION	HOLLOMAN AFB Alamogordo, NM	2010	30%		TBD	TBD
Air Force	F-22 Alter Hangar Bay for LO/Composite Repair Facility	HOLLOMAN AFB Alamogordo, NM	2008	30%		TBD	TBD
Air Force	F-22A CONSOLIDATED MUNITIONS MAINTENANCE - TFI	HOLLOMAN AFB Alamogordo, NM	2010	30%		TBD	TBD
Air Force	F-22 Add/Alter Jet Engine Maintenance Shop	HOLLOMAN AFB Alamogordo, NM	2008	30%		2010	TBD
Air Force	F-22 Add/Alter Flight Simulator Facility	HOLLOMAN AFB Alamogordo, NM	2008	30%		2011	TBD

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Air Force	UAS ADD/ALTER MAINTENANCE HANGAR	HOLLOMAN AFB Alamogordo, NM	2010	30%		TBD	TBD
Air Force	UAS MAINTENANCE HANGAR	HOLLOMAN AFB Alamogordo, NM	2010	30%		TBD	TBD
Air Force	UAS FTU COMPLEX	HOLLOMAN AFB Alamogordo, NM	2008	30%		TBD	TBD
Air Force	F-16 ACADEMIC TRAINING FACILITY	HOLLOMAN AFB Alamogordo, NM	2011	30%		TBD	TBD
Air Force	F-16 SEAD TRAINING FACILITY	HOLLOMAN AFB Alamogordo, NM	2011	30%		TBD	TBD
Air Force	F-22 Aerospace Ground Equipment (AGE) Facility	HOLLOMAN AFB Alamogordo, NM	2008	30%		2010	TBD
Air Force	COMMUNITY ACTIVITY CENTER/TROOP FEEDING FACILITY	Homestead, Homestead, FL	2010	30%		2013	TBD
Air Force	Munitions Maintenance Shop	HOUSTON,TX	2008	53%		2011	TBD
Air Force	ADD TO VISITING QUARTERS (24 RM)	HURLBURT FIELD Fort Walton Beach, FL	2010	30%		TBD	TBD
Air Force	ADAL SPECIAL OPERATIONS SCHOOL FACILITY	HURLBURT FIELD Fort Walton Beach, FL	2010	30%		TBD	TBD
Air Force	REFUELING VEHICLE MAINTENANCE FACILITY	HURLBURT FIELD Fort Walton Beach, FL	2009	30%		TBD	TBD
Air Force	FLIGHT TEST OPERATIONS FACILITY (413 FLTS)	HURLBURT FIELD Fort Walton	2010	30%		TBD	TBD

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		Beach, FL					
Air Force	CHILD DEVELOPMENT CENTER	HURLBURT FIELD Fort Walton Beach, FL	2009	30%		TBD	TBD
Air Force	CONSOLIDATED COMMUNITY CENTER (In concept design phase)	INCIRLIK AB Adana, Turkey	2009	18%	Yes	TBD	TBD
Air Force	DORMITORY 216 PN	INCIRLIK AB Adana, Turkey	2011	32%		TBD	TBD
Air Force	Security Forces Training Facility	JACKSONVILLE,FL	2008	37%		TBD	TBD
Air Force	Communicatons Training Facility	JACKSONVILLE,FL	2005	38%		2011	TBD
Air Force	Conventional Munitions Storage	JOE FOSS, SD	2008	50%		2011	TBD
Air Force	COMMUNITY HOSPITAL ADD'N	KEESLER AFB Biloxi, MS	2007	6%	Yes	TBD	TBD
Air Force	DORMITORY (144 PN)	KEESLER AFB Biloxi, MS	2009	35%		2011	TBD
Air Force	AFNWC Sustainment Center	KIRTLAND AFB Albuquerque, NM	2011	30%		TBD	TBD
Air Force	Nuclear Systems Wing & Sustainment Center Ph 2	KIRTLAND AFB Albuquerque, NM	2011	30%		TBD	TBD
Air Force	ADD TO SPACE RDT&E OPERATIONS CENTER	KIRTLAND AFB Albuquerque, NM	2010	30%		2011	TBD
Air Force	MC-130 Simulator Facility	KIRTLAND AFB Albuquerque, NM	2009	30%		2010	TBD

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Air Force	HC-130 Simulator Facility	KIRTLAND AFB Albuquerque, NM	2009	30%		2010	TBD
Air Force	H/MC-130 Fuel System Maintenance Facility	KIRTLAND AFB Albuquerque, NM	2011	30%		TBD	TBD
Air Force	BRAC - Kirtland Battlespace Environment Lab	KIRTLAND AFB Albuquerque, NM	2007	31%		2011	TBD
Air Force	Armament Shop	KIRTLAND AFB Albuquerque, NM	2010	TDB		TBD	TBD
Air Force	Aerial Delivery Addition	KIRTLAND AFB Albuquerque, NM	2010	TDB		TBD	TBD
Air Force	Replace Security Forces Facilities	KLAMATH FALLS,OR	2010	30%		2012	TBD
Air Force	Replace Squadron Operations	KNOXVILLE, TN	2007	42%		2011	TBD
Air Force	One Company Fire Station	Fort Sam Houston San Antonio, TX	2010	30%		2013	TBD
Air Force	BRAC ADAL Lak Tech Training AS IAAFA Airfield training	LACKLAND AFB San Antonio, TX	2009	30%		TBD	TBD
Air Force	Cns Addition to Child Development Center (CDC) B8210	LACKLAND AFB San Antonio, TX	2009	18%	Yes	TBD	TBD
Air Force	BRAC - Headquarters Admin Center	LACKLAND AFB San Antonio, TX	2008	25%	Yes	2011	TBD
Air Force	Evasion, Conduct After Capture Training Facility	LACKLAND AFB San Antonio, TX	2009	30%		TBD	TBD
Air Force	BMT SATELLITE CLASSROOMS/DINING FACILITY, No. 1	LACKLAND AFB San Antonio, TX	2009	30%		TBD	TBD

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Air Force	Basic Military Training (BMT) Satellite Classroom/Dining Facility #2	LACKLAND AFB San Antonio, TX	2010	30%		TBD	TBD
Air Force	Consolidated Security Forces Ops	LACKLAND AFB San Antonio, TX	2009	30%		TBD	TBD
Air Force	BMT RECRUIT DORMITORY 2, PHASE 2	LACKLAND AFB San Antonio, TX	2009	34%		TBD	TBD
Air Force	BMT Recruit Dormitory	LACKLAND AFB San Antonio, TX	2008	38%		TBD	TBD
Air Force	AMBULATORY HEALTH CLINIC PHASE 1	LACKLAND AFB San Antonio, TX	2009	39%		TBD	TBD
Air Force	AMBULATORY CARE CENTER P2	LACKLAND AFB San Antonio, TX	2009	39%		TBD	TBD
Air Force	AMBULATORY CARE CENTER P3	LACKLAND AFB San Antonio, TX	2009	39%		TBD	TBD
Air Force	CONCOLIDATED DENTAL CLINIC	LACKLAND AFB San Antonio, TX	2009	42%		TBD	TBD
Air Force	Basic Military Training (BMT) Recruit Dorm #3	LACKLAND AFB San Antonio, TX	2010	43%		TBD	TBD
Air Force	Recruit/Family Inprocessing & Information Center	LACKLAND AFB San Antonio, TX	2010	44%		TBD	TBD
Air Force	Basic Military Training (BMT) Dormitory #4	LACKLAND AFB San Antonio, TX	2011	48%		TBD	TBD
Air Force	REPLACE MILITARY FAMILY HOUSING (182 UNITS)	LAKENHEATH AFB Brandon, UK	2008	24%	Yes	TBD	TBD
Air Force	Large Vehicle Inspection Station	LAKENHEATH AFB Brandon, UK	2008	30%		TBD	TBD

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Air Force	AIT Barracks Complex, Ph 2	LANGLEY AFB Hampton, VA	2011	40%		TBD	TBD
Air Force	WEST AND LASALLE GATE FORCE PROTECTION/ACCESS	LANGLEY AFB Hampton, VA	2009	20%	Yes	TBD	TBD
Air Force	F-22 Add/Alter Hangar Bay LO/CR Facility - TFI	LANGLEY AFB Hampton, VA	2010	20%	Yes	TBD	TBD
Air Force	Consolidated Student Activity Center/Library	LAUGHLIN AFB Del Rio, TX	2009	41%		TBD	TBD
Air Force	ADAL Security Forces/Comm	LINCOLN, NE	2008	30%		2010	TBD
Air Force	Education Center Complex	LITTLE ROCK AFB Jacksonville, AR	2008	20%	Yes	TBD	TBD
Air Force	BRAC - C-130 Maintenance Facility	LITTLE ROCK AFB Jacksonville, AR	2008	30%		2010	TBD
Air Force	C130 FLIGHT SIMULATOR ADDITION	LITTLE ROCK AFB Jacksonville, AR	2009	30%		TBD	TBD
Air Force	SECURITY FORCES OPERATIONS FACILITY	LITTLE ROCK AFB Jacksonville, AR	2010	30%		TBD	TBD
Air Force	Replace Engine Shop	LITTLE ROCK, AR	2006	35%		2011	TBD
Air Force	Communications Electronics	LOVELL, TN	2007	44%		2011	TBD
Air Force	F-35 Squad Ops/AMU 2	LUKE AFB Phoenix, AZ	2011	30%		TBD	TBD
Air Force	F-35 ADAL Aircraft Maintenance Unit	LUKE AFB Phoenix, AZ	2011	42%		TBD	TBD

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Air Force	F-35 Squadron Ops Facility	LUKE AFB Phoenix, AZ	2010	44%		TBD	TBD
Air Force	F-35 Academic Training Center	LUKE AFB Phoenix, AZ	2010	52%		TBD	TBD
Air Force	COMBAT TRAINING FACILITY	MACDILL AFB Tampa, FL	2009	14%	Yes	2011	TBD
Air Force	Explosive Ordnance Disposal Facility	MACDILL AFB Tampa, FL	2008	21%	Yes	2010	TBD
Air Force	DORMITORY (120 RM)	MACDILL AFB Tampa, FL	2009	25%	Yes	2012	TBD
Air Force	Mission Support Facility	MACDILL AFB Tampa, FL	2010	30%		TBD	TBD
Air Force	CHILD DEVELOPMENT CENTER	MACDILL AFB Tampa, FL	2009	30%		TBD	TBD
Air Force	SOCCENT COMMANDANT & CULTURAL ENGAGEMENT GROUP FACILITY	MACDILL AFB Tampa, FL	2009	32%		TBD	TBD
Air Force	SOCCENT Headquarters & Commandant Facilities	MACDILL AFB Tampa, FL	2008	34%		2011	TBD
Air Force	Replace USCENTCOM Headquarters	MACDILL AFB Tampa, FL	2008	37%		2011	TBD
Air Force	CONSOLIDATED COMMUNICATIONS FACILITY	MACDILL AFB Tampa, FL	2010	TDB		TBD	TBD
Air Force	Community Activity Center	MALMSTROM AFB Great Falls, MT	2008	30%		2011	TBD
Air Force	UPGRADE WEAPONS STORAGE AREA, PHASE I	MALMSTROM AFB Great Falls, MT	2009	TDB		TBD	TBD

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Air Force	TFI-RED HORSE Squadron Beddown	MANSFIELD, OH	2007	45%		2011	TBD
Air Force	Maintenance Hangar	March ARB, CA	2007	30%		2009	TBD
Air Force	Small Arms Firing Range	March, Moreno Valley, CA	2010	30%		2013	TBD
Air Force	Construct New Airfield Control Tower, B1295 & Base Op's B395	March, Moreno Valley, CA	2012	30%		2014	TBD
Air Force	Replace Fire Station	MARTIN STATE, MD	2006	38%		2011	TBD
Air Force	ADAL AIR UNIVERSITY LIBRARY	MAXWELL AFB Montgomery, AL	2009	21%	Yes	TBD	TBD
Air Force	ASBC CATM Training Facility	MAXWELL AFB Montgomery, AL	2008	28%	Yes	2011	TBD
Air Force	C-17 ADAL Flight Simulator	MCCHORD AFB Tacoma, WA	2008	33%		TBD	TBD
Air Force	262 IWAS Facility	MCCHORD, WA	2006	25%	Yes	2011	TBD
Air Force	BRAC - STRAPP Relocation	MCCONNEL, KS	2007	39%		2010	TBD
Air Force	BRAC - STAMP Relocation	MCCONNEL, KS	2006	44%		2011	TBD
Air Force	MXG Consolidation and Forward Logistics Ph1	MCCONNELL AFB Wichita, KS	2008	30%		2010	TBD
Air Force	MXG CONSOLIDATION AND FORWARD LOGISTICS CENTER PH 2	MCCONNELL AFB Wichita, KS	2009	30%		TBD	TBD

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Air Force	SECURITY FORCES OPERATIONS FACILITY PH 1	MCGUIRE AFB Cookstown, NJ	2009	30%		TBD	TBD
Air Force	USAF EC JIEDDO Training Facility	MCGUIRE AFB Cookstown, NJ	2008	30%		TBD	TBD
Air Force	Base Ops Command Post	MCGUIRE AFB Cookstown, NJ	2009	30%		TBD	TBD
Air Force	Warfighter Family Service Center	MCGUIRE AFB Cookstown, NJ	2010	30%		TBD	TBD
Air Force	DORMITORY (120 ROOM)	MCGUIRE AFB Cookstown, NJ	2010	TDB		TBD	TBD
Air Force	BCE Facilities	MEMPHIS, TN	2008	64%		2012	TBD
Air Force	Add/Alter Operations & Technical Facility	MENWITH HILL Harrogate, UK	2007	30%		TBD	TBD
Air Force	Sec Forces CATM/CATS	MILWAUKEE, WI	2008	47%		2011	TBD
Air Force	Alter STARBASE Facility	MINNEAPOLIS,MN	2009	30%		2011	TBD
Air Force	CONTROL TOWER/BASE OPERATIONS FACILITY	MINOT AFB Minot, ND	2010	30%		TBD	TBD
Air Force	Dormitory (168 RM)	MINOT AFB Minot, ND	2011	30%		TBD	TBD
Air Force	B-52 3-Bay Conventional Munitions Mtc Facility	MINOT AFB Minot, ND	2011	30%		TBD	TBD
Air Force	B-52 Two-Bay Phase Maintenance Dock	MINOT AFB Minot, ND	2011	30%		TBD	TBD

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Air Force	Missile Procedures Training Operations Facility	MINOT AFB Minot, ND	2009	42%		TBD	TBD
Air Force	DORMITORY (168 RM)	MINOT AFB Minot, ND	2009	48%		2011	TBD
Air Force	FY10 Dormitory (168 Rm)	MINOT AFB Minot, ND	2010	48%		TBD	TBD
Air Force	DORMITORY (168 RM)	MINOT AFB Minot, ND	2011	53%		TBD	TBD
Air Force	Fuel Cell and Corrosion Control Hangar	MONTGOMERY, AL	2006	46%		2013	TBD
Air Force	COMMERCIAL ACCESS GATE	MOODY AFB Valdosta, GA	2008	18%	Yes	2010	TBD
Air Force	RESCUE OPERATIONS/MAINTENANCE HEADQUARTERS FAC	MOODY AFB Valdosta, GA	2010	30%		TBD	TBD
Air Force	BRAC - TF-34 Engine Shop (A 10 BD)	MOODY AFB Valdosta, GA	2008	30%		2011	TBD
Air Force	CHILD DEVELOPMENT CENTER	MOODY AFB Valdosta, GA	2009	42%		2011	TBD
Air Force	LOGISTICS READINESS CENTER	MOUNTAIN HOME AFB Mountain Home, ID	2008	30%		TBD	TBD
Air Force	Add to and Alter Squadron Operations Facility	MT CLEMENS,MI	2009	42%		2012	TBD
Air Force	BRAC - Construct Munitions Admin Building	MT CLEMENS,MI	2009	55%		2011	TBD

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Air Force	BRAC - Construct A-10 Munitions Maintenance Shop	MT CLEMENS,MI	2009	77%		2011	TBD
Air Force	BRAC - Construct Munitions Missile Maintenance Bays	MT CLEMENS,MI	2009	79%		2011	TBD
Air Force	TFI- Renovate Intel Squadron Facilities	NASHVILLE,TN	2008	25%	Yes	TBD	TBD
Air Force	UAS SATCOM Relay Pads and Facility	NAVAL AIR STATION SIGONELLA Sicily, Italy	2011	30%		TBD	TBD
Air Force	Global Hawk Aircraft Maintenance and Operations Complex	NAVAL AIR STATION SIGONELLA Sicily, Italy	2009	30%		TBD	TBD
Air Force	F16 Aggressor Hanger/Aircraft Maintenance Unit GF	NELLIS AFB Las Vegas, NV	2008	15%	Yes	TBD	TBD
Air Force	F-35A ADD/ALTER FLIGHT TEST INSTRUMENTATION FACILITY	NELLIS AFB Las Vegas, NV	2010	18%	Yes	TBD	TBD
Air Force	F-16 Aggressor Hanger/Aircraft Maintenance Unit	NELLIS AFB Las Vegas, NV	2008	25%	Yes	TBD	TBD
Air Force	CHILD DEVELOPMENT CENTER	NELLIS AFB Las Vegas, NV	2009	26%	Yes	2011	TBD
Air Force	F 35 A Hangar / AMU	NELLIS AFB Las Vegas, NV	2010	26%	Yes	TBD	TBD
Air Force	JTAC VIRTUAL TRAINING FACILITY	NELLIS AFB Las Vegas, NV	2008	30%		2010	TBD

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Air Force	F-16 AGGRESSOR SQUADRON OPS/INFRASTRUCTURE	NELLIS AFB Las Vegas, NV	2008	30%		TBD	TBD
Air Force	F-35A AGE Facility	NELLIS AFB Las Vegas, NV	2011	30%		TBD	TBD
Air Force	F-35 Flight Simulator	NELLIS AFB Las Vegas, NV	2009	30%		TBD	TBD
Air Force	F-35 Add/Alter Engine Shop	NELLIS AFB Las Vegas, NV	2011	30%		TBD	TBD
Air Force	F-35A Add/Alter 422 Test Evaluation Squadron Facility	NELLIS AFB Las Vegas, NV	2010	32%		TBD	TBD
Air Force	AIRFIELD FIRE RESCUE STATION	NELLIS AFB Las Vegas, NV	2009	35%		2011	TBD
Air Force	COMMUNICATIONS NETWORK CONTROL CENTER	NELLIS AFB Las Vegas, NV	2011	30%		TBD	TBD
Air Force	BRAC- Upgrade F-15 CIRF	NEW ORLEANS,LA	2008	30%		2010	TBD
Air Force	Base Defense Group Beddown	NEWBURGH,NY	2009	32%		2012	TBD
Air Force	Visiting Quarters	Niagara ARS, NY	2007	30%		2009	TBD
Air Force	COMMUNITY ACTIVITIES CENTER	Niagara Falls, NY	2009	30%		2012	TBD
Air Force	DINING HALL	Niagara Falls, NY	2009	30%		TBD	TBD
Air Force	INDOOR SMALL ARMS RANGE	Niagara Falls, NY	2010	30%		2013	TBD

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Air Force	USSTRATCOM Replacement Facility - Incr 1	OFFUTT AFB Bellview, NB	2010	30%		TBD	TBD
Air Force	ADAL Intelligence Squadron Facility	OFFUTT AFB Bellview, NB	2008	30%		2010	TBD
Air Force	TFI Digital Ground Station,	OTIS, MA	2008	10%	Yes	2011	TBD
Air Force	Air Force Technical Applications Center	PATRICK AFB Cocoa Beach, FL	2010	27%	Yes	TBD	TBD
Air Force	Replace Ops and Training	PEASE, NH	2007	40%		2011	TBD
Air Force	Squadron Operations Facility	PEORIA,IL	2008	48%		2012	TBD
Air Force	National Security Space Institute	PETERSON AFB Colorado Springs, CO	2009	9%	Yes	TBD	TBD
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER	PETERSON AFB Colorado Springs, CO	2009	9%	Yes	TBD	TBD
Air Force	East gate	PETERSON AFB Colorado Springs, CO	2010	16%	Yes	TBD	TBD
Air Force	Combat Weapons Training Facility	PETERSON AFB Colorado Springs, CO	2010	30%		TBD	TBD
Air Force	RAIDRS	PETERSON AFB Colorado Springs, CO	2010	33%		TBD	TBD

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Air Force	ACTIVE ASSOCIATE SQUAD OPS/AMU (TFI)	PETERSON AFB Colorado Springs, CO	2010	33%		TBD	TBD
Air Force	VISITING QUARTERS - PHASE 1	Pittsburgh, PA	2008	30%		2013	TBD
Air Force	AIR TRAFFIC CONTROL TOWER	POPE AFB Fayetteville, NC	2010	26%	Yes	TBD	TBD
Air Force	C-130 Flight Simulator	POPE AFB Fayetteville, NC	2011	30%		TBD	TBD
Air Force	Replace Squadron Operations Facilities	PORTSMOUTH,NH	2008	30%		2013	TBD
Air Force	Construct ATC Control Tower	QUONSET, RI	2008	42%		2012	TBD
Air Force	IMPROVE MILITARY FAMILY HOUSING	RAF ALCONBURY Cambridgeshire, UK	2008	24%	Yes	TBD	TBD
Air Force	Improve Military family Housing	RAF CROUGHTON Oxfordshire, UK	2007	24%	Yes	TBD	TBD
Air Force	Dormitory - 128 RM	RAMSTEIN AFB Ramstein, Germany	2007	30%		TBD	TBD
Air Force	REPLACE FAMILY HOUSING, PH E	RAMSTEIN AFB Ramstein, Germany	2008	TDB		TBD	TBD
Air Force	Joint Mobility Processing Center	RAMSTEIN AFB Ramstein, Germany	2007	30%		2011	TBD

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Air Force	CONTINGENCY RESPONSE GROUP COMPOUND - CLOSE SEMBACH	RAMSTEIN AFB Ramstein, Germany	2009	28%	Yes	TBD	TBD
Air Force	CONSTRUCT AEROSPACE GROUND EQUIPMENT MAINTENANCE COMPLEX	RAMSTEIN AFB Ramstein, Germany	2010	40%		TBD	TBD
Air Force	BRAC - CSO Bachelor Housing	RANDOLPH AFB San Antonio, TX	2008	30%		TBD	TBD
Air Force	Replace Fire Station	RENO, NV	2008	54%		2011	TBD
Air Force	BRAC - Add to and alter Information Directorate Lab	ROME LABORATORY Rome, NY	2008	9%	Yes	2011	TBD
Air Force	Replace Fire Station	ROSECRANS, MO	2004	42%		2012	TBD
Air Force	Fire Station, Phase 2	SALT LAKE, UT	2004	32%		2011	TBD
Air Force	Repl Fire Station	SALT LAKE, UT	2004	32%		2011	TBD
Air Force	F-16 Mission Training Center (Flight Sim) Facility	SAN ANTONIO,TX	2009	30%		2012	TBD
Air Force	Add/Alt Aircraft Maintenance Shops	SAN ANTONIO,TX	2009	39%		2012	TBD
Air Force	Relocate ASOS Facilities	SAVANNAH,GA	2008	32%		2012	TBD
Air Force	Fire Station Addition	SAVANNAH,GA	2006	36%		2010	TBD

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Air Force	AEROMEDICAL EVACUATION FACIUTY	SCOTT AFB Belleville, IL	2008	TDB		TBD	TBD
Air Force	RADAR APPROACH CONTROL COMPLEX, PH 1	SEYMOUR JOHNSON AFB Goldsboro, NC	2010	29%	Yes	TBD	TBD
Air Force	AIR TRAFFIC CONTROL TOWER/BASE OPERATIONS COMPLEX	SEYMOUR JOHNSON AFB Goldsboro, NC	2011	30%		TBD	TBD
Air Force	CONSOLIDATED SUPPORT CENTER	SEYMOUR JOHNSON AFB Goldsboro, NC	2009	30%		TBD	TBD
Air Force	BRAC Child Development Center	SHAW AFB Sumter, SC	2008	23%	Yes	2011	TBD
Air Force	BRAC Transient Lodging Facility	SHAW AFB Sumter, SC	2008	23%	Yes	2011	TBD
Air Force	BRAC Visiting Officers Quarters	SHAW AFB Sumter, SC	2008	23%	Yes	2011	TBD
Air Force	BRAC Fitness Center	SHAW AFB Sumter, SC	2008	24%	Yes	2011	TBD
Air Force	DORMITORY (144 RM)	SHAW AFB Sumter, SC	2009	26%	Yes	TBD	TBD
Air Force	Physical Fitness Center	SHAW AFB Sumter, SC	2009	30%		2011	TBD
Air Force	Add/Alt AFCENT HQ	SHAW AFB Sumter, SC	2010	48%		TBD	TBD
Air Force	Technical Training Support Facil.	SHEPPARD AFB Witchita Falls, TX	2009	32%		TBD	TBD

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Air Force	EUROPEAN NATO JOINT JET PILOT TRAINING OPERATIONS	SHEPPARD AFB Witchita Falls, TX	2010	44%		2012	TBD
Air Force	Range Support Facility Complex	SMOKY HILL, KS	2007	30%		2011	TBD
Air Force	CONSTRUCT FITNESS CENTER	SPANGDAHLEM AB Trier, Germany	2009	30%		TBD	TBD
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER	SPANGDAHLEM AB Trier, Germany	2009	30%		TBD	TBD
Air Force	BRAC - Relocate Combat Communications Squadron	SPOKANE, WA	2008	31%		2012	TBD
Air Force	Alter Predator Operations Center Facility	SPRINGFIELD, OH	2011	30%		TBD	TBD
Air Force	Combat Comm Tng Complex	SPRINGFIELD, OH	2008	70%		2011	TBD
Air Force	TFI - cNAF Beddown - Upgrade Facilities	SPRINGFIELD,IL	2008	38%		2013	TBD
Air Force	Add to Fire Station	ST JOSEPH,MO	2008	20%	Yes	2012	TBD
Air Force	BRAC-Relocate 157 AOG	ST LOUIS,MO	2009	26%	Yes	2011	TBD
Air Force	Add to and Alter AOS Facility	STATE COLLEGE,PA	2010	36%		2010	TBD
Air Force	Replace Pararescue Training Facility	SUNNYVALE, CA	2011	30%		TBD	TBD
Air Force	Upgrade ASOS Facilities	SYRACUSE,NY	2008	50%		2011	TBD

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Air Force	TFI - ASOS Beddown - Upgrade Facilities	TERRE HAUTE, IN	2006	30%		2012	TBD
Air Force	Visitor Information Center	TINKER AFB Oklahoma City, OK	2009	25%	Yes	2011	TBD
Air Force	Aircraft Hangar	TINKER AFB Oklahoma City, OK	2008	28%	Yes	TBD	TBD
Air Force	UPGRADE BUILDING 3001 INFRASTRUCTURE, PH III	TINKER AFB Oklahoma City, OK	2010	30%		TBD	TBD
Air Force	Consolidated Fuel Overhaul, Repair and Test Facility	TINKER AFB Oklahoma City, OK	2007	34%		2011	TBD
Air Force	Child Development Center	TINKER AFB Oklahoma City, OK	2010	44%		TBD	TBD
Air Force	Multi-Use Instructional Facility	TOLEDO, OH	2001	34%		2011	TBD
Air Force	CONSTRUCT KC-10 CARGO LOAD TRAINING (CLT) FACILITY	TRAVIS AFB Fairfield, CA	2009	14%	Yes	TBD	TBD
Air Force	LARGE CRASH RESCUE STATION	TRAVIS AFB Fairfield, CA	2009	21%	Yes	TBD	TBD
Air Force	Dormitory (144 RM)	TRAVIS AFB Fairfield, CA	2011	30%		TBD	TBD
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER (CDC)	TRAVIS AFB Fairfield, CA	2011	30%		TBD	TBD
Air Force	GLOBAL SUPPORT SQUADRON FACILITY	TRAVIS AFB Fairfield, CA	2008	TDB		2011	TBD
Air Force	Comm Audiovisual Facility	TRUAX FIELD, WI	2007	37%		2011	TBD

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Air Force	F-22 ADD/ALT HANGAR FOR LOW OBSERVABLE/COMPOSITE REPAIR	TYNDALL AFB Panama City, FL	2011	29%	Yes	TBD	TBD
Air Force	1 AF AFFOR Center, PH 3	TYNDALL AFB Panama City, FL	2008	30%		TBD	TBD
Air Force	F-22 MUNTIONS STORAGE COMPLEX	TYNDALL AFB Panama City, FL	2011	30%		TBD	TBD
Air Force	325 ACS OPS TRAINING COMPLEX	TYNDALL AFB Panama City, FL	2009	44%		TBD	TBD
Air Force	FITNESS CENTER	TYNDALL AFB Panama City, FL	2007	42%		2010	TBD
Air Force	AFA - Center for Character and Leadership Development	USAF ACADEMY Colorado Springs, CO	2009	30%		TBD	TBD
Air Force	Const Vehicle Search Facility	USAF ACADEMY Colorado Springs, CO	2011	32%		TBD	TBD
Air Force	CONTROL TOWER	VANCE AFB Enid, OK	2010	47%		TBD	TBD
Air Force	Fuel System Maintenance Hangar	VANCE AFB Enid, OK	2008	63%		2010	TBD
Air Force	CONSTRUCT CHILD DEVELOPMENT CENTER	VANDENBERG AFB Lompoc, CA	2009	29%	Yes	TBD	TBD
Air Force	Education Center	VANDENBERG AFB Lompoc, CA	2010	30%		TBD	TBD
Air Force	Air Support Operations Squadron,	Vilseck Garrison Vilseck, Germany	2010	42%		TBD	TBD

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Air Force	Aircraft Hangar	WARNER ROBINS AFB Warner Robins, GA	2008	30%		2011	TBD
Air Force	AVIONICS FACILITY	WARNER ROBINS AFB Warner Robins, GA	2009	30%		TBD	TBD
Air Force	Command Post Facility	WARNER ROBINS AFB Warner Robins, GA	2008	30%		2010	TBD
Air Force	CONSTRUCT ASOC COMPLEX	WHEELER ADMIN ANNEX Oahu, HI	2009	30%		TBD	TBD
Air Force	Consolidated Communications Facility	WHITEMAN AFB Knob Noster, MO	2008	30%		2011	TBD
Air Force	WSA Security Control Facility	WHITEMAN AFB Knob Noster, MO	2011	44%		TBD	TBD
Air Force	TFI - Upgrade DCGS Facilities	WICHITA,KS	2008	39%		2011	TBD
Air Force	TFI-ASOS Beddown	WILL ROGERS, OK	2006	30%		2010	TBD
Air Force	TFI - cNAF Beddown - Upgrade Facilities	WINDSOR LOCK,CT	2008	31%		2011	TBD
Air Force	Information Technology Complex, PH 1	WRIGHT PATTERSON AFB Fairborn, OH	2009	16%	Yes	TBD	TBD
Air Force	BRAC - Alter Acquisition Mgt Fac (HQ HSG/YA & Fixed Wing)	WRIGHT PATTERSON AFB Fairborn, OH	2007	20%	Yes	2010	TBD

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Air Force	BRAC - Alter Materials Laboratory (HSG/YA Labs)	WRIGHT PATTERSON AFB Fairborn, OH	2007	20%	Yes	2010	TBD
Air Force	SECURITY FORCES OPERATIONS FACILITY	WRIGHT PATTERSON AFB Fairborn, OH	2008	30%		TBD	TBD
Air Force	Conversion for Advanced Power and Thermal Research Lab	WRIGHT PATTERSON AFB Fairborn, OH	2009	30%		TBD	TBD
Air Force	BRAC - Add to and Alter Sensors Laboratory (AFRL/SN)	WRIGHT PATTERSON AFB Fairborn, OH	2008	30%		2011	TBD
Air Force	BRAC - Radiation Calibration Facility	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD
Air Force	BRAC - AFIOH Facility	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD
Air Force	BRAC - AFRL/HE (Mesa)	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD
Air Force	BRAC - AFRL/HE (Brooks)	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD
Air Force	BRAC - USAFSAM Consult Service	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD

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Air Force	BRAC - USAFSAM (INC 2)	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD
Air Force	BRAC - Dining Facility	WRIGHT PATTERSON AFB Fairborn, OH	2007	39%		2011	TBD
Air Force	BRAC - Pipeline Dormitory	WRIGHT PATTERSON AFB Fairborn, OH	2009	44%		2010	TBD
Air Force	Replace Base Civil Engineer Complex	WRIGHTSTOWN,NJ	2008	30%		2012	TBD
Air Force	Replace Maint Hangar/Shops	YEAGER, WV	2005	50%		2011	TBD
Air Force	Fuel System Hangar/shops	YEAGER, WV	2008	50%		2011	TBD
Air Force	Joint Services Lodging Facility Phase 2	Youngstown, Vienna, OH	2009	30%		2013	TBD
Air Force	Supply Warehouse	ZANESVILLE,OH	2010	32%		2011	TBD
Air Force	Aircraft Component Repair Facility	WARNER ROBINS, Warner Robins, GA	2007	30%		2010	TBD
Air Force	Upgrade Academic Facility, Ph 4B	USAF ACADEMY, Colorado Springs, CO	2008	30%		2009	TBD
Air Force	BRAC - Pensacola CSO Applied Instruction Facility	RANDOLPH, San Antonio, TX	2007	30%		2012	TBD

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Air Force	BRAC - Pensacola USAF Navigator Training Hangar	RANDOLPH, San Antonio, TX	2007	30%		2012	TBD
Air Force	BRAC Admin Center (CPO)	RANDOLPH, San Antonio, TX	2007	21%	Yes	2010	TBD
Air Force	BRAC IFF BDDN Hanger 6 RENO	RANDOLPH, San Antonio, TX	2007	21%	Yes	2010	TBD
Air Force	Dormitory (144 RM)	MINOT, Minot, ND	2007	30%		2010	TBD
Air Force	Air Support Operations Squadron Complex	LANGLEY, Hampton, VA	2008	31%		2010	TBD
Air Force	Small Diameter Bomb - Storage Igloo	LAKENHEATH, Brandon, UK	2008	30%		2012	TBD
Air Force	BRAC ADAL B5075 for Defense Courier Service	LACKLAND, San Antonio, TX	2007	30%		2012	TBD
Air Force	BRAC Construct Equipment Warehouse Tops in Blue	LACKLAND, San Antonio, TX	2007	30%		2012	TBD
Air Force	Construct PJ/CRO Logistics Bldg	KIRTLAND, Albuquerque, NM	2007	30%		2012	TBD
Air Force	Construct PJ/CRO Rescue & Recovery Training Center	KIRTLAND, Albuquerque, NM	2008	30%		2012	TBD
Air Force	DIAGNOSTIC IMAGING CENTER	KEESLER AIR FORCE BASE, Biloxi, MS	2007	22%	Yes	2010	TBD
Air Force	DMTR Aircraft Power Systems Repair Facility	HILL, Ogden, UT	2008	30%		2010	TBD
Air Force	DGS INTEL Squadron Operations Facility	HICKAM, Honolulu, HI	2008	30%		2012	TBD

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Air Force	BRAC - Convert Hangar for UAV Control	GRAND FORKS, Grand Forks, ND	2007	30%		2009	TBD
Air Force	Renovate Historic Dormitories	FRANCIS E WARREN, Cheyenne, WY	2008	38%		2010	TBD
Air Force	F-22 Jet Engine Inspection and Maintenance Facility	ELMENDORF, Anchorage, AK	2007	30%		2012	TBD
Air Force	F 22A 7 BAY AIRCRAFT SHELTER	ELMENDORF, Anchorage, AK	2007	30%		2010	TBD
Air Force	F-22 8-Bay Aircraft Shelter	ELMENDORF, Anchorage, AK	2007	30%		2010	TBD
Air Force	BRAC JSF RENO BLDG 1312 SQ OPS	EGLIN, Valporiso, FL	2008	30%	-	2010	TBD
Air Force	F-35 Add/Alter 53RD Joint Reprogramming Facility	EGLIN, Valporiso, FL	2007	30%		2012	TBD
Air Force	BIO-ENVIRONMENTAL ENGINEERING FACILITY	DOVER, Dover, DE	2008	30%		2010	TBD
Air Force	BRAC - Construct TSSC Storage Facility (3546)	DAVIS-MONTHAN, Tucson, AZ	2007	30%		2009	TBD
Air Force	CSAR EC-130 Maintenance Hangar/AMU	DAVIS-MONTHAN, Tucson, AZ	2007	30%		2009	TBD
Air Force	Addition to Mission Support Complex, PH II	COLUMBUS, Columbus, MS	2007	30%		2010	TBD
Air Force	Add/Alter C-130 Hangar	CANNON, Clovis, NM	2007	30%		2010	TBD
Army	General Instruction Building	Presidio of Monterey,	2007	3%	Yes		

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		California					
Army	Range Control Facility	Fort Hunter Liggett, California	2007	30%			
Army	Indoor Range	Fort Carson, Colorado	2007	10%	Yes		
Army	Army National Guard Readiness Center	Niantic, Connecticut	2007	30%			
Army	Joint Personal Effects Depot	Dover Air Force Base, Delaware	2007	30%			
Army	Southern Command Headquarters Facility	Miami Doral, Florida	2007	30%			
Army	Army National Guard Aviation Support Facility	Jacksonville, Florida	2007	30%			
Army	Brigade Complex-Headquarters	Hunter Army Air Field, Georgia	2007	31%			
Army	Barracks Complex	Hunter Army Air Field, Georgia	2007	38%			
Army	Simulations Training Facility	Fort Benning, Georgia	2007	37%			
Army	Trainee Barracks Complex	Fort Benning, Georgia	2007	32%			
Army	Reception Station, Phase 1	Fort Benning, Georgia	2007	39%			
Army	Barracks Complex	Wheeler Army Air Field, Hawaii	2007	30%			

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Army	Barracks Complex	Schofield Barracks, Hawaii	2007	30%			
Army	Barracks Complex	Schofield Barracks, Hawaii	2007	30%			
Army	Barracks Complex	Fort Leavenworth, Kansas	2007	30%			
Army	Digital Multipurpose Range Complex	Fort Riley, Kansas	2008	18%	Yes		
Army	Vehicle Maintenance Shop	Fort Campbell, Kentucky	2007	<30%	Yes		
Army	Army Reserve Center	Butte, Montana	2007	47%			
Army	Army Reserve Center	Fort Drum, New York	2007	33%			
Army	Student Barracks	Fort Bragg, North Carolina	2007	32%			
Army	Indoor Range	Fort Bragg, North Carolina	2007	12%	Yes		
Army	Army National Guard Readiness Center	Ontario, Oregon	2007	30%			
Army	Army National Guard Field Maintenance Shop Stryker Brigade Combat Team	Graterford, Pennsylvania	2008	30%			
Army	Army National Guard Field Maintenance Shop, Add/Alter Stryker Brigade Combat Team	Philadelphia, Pennsylvania	2008	30%			

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Army	Army National Guard Readiness Center, Add/Alter Stryker Brigade Combat Team	Lebanon, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center, Add/Alter Stryker Brigade Combat Team (SBCT)	Hanover, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center, Add/Alter Stryker Brigade Combat Team (SBCT)	Kutztown, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center Add/Alter Stryker Brigade Combat Team (SBCT)	Hazelton, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Gettysburg, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Carlisle, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	East Fallowfield Township, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center, Alteration Stryker Brigade Combat Team (SBCT)	Philadelphia, Pennsylvania	2008	30%			
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Holidaysburg, Pennsylvania	2009	30%			

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Army	Barracks Complex	Fort Hood, Texas	2008	30%			
Army	Battle Command Training Center, Phase 1	Fort Sam Houston, Texas	2007	32%			
Army	Maneuver Systems Sustainment Center, Phase 2	Red River Army Depot, Texas	2007	30%			
Army	Army Reserve Center	Naval Air Station, Joint Reserve Base, Fort Worth, Texas	2007	33%			
Army	Indoor Range	Fort Lewis, Washington	2007	30%			
Army	Brigade Complex, Increment 2	Fort Lewis, Washington	2007	33%			
Army	Regional Medical Training Facility	Fort McCoy, Wisconsin	2007	33%			
Army	Army National Guard Qualification Training Range	Camp Guernsey, Wyoming	2007	30%			
Army	Aviation Task Force Complex, Phase 2	Fort Wainwright, Alaska	2008	30%			
Army	Forensic Laboratory Expansion	Fort Gillem, Georgia	2008	46%			
Army	Information Systems Facility	Wiesbaden, Germany	2008	30%			
Army	Regional SATCOM Support Center	Wheeler AFB, Hawaii	2007	27%	Yes		
Army	Child Development Center	Fort Knox, Kentucky	2008	30%			

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Army	SATCOM Facility	Fort Detrick, Maryland	2007	36%			
Army	Access Control Point	Detroit Arsenal, Michigan	2007	42%			
Army	Child Development Center	Fort Leonard Wood, Missouri	2008	30%			
Army	Company Headquarters Building	Fort Bragg, North Carolina	2007	30%			
Army	Igloo Storage, Installation	McAlester, Oklahoma	2008	30%			
Army	High Explosive Magazine, Installation	McAlester, Oklahoma	2008	30%			
Army	Fire Station/MP Station Biggs	Fort Bliss, Texas	2008	30%			
Army	Training Aids Support Center	Fort A.P. Hill, Virginia	2008	30%			
Army	Army National Guard Readiness Center Stryker Brigade Combat Team (SBCT)	Army National Guard, Huntingdon	2007	30%			
Army	Army National Guard Readiness Center	East Greenwich, Rhode Island	2008	30%			
Army	Army National Guard Aviation Support Facility	North Kingstown, Rhode Island	2008	30%			
Army	Army National Guard Qualification Training Range	Camp Guernsey, Wyoming	2008	30%			
Army	Armed Forces Reserve Center (JFHQ)	Lincoln, Nebraska	2007	30%			

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Army	Readiness Center	Lawrence, IN	2008	30%			
Army	Regional Training Institute PH 1	Bangor, ME	2008	30%			
Army	Readiness Center, Add/Alt	Salisbury, MD	2008	30%			
Army	Army Aviation Support Facility, Add/Alt	Edgewood, MD	2008	30%			
Army	Readiness Center, Add/Alt (ADRS)	Methuen, MA	2007	30%			
Army	Field Maintenance Shop	Queensbury, NY	2008	30%			
Army	Readiness Center	Anderson, SC	2007	30%			
Army	Regional Training Institute	Camp Rell, CT	2007	30%			
Army	Army Aviation Support Facility, Add/Alt	New Castle, DE	2008	30%			
Army	Armed Forces Reserve Center	Marietta, GA	2007	30%			
Army	Armed Forces Reserve Center	Rapid City, SD	2008	30%			
Army	ARNG Addition, PH II	Arlington, VA	2008	30%			
Army	Readiness Center	Camp Navajo, AZ	2008	30%			

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Army	Readiness Center	Florence, AZ	2008	30%			
Army	Readiness Center	Papago Park, AZ	2008	30%			
Army	Readiness Center	Fort Lupton, CO	2008	30%			
Army	Readiness Center	Grand Junction, CO	2008	30%			
Army	Readiness Center	Arden Hills, MN	2008	30%			
Army	Readiness Center, Add/Alt	Beaufort, SC	2008	30%			
Army	Readiness Center	Cabot, AR	2009	30%			
Army	Regional Training Institute, PH 4	Camp Blanding, FL	2009	30%			
Army	Readiness Center	Urbana, IL	2009	30%			
Army	Combined Arms Collective Training Facility, PH I	Muscatatuck, IN	2008	30%			
Army	Readiness Center, Add/Alt	Davenport, IA	2008	30%			
Army	Readiness Center, Add/Alt	Mount Pleasant, IA	2009	30%			
Army	Aviation Operations Facility PH3	London, KY	2009	30%			

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Army	Barracks Replacement PH I	Camp Grayling, MI	2008	30%			
Army	Readiness Center, Add/Alt	Elko (Carlin), OH	2009	30%			
Army	Barracks	Camp Perry, OH	2009	30%			
Army	Barracks	Ravenna, OH	2009	30%			
Army	Readiness Center, Add/Alt	Honesdale , PA	2009	30%			
Army	Field Maintenance Shop, PH I	Florence, SC	2009	30%			
Army	Barracks/Dining/Admin & Parking Complex, PH I	Camp Rapid, SD	2009	30%			
Army	Readiness Center	Tullahoma, TN	2008	30%			
Army	Readiness Center	Ethan Allen Firing Rnge Jericho VT	2008	30%			
Army	Multi-Purpose Building, PH II	Camp Dawson, WV	2009	30%			
Army	Armed Forces Reserve Center Field Maintenance Shop, Part 2	Farmingdale, NY	2007	30%			
Army	Armed Forces Reserve Center Field Maintenance Shop	Mansfield, OH	2007	30%			
Army	Armed Forces Reserve Center (JFHQ)	Raleigh, NC	2006	30%			

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Army	Readiness Center, PH 1	Los Alamitos, California	2009	30%			
Army	Combined Arms Collective Training Facility	Gowen Fields, Idaho	2009	30%			
Army	Combined Arms Collective Training Facility, PH 1b	Muscatatuck, Indiana	2009	30%			
Army	Armed Forces Reserve Center (JFHQ)	Hanscom AFB, Massachusetts	2009	30%			
Army	Combined Arms Collective Training Facility, Add/Alt	Camp Shelby, Mississippi	2008	30%			
Army	Army Aviation Support Facility, Add/Alt	Eastover, South Carolina	2009	30%			
Army	Army Aviation Support Facility	Greenville, South Carolina	2009	30%			
Army	Regional Training Institute, PH I	St. Croix, Virgin Islands	2009	30%			
Army	Readiness Center	Fort Benning	2009	30%			
Army	Readiness Center, PH 2	Arden Hills, Minnesota	2008	30%			
Army	Readiness Center, Add/Alt	Boonville, Missouri	2009	30%			
Army	Readiness Center	North Las Vegas, Nevada	2009	30%			
Army	Armed Forces Reserve Center, PH 2	Birmingham, Alabama	2007	30%			

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Army	Combined Support Maintenance Shop	Camp Robinson, AR	2008	30%			
Army	Combined Arms Collective Training Facility	Fort Chaffee, AR	2009	30%			
Army	Combined Arms Collective Training Facility	Camp Roberts, CA	2009	30%			
Army	HAATS/AASF	Gypsum/Eagle, CO	2009	30%			
Army	Regional Training Institute	Fort Carson, CO	2007	30%			
Army	Combined Support Maintenance Shop, PH 1	Barrigada, Guam	2009	30%			
Army	Barracks (ORTC)	Gowen Field, ID	2009	30%			
Army	Combined Support Maintenance Shop, Add/Alt	Springfield, IL	2009	30%			
Army	Armed Forces Reserve Center	Wichita East, KS	2009	30%			
Army	Field Maintenance Shop	Wichita East, KS	2009	30%			
Army	Armed Forces Reserve Center	Minden, LA	2008	30%			
Army	Tactical Unmanned Aircraft System Facility	Fort Polk, LA	2009	30%			
Army	Tactical Unmanned Aircraft System Facility	Webster Field, MD	2009	30%			

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Army	Readiness Center, Add/Alt	Westfield, MA	2009	30%			
Army	Combined Arms Collective Training Facility	Camp Grayling, MI	2009	30%			
Army	Tactical Unmanned Aircraft System Facility	Camp Ripley, MN	2009	30%			
Army	Classroom Facility (Regional Training Institute)	Pembroke, NH	2009	30%			
Army	Barracks Facility (Regional Training Institute)	Pembroke, NH	2009	30%			
Army	Readiness Center, Add/Alt	Camp Grafton, ND	2009	30%			
Army	United States Property and Fiscal Office	East Greenwich, RI	2009	30%			
Army	Readiness Center	Watertown, SD	2009	30%			
Army	Readiness Center (JFHQ)	St. Croix, VI	2009	30%			
Army	Combined Support Maintenance Shop	Tacoma, WA	2009	30%			
Army	Readiness Center	Morgantown, WV	2009	30%			
Army	Readiness Center	Moorefield, WV	2009	30%			
Army	Field Maintenance Shop	Laramie, WY	2009	30%			

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Army	Readiness Center	Colorado Springs, CO	2009	30%			
Army	Readiness Center	Windsor, CO	2009	30%			
Army	Readiness Center	Cumming, GA	2009	30%			
Army	Readiness Center	Cook County, IL	2009	30%			
Army	Readiness Center	Mead, NE	2009	30%			
Army	Readiness Center. Add/Alt	Lincoln, NE	2009	30%			
Army	Readiness Center, PH 2	Fort McClellan TC, AL	2009	30%			
Army	Readiness Center	Windsor Locks, CT	2008	30%			
Army	Readiness Center, Add/Alt	Dundal, MD	2007	30%			
Army	Army Aviation Support Facility	Lakehurst, NJ	2007	30%			
Army	Readiness Center, Add/Alt	Santa Fe, NM	2007	30%			
Army	Readiness Center	The Dalles, OR	2008	30%			
Army	Combined Arms Collective Training Facility	Fort Pickett, VA	2009	30%			

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Army	Readiness Center	Alamosa, GA	2009	30%			
Army	Readiness Center, Add/Alt	Allendal, SC	2009	30%			
Army	Readiness Center	North Colorado Springs, CO	2010	30%			
Army	Readiness Center	Windsor, CO	2010	30%			
Army	TUAS Addition/ Alteration, BAFB	Aurora, CO	2010	30%			
Army	Regional Training Institute	Bethany Beach, DE	2010	30%			
Army	Armed Forces Reserve Center	New Castle, DE	2010	30%			
Army	HI-ARNG Brigade Readiness Center	Kalaeloa, HI	2010	30%			
Army	Readiness Center, Add/Alt	Iowa Falls, IA	2010	30%			
Army	AASF, Add/Alt	Boone, IA	2010	30%			
Army	New USPFO	Camp Dodge, IA	2010	30%			
Army	FMS Add/Alt	Fairfield, IA	2010	30%			
Army	MVSB	Bld S-70, Camp Dodge, IA	2010	30%			

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Army	Readiness Center	Owensboro, Ky.	2010	30%			
Army	JSO Phase IV	London, KY	2010	30%			
Army	Readiness Center	Burlington, Ky	2010	30%			
Army	Readiness Center	Grand Island, NE	2010	30%			
Army	Readiness Center (Titan)	Mead, NE	2010	30%			
Army	Readiness Center, Add/Alt	Farmington, NM	2010	30%			
Army	Unit Training Equipment Site (UTES) Add/Alt	Camp Grafton, ND	2010	30%			
Army	Field Maintenance Facility	Wausau, Wisconsin	2010	30%			
Army	Tactical Unmanned Aircraft System Facility	Camp Williams, Wisconsin	2010	30%			
Army	Milan Readiness Center Add/Alt	Milan, IL	2010	30%			
Army	Carlisle, General Instruction Building	Carlisle Barracks	2010	30%			
Army	Meade, Infrastructure Improvements	Fort Meade	2010	0%	yes		
Army	APG, Auto Technology Evaluation Fac, Ph 3	Aberdeen Proving Ground, Md	2010	0%	yes		

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Army	APG, Auto Tech Evaluate Facility Ph 2	Aberdeen Proving Ground, Md	2011	30%			
Army	APG, Fire Station	Aberdeen Proving Ground, Md	2010	0%	yes		
Army	APG, Analytical Chem Wing-Advanced Chem Lab	Aberdeen Proving Ground, Md	2010	0%	yes		
Army	Belvoir, Fire Station	Fort Belvoir	2010	0%	yes		
Army	Belvoir, Admin Facs Army Agencies	Fort Belvoir	2010	0%	yes		
Army	Detrick, Community Support Center	Fort Detrick	2010	30%			
Army	Child Development Center-Under 6 Years Age	Fort Polk	2010	0%	yes		
Army	Lab and Test Building, General Purpose	White Sands Missile Range	2010	0%	yes		
Army	UEPH Housing for Engr BN	White Sands Missile Range	2010	0%	yes		
Army	Police/MP Station	White Sands Missile Range	2010	0%	yes		
Army	Unmanned Aerial System (UAS) Hangar	Fort Hood	2011	25%	yes		
Army	PHYSICS LAB	White Sands Missile Range	2010	0%	yes		
Army	Operational Readiness Training Complex	Fort Hood	2010	0%	yes		

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Army	Unmanned Aerial Systems, Fort Hood, TX	Fort Hood	2010	0%	yes		
Army	Unit Operations - JLENS	Fort Bliss	2010	30%			
Army	THAAD BATTERY	Fort Bliss	2010	30%			
Army	Family Life Center	Fort Hood	2010	0%	yes		
Army	Company Operations Facilities	Fort Hood	2011	41%	yes		
Army	Brigade Complex	Fort Hood	2011	40%	yes		
Army	Battalion Complex	Fort Hood	2011	41%			
Army	THAAD Battery Complex, Ph 1	Fort Bliss	2010	0%	yes		
Army	CAP 073686 JLENS Battery I Phase 1 (TEMF)	Fort Bliss	2010	0%	yes		
Army	JLENS Tactical Training Facility	Fort Bliss	2010	0%	yes		
Army	Barracks Complex	Fort Sam Houston	2010	0%	yes		
Army	Picatinny - Ballistic Evaluation Facility Ph 2 (PN066726)	Picatinny Arsenal	2010	0%	yes		
Army	FY11 LEE MCA PN 73298 COMPANY OPERATIONS FACILITY	Fort Lee	2010	0%	yes		

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Army	FY11 LEE PN 71114 TRAINING SUPPORT CENTER	Fort Lee	2010	0%	yes		
Army	LEE MCA PN 036113 AIT BARRACKS COMPLEX PH6	Fort Lee	2010	30%			
Army	Rappelling Training Area	Fort Lewis	2010	0%	yes		
Army	Regional Logistic Spt Complex Warehouse	Fort Lewis	2011	35%			
Army	Regional Logistic Support Complex	Fort Lewis	2011	35%			
Army	Brigade Trans 1 BCT	Fort Riley	2010	33%			
Army	Trainee Barracks Complex 6, Ph 2	Fort Leonard Wood	2010	0%	yes		
Army	Training Barracks	Fort Leonard Wood	2010	0%	yes		
Army	Central Receiving Warehouse Replacement	Fort Leonard Wood	2010	0%	yes		
Army	Construct a standard-design combat support Brigade Headquarters	Fort Leonard Wood	2010	0%	yes		
Army	Aircraft Direct Fueling Facility	Fort Riley	2010	0%	yes		
Army	Install EMCS System	Fort Riley	2010	0%	yes		
Army	Engineer Combat Bn	Fort Riley	2010	33%			

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Army	Trainee Barracks Complex 3 Incr 1	Fort Leonard Wood	2010	0%	yes		
Army	Attack Aviation BN Cpx	Fort Riley	2010	0%	yes		
Army	Vehicle Maintenance Shop	Fort Leavenworth	2010	0%	yes		
Army	Family Housing New Construction	Fort McCoy	2010	0%	yes		
Army	Battalion Headquarters	Fort Carson	2011	35%			
Army	FY11 Battle Sims training Support Center	Fort Carson	2010	32%			
Army	FY12 MCA PN 076235 BARRACKS W/DFAC, CP HENRY/GEORGE	Camp Henry/George, Korea	2010	0%	yes		
Army	FY12 MCA 072650 BARRACKS AND VMF, CP CARROLL	Camp Carroll, Korea	2010	0%	yes		
Army	FY08 MCA PN67169 Child Dev Ctr 0-5, SB	Schofield Barracks	2010	0%	yes		
Army	PN073746 PHYSICAL FITNESS FACILITY	Fort Shafter	2010	100%			
Army	FY10 MMCA PN72067 Engineer Maintenance Fac, Kwajalein	Kwajalein Atoll	2010	100%			
Army	FY13 MCA PN67189 Consolidated Motorpool, Phase 3, FS	Fort Shafter	2010	0%	yes		
Army	FY13 MCA PN57394 200-PN UEPH BARRACKS, SB	Schofield Barracks	2010	0%	yes		

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Army	FY11 MCA PN65650 USARPAC Cmd & Cntrl Complex, Ph 1, FS	Fort Shafter	2010	30%			
Army	FY13 MCA PN67188 Consolidated Motorpool, Phase 2, FS	Fort Shafter	2010	0%	yes		
Army	FTG127 PN055873 Fire Station	Fort Greely	2010	0%	yes		
Army	FTR266 Railhead Ops Fac	Fort Richardson	2010	0%	yes		
Army	FTW362 Facility Energy Improvements	Fort Wainwright	2010	0%	yes		
Army	FTW365 SIMULATOR BUILDING	Fort Wainwright	2010	0%	yes		
Army	FTG135 Facility Energy Improvements	Fort Greely	2010	0%	yes		
Army	FTR333 Combat Pistol Qualify Range	Fort Richardson	2010	0%	yes		
Army	FTW364 RELIGIOUS EDUCATION FACILITY	Fort Wainwright	2010	0%	yes		
Army	FTW363 Family Housing Replacement Construction	Fort Wainwright	2010	0%	yes		
Army	FTR275 Multipurpose Machine Gun Range	Fort Richardson	2010	0%	yes		
Army	FTR251 PN061561 Brigade Combat Team, Ph 1	Fort Richardson	2010	0%	yes		
Army	FTW357 Aviation Task Force Complex, Ph 3	Fort Wainwright	2010	30%			

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Army	FTW360 1+1 Barracks	Fort Wainwright	2010	0%	yes		
Army	FTW371 Stryker BCT Complex	Fort Wainwright	2010	0%	yes		
Army	LIC: 38233 - PN: 074550, ACCESS CONTROL BUILDING	Redstone Arsenal	2010	0%	yes		
Army	LIC: 40540, Aviation Component Maintenance Shop	Fort Rucker	2010	0%	yes		
Army	LIC: 40538, Repair Bays, DOL/DPW/IMMA/IMMD	Fort Rucker	2010	0%	yes		
Army	Commissary	Miami, Fl	2010	0%	yes		
Army	Training Aids Center	Fort Rucker	2010	0%	yes		
Army	Physical Fitness Facility		2010	0%	yes		
Army	Construction of new Barrack FY011	Honduras Various	2010	0%	yes		
Army	Design and construct security towers at MOTSU	Military Ocean Terminal, Sunny Point Nc	2010	0%	yes		
Army	FTH FYLR FIRE STATION TWO COMPANY	Fort Huachuca	2010	30%			
Army	AEN, 73389, Troop Housing (2130 PAX) - BAF	Afghanistan Various	2010	0%	yes		
Army	AEN, 73236, Temp Housing Ph 1 - Altimur	Afghanistan Various	2010	0%	yes		

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Army	Battle Command Training Center (BCTC) - (PN 64815)	Fort Sill	2010	0%	yes		
Army	Ft Drum - Indoor Rifle Range (PN 071727)	Fort Drum	2010	0%	yes		
Army	Ft Drum - Health Clinic Add/Alt (PN 070579)	Fort Drum	2010	0%	yes		
Army	Ft Drum - Dental Clinic Add/Alt (PN 070580)	Fort Drum	2010	0%	yes		
Army	Infrastructure Support, Incr 3	Fort Benning	2010	30%			
Army	Operations Facility	Fort Stewart	2010	30%			
Army	Battle Simulation Center	Fort Stewart	2011	30%	yes		
Army	Virtual TADDS Fac 1	Fort Stewart	2010	30%			
Army	1 UAS Unit	Fort Stewart	2010	30%			
Army	Classrooms & BN Dining Fac -28	Fort Benning	2010	0%	yes		
Army	Benning Classrooms & BN Dng Fac 29	Fort Benning	2010	0%	yes		
Army	Center Upgrade	Fort Stewart	2010	30%			
Army	Infantry Battle Course	Fort Stewart	2010	30%			

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Army	Modif Record Fire Range	Fort Stewart	2010	30%			
Army	Student Barracks	Fort Bragg	2010	0%	yes		
Army	Benning Barracks Incr 2	Fort Benning	2010	0%	yes		
Army	Vehicle Maintenance Shop	Fort Bragg	2011	30%			
Army	DDESS NC DSO	Fort Bragg	2010	0%	yes		
Army	UAS	Fort Bragg	2010	0%	yes		
Army	Rail Loading Facility Expansion	Fort Benning	2010	0%	yes		
Army	RCx Separates Buildings in A Area	Fort Bragg	2010	0%	yes		
Army	Dining Facility	Fort Bragg	2010	0%	yes		
Army	Div HQ/82nd Airborne Div	Fort Bragg	2010	0%	yes		
Army	Tactical Equipment Maintenance Facility	Fort Bragg	2010	0%	yes		
Army	Repair Barracks, Bldg 2762	Fort Benning	2010	0%	yes		
Army	3rd ID BDE Combat Team Cplx	Fort Benning	2011	32%			

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Army	Dog Kennel Facility	Fort Stewart	2010	40%			
Army	SENSITIVE COMPARTMENTED INFORMATION FACILI	Fort Stewart	2010	40%			
Army	FY13 MCA 076196 Company Ops Facility, USAG Humphreys		2010	0%	yes		
Army	Company Operations Facilities	Fort Bliss	2010	0%	yes		
Army	Shoothouse	Fort Campbell	2010	0%	yes		
Army	Brigade Complex	Fort Campbell	2010	0%	yes		
Army	Hospital Add/Alt	Fort Campbell	2010	30%			
Army	Mout Collective Training Facility	Fort Knox	2010	30%			
Army	APG C4ISR, Phase 2 Increment 2	Aberdeen Proving Ground, Md	2010	30%			
Army	FY10 EUSTIS PN66714 AIT Training Complex PH I	Fort Eustis	2010	48%			
Army	FY11 AP HILL MCA PN 65790 DEMOLITION RANGE	Fort A P Hill	2010	30%			
Army	Camden NJ BRAC AFR Ctr/OMS/Unh Stg	Camden, Nj	2010	30%			
Army	DOIM Information Systems Facility	Fort McCoy	2010	30%			

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Army	Bryan TX Army Reserve Center/Land	Bryan, TX	2010	30%			
Army	GTA Denton TX Army Reserve Center/Land	Denton, TX	2010	30%			
Army	GTA Macon, GA Army Reserve Center/Land	Macon, GA	2010	30%			
Army	GTA Michigan City, IN Army Reserve Center/Land	Michigan City, IN	2010	30%			
Army	Concord, CA (Fairfield) Army Reserve Center	Concord, CA	2010	30%			
Army	GTA Chester/Newtown Square Army Reserve Center	James W Reese USARC, PA	2010	30%			
Army	GTA Rio Grande City, TX Army Reserve Center/Land	Rio Grande, TX	2010	30%			
Army	Greensboro NC Army Reserve Center/Land	Greensboro, NC	2010	30%			
Army	Homewood IL Add/Alt Army Reserve Center	Homewood, IL	2010	30%			
Army	Devens AUTOMATED RECORD FIRE (ARF) RANGE	Devens Reserve Forces Training Area, Ayer, MA	2010	30%			
Army	Camp Park TASS Training Center (TTC)	Camp Parks	2010	30%			
Army	NCO Academy Phase II	Fort McCoy	2010	30%			
Army	Annual Training/Mobilization Barracks	Fort McCoy	2010	30%			

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Army	ECS Warehouse	Fort Hunter Liggett	2010	30%			
Army	GTA Cape Coral, FL (Ft. Meyers) Army Reserve Center/Land	Cape Coral, FL / Ft. Meyers	2010	30%			
Army	GTA Orlando Army Reserve Center	Orlando, FL	2010	30%			
Army	ECS Tac Equip Maint Fac	Fort Hunter Liggett	2010	30%			
Army	Ft. Gordon RTS-MED Training Classroom	Austin USARC	2010	30%			
Army	Belton, MO - Army Reserve Center/Land	Independence, MO	2010	30%			
Army	Ft. Hill, VA Army Reserve Center/Land	Ft. Hill, VA	2010	30%			
Army	GTA Las Cruces, NM Army Reserve Center/Land	La Cruces, NM	2010	30%			
Army	GTA Quincy, IL Army Reserve Center/Land	Quincy, IL	2010	34%			
Army	KAFB - 076184, READY BUILDING	Kirtland Air Force Base	2010	30%			
Army	Access Control Building	Fort Riley	2010	0%	yes		
Army	CAP 073299 Trainee Barracks FY11	Fort Jackson	2010	0%	yes		
Army	071119 Training Aids Center FY11	Fort Jackson	2010	0%	yes		

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Army	GTA San Marcos, TX Army Reserve Center	San Marcos Memorial USARC	2010	39%			
Army	GTA Binghamton, NY (Utica) Army Reserve Center/Land	Binghamton, NY (Utica)	2010	40%			
Army	GTA Roanoke, VA Army Reserve Center/Land	Roanoke, VA	2010	30%			
Army	Tallahassee, FL Army Reserve Center/Land	Tallahassee, FL	2010	45%			
Army	Orangeburg, SC Army Reserve Center/Land	Orangeburg, SC	2010	30%			
Army	GTA Panama City FL Army Reserve Center/Land	George P Wentworth USARC	2010	30%			
Army	GTA West Palm Beach FL Army Reserve Center/Land	Elliott Babcock Memorial AFRC	2010	30%			
Army	GTA Caguas/Puerto Nuevo ARC	Juan Ponce de Leon Armory	2010	30%			
Army	GTA Uniontown Pa Army Reserve center	Uniontown USARC/AMSA 104 SS 2 (G)	2010	30%			
Army	GTA Rochester Army Reserve Center/Land	James W Wadsworth USARC	2010	30%			
Army	Tactical Vehicle Wash Rack	Fort Hunter Liggett	2011	30%			
Army	Corpus Christi (Robstown) Tactical Equipment Maintenance Fac	Comstock, Us Border Patrol Station	2010	30%			

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Army	Millington, TN TEMF/AMSA	Millington, TN	2011	30%			
Army	Ft. Buchanan, PR ENGINEERING/HOUSING MAINTENANCE SHOP	Fort Buchanan	2011	30%			
Army	MEADE, 100 Meter Indoor Range	Fort Meade	2011	30%			
Army	APG, ECIP Solar Tubes	Aberdeen Proving Ground, Md	2009	30%			
Army	MEADE, SATCOM Operations Center	Fort Meade	2011	30%			
Army	DETRICK, Information Services Facility	Fort Detrick	2011	30%			
Army	DETRICK, Water Treatment Plant Repair	Fort Detrick	2011	30%			
Army	DETRICK, Supplemental Water Storage	Fort Detrick	2011	30%			
Army	DETRICK, Consolidated Logistics Facility	Fort Detrick	2011	30%			
Army	DETRICK, NIBC Security Fencing and Equipment	Fort Detrick	2011	30%			
Army	Eng BN Cpx	Fort Carson	2011	33%			
Army	Advanced Individual Training Complex Barracks 1 PH2	Fort Leonard Wood	2011	30%			
Army	Integrated Theater Sig Btl	Fort Lewis	2011	30%			

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Army	Technical unmanned aerial vehicle maintenance operation facility	Fort Carson	2011	30%			
Army	AUTOMATED INFANTRY SQUAD BATTLE COURSE	Fort Riley	2011	31%			
Army	CAP 070350, ARRA, MCA - FT. Carson, CO: FY12	Fort Carson	2009	33%			
Army	Preventive Medicine Facility	Fort Lewis	2011	30%			
Army	Brks Cplx/3rd BDE - PH III	Fort Bragg	2011	40%			
Army	Brks Cplx/3d BDE - PH IV	Fort Bragg	2011	40%			
Army	Co Ops Roundout /Fires BDE	Fort Bragg	2011	30%			
Army	108th ADA Cmplx/Veh Maint	Fort Bragg	2011	30%			
Army	FY11-Air Force Technical Applications Center	Patrick Air Force Base	2011	22%	Yes		
Army	Barracks, 1st BCT	Fort Bragg	2011	30%			
Army	New Elementary School @ Stewart	Fort Stewart	2010	40%			
Army	SOF Operations Support Facility	Fort Bragg	2011	30%			
Army	Construct a 97,289sf Elementary school to serve 575 students	Fort Buchanan	2011	40%			

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Army	SOF Company Support Facility	Fort Benning	2011	35%			
Army	SOF Operational Communications Facility - JCU	Fort Bragg	2011	30%			
Army	SOF C4 Facility - JSOC	Fort Bragg	2011	30%			
Army	SOF JIB AND AVTEG ANNEX	Fort Bragg	2011	30%			
Army	AM2455204 Dexter Elementary School Gym	Fort Benning	2011	30%			
Army	Youth Activity Center	Fort Polk	2008	40%			
Army	Enlisted Unaccompanied Personnel Housing	Fort Polk	2011	40%			
Army	BMT Visitors Reception Center, AFCEE	Lackland Air Force Base	2011	30%			
Army	Battle Command Training Center	Fort Sam Houston	2011	30%			
Army	Ambulatory Care Center, Phase 2	Joint Base San Antonio	2011	30%			
Army	Police/MP Station	White Sands Missile Range	2011	40%			
Army	Readiness Center	Bethel, AK	2011	30%			
Army	Readiness Center	Florence, AZ	2011	30%			

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Army	Tactical Unmanned Aircraft System Facility	Twentynine Palms, CA	2011	30%			
Army	United States Property and Fiscal Office, Add/Alt	Washington, DC	2011	30%			
Army	Combined Support Maintenance Shop Ph2A	Barbers Point NAS, HI	2011	30%			
Army	Readiness Center	Northern Kentucky, KY	2011	30%			
Army	Field Maintenance Shop	Arden Hills, MN	2011	30%			
Army	Tactical Unmanned Aircraft System Facility	Fort Bragg, NC	2011	30%			
Army	Multi Purpose Training Range	Boardman, OR	2011	30%			
Navy	Military Working Dog Relocation, Apra Harbor	AGANA, GUAM	2008	30%	YES	2011	TBD
Navy	Torpedo Exercise Support Building	AGANA, GUAM	2008	30%	YES	2012	TBD
Navy	Reserve Training Center, Alameda, CA	ALAMEDA, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	Consolidated SLC Training & CSS-15 HQ Fac.	APRA, GUAM	2008	30%	YES	2012	TBD
Navy	Aviation Simulator Training Facility	ATSUGI, JAPAN	2009	30%	YES	2012	TBD
Navy	Operations and Support Facilities	BAHRAIN IS, BAHRAIN	2009	30%	YES	2013	TBD

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Navy	Physical Fitness Center	BEAUFORT, SOUTH CAROLINA	2009	30%	YES	2012	TBD
Navy	Training and Simulator Facility	BEAUFORT, SOUTH CAROLINA	2009	30%	YES	2013	TBD
Navy	Aircraft Hangar - VMFAT-502	BEAUFORT, SOUTH CAROLINA	2010	30%	YES	2013	TBD
Navy	Construct Joint Air Traffic Control Facility	BELLE CHASSE, LOUISIANA	2009	30%	YES	2012	TBD
Navy	EHW Security Force Facility	BREMERTON, WASHINGTON	2009	30%	YES	2013	TBD
Navy	Commissary - MWTC	BRIDGEPORT, CALIFORNIA	2009	30%	YES	2012	TBD
Navy	Fire Station - Renovation - MWTC	BRIDGEPORT, CALIFORNIA	2009	30%	YES	2012	TBD
Navy	Motor Transportation/Comm. Maint. Fac.	CAMP LEJEUNE, NORTH CAROLINA	2010	30%	YES	2013	TBD
Navy	2nd Intel Bn Maintenance/Operations Complex	CAMP LEJEUNE, NORTH CAROLINA	2010	30%	YES	2013	TBD
Navy	Physical Fitness Center	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	BEQ - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	BEQ - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2012	TBD
Navy	BEQ - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2012	TBD

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Navy	BEQ - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	Maintenance/Ops Complex	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	Maintenance/Ops Complex - 2nd ANGLICO	CAMP LEJEUNE, NORTH CAROLINA	2010	30%	YES	2013	TBD
Navy	EOD Addn - 2nd Marine Logistics Group	CAMP LEJEUNE, NORTH CAROLINA	2009	TBD	YES	2012	TBD
Navy	BEQ - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	BEQ - Wallace Creek North	CAMP LEJEUNE, NORTH CAROLINA	2010	30%	YES	2013	TBD
Navy	BEQ - Courthouse Bay	CAMP LEJEUNE, NORTH CAROLINA	2010	30%	YES	2013	TBD
Navy	BEQ - Courthouse Bay	CAMP LEJEUNE, NORTH CAROLINA	2010	30%	YES	2013	TBD
Navy	Mess Hall Addition - Courthouse Bay	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2012	TBD
Navy	Utility Expansion - Hadnot Point	CAMP LEJEUNE, NORTH CAROLINA	2009	TBD	YES	2013	TBD
Navy	Utility Expansion - French Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	TBD	YES	2013	TBD
Navy	Mess Hall - French Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	SOI-EAST Facilities - Camp Geiger	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD

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Navy	Field Training Fac. - Devil Dog - SOI	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	BEQ - Rifle Range	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	4th Infantry Bn Ops Complex	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2012	TBD
Navy	MP Working Dog Kennel - Relocation	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2011	TBD
Navy	Pre-Trial Detainee Facility	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	Consolidated Info Tech/Telecom Complex	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	BEQ - French Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	BEQ - Camp Johnson	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	BEQ - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	Armory - II MEF - Wallace Creek	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2012	TBD
Navy	VMMT-204 Maintenance Hangar - Phase 3	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2011	TBD
Navy	Hangar	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	Maintenance Hangar (HMLA)	CAMP LEJEUNE, NORTH CAROLINA	2009	30%	YES	2013	TBD

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Navy	Gymnasium/Outdoor Pool	CAMP LEJEUNE, NORTH CAROLINA	2008	30%	YES	2012	TBD
Navy	ANGLICO Operations Complex	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	Truck Company Operations Complex	CAMP PENDLETON, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	Reconnaissance Bn Operations Complex	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Comm/Elect Maintenance Facility	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	WFTBn Support Facilities	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	Enlisted Dining Facility - Edson Range	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Expansion of SRTTP to 7.5 MGD	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	North Regional Tertiary Treatment Plant	CAMP PENDLETON, CALIFORNIA	2008	TBD	YES	2012	TBD
Navy	Conveyance/Water Treatment	CAMP PENDLETON,	2009	TBD	YES	2013	TBD

Component	Building Name	Location (City, State)	Design Started (FY)	Percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 in terms of energy use	If not at least 30% below ANSI/ASHRAE/IESNA Standard 90.1--2004, will design achieve maximum level of energy efficiency that is life-cycle cost-effective?	Date Construction Completed (FY)	In terms of energy use, percentage below ANSI/ASHRAE/IESNA Standard 90.1--2004 achieved
		CALIFORNIA					
Navy	Gas/Electrical Upgrades	CAMP PENDLETON, CALIFORNIA	2008	TBD	YES	2012	TBD
Navy	Bachelor Enlisted Quarters	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Recruit Barracks, School of Infantry	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Enlisted Dining Facility	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	CNATT/FRS - Aviation Training and BEQ	CAMP PENDLETON, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	Communications Upgrades	CAMP PENDLETON, CALIFORNIA	2008	TBD	YES	2012	TBD
Navy	BEQ - Las Flores	CAMP PENDLETON, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	MALS-39 Maintenance Hangar Expansion	CAMP PENDLETON, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	BEQ - 13 Area	CAMP PENDLETON,	2010	30%	YES	2013	TBD

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		CALIFORNIA					
Navy	Small Arms Magazine - Edson Range	CAMP PENDLETON, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	Recruit Marksmanship Training Facility	CAMP PENDLETON, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	BEQ	CHERRY POINT, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	EMS/Fire Vehicle Facility	CHERRY POINT, NORTH CAROLINA	2008	30%	YES	2011	TBD
Navy	Missile Magazine	CHERRY POINT, NORTH CAROLINA	2009	30%	YES	2013	TBD
Navy	Reserve Training Center, Joliet, IL	CHICAGO, ILLINOIS	2008	30%	YES	2011	TBD
Navy	Operational Facilities for T-6	CORPUS CHRISTI, TEXAS	2007	30%	YES	2012	TBD
Navy	General Warehouse	DJIBOUTI, DJIBOUTI	2009	30%	NO	2012	TBD
Navy	Horn of Africa Joint Operations Center	DJIBOUTI, DJIBOUTI	2009	30%	YES	2013	TBD
Navy	Camp Lemonier HQ Facility	DJIBOUTI, DJIBOUTI	2009	30%	YES	2012	TBD
Navy	Fire Station	DJIBOUTI, DJIBOUTI	2008	30%	YES	2012	TBD

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Navy	F-35 POL Operations Facility	EGLIN A.F.B., FLORIDA	2008	30%	YES	2011	TBD
Navy	BEQ, EOD School Phase 2	EGLIN A.F.B., FLORIDA	2009	30%	YES	2012	TBD
Navy	Applied Instruction Facility, EOD Course	EGLIN A.F.B., FLORIDA	2008	30%	YES	2013	TBD
Navy	Finegayan Site Prep and Utilites	FINEGAYAN, GUAM	2009	TBD	YES	2013	TBD
Navy	Reserve Vehicle Maintenance Facility	GOOSE CREEK, SOUTH CAROLINA	2008	30%	YES	2011	TBD
Navy	Agile Chemical Facility, Phase 2	INDIAN HEAD, MARYLAND	2010	30%	YES	2013	TBD
Navy	Paint and Blast Facility	JACKSONVILLE, FLORIDA	2010	30%	YES	2013	TBD
Navy	Port Operations Facility	JACKSONVILLE, FLORIDA	2008	30%	YES	2011	TBD
Navy	Consolidated Warehouse Facility	JACKSONVILLE, FLORIDA	2009	30%	YES	2012	TBD
Navy	P-8A (MMA) Facilities Modification	JACKSONVILLE, FLORIDA	2008	30%	YES	2012	TBD
Navy	Physical Fitness Center - Camp Smith	KANEOHE, HAWAII	2010	30%	YES	2013	TBD
Navy	Waterfront Operations Facility	KANEOHE, HAWAII	2009	30%	YES	2013	TBD
Navy	BEQ - Marine Corps Base Hawaii	KANEOHE, HAWAII	2009	30%	YES	2013	TBD

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Navy	Addition, MCU Research Center	MARINE CORPS BASE QUANTICO VA	2011	30%	YES	2013	TBD
Navy	SNCO Academic Facility Addition	MARINE CORPS BASE QUANTICO VA	2010	30%	YES	2013	TBD
Navy	T-6B JPATS Training Ops Paraloft Facility	MILTON, FLORIDA	2008	30%	YES	2011	TBD
Navy	CSDS-5 Laboratory Expansion Phase I	NAVAL BASE KITSAP BREMERTON WA	2010	30%	YES	2013	TBD
Navy	Limited Area Productions/Storage Complex Inc 7 OF 7	NAVAL BASE KITSAP BREMERTON WA	2003	30%	YES	2013	TBD
Navy	Air Traffic Control Tower	NAVSTA ROTA SP	2010	30%	YES	2013	TBD
Navy	NAVCENT Ammunition Magazines	NAVSUPPACT BAHRAIN	2011	30%	YES	2013	TBD
Navy	Marine Corps Reserve Center	NEW ORLEANS, LOUSIANA	2010	30%	YES	2013	TBD
Navy	Electromagnetic Sensor Facility	NEWPORT, RHODE ISLAND	2009	30%	YES	2013	TBD
Navy	Officer Training Command (OTC) Quarters	NEWPORT, RHODE ISLAND	2008	30%	YES	2013	TBD
Navy	E-2D Training Facility	NORFOLK, VIRGINIA	2008	30%	YES	2012	TBD

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Navy	Naval Construction Div Operations Facility	NORFOLK, VIRGINIA	2009	30%	YES	2011	TBD
Navy	Broad Area Maritime Surveillance T & E Fac	PATUXENT RIVER, MARYLAND	2009	30%	YES	2013	TBD
Navy	APCSS Conference & Technology Learning Center	PEARL HARBOR, HAWAII	2008	30%	YES	2011	TBD
Navy	Joint POW/MIA Accounting Command (Hickam AFB)	PEARL HARBOR, HAWAII	2008	30%	YES	2013	TBD
Navy	Center for Disaster Management/Humanitarian Assistance	PEARL HARBOR, HAWAII	2010	30%	YES	2013	TBD
Navy	Corry 'A' School BEQ	PENSACOLA, FLORIDA	2008	30%	YES	2012	TBD
Navy	Simulator Addition for UMFO Program	PENSACOLA, FLORIDA	2008	30%	YES	2011	TBD
Navy	Reserve Center	PHOENIX, ARIZONA	2009	30%	YES	2011	TBD
Navy	NOSC Pittsburgh	PITTSBURGH, PENNSYLVANIA	2009	30%	YES	2012	TBD
Navy	Controlled Industrial Facility	PORTSMOUTH, VIRGINIA	2008	30%	YES	2013	TBD
Navy	Aircraft Trainer	QUANTICO, VIRGINIA	2008	30%	YES	2011	TBD
Navy	Dining Facility, TBS	QUANTICO, VIRGINIA	2009	30%	YES	2011	TBD
Navy	Student Quarters, TBS, Phase 4	QUANTICO, VIRGINIA	2009	30%	YES	2011	TBD

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Navy	Student Officer Quarters - The Basic School	QUANTICO, VIRGINIA	2009	30%	YES	2013	TBD
Navy	BEQ	QUANTICO, VIRGINIA	2010	30%	YES	2013	TBD
Navy	Battalion Training Facility - MSGBN	QUANTICO, VIRGINIA	2009	30%	YES	2011	TBD
Navy	MC Information Operations Center - MCIOC	QUANTICO, VIRGINIA	2009	30%	YES	2012	TBD
Navy	Reception Airfield Facilities	ROTA, SPAIN	2009	30%	YES	2012	TBD
Navy	Reserve Training Center	SAN ANTONIO, TEXAS	2009	30%	YES	2011	TBD
Navy	Public Works Shops Consolidation	SAN DIEGO, CALIFORNIA	2007	30%	YES	2011	TBD
Navy	Hangar 4	SAN DIEGO, CALIFORNIA	2010	30%	YES	2014	TBD
Navy	Aircraft Maintenance Hangar	SAN DIEGO, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	Messhall Expansion	SAN DIEGO, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	Bachelor Enlisted Quarters, Homeport Ashore	SAN DIEGO, CALIFORNIA	2009	30%	YES	2013	TBD
Navy	Rotary Hangar	SAN DIEGO, CALIFORNIA	2009	30%	YES	2013	TBD
Navy	Specialized SERE Training Area	SPOKANE, WASHINGTON	2009	30%	YES	2011	TBD

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Navy	Tank Vehicle Maintenance Facility	TWENTYNINE PALMS, CALIFORNIA	2010	30%	YES	2013	TBD
Navy	Maint. Shop - Wheeled	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Maint. Sunshades - Wheeled	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	Dining Facility - North Mainside	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Bachelor Enlisted Quarters	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2011	TBD
Navy	Maint. Shop - Tracked	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Station Comm. Facility and Infrastructure	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Sub-Station and Electrical Upgrades	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	BEQ and Parking Structure	TWENTYNINE PALMS, CALIFORNIA	2009	30%	YES	2013	TBD

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Navy	Bachelor Enlisted Quarters	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	Consolidated Armory, Tanks	TWENTYNINE PALMS, CALIFORNIA	2008	30%	YES	2012	TBD
Navy	C-40 Hangar	VIRGINIA BEACH, VIRGINIA	2008	30%	YES	2012	TBD
Navy	Navy Ord Cargo Logistic Training Complex	WILLIAMSBURG, VIRGINIA	2008	30%	YES	2012	TBD
Navy	Marine Corps Reserve Center	YAKIMA, WASHINGTON	2009	30%	YES	2012	TBD
Navy	Aircraft Maintenance Hangar Phase 1	YUMA, ARIZONA	2008	30%	YES	2012	TBD
Navy	Aircraft Maintenance Hangar	YUMA, ARIZONA	2010	30%	YES	2012	TBD
Navy	Aircraft Maintenance Hangar	YUMA, ARIZONA	2010	30%	YES	2013	TBD
Navy	Simulator Facility	YUMA, ARIZONA	2009	30%	YES	2013	TBD
Navy	Intermediate Maintenance Activity Facility	YUMA, ARIZONA	2009	30%	YES	2013	TBD
MDA	Von Braun III	Redstone Arsenal, AL	2006	25.8% reduction (total) and a 68.2% reduction (without receptacles)	Yes	2011	N/A
MDA	MDA Headquarters Command Complex (HQCC)	Fort Belvoir, VA	2006	30%	Yes	2011	N/A

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MDA	MDA Aegis Facility Expansion	Dahlgren Naval Station, VA	2010	30%	Yes	2012	N/A
MDA	Von Braun IV	Redstone Arsenal, AL	2012	30%	Yes	2015	N/A
DIA	Joint Use Intel Analysis Facility	Rivanna Station, Charlottesville, VA	2008	33%	N/A	2011	0%
DIA	National Center for Medical Intelligence - ADDITION	Ft Detrick, Frederick, MD	2008	33%	N/A	2011	0%
DIA	Military Department Intelligence Activities	MCAS Quantico VA	2008	33%	N/A	2011	0%
DIA	Intelligence Community Campus - Bethesda	Bethesda, MD	2011	33%	N/A		
DIA	Missile and Space Intelligence Command EOE Operations Area	Redstone Arsenal, Huntsville, AL	2011	33%	N/A		
DIA	Convert Warehouses at K16 Air Base	Afghanistan	2011	33%	N/A		
DeCA	New Commissary	Saratoga Springs, NY	2007	Unknown - 30% goal	Yes	2009	TBD
DeCA	New Commissary	Fort Bliss, TX	2007	Unknown - 30% goal	Yes	2011	TBD
DeCA	New Commissary	Keesler AFB, MS	2007	Unknown - 30% goal	YES	2010	TBD
DeCA	New Commissary	Ansbach, GE	2008	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	Spangdahlem, GE	2008	Unknown - 30% goal	Yes	2015	TBD

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DeCA	New Commissary	K-16, Korea	2008	Unknown - 30% goal	Yes	2012	TBD
DeCA	New Commissary	Fort Campbell, KY	2009	Unknown - 30% goal	Yes	2012	TBD
DeCA	New Commissary	Fort Carson, CO	2009	Unknown - 30% goal	Yes	2012	TBD
DeCA	New Commissary	Chinhae, Korea	2009	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	Portsmouth NNSY, VA	2009	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	Annapolis NSA, MD	2010	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	New London NSB, CT	2010	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	Mitchel Field, NY	2010	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	Coraopolis, PA	2010	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	U.S. Southern Command	2010	Unknown - 30% goal	Yes	on hold	TBD
DeCA	New Commissary	Gunter Annex, Maxwell AFB, AL	2011	Unknown - 30% goal	Yes	2013	TBD
DeCA	New Commissary	Fort Polk, LA	2011	Unknown - 30% goal	Yes	2014	TBD
DeCA	New Commissary	Fort Rucker, AL	2011	Unknown - 30% goal	Yes	2015	TBD

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DeCA	New Commissary	Fort Belvoir, VA	2011	Unknown - 30% goal	Yes	2016	TBD
DLA	Child Development Center Expansion	Columbus OH	2009	21%	Yes	2011	21%
DLA	Community Center	Columbus OH	2010	32%		2012	
DLA	Public Safety Building	Columbus OH	2009	30%		2012	
DLA	Physical Fitness Center	New Cumberland, PA	2007	0%	Yes or No	2009	0%
DLA	Purchase Relocatable (Admin Space)	New Cumberland, PA	2007			2009	
DLA	Family Housing	New Cumberland, PA	2009			2011	
DLA	Family Housing	New Cumberland, PA	2009			2011	
DLA	Family Housing	New Cumberland, PA	2009			2011	
DLA	Family Housing	New Cumberland, PA	2009			2011	
DLA	Central Heat Plant	New Cumberland, PA	2009			2011	
DLA	GPW - BRAC Warehouse	New Cumberland, PA	2009			2011	
DLA	GPW - BRAC Warehouse	New Cumberland, PA	2009			2011	

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DLA	Recycling Center	New Cumberland, PA	2009			2011	
DLA	General Purpose Warehouse	Tracy, CA	2007	Unknown - 30% goal	YES	2012	
DLA	New Truck Entrance, Truck Control Facility	Tracy, CA	2008	30%		2010	30%
DLA	Child Development Center	Tracy, CA	2010	34%		2012	
NGA	7500 Geo Int Drive	Springfield, VA	2005	30%	yes	2011	30%
WHS	Pentagon Emergency Response Center	Arlington, VA	2009	22%	Yes	20??	N/A
WHS	Pentagon Athletic Center Phase II	Arlington, VA	2009	N/A	Yes	2011	N/A
WHS	Secure Access Lane	Arlington, VA	2011	>30%	N/A	20??	N/A
WHS	MEF/COR8 Screening Facilities	Arlington, VA	2012	>30%	N/A	20??	N/A
TMA	MRI Facility B23	Bremerton, WA	2009	Not available at this time	Yes	2010	
TMA	Navy Enviro Preventative Med Unit 2	Norfolk, VA	2007	21%	Yes	2010	TBD
TMA	24 Hour Child Development Center	Portsmouth, VA	2009	50%		2010	TBD
TMA	NAVHOSP Central Utility Plant	NH Guam, Guam	2007	31%		2011	31%

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TMA	NAVHOSP Guam Replace	Fort Detrick	2009	30%			30%
TMA	Navy	Fort Detrick	2009	0%	Yes	2011	0%
TMA	Med Admin	Fort Detrick	2010	0%	Yes	2011	0%
TMA	SETS	Fort Detrick	2009	0%	Yes	2011	0%
TMA	WSOC	Fort Detrick	2009	0%	Yes	2012	0%
TMA	ESC	Fort Detrick	2010	0%	Yes	2012	0%
TMA	Truck Insp	Fort Detrick	2010	0%	Yes	2013	0%
TMA	Gate	Fort Detrick	2010	0%	Yes	2013	0%
TMA	509 Rehab	Fort Detrick	2010	0%	Yes	2013	0%
TMA	National Medical Museum	Fort Detrick	2009	0%	Yes	2011	0%
TMA	Conlog	Fort Detrick	2010	0%	Yes	2014	0%
TMA	Countermeasures	Fort Detrick	2014	0%	Yes	2016	0%
TMA	HW Fac	Fort Detrick	2013	0%	Yes	2016	0%

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TMA	Auditorium	Fort Detrick	2010	0%	Yes	2016	0%
TMA	R&D Sup Ops	Fort Detrick	2010	0%	Yes	2016	0%
TMA	Infor Services	Fort Detrick	2010	0%	Yes	2016	0%

APPENDIX J
MILITARY CONSTRUCTION RENEWABLE ENERGY INITIATIVES

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Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
ARMY										
63rd Army Readiness Support Command	06510		Las Cruces, New Mexico	1,400			Solar PV	Solar PV		
63rd Army Readiness Support Command	06510		San Marcos, Texas	380			Solar PV	Solar PV		
Colorado Army National Guard	080NG		GSHP - Fort Lupton RC	400						
Colorado Army National Guard	080NG		GSHP - Windsor RC	400						
Colorado Army National Guard	080NG		Solar PV - HAATS	1,100						
Colorado Army National Guard	080NG		Solar Thermal - Fort Lupton RC	50						
Colorado Army National Guard	080NG		Solar Thermal - HAATS	70						
Connecticut Army National Guard	090NG		Readiness Center, Windsor Locks	41,000			Solar PV	Solar PV		
Delaware Army National Guard	100NG		BBTS Vehicle Training Bldg.	409				GSHP		
Delaware Army National Guard	100NG		River Road Training Site PV Solar Array	5,070			Solar PV	Solar PV		
Detroit Arsenal	26155		Install Solar Panels on ACP	118				Solar PV		
Fort A.P. Hill	51290		Indoor Range	6,600			Cool	GSHP		
Fort A.P. Hill	51290		Indoor Range	6,600			Cool	GSHP		
Fort A.P. Hill	51290		MOUT Collective Training Facility	65,000			Cool	GSHP		

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
Fort A.P. Hill	51290		MOUT Collective Training Facility	65,000			Cool	GSHP		
Fort Bliss	48125		Flagship				Solar PV	Solar PV		
Fort Bliss	48125		Warriors-in Transition				Solar PV	Solar PV		
Fort Bragg	37225		Warriors in Transition PV	450			Cool	Solar PV		
Fort Carson	08005		235kW Carport Battalion HQ				Solar PV	Solar PV		
Fort Carson	08005		300kW ground mount, WTU Barracks				Solar PV	Solar PV		
Fort Carson	08005		481kW Ground mount (tracking) Battalion HQ				Solar PV	Solar PV		
Fort Carson	08005		87kW Rooftop Fitness Center (ECD Jan 12)				Solar PV	Solar PV		
Fort Devens	25152		Automatic Record Fire Range	5,300			Solar Thermal	Solar Thermal		
Fort Polk	22725		Photovoltaic Power for Noise Monitoring Stations	52			Solar PV	Solar PV		
Fort Riley	20605		7613 Brigade Headquarters	2,046			Solar PV	Solar PV		
Fort Riley	20605		UEPH Barracks				Solar Thermal	Solar Thermal		
Hawaii Army National Guard	150 NG		150081, KMR-AFRC	573			Solar PV	Solar PV		

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
Hawaii Army National Guard	150 NG		150081, KMR-AFRC	50			Solar Thermal	Solar Thermal		
Idaho Army National Guard	160 NG		160122 - TUAS	5,327			Solar PV	Solar PV		
Illinois Army National Guard	170 NG		CSMS #1 (Design Build)	15,000						
Iowa Army National Guard	190 NG		Cedar Rapids AFRC/FMS	37,759			Cool	GSHP, Dayighting		
Iowa Army National Guard	190 NG		Middletown AFRC/FMS	24,860			Cool	GSHP, Dayighting		
Joint Base Lewis McChord	53465		Dental Clinic (9119)				Solar PV	Solar PV		
Joint Base Lewis McChord	53465		N. Motor Pool (11980)							
Joint Base Lewis McChord	53465		CSMS	20,000			Cool			
Massachusetts Army National Guard	250 NG		JFHQ - PH2	23,000			Cool			
Montana Army National Guard	300 NG		Troop Medical Center ADD/ALT	1,593			Solar PV	solar PV		
Nebraska Army National Guard	310 NG		310091 - Columbus AFRC	10,400				GSHP		
Nebraska Army National Guard	310 NG		310087 - McCook ARFC	7,900				GSHP		
New Jersey Army National Guard	340 NG		170 KW Roof Top Solar	1,700			Solar PV	Solar PV		
New Jersey Army National Guard	340 NG		250 KW Roof Top Solar	3,200			Solar PV	Solar PV		
North Dakota Army National Guard	380 NG		Readiness Center, Devils Lake	59,000						
South Dakota Army National Guard	460 NG		Geothermal Ground Source HP	445			Cool	GSHP		

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
Tennessee Army National Guard	470 NG		Tullahoma Readiness Center					GSHP		
US Army Garrison Ansbach			Illesheim Child Development Center				Solar Thermal	Solar Thermal		
US Army Garrison Ansbach	GEAN0		AAFES PX				Solar Thermal	Solar Thermal		
US Army Garrison Ansbach	GEAN0		Auto Skills Facility				Solar Thermal	Solar Thermal		
US Army Garrison Ansbach	GEAN0		Commissary				Solar PV	Solar PV		
US Army Garrison Grafenwoehr	GEGF0		Addition/Alteration Health Clinic	34,000			Solar Thermal	Solar Thermal		
US Army Garrison Grafenwoehr	GEGF0		Barracks 404	20,000			Solar Thermal	Solar Thermal		
US Army Garrison Grafenwoehr	GEGF0		Barracks 405	18,500			Solar Thermal	Solar Thermal		
US Army Garrison Grafenwoehr	GEGF0		Barracks 785	17,500			Solar Thermal	Solar Thermal		
US Army Garrison Grafenwoehr	GEGF0		Barracks 790	17,000			Solar Thermal	Solar Thermal		
AIR FORCE										
Wheeler Admin Annex, HI		141753	CONSTRUCT ASOC COMPLEX	15,000	ASHRAE 90.1 2004	>30%	Solar PV		LEED	SILVER
Dover AFB, DE		171618	C-5 CARGO AIRCRAFT MAINTENANCE TRAINING FACILITY, PH 1	5,300	ASHRAE 90.1 2004	>30%	Solar PV		LEED	SILVER
Aviano AB, Italy		141753	Air Support Operations Squadron	10,180	ASHRAE 90.1 2007	>10%	Cool, Solar Thermal		LEED	SILVER

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					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
Aviano AB, Italy		171212	F-16 Mission Training Center	9,400	ASHRAE 90.1 2007	>30%	Cool, Solar Thermal		LEED	SILVER
Aviano AB, Italy		721312	Dormitory 144PN	18,226	ASHRAE 90.1 2007	>30%	Solar Thermal		LEED	SILVER
Incirlik AB, Turkey		721312	Dormitory 216 PN	27,000	ASHRAE 90.1 2007	>30%	Cool, Solar Thermal		LEED	SILVER
Langley AFB, VA		721313	AIT Barracks Complex, Ph 2	50,000	ASHRAE 90.1 2007	>40%	Solar Thermal		LEED	SILVER
Tyndall AFB, FL		742674	FITNESS CENTER	19,014	ASHRAE 90.1 2004	>40%	Cool, Solar PV, Solar Thermal		LEED	PLATINUM
Davis-Monthan AFB, AZ		211173	AMARG HANGAR	24,897	ASHRAE 90.1 2007	>20%	Cool	Solar Thermal and Solar PV	LEED	SILVER
Davis-Monthan AFB, AZ		721312	Dormitory (144 RM)	18,269	ASHRAE 90.1 2004	>30%	Cool	Solar Thermal and Solar PV	LEED	GOLD
Davis-Monthan AFB, AZ		171212	HC-130J Simulator Facility	5,409	ASHRAE 90.1 2004	>30%	Cool		LEED	CERTIFIED
Davis-Monthan AFB, AZ		141753	HC-130J Squadron Operations Facility	5,427	ASHRAE 90.1 2004	>30%	Cool	Solar Thermal and Solar PV	LEED	CERTIFIED
Davis-Monthan AFB, AZ		141782	HC-130J Aerial Delivery Facility	10,679	ASHRAE 90.1 2007	>30%	Cool	Solar Thermal and Solar PV	LEED	SILVER
Davis-Monthan AFB, AZ		422758	HC-130J Parts Store	7,407	ASHRAE 90.1 2007	>30%	Cool		LEED	SILVER
Davis-Monthan AFB, AZ		218712	HC-130J AGE Maintenance Facility	4,591	ASHRAE 90.1 2007	>30%	Cool	Solar Thermal and Solar PV	LEED	SILVER
Davis-Monthan AFB, AZ		730142	FIRE/CRASH RESCUE STATION	15,000	ASHRAE 90.1 2004	>30%	Cool	Solar Thermal and Solar PV	LEED	CERTIFIED
Luke AFB, AZ		171212	F-35 Squadron Ops Facility	53,541	ASHRAE 90.1 2007	>40%	Cool, Solar PV		LEED	SILVER

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
Lackland AFB, TX		510672	AMBULATORY HEALTH CLINIC P1	72,600	ASHRAE 90.1 2004	>30%	Cool, Solar PV		LEED	GOLD
Lackland AFB, TX		510672	AMBULATORY CARE CENTER P2	162,500	ASHRAE 90.1 2004	>30%	Cool, Solar PV		LEED	GOLD
Lackland AFB, TX		510672	AMBULATORY CARE CENTER P3	161,300	ASHRAE 90.1 2004	>30%	Cool, Solar PV		LEED	GOLD
Seymour-Johnson AFB, NC		149962	AIR TRAFFIC CONTROL TOWER/BASE OPERATIONS COMPLEX	14,000	ASHRAE 90.1 2007	>30%	Solar PV		LEED	SILVER
Nellis AFB, NV		740884	CHILD DEVELOPMENT CENTER	13,400	ASHRAE 90.1 2004	>25%	Cool, Solar PV		LEED	SILVER
Nellis AFB, NV		730142	AIRFIELD FIRE RESCUE STATION	9,506	ASHRAE 90.1 2004	>30%	Cool, Solar PV		LEED	SILVER
Nellis AFB, NV		218712	F-35A AGE Facility	21,500	ASHRAE 90.1 2007	>30%	Cool, Solar PV		LEED	SILVER
Nellis AFB, NV		131111	COMMUNICATIONS NETWORK CONTROL CENTER	11,600	ASHRAE 90.1 2007	>30%	Cool, Solar PV		LEED	SILVER
Nellis AFB, NV		211157	F-35 Add/Alter Engine Shop	2,750	ASHRAE 90.1 2007	>30%	Cool, Solar Thermal		LEED	SILVER
Andrews AFB, MD		510001	Ambulatory Care Center	201,000	ASHRAE 90.1 2007	>30%	Cool, Solar PV		LEED	SILVER
Anderson AFB, Guam		610127	NW FIELD COMMANDO WARRIOR OPERATIONS FACILITY	3,931	ASHRAE 90.1 2007	>30%	Cool, Solar PV		LEED	SILVER
Spangdahlem AFB, Germany		740674	CONSTRUCT FITNESS CENTER	20,543	ASHRAE 90.1 2004	>30%	Solar PV		LEED	SILVER

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
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Goodfellow AFB, TX		721313	STUDENT DORMITORY (100 RM)	14,000	ASHRAE 90.1 2004	>30%	Cool, Solar Thermal		LEED	SILVER
USAF Academy, CO		171853	AFA - Center for Character and Leadership Development	27,545	ASHRAE 90.1 2004	>30%	Solar PV		LEED	PLATINUM
March ARB		171475	SMALL ARMS FIRING RANGE	9,563	ASHRAE 90.1 2004	>30%	Solar Thermal		LEED	SILVER
AURORA, CO			ADAL Weapon Release Facility	2,870	ASHRAE 90.1 2004	0.37213	Cool, Solar PV		LEED	CERTIFIED
BURLINGTON, VT			Security Forces and Communications Facility	5,950	ASHRAE 90.1 2004	0.52	Cool, Solar PV		LEED	SILVER
CARSWELL, TX			Add to and Alter Avionics/ECM Shop	1,984	ASHRAE 90.1 2004	0.3	Cool, Solar PV		LEED	SILVER
HOUSTON, TX			Munitions Maintenance Shop	1,900	ASHRAE 90.1 2007	0.53003	Cool, Solar PV		LEED	SILVER
HICKAM, HI		171212	TFI - F-22 Flight Simulator Facility	19,800	ASHRAE 90.1 2007	0.33	Cool, Solar PV		LEED	SILVER
HICKAM, HI		211111	TFI - F-22 Hangar, Squadron Operations and AMU	48,153	ASHRAE 90.1 2004	0.4	Cool, Solar PV		LEED	SILVER
HICKAM, HI		211159	TFI - F-22 LO/Composite Repair Facility	26,000	ASHRAE 90.1 2004	0.6	Cool, Solar PV		LEED	SILVER
HICKAM, HI		216642	TFI - F-22 Upgrade Munitions Complex	17,215	ASHRAE 90.1 2004	0.2	Cool, Solar PV		LEED	SILVER
HICKAM, HI		171875	TFI - F-22 Weapons Load Crew Training Facility	7,000	ASHRAE 90.1 2007	0.42	Cool, Solar PV		LEED	SILVER

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
FT INDIAN TOWN GAP, PA			Replace Troop Training Quarters	5,867	ASHRAE 90.1 2004	0.5194	Cool, Solar PV		LEED	SILVER
MEMPHIS, TN			Base Civil Engineer Maintenance and Training Facilities	9,800	ASHRAE 90.1 2004	0.64	Cool, Solar PV		LEED	SILVER
PORTSMOUTH, NH			Replace Squadron Operations Facilities	11,043	ASHRAE 90.1 2004	0.3	Cool, Solar Thermal		LEED	SILVER
CHARLOTTE, NC			Replace Fire Crash Rescue Station	7,000	ASHRAE 90.1 2004	0.48	Cool, Solar Thermal		LEED	SILVER
RENO, NV			Replace Fire Station	10,800	ASHRAE 90.1 2004	0.54	Cool, Solar Thermal		LEED	SILVER
NAVY										
NAVSTA NORFOLK VA			Install 180 Ton Ground Source Heat Pump for Building Z-140							
NAVSUPPACT NORFOLK VA			New BRAC Brig - NW Annex							
NAS LEMOORE CA	1077848	1714	Marine Corps Reserve Training Center, PV - Rooftop	104	ASHRAE 90.1 2007	Met	Solar PV	Solar PV	LEED	GOLD
NAS LEMOORE CA	1077848	1714	Marine Corps Reserve Training Center, PV - Carport	1,790	ASHRAE 90.1 2007	Met	Solar PV	Solar PV	LEED	GOLD
NAS LEMOORE CA	94250	7210	B-895 (BQ 14/15) Solar Thermal DHW System	24	ASHRAE 90.1 2007	Met	Solar Thermal	Solar Thermal	LEED	GOLD

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
NAS KINGSVILLE TX			550KW Solar Photovoltaic Array	3,106						
WPNSTA YORKTOWN VA			MILCON - Solar domestic water heating system and Geothermal System	13,556	ASHRAE 90.1 2004	>30%			LEED	SILVER
NAVBASE GUAM			Bachelor Enlisted Quarters, Main Base							
NAF EL CENTRO CA			Child Development Center Addition, PV Solar	576	ASHRAE 90.1 2010	>20%	Solar PV	Solar PV	LEED	GOLD
NAF EL CENTRO CA			Child Development Center Addition, Solar Thermal DHW	310	ASHRAE 90.1 2010	>10%	Solar Thermal	Solar Thermal	LEED	GOLD
NSA MONTEREY CA	1081601	CCN 17120	49.68 kW Roof-mounted PV (on adjacent B-339)	6,675	ASHRAE 90.1 2004	>30%	Solar PV	Solar PV	LEED	SILVER
MARINE CORPS										
MCAS CHERRY PT NC			MILCON - Solar PV mounted on outside walkway	14,504	ASHRAE 90.1 2004	>20%	Solar PV	Solar PV	LEED	GOLD
CG MCB CAMP LEJEUNE NC			MILCON - 4.6 MW solar PV Canopies	32,000			Solar PV	Solar PV		
DLA										
DEFENSE DISTRIBUTION DEPOT SUSQUEHANNA		610	DDC Headquarters	95,808	ASHRAE 90.1 2007	>40%	Cool	Solar PV	LEED	SILVER

Installation Name	RPUID	FAC CODE	Project Description	Project Cost ($000)	EFFICIENCY STANDARD		ROOF		SUSTAINABILITY STANDARD	
					STANDARD	PERFORMANCE	Roof Attribute	Renewable Energy Technology Type	STANDARD	PERFORMANCE
DEFENSE DISTRIBUTION DEPOT SUSQUEHANNA			EDC Building Solar thermal wall	3,800	ASHRAE 90.1 2007	>40%	Solar Thermal	Solar Thermal	GUIDING PRINCIPLES	
NSA										
Fort Meade Campus			North Campus Utility Plant	219,360			Green	Solar PV		
Fort Meade Campus			South Campus Utility Plant	146,172			Green	Solar PV		
Colorado			Denver SOC	140,932			Green	Solar PV		
Yakima Training Center			Yakima Research Station	40,000			Cool	Solar PV		
Fort Meade Campus			CMC Replacement	38,562			Green	Solar PV		
Fort Meade Campus			Boiler Plant	26,500			Cool	Solar PV		
WHS										
Pentagon			Secure Access Lane	4,923	ASHRAE 90.1 2007	>30%	Cool		LEED	SILVER
Pentagon			MEF/COR8 Screening Facilities	6,473	ASHRAE 90.1 2007	>30%	Cool		LEED	SILVER

APPENDIX K
REFERENCES

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Energy Information Administration, *Annual Energy Review 2010*: *Energy Consumption by Sector and Source* [on-line source] (Washington, DC , 2011, accessed February 1, 2012); 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; Internet.

Energy Information Administration, *State Energy Data System (SEDS): Table CT3 Total End-Use Energy Consumption Estimates, 1960-2009, District of Columbia* [on-line source] (Washington DC, 2011, accessed February 1, 2012); available from http://www.eia.gov/state/seds/hf.jsp?incfile=sep_use/tx/use_tx_DC.html&mstate=District%20of%20Columbia; Internet.

ICF International, *Solar Energy Development on Department of Defense Installation in the Mojave and Colorado Deserts* [on-line source] (January 2012, accessed May 24, 2012); available from http://www.icfi.com/insights/reports/2012/full-report-solar-energy-development-on-department-of-defense-installations-mojave-colorado-deserts; Internet.

U.S. Air Force, *Energy Plan*, [on-line source] (2010, accessed August 10, 2012); available from http://www.safie.hq.af.mil/shared/media/document/AFD-091208-027.pdf; Internet.

U.S. Army, *Energy strategy for Installations* [on-line source] (June 8, 2005, accessed August 10, 2012); available from http://army-energy.hqda.pentagon.mil/docs/strategy.pdf; Internet.

U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Procuring Energy-Efficient Products* [online source] (Washington, D.C., June 2012, accessed August 10, 2012); available from http://www1.eere.energy.gov/femp/pdfs/eeprod_categories.pdf; Internet.

U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Project Funding* [online source] (Washington, D.C., 2011, accessed June 1, 2012); available from http://www1.eere.energy.gov/femp/financing/espcs.html; Internet.

U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, Technologies, *Covered Product Categories* [online source] (Washington, D.C., 2012, accessed August 10, 2012); available from http://www1.eere.energy.gov/femp/technologies/eep_purchasingspecs.html; Internet.

U.S. EPA, Energy Star Program, *Energy Star Product Specifications*, [online source] (accessed August 10, 2012); available from http://www.energystar.gov/index.cfm?c=product_specs.pt_product_specs; Internet.

U.S. Marine Corps, *United States Marine Corps Expeditionary Energy Strategy and Implementation Plan* [on-line source] (accessed August 10, 2012); available from http://www.marines.mil/community/Documents/USMC%20Expeditionary%20Energy%20Strategy%20%20Implementation%20Planning%20Guidance.pdf; Internet.

U.S. Navy, *Department of the Navy's Energy Program for Security and Independence* [on-line source] (October 2010, accessed August 10, 2012); available from http://greenfleet.dodlive.mil/files/2010/04/Naval_Energy_Strategic_Roadmap_100710.pdf; Internet.