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The Army's Energy Conservation Program

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Why energy conservation is important for the Federal Government:

- Government is the largest energy user
- Lead by example
- Save energy and money
- Pull the market for energy efficient, renewable energy, and water-conserving products

The influence of energy conservation:

- Reduce U.S. dependency on foreign oil
- Adverse impact from costs
- Potential security risk
- Growing world demand
- Climate change

Legislative History and Executive Orders:

- Energy Policy and Conservation Act (1975)
- DOE Organization Act (1977)
- National Energy Conservation Policy Act (1978)
- Federal Energy Management Improvement Act (1988)
- Executive Order 12759 (1991)
- Energy Policy Act (1992)
- Executive Order 12902 (1994)
- Executive Order 13123 (1999)
- Executive Order 13221 (2001)
- Energy Policy Act of 2005 (EPAct ’05)
- Executive Order 13423 (2007)
- Energy Independence and Security Act of 2007 (EISA)
- American Recovery and Reinvestment Act of 2009 (ARRA)
- Executive Order 13514 (2009)

EO 13514 “High-lights”

- Executive Order 13514 establishes numerous goals for Federal agencies.
- **<u>EO 13514 represents a transformative shift in the way the government operates by:</u>**

1. Establishing GHGs as the integrating metric for tracking progress in Federal sustainability --energy efficiency is the best method to reduce GHG emissions
2. Requiring a deliberative planning process
3. Linking to budget allocations and OMB scorecards to ensure goal achievement.

EO 13514 “High-lights” (cont)

- Achieve 30% reduction in vehicle fleet petroleum use by 2020
- Achieve 26% reduction in potable & 20% reduction in industrial, landscaping, & agricultural water consumption by 2020
- Comply with new EPA stormwater management guidance
- Achieve 50% recycling & waste diversion by 2015
- Requires that 95% of all applicable procurement contracts will meet sustainability requirements
- Requires 15% of buildings meet the *Guiding Principles for High Performance and Sustainable Buildings by 2015*
- Design all new Federal buildings which begin the planning process by 2020 to achieve zero-net energy by 2030

The Federal model for energy conservation:

- Set goals **(legislation and EOs)**
- Plan and implement projects
- Measure performance
- Report progress
- Reward Federal leadership

Types of Federal Buildings:

- Office Buildings
- Laboratories
- Housing
- Border stations
- Parks and historic sites
- Post Offices
- Court Houses
- Hospitals
- Warehouses
- Space launch buildings

Garrison Energy Program Action Plans:

Energy Conservation

1. Appoint, in writing, full time garrison energy manager
2. Include energy and water conservation responsibilities in position descriptions of Commanders and Directors
3. Establish and chair a quarterly Garrison Energy Steering Committee (GESC)
4. Implement a Building Energy Monitor (BEM) and Unit Energy Conservation Officer (UECO) Program
5. Garrison Energy Mangers will provide, as a minimum quarterly, energy training and awareness for installation and community personnel.
6. Develop an Energy Security Plan and update plans annually based on a review with local utility suppliers
7. Enter accurate energy data monthly and water data quarterly into the Army Energy and Water Reporting System
8. Submit a complete annual energy report
9. Nominate worthy projects, individuals, and teams for energy awards

Garrison Energy Program Action Plans (cont):

Energy Efficiency

10. Review all new construction and repair project plans and specifications for compliance with all appropriate energy policies.
11. All new construction and major repair and renovation greater than $7.5M must incorporate sustainable design principles to achieve a minimum of the Silver Level of the LEED Certification.
12. IAW EPAct05, all designs will reduce energy consumption by 30% below the levels established in 2004 by American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standard 90.1.
13. IAW EISA Sec 432, garrisons will annually perform Comprehensive Energy and Water Evaluations (energy audits)
14. Implement all cost effective no-cost/ low-cost Energy Conservation Measures (ECMs).

Garrison Energy Program Action Plans (cont):

15. Identify energy and water saving projects that are life cycle cost-effective (ECMs with simple payback of 10 years or less) IAW EISA07.
16. Annually, use other than SRM funding sources, such as, Energy Savings Performance Contracts (ESPCs), Utility Energy Services Contracts (UESCs), and Energy Conservation Investment Program (ECIP) to help fund at least one project that cannot be self funded.

Alternative and Renewable Fuels

17. IAW Executive Order 13514, garrisons will reduce vehicle fleet petroleum use 30% by 2020, given a base year of 2005 (2% per year).

Garrison No Cost – Low Cost Energy Conservation Measures:

- Office Equipment: Scanners, copy machines, faxes, monitors, printers and other such equipment are required to be Energy Star rated and have a sleep mode.
- Interior Lights: Install occupancy sensors in hallways and common areas.
- Low-level Electrical Controls: Install time clocks and photocells to control exhaust fans, exterior lights or lights in areas where ambient lighting through windows is adequate for purpose.
- Light Bulbs and Ballasts: Replace existing incandescent bulbs with compact florescent, florescent, LED or Energy Star-rated laminars. Replace T12s with T8 or T5 lamps w/electronic ballasts or LEDs.
- Exit Lights: Replace all exit lighting with LED lighting fixtures.

Garrison No Cost – Low Cost Energy Conservation Measures (cont):

- Weather Stripping: Install or replace all weather stripping on every entry way where a gap or light is visible. Calk all joints, window frames, door jambs and any penetrations from the outside of the building.
- Wiring and Switches: Rewire all indoor lighting that is on 24/7, except LED exit fixtures required by code, to be on either switches or motion sensors.
- Filters: Replace every 30-90 days.
- Rewinding Motors: Replace all motors and pumps with high-efficiency Energy Star equipment every time a replacement is required.
- Thermostats: Install programmable thermostats
- Water Heaters: Replace electric water heaters with gas water heaters.

Net Zero Installations:

- A net zero energy installation produces as much energy on site as it uses, over the course of a year.

- As part of the Army's overall effort to conserve precious resources, net zero installations will consume only as much energy or water as they produce and eliminate solid waste to landfills.

- On April 19, 2011, The Army identified six net zero pilot installations in each of the energy, water, and waste categories and two integrated installations striving towards net zero by 2020.

The Army's pilot net zero ENERGY installations:

- Fort Detrick, Md.;
- Fort Hunter Liggett, Calif.;
- Kwajalein Atoll, Republic of the Marshall Islands;
- Parks Reserve Forces Training Area, Calif.;
- Sierra Army Depot, Calif.;
- West Point, N.Y.

The Army's pilot net zero WATER installations:

- Aberdeen Proving Ground, Md.;
- Camp Rilea, Ore.;
- Fort Buchanan, Puerto Rico;
- Fort Riley, Kan.;
- Joint Base Lewis-McChord, Wash.;
- Tobyhanna Army Depot, Pa.

The Army's pilot net zero WASTE installations:

- Fort Detrick, Md.;
- Fort Hood, Texas;
- Fort Hunter Liggett, Calif.;
- Fort Polk, La.;
- Joint Base Lewis-McChord, Wash.;
- U.S. Army Garrison, Grafenwoehr, Germany.

The Army's pilot net zero INTEGRATED installations:

- Fort Bliss, Texas;
- Fort Carson, Colo

Summary:

- Energy conservation and energy independence are top priorities for the federal government, specifically the Department of Defense
- Private industry is key to helping federal agencies meet energy mandates (through supplies and services)
- NET ZERO Installations are the future for the Army (DoD leader)
- Design all new Federal buildings which begin the planning process by 2020 to achieve zero-net energy by 2030

Useful Links:

- The U.S. Army Energy & Water Campaign Plan for Installations:

http://army-energy.hqda.pentagon.mil/docs/AEWCampaignPlan.pdf

  - The Campaign Plan is designed to ensure that the Army provides safe, secure, reliable, environmentally compliant and cost-effective energy and water services to Soldiers, families, civilians and contractors on Army installations and will form the foundation for the future direction and resource requirements for effective energy and water management for the Army.
- FedBizOpps: https://www.fbo.gov/
  - FedBizOpps is the single government wide point-of-entry for federal government procurement opportunities more than $25,000.
- Defense Logistics Agency Energy (DLA-E): http://www.desc.dla.mil/
  - DLA-E's mission is to provide the Department of Defense and other government agencies with comprehensive energy solutions in the most effective and efficient manner possible.

Q&A