BY ORDER OF THE COMMANDER
OF THE 51ST FIGHTER WING

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ENERGY MANAGEMENT AND CONSERVATION

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This instruction implements Air Force Policy Directive (AFPD) 90-17, *Energy and Water Management.* This instruction prescribes energy conservation goals and it establishes the methodology to conserve energy resources in facilities, equipment, operations and vehicles at Osan Air Base, Republic of Korea. All organizations and tenants shall comply with this instruction and perform specific tasks, as required, to reduce waste and conserve energy resources. The Instruction defines the responsibilities of the Energy Management Steering Group (EMSG), Energy Management Working Group (EMWG), Base Energy Manager (BEM), Energy Conservation Officers, Facility Managers, and general base populace with regards to energy management. It applies to all assigned, attached or associated units to the 51 FW. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document is revised and must be completely reviewed. This revision supersedes 51FWI90-1702, 13 February 2014. It includes the current federal requirements and energy conservation goals in Executive Order (EO) 13693, *Planning for Federal Sustainability for the Next Decade (25 Mar 2015).* It includes an updated heating and cooling temperature set point table with occupied and unoccupied target temperatures aligned with American Society of Heating, Refrigerating and Air Conditioning Engineers **(**ASHRAE) Standard 55 recommendations, and the current GeoBase links for reporting monthly utility consumption data. Methods for Osan AB to achieve the three main goals of the 2017 AF Energy Flight Plan–Improve Resiliency, Optimize Demand, and Assure Supply, are added along with recommended facility illumination levels IAW the Illuminating Engineering Society (IES) Lighting Handbook, and details of the annual Energy Cup competition. Sections on Vehicle, Communications and Flightline energy conservation were also added along with the use of the base average electricity consumption per square foot to calculate reimbursable utility billings when electric meters are broken or operating incorrectly.

1. Introduction. Osan Air Base (AB) consumes significant amounts of energy in support of the national defense policy. Restrictive budgets and potential pollution of the environment requires Osan AB to establish policies for the responsible management, control, metering and use of energy resources. Energy is defined as any usable power, including but not limited to, petroleum products, electricity, steam, natural gas, propane, military operational fuels and propellants, and renewable energy including but not limited to, solar and geothermal.

1.1. As the Department of Defense's (DoD) largest energy consumer, the Air Force is taking a leadership role in developing Energy Strategies, Visions, and Programs to reduce energy consumption across all mission areas. The Air Force's Energy Flight Plan, introduced in 2017, provides a framework for coordinating activities across multiple organizations and engaging thousands of individuals to enhance mission assurance through energy assurance. The three goals of the Flight Plan—Improve Resiliency, Optimize Demand and Assure Supply—are designed to improve energy assurance, enhance energy security, and overcome challenges posed by the vulnerabilities created by its energy requirements. In fostering an energy awareness culture, the Air Force's energy vision to "Enhance Mission Assurance through Energy Assurance," assigns energy conservation responsibilities to all Air Force personnel.

1.2. This instruction serves as the Osan AB Energy Management Plan and provides specific guidance to ensure 51st Fighter Wing compliance with applicable federal, Department of Defense and Air Force energy management and conservation directives. Air Force Instruction (AFI) 90-1701, *Energy Management,* is the governing policy within the Air Force regarding energy. Other applicable directives include, but are not limited to the Energy Independence and Security Act (EISA) of 2007, the Energy Policy Act (EPAct) of 2005, EO 13693, AFI 32-1023, *Designing and Constructing Military Construction Projects*, and the United States Air Force Energy Flight Plan 2017-2036. In addition, DoD Instruction 4170.11, *Installation Energy Management,* establishes policy and provides guidance for installation energy management.

2. Responsibilities and Authorities.

2.1. Energy Management Steering Group (EMSG): The EMSG serves as an installation-level forum on all energy related matters. The EMSG will meet as directed by the EMSG Chairperson, or quarterly IAW AFI 90-1701.

2.1.1. The 51st Fighter Wing Commander (51 FW/CC) or Vice Commander chairs the EMSG, which consists of 51 FW Group Commanders and squadron commanders from civil engineering, fuel management, logistics, communications, force support, maintenance, and aircraft operations.

2.1.2. EMSG will review the status of ongoing projects and initiatives towards achieving federal, DoD and USAF energy and water conservation goals and metrics, and "improving resiliency" IAW the AF Energy Flight Plan. "Improving resiliency" requires the installation to create the ability to prepare and recover from disruptions to the energy distribution systems, and sustain the mission.

2.1.3. EMSG will prepare briefings for the PACAF or AFCEC EMSG on the status of the installation's energy management program.

2.1.4. EMSG will support the promotion of a culture of energy awareness.

2.2. Energy Management Working Group (EMWG): The EMWG is a cross-functional team composed of Energy Conservation Officers, discussed in Sec. 2.4. The EMWG will be chaired by the Base Energy Manager and will meet prior to EMSG meetings or as directed by the Base Energy Manager.

2.2.1. EMWG will provide a cross-functional forum for discussing energy conservation initiatives and issues, and will prepare EMSG meeting slides as required.

2.2.2. EMWG will monitor functional area performance versus federal, DoD, and USAF directed energy conservation goals.

2.3. Base Energy Manager (BEM): The BEM, designated by the Base Civil Engineer, has the primary responsibility of leading and managing the 51st Fighter Wing Energy Management Program. The contracted Resource Efficiency Manager (REM) may be asked to perform the duties of the BEM within contract limitations.

2.3.1. BEM will lead and organize the EMWG, and develop agendas and prepare minutes for EMSG meetings.

2.3.2. BEM will develop plans to support or supplement Air Force and Major Command (MAJCOM) energy conservation goals/strategies.

2.3.3. BEM will evaluate energy conservation requirements, summarize all energy-related statistical data for progress reporting and planning purposes, and initiate energy-awareness programs such as the annual Energy Cup consumption reduction competition between facilities and organizations.

2.3.4. BEM will plan, program, and design energy conservation projects, and if appropriate, request funding from the Qualified Recycling Program's (QRP) sales proceeds IAW 10 USC Sec 2577 and DoDI 4170.11, *Installations Energy Instruction*.

2.3.5. BEM will participate in construction project design reviews to ensure that energy efficiency, energy conservation, energy budget figures, and life-cycle cost criteria are considered during design and construction.

2.3.6. BEM will measure, evaluate, and report base energy usage to the Air Force Civil Engineer Center (AFCEC) through the Air Force Energy Reporting System (AFERS). BEM will evaluate the energy usage of organizations that reimburse the base for their utilities and when electric meter data is obviously inaccurate based on an evaluation of electricity usage per square foot, the BEM will request the 51 CES Finance Office to use the base average electricity consumption rate to compute the monthly facility electricity costs IAW AFI 32-1061, *Providing Utilities to U.S. Air Force Installations*.

2.3.7. BEM will ensure facility managers are trained on energy conservation procedures applicable to their facilities.

2.3.8. BEM will assist 51 FW Public Affairs in promoting energy conservation awareness through all available media outlets.

2.3.9. BEM will serve as the focal point for all energy related reports, requests for information and utility and energy consumption data calls.

2.4. Energy Conservation Officers: Energy Conservation Officers are selected as representatives of each of the wing's major energy consumer organizations, with particular focus on the major energy consuming activities not under the direct scope of the Base Energy Manager, such as communications, maintenance, hospitality, and vehicle and aircraft operations. Energy Conservation Officers will be selected by their respective squadron or group commanders with a minimum grade of E-6 or above. Responsibilities will include the following:

2.4.1. Participate in the EMWG.

2.4.2. Brief the EMSG on energy conservation initiatives and progress versus directed goals for their functional area.

2.4.3. Develop plans and programs to reduce energy consumption in their functional area as per federal, DoD, and USAF guidance.

2.4.4. Promote energy awareness, monitor energy use within the organization, and assist the BEM in ensuring facility managers perform their duties in reporting monthly utility consumption for their facilities and encouraging occupants to follow energy conservation procedures.

2.4.5. Energy Conservation Officers shall, at a minimum, be assigned to the EMWG to represent the following 51 FW organizations IAW AFI 90-1701:

2.4.5.1. The 51st Civil Engineering Squadron

2.4.5.2. The 51st Logistics Readiness Squadron

2.4.5.3. The 51st Communications Squadron

2.4.5.4. The 51st Force Support Squadron

2.4.5.5. The 51st Operations Group

2.4.5.6. The 51st Maintenance Group

2.4.5.7. The 51st Fighter Wing Public Affairs Office

2.5. Facility Managers: Primary and Alternate Facility Managers have a critical role in ensuring buildings are operated in an efficient manner and energy conservation is practiced. Facility Manager responsibilities include, but are not limited to the following:

2.5.1. Compile and report facility electricity and heating fuel data required for the BEM to calculate each facility's monthly and annual energy consumption quantities.

2.5.1.1. Facility Electric Meter: Facility Managers will record total kilowatt hour electric meter readings on or within two days of the 20th of each month and enter the data into the data table at: **https://osws102.area52.afnoapps.usaf.mil/Home/TableEditor/ShowTable.aspx?site=EMS**. The Base Energy Management Office (784-9176) will provide assistance if necessary.

2.5.1.2. Organizational Fuel Tanks: Facility Managers will work with Facility Tank Custodians to report the quantity of diesel fuel (for heating and generators) on hand on the first day of each new quarter to the data table at: **https://osws102.area52.afnoapps.usaf.mil/Home/TableEditor/ShowTable.aspx?site=FMS.** The quantity of fuel on hand should be documented using calibration charts or tank gauges before any fuel is added during the first day of each quarter. At least monthly, the 51 LRS Fuels Management Office (784-1223) sends the Base Energy Office (784-9176) a report detailing the date and quantity of heating fuel delivered to all Osan AB organizational tanks.

2.5.1.3. AF Form 500, *Daily and Weekly Fuel Record*: Tank Custodians or Facility Managers must to complete Section II, Receipt of Fuel, whenever fuel is received IAW AFI23-204, *Organizational Fuel Tanks*. A Facility Manager must be present the entire time fuel is delivered to verify/reconcile fuel receipts. Any discrepancies over 40 gallons should be reported immediately to the Energy Management Office at 784-9176.

2.5.2. Ensure all building occupants practice energy conservation, including proper thermostat temperature settings (see **Table 1**), decreasing indoor lighting during daylight hours, if appropriate, and turning off or unplugging unnecessary energy-using devices whenever possible.

2.5.3. Perform weekly walk-through inspections of the facility to identify wasteful energy practices and make on-the-spot corrections including turning-off unnecessary interior and exterior lighting.

2.5.4. Upon request, escort the Base Energy Manager on energy conservation inspections and audits of the facility.

2.5.5. Identify energy saving opportunities to the Base Energy Manager and submit work orders to 51 CES Customer Service for issues beyond the scope of spot corrections (examples include: leaking faucets, defective flush valves, malfunctioning HVAC equipment, and excessive HVAC heating or cooling).

2.5.6. Ensure the Osan AB Real Property Office (784-6955) is notified when a facility is vacated for turn over to the 51 CES Installation Management Flight. A building turnover inspection checklist, including energy conservation requirements, must be signed by the facility manager or another person in the organization's leadership and submitted to the 51 CES Real Property Office.

3. Base Utility Conservation Management.

3.1. Heating Ventilation and Air Conditioning (HVAC) Policy: During Fall and Spring seasons, the 51 CES will closely monitor weather patterns and turn the HVAC systems off or on according to the guidelines stated below. These guidelines are to be used only for planning purposes. Actual dates will depend on many factors to include climate data, facility priority and work crew availability. The 51 CES/CC can override these guidelines with the understanding that energy conservation will be impacted.

3.1.1. Spring: During April, 51 CES will monitor weather conditions and turn off heating systems and activate cooling systems according to the following weather conditions.

3.1.1.1. Turning off heating systems: This typically occurs around mid-April when indoor temperatures exceed comfortable levels due to winter settings on HVAC systems.

3.1.1.2. Turning on air-conditioning systems: This typically occurs around mid-May, but cold temperatures often return for a number of days near the end of May.

3.1.2. Fall: During mid-September, to mid-November, 51 CES will monitor weather conditions and turn off air-conditioning systems and activate heating systems according to the following weather conditions:

3.1.2.1. Turning off air-conditioning systems: This typically occurs around mid-September, but sometimes warmer temperatures continue until late September.

3.1.2.2. Turning on heat systems: This typically occurs around mid-October, but often cooler temperatures begin in early October.

3.1.2.3. With the exception of areas requiring mold control and 24-hour operation, air conditioning systems shall be set no lower than 82°F on weekends and holidays as well as during the hours of 1700-0600 on duty days as practicable.

3.1.3. Exceptions to the HVAC Policy: The 51 CES Operations Flight Commander or delegate will ensure that HVAC in certain community facilities like Military Family Housing (MFH), dorms, clubs, fitness centers, dining halls and the base theater, will be turned on first during each seasonal transitional period. Other organizations requiring extended heating or cooling operation will work through their chain of command to submit requests to 51 CES/CC with justification. Requests must be endorsed by a Squadron Commander or higher.

3.1.3.1. Air conditioning systems servicing facilities with critical equipment (main-frame computers, navigation aids, temperature-sensitive calibration equipment, etc.) or special use (medical patient treatment, etc.) will be operated year round. Users are responsible for coordinating specific facility needs with 51 CES and provide applicable Air Force Instructions, Technical Orders, and/or Manufacturer's Manuals to support all requests.

3.1.3.2. Window and Split Air Conditioning Units: The use and/or installation of window and split air conditioning units are strongly discouraged. Window and split air conditioning units are not real property equipment items and will not be maintained by 51 CES.

3.1.3.3. Temperature set points in facilities at Osan AB will be maintained by HVAC personnel in accordance with the guidelines in **Table 1** Unit commanders and facility managers should not request additional cooling or heating that exceeds the targeted set points.

3.1.3.4. Facility managers should call 51 CES Customer Service when indoor temperatures vastly exceed specified set points in **Table 1** to correct excessive heating and cooling of buildings.

Table 1. Heating and Cooling Temperature Settings.

Heating		
Type of Facility	**Occupied Hours**	**Unoccupied Hours**
Office Space	66-70 Degrees F	55 Degrees F
MFH and Dorms	72 Degrees F	NA
Hangars and Warehouses	55 Degrees F	55 Degrees F
Maintenance Shops	60 Degrees F	55 Degrees F
Cooling		
Type of Facility	**Occupied Hours**	**Unoccupied Hours**
Office Space	66-70 Degrees F	55 Degrees F
MFH and Dorms	72 Degrees F	NA
Hangars and Warehouses	Unconditioned	Unconditioned
Maintenance Shops	Unconditioned	Unconditioned

3.2. Lighting Policy: The general concept of the lighting policy is to make sure that the proper quantity and style of the most efficient lighting is being used for the task being done in all areas. This, along with minor maintenance such as lamp replacement and cleaning can save precious base resources.

3.2.1. Lighting Levels: Many work areas on base are lit far more brightly than is required for the tasks performed. The lighting levels specified in **Table 2** represent the range for Osan AB work areas. It should be understood that these levels are guidelines established in the IES Handbook and represent the average light levels within the occupied space. When designing a modification to or a new installation of lighting; the listed minimum level shall be considered as the design maximum. Any special lighting level requirements shall be resolved by the individual organizations by obtaining written approval from the 51st Aerospace Medicine Squadron's Bioenvironmental Engineering Office (51 AMDS/SGPB) and coordination by the Energy Management Office. Additional exceptions will be considered on a case-by-case basis.

Table 2. Lighting Levels.

IES Recommended Illuminance Values	
Area/Activity	**Foot-candles**
Offices, General	20 – 50
Hallways	10 – 20
Conference Rooms	20 – 50
Rest Rooms	20 – 50
Service Areas	30 – 50
Shop Areas	30 – 50
Warehouse/Active	20 – 50
Warehouse/Inactive	5 – 10
Storage Areas	5 – 20
Maintenance Areas	20 – 50
General Aircraft Maintenance Area	50 – 75
Retail Spaces	10 – 50
Food Service Area	10 – 50
Classrooms	20 – 50

3.2.2. De-lamping: De-lamping is the process of removing unnecessary fluorescent tubes from light fixtures. Many fluorescent fixtures on the base have four tubes. If lighting levels remain adequate, energy savings of 40 percent may be realized by removing either the two outer or two inner tubes from a four-tube fixture.

3.2.3. Re-lamping: Incandescent bulbs are prohibited. Compact Fluorescent Light (CFL) bulbs are available to facility managers at the 51 CES Self Help Office (Bldg. 657). Replaced bulbs must be disposed at the Hazardous Waste Shop in B833.

3.2.4. Interior Lighting: Interior lighting in facilities shall be turned off while the area is unoccupied with the exception of lighting required for safety or security. In office buildings, the facility manager needs to ensure there is a plan to turn off bathroom, break room and hallway lights at the end of the work day. Lights should also be turned off during the day if the work area will not be used for more than 8 minutes. After 5-8 minutes, energy savings outweigh wear and tear on switches and light ballasts.

3.2.4.1. Vacancy Sensors: Vacancy sensors, programmable to monitor movement, body heat and sound, should be used to shut off lights when rooms are empty. To prevent passive activation, the sensors should usually require initial manual activation with manual-off capability. When a malfunctioning or broken lighting sensor is removed, it must be replaced by a vacancy sensor.

3.2.5. Exterior lighting: Exterior lighting shall be turned off during daylight hours. Exceptions shall be granted for critical operations requiring additional exterior lighting or safety concerns.

3.2.5.1. Exterior lighting circuits and fixtures shall be adjusted with timers and photocells, to provide minimal safe lighting dusk to dawn. When a malfunctioning or broken timer or photocell is removed, it must be replaced by another timer or photocell.

3.3. Seasonal Cold Water Hand Washing. This initiative, called Operation Cold Shoulder, discontinues the availability of hot water in sinks for washing hands from May thru October. Administrative buildings and other buildings that do not have showers or cooking operations are impacted and approximately 110 buildings are exempt from this requirement. During this time period, HVAC personnel can spend time on system repairs and improvements, by not being required to respond to hot water service calls at approximately 220 facilities for 6 months each year.

3.4. Energy Considerations in New Construction. The design of new building construction projects should include many standard energy conservation controls as discussed in prior sections of Section 3, Base Utility Conservation Management. The 51 CES Engineering Flight is responsible for ensuring that preferred energy conservation equipment, procedures, and requirements are included in all major renovation and new construction projects. For example, construction contractors will monitor and pay for their energy consumption during construction, and ensure unnecessary lighting is turned off during non-working hours. Merely meeting any minimum energy conservation point requirements is not conducive to meeting the energy reduction goals of EO 13693.

3.5. Functional Energy Conservation Goals and Requirements:

3.5.1. Facility energy efficiency: Building efficiency, performance, and management shall be improved to ensure all new construction of buildings greater than 5,000 gross square feet, shall be designed to achieve energy net-zero by fiscal year 2020, IAW EO 13693. Energy net-zero is defined as facility energy consumption being balanced by on-site renewable energy. In addition, EO 13693 and the AF Energy Flight Plan requires Osan AB to reduce the installation's energy use intensity (EUI) by 2.5% annually from FY2015 through FY2025. Osan's EUI is the amount of energy consumed by Osan AB facilities in one year divided by the square footage of the buildings. Reducing the EUI increases the Flight Plan goal of "Improve Resiliency."

3.5.2. Malfunctioning water fixtures. Malfunctioning water fixtures shall be reported to 51 CES Customer Service by facility managers. This may include, but is not limited to, leaking faucets, toilets continuously flowing or leaking, broken spigots, and leaking interior or exterior water lines. Wasting water wastes both water and energy, because significant energy is consumed by pumping water and operating the water distribution system.

3.5.3. Appliances in the workplace: EO 13693 requires purchase preference of appliances that are ENERGY STAR® qualified and Federal Energy Management Program (FEMP)-designated products in federal facilities. Appliances include, but are not limited to, vending machines, refrigerators, dishwashers, coffee-makers, copiers, document scanners, televisions, water coolers and video equipment. Local purchase of appliances often cost much less than purchasing them from the United States, and this acceptable assuming the appliances are rated "high" in energy conservation.

3.5.3.1. Space heaters in the workplace. The use of space heaters can be used in common areas provided they are plugged directly into a wall outlet and unplugged when not in use. Personal space heaters waste energy, but they can be used sparingly to offset uncomfortable working conditions due to HVAC issues. Refer to additional requirements for heat producing appliances in para 6.2.5. of AFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards.*

3.5.3.2. Personal refrigerators. The use of personal refrigerators in the workplace is prohibited. Refrigerators are permissible only when shared and located in a common use area. A standard rule-of-thumb that should be used is one full size refrigerator per 20 personnel working on a single shift in a given area.

3.5.3.2.1. When disposing a refrigerator, owners/users shall use their own funds to ensure the proper drainage and disposal of refrigerants.

3.5.4. Individual occupant actions to save energy: The energy conservation actions of each occupant can significantly decrease the installation's energy and water consumption.

3.5.4.1. All permissible electronic items and/or office equipment shall be turned off when areas are unoccupied during work breaks or end of shifts. This includes but is not limited to computer monitors, speakers, TVs, radios, rechargeable portable devices, paper shredders, and fans.

3.5.4.2. Before weekends, holidays and other reasons for extended absence, all permissible electronic items and/or office equipment shall be unplugged from wall outlets in work areas as practicable. This is to eliminate or severely reduce the amount of phantom loads or "electrical leakage."

3.6. Ground Vehicle Energy Efficiency: The vehicle fleet, maintained and acquired by 51st Logistics Readiness Squadron (LRS), shall be as energy-efficient as possible. IAW with EO 13693, greenhouse gas (GHG) emissions per mile, should be reduced by 30% by FY25 on a FY14 baseline, with zero-emission vehicles or plug-in hybrid vehicles accounting for 20% of all new passenger vehicle acquisitions by the end of CY20. These strategic objectives are included in the Air Force Energy Flight Plan's goal of "improve resiliency." The Flight Plan also requires an increase of alternative fuels in ground vehicles and equipment by FY20 to help meet the "Assure Supply" Flight Plan goal.

3.7. Communications Energy Efficiency: Data center efficiency shall be improved IAW EO 13693 so that advanced energy meters are installed and monitored in all data centers when the AFCEC installs the Advanced Meter Reading System (AMRS 2.1) at Osan AB in 2020. Power usage effectiveness of 1.2 to 1.4 is required for new data centers, and less than 1.5 for existing data centers. By enhancing energy efficiency of fixed data center infrastructure, the Flight Plan's goal of "Optimize Demand" will be improved at Osan AB.

3.8. Flight-line Energy Efficiency: All recovered aircraft fuel from defueling or other flightline operations, shall be saved for reuse, or analysis. No recovered fuel shall be added to other recovered petroleum products like hydraulic fluid, for disposal as used petroleum products, often referred to as used oil. Overhead lighting in hangars and flow-through fueling stations, should be turned off when the facilities are unoccupied by personnel, especially during daylight hours. By increasing energy conservation by personnel on the flightline, the Flight Plan's goal of "Optimize Demand" can be improved at Osan AB.

4. Base Energy Conservation Awareness Initiatives.

4.1. Energy Cup. A facility energy reduction competition is conducted the first three quarters of each fiscal year from 1 October through 30 June. Each year, 32 high energy consuming facilities with working electric meters, are selected for the competition and they are scored by comparing the facility's quarterly energy consumption per square foot to the facility's consumption per square foot from the same time period in the previous fiscal year. The competition includes a four-division, bracketed tournament format, and recognition of the top 3 facilities that recorded the largest energy intensity reduction during the nine-month tournament.

4.2. Commander's Access Channel: Announcements, updates and results of the energy reduction competition will be posted as slides on the Commander's Access Channel, or the Community Channel, managed by the 51 FW Public Affairs Office. Awareness of the competition by leadership and occupants of the participating facilities, along with pride in performance at each facility, is intended to stimulate participation by facility occupants and increase the potential for success and maximum energy conservation.

4.3. Energy Action Month. Each October, the Air Force celebrates Energy Action Month by promoting energy awareness activities at each installation. The goals of Energy Action Month are to increase awareness about energy consumption and to encourage energy saving actions in Airmen, civilians and their families. Energy efficient actions highlighted during Energy Action Month become habits, leading to increased mission effectiveness and reduced costs.

4.3.1. The Energy Cup competition between facilities begins on 1 Oct, and each year this activity kicks-off Energy Action Month.

4.3.2. At the beginning of the month, an energy conservation informational booth at the Osan AB Food Court contains energy saving ideas, and energy management personnel interact with visitors to the booth.

4.3.3. Throughout the month of October, activities and events are planned to increase base occupants' awareness to energy conservation. Energy conservation must become a responsibility of every airman, civilian, and contractor on Osan AB.

WILLIAM D. BETTS, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 90-17, *Energy and Water Management*, 18 November 2016

AFI23-204, *Organizational Fuel Tanks*, 24 July 2012

AFI 32-1023, *Designing and Constructing Military Construction Projects,* 19 November 2015

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American Society of Heating, Refrigerating and Air Conditioning Engineers **(**ASHRAE) Standard 55 -2013

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Executive Order (EO) 13693, *Planning for Federal Sustainability for the Next Decade*, 25 March 2015

DoDI 4170.11, *Installations Energy Instruction*, 7 March 2016

United States Air Force Energy Flight Plan 2017-2036, 6 Jan 2017

Illuminating Engineering Society (IES) Lighting Handbook, 23 November 2015

Adopted Forms

AF Form 500, *Daily and Weekly Fuel Record*

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AB—Air Base

AFCEC—Air Force Civil Engineer Center

AFERS—Air Force Energy Reporting System

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFRIMS—Air Force Records Information Management System

ASHRAE—American Society of Heating, Refrigerating and Air Conditioning Engineers

BEM—Base Energy Manager

CFL—Compact Fluorescent Light

DoD—Department of Defense

EISA—Energy Independence and Security Act

EO—Executive Order

EMSG—Energy Management Steering Group

EMWG—Energy Management Working Group

EPAct—Energy Policy Act

EUI—energy use intensity

FEMP—Federal Energy Management Program

HVAC—Heating, Ventilation, Air-Conditioning

GHG—greenhouse gas

IAW—in accordance with

IES—Illuminating Engineering Society

LRS—Logistics Readiness Squadron

MAJCOM—Major Command

MFH—Military Family Housing

OPR—Office of Primary Responsibility

QRP—Qualified Recycling Program

RDS—Records Disposition Schedule

REM—Resource Efficiency Manager