



DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, U.S. ARMY GARRISON COMMAND, FORT KNOX
111 E CHAFFEE AVENUE
FORT KNOX, KENTUCKY 40121-5256

AMIM-KNP (100)

15 November 2021

MEMORANDUM FOR

Commanders, All Units Reporting Directly to This Headquarters
Commanders, Fort Knox Partners in Excellence
Directors and Chiefs, Staff Offices/Departments, This Headquarters

SUBJECT: Fort Knox Policy Memo No. 24 – Installation Energy Guidance 2021

1. References.

- a. Army Regulation (AR) 420-1, (Army Facilities Management), 12 February 2008 (RAR 24 August 2012).
- b. Energy Policy Act of 2005.
- c. Energy Independence and Security Act of 2007.
- d. Executive Order 13423 Strengthening Federal Environmental, Energy, and Transportation Management, 26 January 2007.
- e. Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance, 8 October 2009.
- f. Executive Order 13834 – Efficient Federal Operations, 17 May 2018 (revoking Executive Order 13693 – Planning for Federal Sustainability in the Next Decade, 19 March 2015).
- g. Army Energy Strategy for Installations, 8 July 2005.

2. Purpose. To emphasize energy saving measures, which can be controlled by Fort Knox Soldiers, Family members, employees, contractors, and all Department of Defense (DoD) and Non-DoD organizations, activities, agencies, tenants, and partners without decreasing comfort, safety, health and quality of life standards.

3. General. Department of the Army, Installation Management Command (IMCOM), Human Resource Center of Excellence and United States Army Garrison (USAG) Fort Knox guidance, supports the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and Executive Orders 13423 and 13834. These documents emphasize responsibilities, including customer responsibilities, within the Energy Management Program and set goals to be reached by all Department of Defense

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organizations. Executive Order (EO) 13834 affirming that agencies shall meet such statutory requirements in a manner that increases efficiency, optimizes performance, eliminates unnecessary use of resources, and protects the environment.

4. Policy/Procedures. Fort Knox has achieved yearly energy reduction goals set by the Energy Policy Act of 2005 or the Energy Independence and Security Act of 2007 with respect to our facilities. (See enclosure 4 for details.) The goal of this policy is to ensure the Fort Knox community is taking actions to comply with the laws and the EO mandate and developing procedures to track compliance. Wasteful habits can negatively impact the good results. Fort Knox targets 2.5% per year energy reduction, Fort Knox also targets reducing water consumption by 3% per year, utilize renewable energy and sustainable building practices, and target reducing petroleum use 2% per year. Efficient use of energy is and will remain a Command priority. Commanders and Directors are expected to implement effective energy program IAW AR 420-1, Chapter 22. Enclosed are some best management practices to help achieve energy reduction goals. Commanders and Directors will ensure that effective Organization Energy Conservation Officers (ECOs) are appointed. Organizations with a large number of facilities beyond the ECOs ability to observe shall also appoint Building Energy Monitors (BEMs) to ensure required area inspections are conducted in order to eliminate waste during both duty and non-duty hours. The Directorate of Public Works (DPW) and Installation Energy Manager will continue to assist units through energy conservation projects and educational initiatives. The Energy Office of the DPW will serve as lead on a quarterly Energy Council as well as monthly Energy Line Item Reviews (LIR). The Energy Office will review Program effectiveness, identify innovative ways to conserve energy and water, and provide progress reports to this Command.

5. Responsibilities.

a. Commanders/Directors:

(1) Ensure that an ECO is appointed for all organizations. The ECO should be in a position of significance in the organization that has the authority to direct compliance with energy policies. ECO appointments will be made in writing to the DPW Energy Office within 30 days of issuance of this Policy Memo.

(2) Ensure that all ECOs/BEMs in their organization receive and utilize the energy checklists (Building Energy Monitor Checklist (enclosure 1-1) and the Office Energy Checklist (enclosure 1-2) and perform assigned duties. Report the name, phone and the building number of the ECOs and BEMs to the DPW Energy Office. Point of contact is Robert (RJ) Dyrdek, Energy Program Manager at (502) 624-2604.

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(3) Ensure that all ECOs attend monthly meetings arranged by the installation Energy Manager. These occur the 2nd Thursday of every month and are located in Building #1110, Room 332. This is the Directorate of Public Works (DPW) Conference Room.

(4) Procure and use only ENERGY STAR™ rated office equipment. ENERGY STAR™ compliance is mandated by the Energy Policy Act of 2005 (EPA 2005), Energy Independence and Security Act of 2007 (EISA 2007), and AR 420-1. ENERGY STAR™ rated equipment has a sleep mode that reduces energy consumption when not in use. Ensure the equipment is programmed to enter sleep mode although it still draws energy while asleep. Place all peripheral devices in an office/area/workstation on the minimum number of power strips/surge protectors, which have timers or motion sensors to shut down all peripherals when the areas are unoccupied (see enclosure 2).

(5) Computers and Monitors: Personal computers (PCs) may be left on, but logged off, at the end of the day as directed by the Network Enterprise Center (NEC). NEC is utilizing software that will remotely shut PCs down after 20 minutes of inactivity. Monitors and peripheral devices (monitors, scanners, speakers, chargers, etc.) will be turned off at close of business every day and at any time when not in use (AR 420-1, Chapter 22). Use the power strips/surge protectors with timers or motion sensors to shut them down completely.

(6) AR 25-1, paragraph 6-2f requires that all purchases of microcomputers, including personal computers, monitors and printers, meet the ENERGY STAR™ requirements for energy efficiency. Scanners, copy machines, faxes, printers and other such equipment should be programmed with sleep modes to activate automatically when not in use. All of this equipment is required to be ENERGY STAR™ rated (see enclosure 2).

(7) Classrooms and Conference Rooms: Ensure all unnecessary equipment (Smart boards, TVs, LCD projectors, etc.) is turned off. Flat screen TVs (Plasma/LCD) and classroom/conference room electronics use more electricity and generate more heat, increasing air conditioning load, than earlier versions of these rooms. Electronics on "standby" mode continue to consume energy; shut them down when not needed.

(8) Eliminate off-hour and exterior lighting unless necessary for safety and security (AR 190-11), and turn off lights in offices and common areas during off-duty hours. Until occupancy sensors are installed, have procedures in place to ensure lights and equipment get turned off. Install light switches if circuit breakers are currently the only way to turn off lights.

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(9) Ban the bulb!!! Install LED lighting in place of compact fluorescents and incandescent lighting.

(10) Reduce water consumption inside and outside of buildings.

(11) The use of personal refrigerators is not authorized for individual work areas and strongly discouraged. Refrigerators are authorized in work and office areas for area use with sizing based on number of personnel supported. Use one cubic foot per person as an average to determine size and quantity of refrigerators that are appropriate. Refrigerators in work areas and offices intended for only one person's use are prohibited. Exceptions allowed for general officers and commanders who have conference room meeting requirements that justify the single use (reference: AR 420-1, Chapter 22-12).

(12) Stop idling government vehicles when unattended or waiting for more than 30 seconds. Monitor the administrative use of vehicles and other energy consuming equipment for unnecessary use.

(13) Monitor the use and authorization of personal space heaters. Per Army Regulations, space heaters are not authorized for use, unless approved by Garrison, DPW, and Fire Department, with supervisor/medical approval. Space heaters are energy hogs and can be dangerous if not used properly. An approved space heater must be UL or FM approved, contain a tip over switch, and not be set on or near combustible materials. If use of a space heater is approved, electrical extension cords will not be used. If the facility heating system is not adequate, contact the Directorate of Public Works (DPW) at (502) 624-1171 for repairs/modifications.

(14) Doors and windows between conditioned spaces and non-conditioned spaces are not to be propped or left open. Active management of doors and windows that control conditioned spaces is critical to reducing energy waste.

(15) Use setback temperatures on all heating, ventilation and air conditioning equipment, including window air conditioners that are being used for temporary solutions. If automated controls are not installed, activate procedures for manual adjustment of all heating and cooling equipment at the end of every work day and for any periods an area is unoccupied during work hours (locker rooms, lunch/break rooms). Required setback temperatures are found in AR 420-1, Chapter 22 as follows:

Occupied Settings

Heating at 72 °F +/- 2 °F

Cooling at 74 °F +/- 2 °F

Unoccupied Settings

55 °F +/- 5 °F

85 °F +/- 5 °F

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Patton Museum (recognized by the Center of Military History) should maintain heating and cooling (and humidity settings) IAW AR 870-20.

(16) Ensure that contract clauses cover the guidelines of this energy policy. Contractors may also suggest energy conservation opportunities.

(17) Encourage, recognize, share and reward worthwhile ideas on energy and water conservation.

(18) Do not "charge" government electric vehicles (GOV) between 1100 and 1630 during the months of May through September. As well as from 0600 to 1000 during the months of October through April.

b. Director of Public Works:

(1) When replacing lighting, use only the LED lights or more energy efficient lighting. Install daylight, motion sensors or timers to automatically shut off lights when cost effective. In general, see the Energy Office DPW Energy Standards for details.

(2) Replace all "bulb" EXIT lighting with LED or electroluminescent lighting fixtures as funding supports or through attrition/failure of existing bulbs and fixtures.

(3) During the heating season, maintain temperatures in occupied general office space to 72 °F (plus or minus 2 °F) during working hours. Set heaters to decrease to 55 °F (plus or minus 5 °F) during unoccupied hours (see enclosure 3).

(4) Ensure cooling devices are set to 74 °F (plus or minus 2 °F) during working hours. At night or other times where buildings are unoccupied, temperatures should be 85 °F (plus or minus 5 °F). Exceptions are granted if DoD standards require otherwise (i.e., medical reasons, or if necessary to prevent mold, during periods of high humidity, etc.) (see enclosure 3).

(5) Maintain hot water supply temperatures as follows:

(a) Automatic dishwashing in food services facilities 140 °F.

(b) Final rinse for dishes and utensils in all food service applications 180 °F.

(c) Child Care Centers IAW AR 608-10 for child occupied areas.

(d) Administrative and other facilities 110 °F.

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(6) Ensure all Sustainment Restoration and Modernization (SRM) and Military Construction (MILCON) projects fully comply with prescriptive technology solution sets in IMCOM/Engineer Research and Development Center (ERDC), Construction Engineering Research Laboratory (CERL), and Energy and Water Conservation Design Guide. The SRM Design Guide specifies that all SRM-funded projects as well as MILCON construction shall comply with and contribute towards the goals specified in EPA 2005, EISA 2007, EO 13423, EO 13514, EO 13834, and LEED where applicable to these guidelines.

(7) Ensure compliance with AR 420-1, Appendix H-16, specifications that all new Army facilities must achieve the Leadership in Energy and Environmental Design (LEED) SILVER rating criteria for sustainable design where applicable to these guidelines.

(8) Replace all motors and pumps with only high-efficiency ENERGY STAR™ compliant equipment every time a replacement is required. Prohibit staff from rewinding or replacing with the same efficiency. Replacement with high efficiency normally has a payback of less than 5 years and / or as revealed and implemented in the most current Energy Savings Performance Contract (ESPC) metrics instituted as a part of Task Order (TO) W912DY-15-D-0042-0001.

(9) All motors and pumps that have automatic controls will be operated in "auto mode" and not in manual mode that causes them to run 24/7, unless specific systems require 24/7 operation. Conduct internal control review of the requirements to reduce operating hours of pumps and motors and / or as revealed and implemented in the most current ESPC metrics instituted as a part of TO W912DY-15-D-0042-0001.

(10) Meter, measure, and track energy and water consumption by building and activity. Analyze use for targeted conservation efforts.

(11) Lease/procure only fuel efficient vehicles.

(12) Reduce petroleum use by 2% per year.

c. Installation Energy Manager:

(1) Train all ECOs/BEMs.

(2) Provide expertise and support to ECOs and BEMs and others assigned energy and water conservation responsibilities.

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(3) Maintain and update all garrison plans, follow or set the best management practices and standard operating procedures pertaining to energy and water conservation.

(4) Visit facilities and conduct quality assurance energy and water conservation inspections as necessary.

(5) Act as the proponent for energy and water conservation projects on the installation.

(6) Monitor consumption of energy and water.

(7) Conduct public outreach activities to raise awareness of energy and water conservation throughout the community.

(8) Complete yearly and upward reporting for energy and water savings and usage.

(9) Act as the proponent for energy awards for the community.

d. Director of Plans, Training, Mobilization and Security:

(1) Update appropriate Staff Duty Officer (SDO) and Field Officer of the Day (FOD) instructions to incorporate review of unit/directorate/building compliance with this directive.

(2) FOD checklist will include review of sample facilities compliance during duty days.

(3) SDO instructions and checklists will include review of energy savings directives detailed in this directive. SDO will perform non-duty hour checks of building exterior and interior illumination, parking lot lights, and recreation fields.

e. All tenant, DoD, Non-DoD, contract and partner organizations: Energy consumption by all organizations contributes to the overall "load" for the Fort Knox installation. Directors/Commanders efforts have a direct effect on setting the peaks that affect the utility rates charged to Fort Knox by the commodity suppliers. Energy awareness and reduction efforts directed above apply to all agencies as well.

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6. Proponent. The agency responsible for this policy is the U.S. Army Garrison Fort Knox, Directorate of Public Works, at (502) 624-2151/7351. For further information, contact the Installation Energy Manager at (502) 624-2604.

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Building Energy Monitor (BEM) Checklist

For additional information see AR 420-1, Section III, Para 22-12; Energy conservation and management guidelines for facilities and buildings.

Installation: _____ Bldg. No. _____ Unit/Activity: _____

ITEM	CHECK POINT DESCRIPTION	YES	NO	CORRECTIVE ACTION
1	Are lights off in areas unoccupied for more than 5 minutes?			
2	Are exterior lights off during daytime hours?			
3	Is natural lighting or day lighting used in office areas near windows?			
4	Is lighting on setback and used on weekends only when needed?			
5	Are thermostats set for heating @ 72° F +/- 2° F and cooling @ 74° F +/- 2° F?			
6	Is heating/cooling turned off in unoccupied workspaces?			
7	Are doors and windows closed in heated/cooled areas?			
8	Are exhaust fans run only when required?			
9	Are restroom fans and lights turned off when unoccupied and at the close of business?			
10	Are there any leaking faucets?			
11	Are there any leaking toilets/urinats?			
12	Are items consolidated to minimize number of refrigerators?			
13	Are personal refrigerators, microwaves, and coffee pots eliminated?			
14	Are personal heaters approved or eliminated?			
15	Are off ice machines Energy Star compliant?			
16	Is unused equipment turned off or in sleep mode during work hours?			
17	Is office equipment turned off at the close of business?			
18	Are peripheral office machines (scanners, faxes, copiers, printers, etc) turned off at close of business?			
19	Is building/ unit/ direct rate/ facility recycling office paper?			
20	Is building/unit/directorate/ facility using a paper shredding service to recycle and reduce waste?			

Inspected by _____ Date _____

U.S. Army Fort Knox Office Energy Checklist

The following is a simple checklist of energy conservation/efficiency measures to use at the office.

- ℞ Replace incandescent lights and compact fluorescent lights (CFLs) with light-emitting diodes (LEDs) for desk lamps and overhead lighting. Using LEDs instead of comparable incandescent bulbs can save about 90 percent on your lighting costs. LEDs use only one-fourth the energy and last up to 10 times longer.
- ℞ Switch off all unnecessary lights. Use dimmers, motion sensors, or occupancy sensors to automatically turn off lighting when not in use to reduce energy use and costs.
- ℞ Turn off lights when you leave the office, even when you intend to return immediately.
- ℞ Use natural lighting or daylighting. When feasible, turn off lights near windows
- ℞ Use task lighting; Instead of brightly lighting an entire room, focus the light where you need it, to directly illuminate work areas.
- ℞ Use energy efficient **ENERGY STAR®** products.
 - ℞ Close or adjust window blinds to block direct sunlight to reduce cooling needs during warm months. Overhangs or exterior window covers are most effective to block sunlight on south-facing windows.
 - ℞ In the winter months, open blinds on south-facing windows during the day to allow sunlight to naturally heat your workspace. At night, close the blinds to reduce heat loss at night.
 - ℞ Unplug equipment that drains energy when not in use (i.e. cell phone chargers, fans, coffeemakers, desktop printers, radios, etc.).
 - ℞ Turn off your computer monitors and peripherals at the end of the work day. If you leave your desk for an extended time, turn off your monitors/peripherals. Set them to sleep mode after 20 minutes of inactivity.
 - ℞ Turn off office equipment, scanners, copiers, faxes at night. All equipment is required to be **ENERGY STAR®** compliant.
 - ℞ Eliminate and remove all extra refrigerators, microwaves, coffee pots and other appliances per AR420-1, Chapter 22.
 - ℞ Save paper. Photocopy only what you need. Always use the second side of paper, either by printing on both sides or using the blank side as scrap paper.
 - ℞ Use coffee mugs instead of disposable cups.



ACC-Contracting Note - #16-04: Energy and Sustainability Procurements Follow-up Reminder

Purpose: To ensure the continued awareness and compliance with the Army's Energy and Sustainability Performance Plan (SSPP) and to reiterate the available resources and tools for ACC Contracting Professionals in this area.

Methodology:

The Office of the Deputy Assistant Secretary of the Army (Procurement) (ODASA(P)) has implemented a new, streamlined approach for recurring reports related to the compliance review for the DoD SSPP, Sub Goal 7.1 - 95% of Procurements Conducted Sustainably. Going forward, the evaluation, validation, verification and reporting will be completed using the ODASA(P) SharePoint template at: <https://spcs3.kc.army.mil/asaalt/ZPTeam/taskers/SP>.

In addition, the sub-goal requires that 95% of contract actions for applicable products and services, meeting DoD performance requirements, must adhere to the principles of sustainability by containing energy-efficient (Energy Star or Federal Energy Management Program-designated), water -efficient, bio-based, environmentally preferable, non-ozone depleting, containing recycled content, and/or are non-toxic or less-toxic alternatives.

Per recent FY 15 3rd and 4th quarter contract reviews processed through the share-point application, ACC's compliance rate was 76%. Two of the most common reasons that contracts were deemed noncompliant were: failure to include appropriate FAR provisions and clauses in the solicitation and contracts and failure to include specific language in the performance work statement and or specifications.

As a reminder, revision 1 to PARC Tasker #16-12, outlined the new sustainable procurement review guidelines and the revised measure of compliance criteria. For details, please refer to the final review guide at <https://spcs3.kc.army.mil/asaalt/ZPTeam/taskers/sp/layouts/15/start.aspx#/>.

Additional tools such as the Quick Guide to Ensure Contracts are in Compliance with Sustainable Procurement Requirements and a Sustainable/Green Procurement Checklist can be found on the ACC Mapping the Acquisition and Procurement Process Application (ACC MAP APP) at <https://acc.aep.army.mil/accapps/ACCMAP/Pages/default.aspx>.

The HQ ACC POC for this action is Mr. Keenan Sease, 256-955-5640, and Keenan.a.sease.civ@mail.mil.

Enclosure 2

Heating and Cooling (Temperature Setpoint) Policy

Defining the Cooling and Heating Seasons

For the purpose of this policy, cooling season is from mid-April to early October and heating season is from mid-October to early May.

Defining Occupied and Unoccupied Hours

Schedules for buildings are assigned on a building by building basis. It is important for building owners and BEMs to communicate occupied hours to DPW Energy Office so that HVAC systems are not running unnecessarily. Building schedules are reviewed on a quarterly basis to ensure the optimum schedule is being used. Generally speaking, offices hold a Monday-Friday 7:00A M-5:00 PM occupancy schedule. Barracks and lodging facilities are considered occupied 24/7.

Space Temperature Setpoints during Occupied Hours

Space temperatures will be assigned based upon the following priority system

	Building Use	Heating Setpoint Range	Cooling Setpoint Range
Priority 1	Guest Sleeping Quarters	70 F - 74 F	72 F - 76 F
Priority 2	Soldier Sleeping Quarters	70 F -74 F	72 F -76 F
Priority 3	Office and Training Facilities	70 F-74 F	72 F -76 F
Priority 4	Heat-Only Warehouses	55 F High Limit	N/A

Priority 1 buildings also include simulator buildings and warriors in transit barracks.

Certain areas are required to be maintained at certain temperatures and are exempt from this policy, i.e. pool, medical, and computer server areas. The target temperatures are within the range that is acceptable and comfortable to 80 percent of the building occupants per ANSI/ASHRAE Standard 55-2004, *Thermal Environmental Conditions/or Human Occupancy*.

Space Temperature Setpoints during Unoccupied Hours

During off-hours and weekends, the temperatures will be adjusted to be as low as 50 ° during winter and as high as 85° during summer. The HVAC systems will be cycled on and off to maintain these adjusted setback temperatures and conserve energy. The systems will optimally start based on the outside air temperature to ensure that occupied setpoint is met at start of the day.

Use of Space Heaters, Portable AC Units and Fans

ASA policy, space heaters and portable A/C units are prohibited due to energy conservation mandates unless permission has been granted by DPW. DPW will permit approved space heaters/portable A/C units only in those limited instances where the building systems cannot provide temperatures within acceptable variation of the ranges stated above. All other space heaters/ portable A/C units in any other spaces are subject to confiscation by DPW. Energy efficient table or pedestal fans are permitted and considered acceptable solutions to increase your sense of comfort by improving air movement.

Questions/Concerns

If you have questions about the temperature setpoint policy implementation, please contact RJ Dyrdek at 624- 2604, robert.d.dyrdek.civ@mail.mil or Chuck Beach at 624-2779, charles.h.beach6.civ@mail.mil. To report HVAC problems, please call the HVAC support desk at 502-942-5221.

Enclosure 3

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RJ Dyrdek - DPW Energy Manager

AEWRS Areas of Challenge regarding Building Loads vs. Base Process Loads

Executive Summary

A correction to an anomaly in the Army Energy and Water Reporting System (AEWRS) should be considered as installations strive for energy efficiency and energy security.

The U.S. Army has been using AEWRS for many years. The original intent of AEWRS was to collect and compile energy data from installations and to demonstrate/ confirm compliance with Federal and Department of Defense energy usage reporting requirements. Energy reported via AEWRS was to be an accounting of all the related buildings at a base and their consumed utility and water consumption footprint(s). It was also required that the reporting facilities reduce their energy and water impacts.

In the earliest years of AEWRS and the related drive(s) to reduce energy consumption on all possible loads (non-core or mission related), Fort Knox and many other bases implemented multiple changes and programs to meet this challenge and which demonstrated successes. Modifying building energy usage and load parameters such as HVAC efficiency, facility component load profiles, lighting, domestic and landscape water consumption, occupancy schedules, etc. remain the primary targets for usage reductions.

Challenges in the current versions of AEWRS reporting methods as referenced above surround the program's handling of new process loads which can be associated with core missions or directives. At this time any new process loads are simply added to the base totals making it appear that the existing (and unrelated) building usage profiles have increased.

The portion of total energy used that represents new process loads may need to be mathematically deducted from the overall total load where modification of building energy usage is the target parameter. Without this change to the reporting process a mission related process can inaccurately reflect on the base energy building efficiency and reduction programs. In the case of Fort Knox there is also the energy security so attached. Specifically, any base with increasing process loads can be receiving less than satisfactory reported results in AEWRS.

Energy reductions do have a twofold benefit. The first impact is related to the consumption of energy/costs and the second are the environmental impacts (especially with fossil fuels). The first benefit (utility cost reduction) can be highly *favored* in our most current period's need for cost cutting measures.

The AEWRS reporting of purchased electricity also does not reflect an input associated with the BTUs for the utility's fuel fossil where used by the local utility in producing the electricity. An even handed environmental comparison may be also appropriate. Efforts to reduce the cost of electricity and to fulfill directives surrounding energy independence via self-generation have been successful. Improved environmental impacts for the region due to the cleaner production generation via natural methane and the greatly improved energy security posture for the installation have been achieved. The AEWRS report inaccurately depicts this as showing the base reports being less efficient on a BTU/SF basis because of how the process load is handled.

A modification of AEWRS to allow for process loads to be totaled separately from building loads seems necessary to accurately reflect the actual building use profile and performance. The AEWRS business rules may need to adjust for newest technologies and energy strategies.

To achieve current AEWRS efficiency targets and to also include energy independency capabilities could be at cross purposes and suggest a shutdown of any related on-post generation of electricity. This would result in increased utility bills and decreased energy security as the installation would have to continue to rely on the unsecured remote substation and local electric company power feed to the installation. This could in some instances not allow for environmental benefits of fuels used and electrical distribution loss gains associated with the local generation option.