



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

February 12, 2024

MEMORANDUM FOR AF/A4C
USSF/S4O
AFIMSC/CC
ALL MAJCOM/FLDCOM/A4
ANG/A4

FROM: SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

SUBJECT: Electrification of Installations, Standard Building Operations, Flightlines, and Non-Tactical Vehicles (NTV)

- References:
- (a) Department of the Air Force (DAF) Climate Action Plan, 05 October 2022
 - (b) Deputy Assistant Secretary of the Air Force for Environment, Safety, and Infrastructure (SAF/IEE) Memorandum, "Base Electrification Pilot Program," 18 January 2023
 - (c) SAF/IEE Memorandum Expanding the NTV Fleet Electrification Pilot Program, 17 August 2023
 - (d) Department of Defense (DoD) Memorandum, "Electrification of Standard Building Operations," 29 March 2023
 - (e) DAF Instruction 90-1701, "Installation Energy and Water Management," 17 December 2020

Extreme weather and hazards imposed by the climate crisis are delivering higher costs and complex security risks to DAF installations and personnel and their ability to train and operate effectively. Maintaining air and space dominance against these challenges requires the DAF to better enable long-term mission assurance through increased resilience. Electrification is one of several strategies we are employing to mitigate emissions and their associated risks to supply chains, logistics, and exacerbation of these hazards. The DAF is electrifying installations, buildings, Non-Tactical Vehicles (NTV), and flightline equipment to comprehensively address these risks, modernize operations, and advance more resilient power projection platforms. Under a "no regrets" investment approach, new technologies to accelerate electrification will be integrated at DAF installations through a series of pilot programs and policy changes in support of the DAF's mid- and long-term resilience goals, as identified in the Department's Climate Action Plan (Reference a).

SAF/IEE is taking steps to identify strategic pathways towards electrification via pilot programs. In January 2023, SAF/IEE launched the Base Electrification Pilot Program to evaluate electrification pathways, impacts, and infrastructure investment needs to support base-wide

electrification (Reference b). In August 2023, SAF/IEE expanded the NTV fleet electrification program to explore charging technologies and alternative acquisition methods for zero-emission NTVs (Reference c). See Attachments 1 and 2 for additional details about the Department's electrification pilot programs that models a uniform deployment of technology strategies.

Effective immediately, in accordance with the DoD Memorandum, "Electrification of Standard Building Operations," 29 March 2023 (Reference d), DAF installations and sites are to maximize the use of all-electric technologies in building design, construction, repair, and operations where market ready technologies exist. This policy directs that:

- a. All new major and minor construction and major repair/renovation projects that have not reached 15% design by the date of this memorandum will include the use of all-electric technologies for system components, including for space conditioning, water heating, cooking, and laundry in designs.
- b. All projects that have completed 15% design but have not reached 35% design by the date of this memorandum will include the necessary infrastructure to enable future electrification of building systems for space conditioning, water heating, cooking, and laundry in designs. This includes, but is not limited to, increasing sizing of conduit runs, utility chases, electrical panels, and wiring to support future electrification.
- c. For existing buildings, use all-electric technologies when replacing building systems for any reason (reaching expected end of life, failure, or major facility renovation).

Exemptions. This policy does not apply to:

- a. Systems and equipment where host nation requirements or agreements prohibit compliance.
- b. Systems and equipment used for unique research, manufacturing, industrial and process loads for which all-electric technology is not practicable, provided a qualified use is separately sub-metered and accounted for on a regular basis.
- c. Projects currently in advanced design (beyond 35%) or in the construction phase. Installations are not required to modify existing designs or contracts to incorporate increased electrification. However, projects are encouraged to pursue low and no-cost changes as practicable.
- d. Emergency use generators; provided they are not used for non-emergency load shedding or peak demand shaving.
- e. Emergency repairs for unexpected failure of system components where all-electric technologies are not readily available on a reasonable timeline, considering impact to mission, health, and life safety.

The implementation of this policy may increase electricity demand beyond the load capacity supported by existing switchgear, transformer, substation, or other electrical utility transmission infrastructure. As a result:

- a. Planning and design of projects covered by this policy must incorporate electric infrastructure requirements beyond immediate boundary of the facility in the project scope when required.

- b. In cases where utilities are privatized, the utilities privatization system owner may require modification to capture any increased demand and utilities infrastructure requirements.
- c. Installations must account for the increased energy requirements resulting from future year projects to include capital improvements to power generation and distribution facilities into their installation energy plans (IEPs). If an installation has already completed their initial IEP, then the policy requirements must be accounted for during the installation's next IEP annual review cycle, in accordance with DAF Instruction 90-1701 (Reference e) and updated accordingly.

Exceptions. Exceptions to this policy may be requested through the interim exception process (Attachment 3) and follow the most appropriate functional chain of command. Exception requests for any asset or facility on a DAF installation or site, including those assets or facilities owned or operated by other DoD Components or tenants, are to be submitted by the installation or garrison commander to the Air Force Civil Engineer Center (AFCEC) for technical review. Upon review, AFCEC may deny the exception request or advance it to the Office of the Director of Air Force Civil Engineers (AF/A4C) for review. Upon review, AF/A4C may deny the exception request or advance it to SAF/IEE for disposition. A denial of an exception request will be communicated to the installation by the authority rejecting the exception, copying AFCEC if appropriate. AFCEC will record and track disposition of all packages. Only the SAF/IEE office can approve exception requests and communicate approved exceptions to the Assistant Secretary of the Air Force (Installations, Environment & Energy) and the Assistant Secretary of Defense for Energy, Installations, and Environment.

Exceptions will be reviewed on a case-by-case basis and limited to unique and extenuating circumstances where the use of all-electric technologies do not safeguard facilities, missions, and/or personnel. DAF is pursuing a 'no regrets' electrification investment approach to support modernization and long-term mission assurance, wherein higher operating costs and delayed project timelines are not adequate reasoning for granting an exception. For example: SAF/IEE is not likely to consider an exception to facility-level electrification; however, an exception may be considered if the wider installation grid infrastructure cannot support additional load caused by electrification. Any granted exceptions will be reviewed on a recurring basis as all-electric technologies and circumstances evolve and therefore similar requests may not be approved in the future. See Attachment 4 for examples of exceptions to this policy and other frequently asked questions.

To implement this policy, AF/A4C, the Air Force Installation and Mission Support Center (AFIMSC), and AFCEC will adjust directive publications and issue implementing guidance, business rules, playbooks, compliance tracking, and other materials to implement the policy herein within 90 days of this memorandum.

Until building criteria in the Unified Facilities Criteria (UFC) are updated, AF/A4C, in coordination with AFIMSC, will provide interim guidance on market-ready technologies and best practices to achieve the objectives of this policy. The market-ready technologies and best practices guidance shall be updated on a semi-annual basis, with the first issuance no later than 90 days after the signature of this memorandum. This policy will be incorporated into the appropriate DAF directive publication(s) at a later date.

To understand the financial and logistical impact of electrification on existing DAF programs, projects, and accounts, AF/A4C will evaluate training requirements for all-electric systems. AFIMSC will assess feasibility of incorporating all-electric technologies in FY26 programs (including Military Construction and Facilities Sustainment, Restoration, & Modernization maintenance operations) and the impact to utility costs and the Facility Operations account no later than 60 days after the signature of this memorandum.

My point of contact for this policy is Ms. Christa Gunn, Director of Resilience Integration (christa.gunn@us.af.mil, COMM 202-355-2608).

NANCY J. BALKUS, P.E., SES,
Deputy Assistant Secretary of the Air Force
(Environment, Safety, and Infrastructure)

4 Attachments:

1. Electrification Pilots Bullet Background Paper
2. Electrification Factsheet
3. Interim Exception Process Instructions
4. Electrification FAQs/Case Scenarios

cc:

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