ARMY CLIMATE STRATEGY

Implementation Plan

Fiscal Years 2023-2027

Climate change poses an immediate and serious threat to U.S. national security and affects how and where the Army trains and operates. As the Secretary of the Army (SecArmy) stated in the United States Army Climate Strategy (ACS), "For today's Soldiers operating in extreme temperature environments, fighting wildfires, and supporting hurricane recovery, climate change isn't a distant future, it is a reality."

The Total Army must train, modernize, and remain ready to deploy, fight, and win the nation's wars. Extreme weather events, soaring average temperatures, and other hazards caused by climate change are increasing the risk to military operations and forces at home and in many parts of the world. Adapting the Army to climate change will return significant, lasting advantages in training, readiness, and capabilities at strategic and operational levels.

But simply adapting to climate change does not go far enough. Dangerous levels of greenhouse gases (GHG) have already accumulated in the Earth's atmosphere. Slowing the pace of this build-up may help avoid the worst predictions of today's climate models. While the Army cannot address all or even most GHG emissions, the right initiatives, investments, and policies can significantly reduce Army GHG emissions while at the same time enhancing readiness. In climate change terms, this is known as "mitigation."

The ACS envisions the Total Army as "a resilient and sustainable land force able to operate in all domains with effective mitigation and adaption measures against the key effects of climate change, consistent with Army modernization efforts." The ACS, accompanied by this Army Climate Strategy Implementation Plan (ACS-IP), represents the Army's current approach to addressing climate change. Over 100 stakeholders helped to develop the ACS-IP and identify the many existing Army efforts and programs that are already contributing to the ACS's goals. The ACS-IP describes concrete tasks, metrics, and resources necessary over the next five fiscal years (FYs) to establish progress and lay the foundation for enduring change beyond 2027.

The effects of climate change will be a feature of global conditions for the foreseeable future. As such, the Army must continually adjust the ACS-IP to reflect the best science and cutting-edge technologies. In FY25, the Army will assess progress, revisit assumptions, update and refresh the way ahead.

RACHEL JACOBSON
Assistant Secretary of the Army
Installations, Energy and Environment

DANIEL M. KLIPPSTEIN 21 SEP 2022
Acting Deputy Chief of Staff, G-9

I. Introduction.

The Army Climate Strategy Implementation Plan (ACS-IP) is the blueprint for the Army's enterprise-wide climate change adaptation and mitigation measures through FY27. This plan directly supports the Army Climate Strategy (ACS), which was approved by the SecArmy and published on 08 February 2022. Completing ACS-IP tasks from fall 2022 through summer 2027 will result in a Total Army that is better able to train, deploy, fight, and win the nation's wars while reducing the force's overall GHG emissions. Ultimately, the ACS-IP does not change the Army's core purpose.

This plan is informed by the reality of climate change. Soldiers are already experiencing changing physical environments. Scientific forecasts predict that those environmental changes will become more severe as the 21st century progresses. Through the activities, investments, and initiatives identified in the ACS-IP, plus countless other ongoing efforts, the Army will lead and inspire innovation and cutting-edge technology-driven solutions to meet this reality. By reducing GHG emissions and mitigating the effects of climate change, the Army's mission will be more sustainable well into the future.

The ACS describes long-term goals over several decades stretching as far as 2050. The ACS-IP, however, focuses on implementing specific actions over the next five FYs. The ACS-IP synchronizes all lines of effort (LOE) and objectives to a single, initial time horizon without reaching too far into assumed future conditions that cannot be accurately forecasted today. Using a dynamic process with robust data collection over a five-year period, the Army can recalibrate the ACS-IP to continually reflect best practices and new science and technology. The ACS-IP describes necessary tasks through FY27 that will lay the foundation for achieving the ACS's 2050 vision.

By executing the actions outlined in the ACS-IP, the Army will begin to create a climate- and sustainability-informed workforce and integrate climate change adaptation and mitigation appropriately into operations and programs. The ACS-IP responds to changes in the climate and operating environment, supports Department of Defense (DoD) and federal government climate change goals, and promotes U.S. national security interests.

II. Situation.

Climate change threatens Army missions, infrastructure, and people. The measurable and sustained increase in average global temperatures since 1880 has already caused significant degradation in environments around the world as evidenced by shrinking polar ice caps and glaciers, rising sea levels, saltwater intrusion into coastal areas, changes in rainfall patterns, and more frequent and severe extreme weather events. Based on projections from the Intergovernmental Panel on Climate Change and others in the scientific community, the effects of climate change are expected to worsen without intervention.

It has long been recognized that the effects of climate change pose a national security threat. Indeed, climate change has been described as a “threat multiplier.” For example, higher average temperatures and shrinking polar sea ice will open multiple strategic avenues of approach. The Arctic will become more accessible to military forces and civilian commerce in the coming decades, meaning that Army forces must be more ready to defend the homeland and its circumpolar and transpolar approaches. Climate change will alter natural and social systems. Extreme drought and flooding will displace individuals and communities, increasing the potential for human conflict and the demand for Army humanitarian relief and disaster response at home and abroad. For the foreseeable future, climate impacts will disrupt Army activities and increase the frequency of crisis deployments. Future competitive advantage requires enhanced operational capabilities reflecting changing environmental conditions. The Army must strengthen those capabilities through a combination of installation management, training, acquisition and logistics initiatives.

The ACS-IP relies on four key assumptions to enable action:

a. First, that changes in human behavior can mitigate both the magnitude and severity of the negative consequences resulting from climate change.

b. Second, that the Army will continue to prioritize its operations, activities, investments (OAI), and policies based on available funding. Simply put, the Army will not be able to afford to do everything it *could* do, and therefore must prioritize what it *will* do.

c. Third, that the quantity of commodities, raw materials, and other products available through market supply chains will be sufficient to meet the Army’s prioritized requirements for the duration of the ACS-IP.

d. Fourth, that emerging technologies will produce systems that are designed to be more efficient, increase the use of renewable energy, and reduce Army GHG emissions.

In summary, climate change poses unique challenges to U.S. national interests and the Army at all levels. Observed changes in today’s environment increase demands on the U.S. military and risks the Army’s ability to train, deploy, fight, and win the nation's wars. All Army components and organizations are addressing climate change under current authorities, however, these efforts have not, until now, been aligned in one plan to optimize effectiveness and efficiency. The Army must strategically leverage the entire enterprise to mitigate and adapt to climate change.

III. End State.

When the objectives and tasks outlined in the ACS-IP are achieved, the Army will be more resilient, capable, and ready to fight and win the nation’s wars in all

environments around the globe. The Army will have in place clear policies, informed guidance, and prioritized direction that supports the long-term goals of the ACS. Through the ACS-IP, the Army will integrate climate change considerations at every level, resulting in modern installations and equipment, enhanced partnerships, and a Total Army trained and educated to operate in a climate-altered world. The Army will also be contributing to nationwide efforts to address the effects of climate change.

IV. Problem Statement.

The Army today is not sufficiently climate-resilient. Army investments and partnerships are not optimized for a climate-altered world. Absent targeted planning, the Army's current trajectory of mitigation and adaptation will not achieve the ACS's 2050 end state.

V. Mission.

Through the end of FY27, the United States Army will leverage its enterprise and execute initiatives to adapt to and operate in climate-altered environments, mitigate Army GHG emissions, and set the conditions for achieving the ACS end state, all of which support the nation's climate change goals and address national security threats.

VI. Strategic Approach.

The objectives and tasks outlined in the ACS-IP will drive change across Army installations, acquisition, logistics, and training. Some of these changes will be completed within a few years, but others will take much longer to fully realize. As a result, the Army must remain nimble as it maps out actions to transform into the Army of 2050. Technology in this field is rapidly advancing and the science continues to evolve. Considering the complexity of the challenge, this ACS-IP identifies essential steps that the Army will pursue during FY23-27, which have been designed for early progress. Data-based learning will inform subsequent action.

This initial implementation plan focuses on near-term tasks, analyses, and planning that will lay the groundwork for future action. The three LOEs in this plan mirror those in the ACS. Each implementation LOE was developed through a collaborative process with stakeholders using ACS themes to ensure completeness of the ACS-IP (see Table 1). Each LOE contain tasks which, if executed successfully, will collectively achieve the objectives listed in Table 1 and Annex A.

Lines of Effort	Ways and Means	Objectives
1. Installations	• Resilient energy and water supply • Carbon free electricity • Efficient and sustainable infrastructure • Non-tactical fleet electrification • Sustainable land management • Enhanced planning	• Infrastructure resilience optimized • Infrastructure sustainability enhanced • Land management adapted to climate change risks • Future access to training and testing lands secured • Army GHG emissions mitigated
2. Acquisition and Logistics	• Deployment of advanced technology • Reduced fuel consumption • Future contingency basing • Clean procurement • Resilient supply chains	• Sustainment demand reduced • Operational and contingency basing capability increased • Climate resilience strengthened
3. Training	• What the Army trains • How the Army trains	• Train and educate the Army to operate in a climate-altered world

Table 1. *ACS-IP LOEs, Themes, and Objectives.*

By achieving all the ACS-IP objectives, the Army will establish vital momentum towards the ACS's 2050 vision. Reaching these objectives will also enable significant, near-term improvements in Army GHG emissions and the Army's ability to operate in a climate-altered world.

This implementation plan is designed to enhance, but not duplicate, existing efforts. The Army must ensure climate-related actions remain integrated and synchronized with Army institutional strategies, priorities, and requirements. In particular, ACS implementation will be most effective through close integration with the Army Campaign Plan; the Army Synchronization Meeting; the Planning, Programming, Budgeting, and Execution (PPBE) process; Total Army Analysis (TAA); and other Army forums that support institutional action and investments. This will allow the force to realize the ACS end state while maintaining the Army's core warfighting capabilities. Coordination with the Army Installations Strategy Implementation Plan will also be essential.

This document represents the initial ACS implementation that becomes effective upon approval. In FY25 a sequel plan will be developed to build on the Army's progress as demonstrated by data-driven metrics and newly observed conditions, to maintain the trajectory towards the ACS's 2050 end state. The Army will continuously build on progress with the intent of updating this implementation plan at three-year intervals. Each future ACS-IP iteration will document and consider the results and lessons of previous execution. Updates will also consider changes in the strategic environment to keep the Army on track to achieve the ACS end state.

VII. Implementation Guidance.

The ACS provides overall strategic guidance and direction for the Army to address climate change. During ACS implementation planning, the terminology, concepts and topics below were identified as requiring elaboration.

Use existing Army processes. This plan does not replace any of the Army's standard processes for developing and implementing institutional strategy. Actions carried out under this plan must be integrated as early as practical into existing governance, systems, and structures. Headquarters, Department of the Army (HQDA) staff will carefully assess whether a given ACS-IP task can be achieved through an existing Army strategic document, process, or forum. Whenever possible, HQDA should seek institutional change via existing channels in the first instance. For example, all resourcing requirements must go through standard Army PPBE processes. Such integration will avoid duplication of efforts and enable the Army to become more deliberate and responsive in its approach to addressing climate change.

Alliances and partnerships. The Army will maximize its return on investment by leveraging stakeholders' efforts and enhancing partnerships. The Army will continue working with the Office of the Secretary of Defense, the other military Services, and other federal agencies to seek synergies of resources and expertise in areas of shared interest. The Army will also support U.S. efforts to strengthen international collaboration on climate change by incorporating climate change into military-to-military engagements with allied and partner land forces, wherever appropriate. As a part of disaster response and risk reduction, for example, the Army will share climate change adaptation and mitigation lessons and best practices with allies and partners in appropriate forums for the duration of this plan. As carbon free systems and platforms become available, the Army will recommend their incorporation into Security Assistance and Security Cooperation activities when and where possible. Similarly, future Foreign Military Sales should offer options to foreign customers that feature high energy efficiency and the least potential for environmental harm. Interoperability between the Army, allies, partners, and other components of the DoD is essential for effective military operations. This plan will advance interoperability and reduce the negative climate effects of military operations and activities.

Microgrids and islanding. Microgrids are localized electrical systems with the ability to manage multiple energy sources and loads. Microgrids may operate in grid-connected mode or as independent systems disconnected from the power grid. Operating in a grid-disconnected mode is called “islanding” from the regular grid. The components of a microgrid vary from place to place and unit to unit depending on local conditions and resources and the specificities of the system. The Army currently operates both installation and tactical microgrids. The essential characteristic of any Army microgrid is its ability to power mission-critical systems of an installation or contingency base in “island” mode during grid disturbances and disruptions. Real Property Master Plans, Installation Geospatial Information & Services layers, and the associated investment plans are avenues for documenting details of individual microgrid projects. Installation staff may seek expert advice from the installations enterprise when planning microgrids.

Critical missions. The Army’s abilities to deploy, sustain, fight, and win are built upon secure, reliable, and resilient execution of certain mission-essential tasks and mission-essential functions across all operating environments. Many of these tasks and functions either provide support to or require support from task-critical assets. A “critical mission” is any mission of such high importance that its incapacitation or destruction would severely degrade the Army’s ability to support task-critical assets or execute mission-essential tasks or functions. Per the Army’s Installation Energy and Water Resilience Policy (Army Directive [AD] 2020-03), the senior commander who exercises Army command authority over an installation is responsible for identifying the critical missions on that installation. All uses of “critical mission” in this plan strictly refer to this definition and the set of missions, by installation, that Army senior commanders have identified. For additional guidance and discussion on critical missions, see AD 2020-03.

Land Holding Commands (LHCs). See Annex C for a definition and by-name list of LHCs. Throughout this plan, the term “LHC” may refer either to all eight LHCs or a subset of them. For example, whenever a specific LHC is designated as the Office of Primary Responsibility (OPR), listing “LHCs” as Office of Coordinating Responsibility (OCR) refers to the other seven LHCs. An organization cannot be both OPR and OCR for the same task.

Tier 1 suppliers. Supplier tiering is the process of organizing firms in a supply chain into logical groups (“tiers”) based on their closeness to a given reference point (usually the consumer) and their importance to the supply chain. As a vital link in Army supply chains, “Tier 1” suppliers conduct business directly with the Army. Tier 1 suppliers, including contracted manufacturing facilities and production partners, deliver end products that the Army needs. Tier 1 suppliers usually add final assembly and manufacturing labor to a supply chain in order to assemble final products in satisfaction of Army requirements.

Army scope 1 GHG emissions. Scope 1 emissions are direct GHG emissions that occur from sources controlled or owned by a given organization. Until otherwise directed, the Army will use its current methodology for counting scope 1 GHG emissions.[1] This method counts "direct emissions" from Army vehicles and equipment, stationary sources, on-site landfills, wastewater treatment facilities, and fugitive emissions as scope 1. The Army calculates operational GHG emissions by tracking liquid fuel purchases for tactical vehicles and mobile equipment, no matter where those vehicles or equipment are used. The Army currently does not disaggregate its operational GHG emissions by physical location. The Army is aware of the potential for this approach to change in the future, which may require the Army to count all scope 1 and scope 2 GHG emissions based on the installations where they are generated.[2]

Supplement resources through technology demonstration programs. Army organizations may participate in many technology assessment and demonstration programs which provide resources to test and validate new ideas. Such programs include the Strategic Environmental Research and Development Program, Environmental Security Technology Certification Program, National Defense Center for Energy & Environment programs, Operational Energy Capability Improvement Fund, and Operational Energy Prototyping Fund. Over the long term, successful climate change adaptation and mitigation will depend on methods and technologies which have yet to be developed or perfected. Therefore, near-term participation in technology demonstration programs provide potential ways to partner with industry and the scientific community to further explore future requirements and capabilities.

Training must continue. While training may look different in the future, the Army will *not* simply cancel training or other readiness-generating activities to mitigate climate change. Rather, Army training will adapt through better policy, improved technology, and innovative approaches.

VIII. Objectives, Tasks, and Metrics.

Each ACS-IP LOE contains objectives and supporting tasks necessary to achieve that LOE's strategic outcomes. Annex A lists all the objectives and specified tasks in each LOE.

Each task includes an Army Secretariat office that will oversee the task; an Army Staff (ARSTAF) office that will integrate actions, data, and reports associated with the task; the Army Commands (ACOMs), Army Service Component Commands (ASCCs), and Direct Reporting Units (DRUs) that will execute the task; and the FY in which the task will be completed. If a task will be completed more than once over the duration of the ACS-IP, multiple FYs are listed.

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[1] The Army follows the Federal Energy Management Program methodology for counting GHG emissions, as published by the U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy.
[2] Scope 2 GHG emissions are indirectly attributable to Army OAI based on how the associated energy is procured, not what that energy is used to power (e.g., for electricity, steam, hot / chilled water, etc.).

Annex A also includes metrics for each task in a separate table below the task lists. These metrics will enable task executors to report - and integrators to track - accomplishment of ACS-IP objectives over time.

IX. Prioritization.

One key function of the ACS-IP is helping the Army prioritize climate change related actions so that they can be integrated with all the Army's other OAI. The ACS-IP does ***not*** supersede or replace any Army-wide prioritization document or process. This plan does, however, prioritize ACS-IP objectives and tasks against each other, placing each element into one of three bins.

Critical priorities must be completed not later than the specified FY. Failure to do so will present a major challenge to keeping the Army on track towards the ACS end state. If a critical priority is at risk, additional resources should be identified to ensure on-time accomplishment. Critical ACS-IP priorities meet one or more of the following criteria:

- Army Senior Leader (ASL) or senior executive leader directed priority
- Directly supports a goal or task directed by Executive Order (EO) or federal law
- Has high external visibility and stakeholder interest
- Offers well-documented, high return on investment for adapting to climate change or mitigating Army GHG emissions

Important priorities are those efforts that can have a significant positive impact on current or future climate change adaptation or mitigation, including any initial steps in long-term processes to that effect.

Desirable priorities drive beneficial outcomes that the Army wishes to accomplish within the scope of the ACS-IP. In some instances, desirable actions enable higher priorities but are not essential components of accomplishing those priorities.

The priority of each ACS-IP objective and task is noted in Annex A.

X. Resources.

In early 2021, the Army began tracking programmed resources by their alignment to climate change adaptation and mitigation. Since then, the Army has continuously improved its ability to track and report climate change-related OAI that also support other Army programs. This ongoing analysis allows the Army to assess and potentially adjust climate-related OAI based on the imperatives in the ACS and tally the programmed resources which support and enable the ACS-IP. Considerable funding has been programmed in the last two President's Budgets for Army programs that also support Army climate mitigation and adaptation but are not strictly dedicated to climate change adaptation or mitigation (see Figure 1).

In addition to appropriated funds, the Army will seek innovative sources of funds to meet every ACS-IP objective in the target FYs specified in this plan. Annex B contains a current snapshot of the estimated additional funds required to achieve each ACS-IP objective.

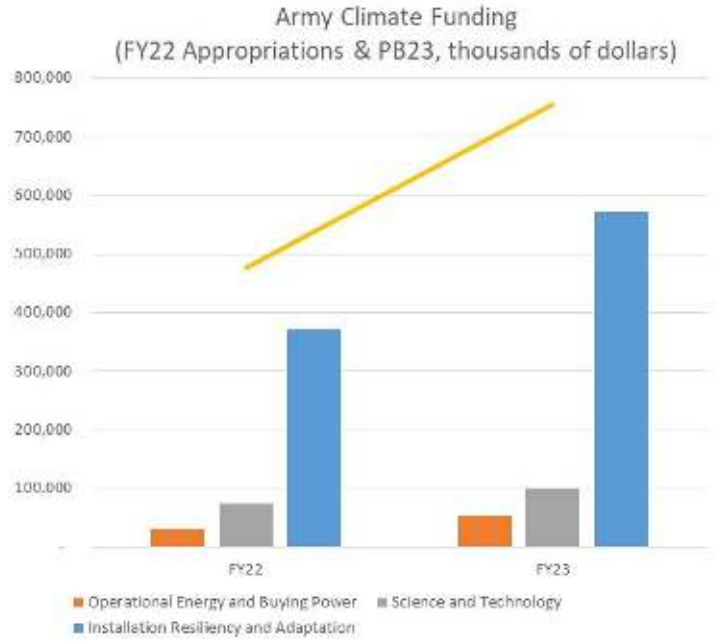

Figure 1. Army Climate Funding as of August 2022

In the near-term, spend plans will need to optimize resource allocation to the highest priorities and accept risk in those areas that are currently unfunded. In the long-term, the use of existing PPBE processes will be essential to integrating climate-related priorities with other Army requirements. Consequently, the ACS-IP presents resource-informed requirements, along with their relative priority to one another, to aid ASLs in making holistic and informed resource decisions.

XI. Enabling and Parallel Efforts.

The ACS-IP was informed by a broad survey of ongoing Army efforts that are running parallel to one or more ACS-IP LOEs. In many cases, ACS-IP objectives and tasks have been designed to leverage those efforts as important enablers towards the ACS end state.

For at least the past thirty years, adaptation to climate change has been part of the Army's strategic thinking. Environmental projections have informed Army training, technology, doctrine, and policies since the early 1990s. Similarly, climate change mitigation is not new to the Army. For decades the Army has been promoting energy efficiency and sound environmental stewardship. For example, the Army has continuously sought to improve fuel efficiency of its vehicles. Army land management, long a means of preserving tracts of land essential for Army training and other activities and creating buffers to protect against encroachment, has created space for natural carbon sequestration to take place. These pre-existing stewardship practices, which have the additional benefit of mitigating some effects of climate change, continue today and will continue into the future, not only because they are good for the environment, but also because they enhance Army readiness and modernization.

XII. Risks.

Climate change itself poses significant military risks to the Army. While these risks are important to address, this section will not cover them in detail. Several of the references for this plan, especially the ACS and the DoD Climate Risk Analysis, describe in greater detail climate change hazards, vulnerabilities, and risks.

Failure to execute the ACS-IP is likely to result in specific negative impacts to Army missions and forces, thereby increasing national security threats. The following hazards and consequences were identified during ACS-IP development:

a. Failure to resource all objectives adequately will delay Army adaptation and mitigation, potentially failing to keep pace with risks associated with climate change.

b. Failure to modernize Army platforms, equipment, and installations will result in the inability to address the largest sources of Army GHG emissions.

c. Failure to identify key vulnerabilities and military risks due to climate change will prevent the Army from strategically preparing for future conflicts, including conflicts where fossil fuel supplies can be severely affected by adversary actions.

d. Failure to take advantage of key carbon sequestration opportunities through improved Army land management practices and partnerships on and adjacent to Army lands will slow the pace of Army GHG emissions reduction.

e. Failure to capitalize on opportunities created by emerging technology and key partnerships across all sectors will result in reduced operational and installation effectiveness and create risks to the Army's abilities to generate forces, project power, and respond to crisis.

XIII. Governance.

a. Purpose and Structure.

Purpose. ACS-IP governance is the process through which Army leaders will make strategic decisions, provide guidance, and maintain accountability of ACS implementation.

ACS General Officer Steering Committee (ACS GOSC). The ACS GOSC is responsible for resolving issues, providing guidance, and selecting ACS-related topics for guidance or decision at Army Campaign Plan or ASL forums. The ACS GOSC will also facilitate routing of implementation requirements through the appropriate Army forum or process for review. The ACS GOSC will develop a charter which will specify the GOSC's principal members, their responsibilities to the GOSC, and any business rules internal to the function and operation of the GOSC (including voting). There will be

a GOSC session at least twice per year. The GOSC will consists of, at a minimum: Assistant Secretary of the Army (Installations, Energy and Environment) [ASA(IE&E)]; Assistant Secretary of the Army for Acquisition, Logistics and Technology [ASA(ALT)]; Assistant Secretary of the Army (Financial Management & Comptroller) [ASA(FM&C)]; Assistant Secretary of the Army (Manpower and Reserve Affairs) [ASA(M&RA)]; Commander, U.S. Army Materiel Command (AMC); Commander, U.S. Army Training and Doctrine Command (TRADOC); Commander, U.S. Army Futures Command (AFC); Director, Army National Guard (ARNG); Chief, U.S. Army Reserve; Commander, U.S. Army Corps of Engineers (USACE); and HQDA Deputy Chiefs of Staff (DCS), G-1, G-3/5/7, G-4, G-8, and G-9. The ACS GOSC may also include representatives from key stakeholder organizations, subject matter experts, and task executors.

Other Governance Groups. The ACS Council of Colonels (CoC) and action officer working group will provide input on the implementation of this plan and the overall ACS, with outputs directly informing ACS GOSC agendas and content. The ACS CoC will develop a charter which will specify the CoC's members, their responsibilities to the CoC, the relationship between the CoC and the ACS working group, and any business rules necessary to facilitate the activities of the CoC and ACS working group (including voting). The ACS working group and CoC may also include representatives from key stakeholder organizations, subject matter experts, and task executors. CoC and working group meetings will take place at least quarterly.

b. Roles and Responsibilities.

Oversight. The ASA(IE&E) is responsible for overall ACS implementation oversight in accordance with General Order 2020-01. Other Assistant Secretaries of the Army have an oversight role for specific objectives and tasks in their respective areas. Oversight responsibilities include clarifying strategic direction; and reviewing, confirming, or modifying Army policy as necessary for executing the ACS-IP. Deputy assistant secretaries should collaborate with integrators, executors, and stakeholders to develop appropriate metrics and score cards for tracking execution progress. The ASA(IE&E), in coordination with DCS, G-9, will schedule and advocate for inclusion of ACS and ACS-IP topics on ASL or Army Campaign Plan forum agendas.

Integration. DCS, G-9 advises the Army enterprise on overall ACS implementation and integrates governance activities. DCS, G-9 will internally synchronize and integrate ACS implementation both at the ACS-IP LOE level and across all the plan's LOEs in order to facilitate and inform Army-wide planning, resourcing, and execution tracking. DCS, G-9 will also approve standard ACS-IP formats for reporting LOE and task progress, resource requirements, and issues to ACS governance groups.

The Office of the DCS, G-9 (ODCS, G-9) is the supported organization and the Army-wide ACS-IP implementation lead. As such, ODCS, G-9 will integrate all governance activities at LOE level and above. This includes scheduling and setting agendas for ACS GOSC sessions, action officer working group meetings, and CoC

meetings; providing continual analysis of and input to policies, requirements, plans, resource needs, and priorities; submitting consolidated (multi-LOE) status reports to ASLs and Army Campaign Plan forums; and facilitating integration between ACS-IP, the Army Campaign Plan, and other applicable Army forums, such as PPBE processes.

Task level ARSTAF integrators are also designated in this plan. They will provide global synchronization / integration and facilitate implementation for their assigned task(s). Task integrators are best placed to seek the participation or cooperation of Army stakeholders and partners in the private sector, academia, other government agencies, and other military departments. Doing so is a key element of enabling ACS-IP execution. Task integrators will also gather data, progress reports, resource requirements, and issues from their task executor(s), compile them using a standard reporting format approved by DCS, G-9, and report the result to both the office(s) overseeing their task(s) as well as ODCS, G-9. Task oversight, task integrators, and ODCS, G-9 will coordinate to ensure the right content is presented to ACS governance meetings.

Execution. Many commands and organizations throughout the Army will play key roles in executing this plan. OPRs and OCRs for each ACS-IP task are listed by task in Annex A. ACS-IP task executors are responsible for planning, executing, and leading the actions and decisions required to accomplish their assigned tasks. For example, ACS-IP execution includes developing and overseeing execution plans, action plans, operations orders, command/component guidance, task resourcing and budgets, and routine status updates. Executors will provide task-level briefings to working group, CoC, and GOSC sessions, as needed.

ACS-IP task executors, in coordination with their integrators and other Army stakeholders, will identify resourcing requirements, actions, and decisions necessary to complete their assigned tasks. Executors will also collaborate with their integrators to refine or develop metrics and reporting templates for tracking the progress of their tasks. Executors will obtain ACS GOSC approval of their execution plans and metrics.

XIV. Conclusion.

The Army's core purpose has not changed: to deploy, fight, and win the nation's wars by providing ready, prompt, and sustained land dominance as part of the Joint Force. Bold actions now will ensure the Army remains ready for this primary mission while setting the stage for long-term climate change adaptation and mitigation. Executing this plan plays a critical role in modernizing and preparing the Army to operate in the environmental extremes that the 21st century will present. Creating momentum towards the ACS end state requires an Army-wide effort with targeted action and thoughtful prioritization. The ACS-IP harmonizes activity on installations, in modernization, and during training to make the Total Army increasingly resilient, capable, and ready to fight and win the nation's wars in climate-altered environments.

ANNEX A

ACS-IP LINE OF EFFORT DETAILS

This annex describes the ACS-IP LOEs in detail. Each task table begins by restating the LOE's strategic outcomes, then breaks down the LOE into a series of 2027 Objectives, each of which maps to an associated "Intermediate Objective" from the ACS. Each objective includes a description of one or more tasks with a unique identifying number, task description, the Secretariat office responsible for task oversight, the ARSTAF integrator for that task, the executors responsible for achieving the task at the strategic level, and the target FY in which the task should be completed. Throughout this Annex, two-letter parentheticals after ARSTAF office names are HQDA staff division-level designators.

Beside each 2027 Objective and underneath each task's number there is a letter in square brackets: [C], [I], or [D]. These are prioritization designators as determined during the planning process, and stand for Critical, Important, and Desirable priorities, respectively. The ACS-IP does ***not*** supersede or replace any Army-wide prioritization document or process. This plan does, however, prioritize ACS-IP objectives and tasks against each other, placing each element into context and helping to inform Army-wide priorities. See Section IX for detailed explanations of the three prioritization bins.

I. LOE 1.

a. Objectives, Tasks, and Prioritization.

LOE 1. Installations.					
Strategic Outcomes. • Infrastructure resilience optimized • Infrastructure sustainability enhanced • Land management adapted to climate change risks • Future access to training and testing lands secured • Army GHG emissions mitigated					
ACS-IP 2027 Objective 1.a. [C] Number of microgrids supporting critical requirements on priority installations increased by 30 percent, from a FY21 baseline.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.a.1 **[I]**	Develop 20 microgrid projects that are either in design or under construction by 2024	ASA(IE&E), Deputy Assistant Secretary of the Army for Energy and Sustain-ability) [DASA(E&S)]	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, Office of the Chief of the Army Reserve (OCAR), ARNG	FY24

1.a.2 **[I]**	Complete 15 microgrid projects (operational by the end of FY26)	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY26
1.a.3 **[I]**	Complete 20 microgrid projects (operational by the end of FY27)	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY27
1.a.4 **[C]**	Increase microgrid coverage to 30% of critical mission demand on all installations	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY27
1.a.5 **[C]**	Increase microgrid coverage to 50% of critical mission demand on Mission Assurance installations, Power Projection Platforms, and Mobilization Force Generation Installations	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY27
ACS-IP 2027 Objective 1.b. [C] Carbon intensity of power generation for Army critical mission demands reduced.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.b.1 **[C]**	Complete no less than 3 on-site carbon-free power generation projects	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY23
1.b.2 **[C]**	Complete no less than 10 onsite carbon-free power generation projects	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY27
1.b.3 **[C]**	Increase on-site carbon-free power generation capacity by at least 15% of critical mission load on Mission Assurance installations, Power Projection Platforms, and Mobilization Force Generation Installations	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- USACE, OCAR, ARNG	FY27

ACS-IP 2027 Objective 1.c. [I] Conditions set for 100% carbon-free electricity on all 137 Army installations in 2030.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.c.1 **[C]**	In collaboration with energy suppliers and local utilities, develop installation plans to achieve 100% carbon-free electricity by 2030	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- LHCs, U.S. Army Office of Energy Initiatives (OEI)	FY25
1.c.2 **[I]**	Reduce carbon intensity of electricity supply for Army LHCs by 60%, from a 2008 baseline	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- LHCs OCRs- USACE, OEI	FY27
ACS-IP 2027 Objective 1.d. [I] Building automation systems (BAS) implemented in 90% of Army facilities where it is determined cost-effective to install and operate such systems.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.d.1 **[I]**	Complete no less than 10 BAS projects	ASA(IE&E), Deputy Assistant Secretary of the Army (Installations, Housing & Partner-ships) [DASA(IHP)]	HQDA G-9 (OD)	OPR- HQDA G-9 OCRs- LHCs, USACE, HQDA G-3/5/7, HQDA G-6	FY23
1.d.2 **[I]**	Provide HQDA guidance to facilitate identification and prioritization of BAS requirements	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- HQDA G-9 OCRs- AMC, ARNG, OCAR, USACE, HQDA G-3/5/7, HQDA G-6	FY23
ACS-IP 2027 Objective 1.e. [D] GHG emissions from the Army real property portfolio reduced by 40% from a 2008 baseline.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.e.1 **[D]**	Reduce GHG emissions from the Army real property portfolio by 10%, from a 2008 baseline	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- LHCs	FY23

1.e.2 **[D]**	Reduce GHG emissions from the Army real property portfolio by 40%, from a 2008 baseline	ASA(IE&E), DASA(E&S)	HQDA G-9 (OD)	OPR- AMC OCRs- LHCs	FY27
ACS-IP 2027 Objective 1.f. [I] Net GHG emissions from Army installations reduced by 20% from a new 2023 baseline.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.f.1 **[I]**	Reduce net GHG emissions from Army installations by 20%, from a FY23 baseline	ASA(IE&E), DASA(E&S)	HQDA G-9	OPR- AMC OCRs- LHCs	FY27
ACS-IP 2027 Objective 1.g. [C] Field a zero-emission light-duty non-tactical vehicle (NTV) fleet.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.g.1 **[I]**	Develop orders and guidance directing the purchase, leasing and use of the most efficient and effective fleet with the lowest carbon footprint possible	ASA(IE&E), DASA(E&S)	HQDA G-9	OPR- HQDA G-9 OCRs- ACOMs, ASCCs, and DRUs	FY23
1.g.2 **[C]**	Field a 100% zero-emission light-duty NTV fleet	ASA(IE&E), DASA(E&S)	HQDA G-9	OPR- AMC OCRs- ACOMs, ASCCs, and DRUs	FY27
ACS-IP 2027 Objective 1.h. [I] Forty percent of Army NTV fleet requirements (including medium and heavy-duty) are met using Zero Emission Vehicles (ZEVs)					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.h.1 **[I]**	Establish Army-wide policy favoring zero-emission, plug-in hybrid, and hybrid platforms for medium and heavy-duty NTV leases and purchases	ASA(IE&E), DASA(E&S)	HQDA G-9	OPR- ASA(IE&E), DASA(E&S) OCR- HQDA G-9	FY23
1.h.2 **[I]**	Meet 40% of all Army NTV requirements using ZEVs (including 100% of light-duty requirements)	ASA(IE&E), DASA(E&S)	HQDA G-9	OPR- AMC OCRs- ACOMs, ASCCs, and DRUs	FY27

ACS-IP 2027 Objective 1.i. [I] Acreage managed under Army Compatible Use Buffer (ACUB) / DoD Readiness and Environmental Protection Integration (REPI) programs increased.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.i.1 **[D]**	Inform local partners of ACUB/REPI opportunities	ASA(IE&E)	HQDA G-9	OPR- LHCs OCRs- HQDA G-9, AMC, ARNG	FY23
1.i.2 **[D]**	Advocate for expanded ACUB/REPI coverage as local circumstances permit	ASA(IE&E)	HQDA G-9	OPRs- LHCs OCRs- AMC, ARNG, HQDA G-9	FY23
1.i.3 **[I]**	Increase acreage managed under ACUB/REPI projects, from 2022 baseline	ASA(IE&E)	HQDA G-9	OPRs- AMC, ARNG OCRs- HQDA G-9, LHCs	FY27
ACS-IP 2027 Objective 1.j. [C] Climate change threat mitigation included in Army Military Construction (MILCON) and land management processes.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.j.1 **[C]**	Develop a roadmap for incorporating 1) use of sustainable building materials and 2) Engineering with Nature tools and techniques into MILCON planning and design processes	ASA(IE&E), Deputy Assistant Secretary of the Army (Environ-ment, Safety and Occupational Health) [DASA(ESOH)]	HQDA G-9	OPR- HQDA G-9 OCRs- AMC, USACE (U.S. Army Engineer Research and Development Center [ERDC]), ARNG, OCAR	FY23
1.j.2 **[C]**	Incorporate carbon sequestration considerations and decision support modeling into land management guidance and decision processes. Purpose: Meet Army readiness and operational requirements while maximizing carbon sequestration.	ASA(IE&E), DASA(ESOH)	HQDA G-9	OPRs- AMC, USACE, ARNG, OCAR OCRs- ASA(IE&E), HQDA G-9	FY24

1.j.3 **[C]**	Incorporate nature-based solutions, risk-based climate science, tools, technology, and adaptation measures into installation land management plans and disaster preparations. Standard: update integrated management plans for natural resources, wildland fire, cultural resources, pests, forestry, agriculture, grazing, urban forestry, and storm water	ASA(IE&E), DASA(ESOH)	HQDA G-9	OPR- LHCs OCR- HQDA G-9, USACE (ERDC)	FY27
ACS-IP 2027 Objective 1.k. [C] Stationing, construction, master planning, and fielding processes updated to add climate and environmental implications of modernization decisions.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
1.k.1 **[C]**	Update the Installation Management Application Resource Center with guidance, tools, and references to enable the integration of the latest climate and environmental science into Army stationing, construction, and fielding decision-making	ASA(IE&E)	HQDA G-9	OPR- HQDA G-9 OCR- HQDA G-3/5/7	FY23
1.k.2 **[C]**	Update Army Regulation (AR) 210-20 "*Real Property Master Planning for Army Installations*" to direct identification, analysis, and integration of climate and environmental implications in master planning	ASA(IE&E)	HQDA G-9	OPR- HQDA G-9 OCR- HQDA G-3/5/7	FY24
1.k.3 **[I]**	Update AR 5-10 "*Stationing*" to direct identification, analysis, and integration of climate and environmental implications from stationing options in stationing decision-making processes	ASA(IE&E)	HQDA G-3/5/7 (FM)	OPR- HQDA G-3/5/7 (FM) OCR- HQDA G-9	FY24

1.k.4 **[I]**	Update Department of the Army Pamphlet 5-13 "*Procedures for Army Stationing*" with guidance and instructions for identification, analysis, and integration of climate and environmental implications from stationing options during stationing decision-making processes	ASA(IE&E)	HQDA G-3/5/7 (FM)	OPR- HQDA G-3/5/7 (FM) OCR- HQDA G-9	FY26

Table A-1.

b. Metrics.

Objective	Metric(s)
1.a	• Number of Army installations with at least 1 microgrid at full operating capability • Number of microgrids at full operating capability on each Army installation • Percent of microgrid coverage supporting critical mission demand overall and by installation each FY • Number and cost by installation of microgrid projects each FY
1.b	• Percent of on-site carbon free power generation capable to supply/offset critical mission demands overall and by installations each FY • Number and cost by installation of carbon-free power generation projects each FY
1.c	• Percent of carbon-free electricity purchased overall and by installation each FY • Percent of carbon-free electricity consumed overall and by installation each FY • Number and cost by installation of carbon-free electricity contracts each FY
1.d	For each Army installation: • Percent of facilities on an installation assessed for cost effectiveness of BAS implementation • Percent of facilities (of those determined cost effective) in which BAS have been implemented
1.e	• FY Percent of GHG emissions reduced from the Army real property portfolio overall and by installation (from a 2008 baseline) • Number and cost by installation of GHG emission-reducing projects each FY
1.f	• FY Percent of net GHG emissions reduced from Army installations (from a FY23 baseline) • Number and cost by installation of GHG emission reducing projects each FY
1.g and 1.h	• Number of ZEVs out of total by vehicle class • Number and cost by installation of electric vehicle charging facility (EVCF) projects vs total requirement • Number of EVCF for NTV fleet use by installation vs total requirement
1.i	• Acres managed by ACUB/REPI and benefits accrued (e.g., acres added, metric tons of carbon dioxide equivalent sequestered, sustained Army access secured)

1.j	• Percent of Army installations' integrated management plans (for natural resources, wildland fire, cultural resources, pests, forestry, agriculture, grazing, urban forestry, or storm water) that incorporate climate change considerations
1.k	• Status/completion of regulation or reference updates

Table A-2.

II. LOE 2.

a. Objectives, Tasks, and Prioritization.

LOE 2. Acquisition & Logistics.					
Strategic Outcome. • Sustainment demand reduced • Operational and contingency basing capability increased • Climate resilience strengthened					
ACS-IP 2027 Objective 2.a. [C] Army Joint Light Tactical Vehicle (JLTV), Family of Medium Tactical Vehicles (FMTV), and Heavy Tactical Vehicle (HTV) fleets modernized to add mature electrification technologies commenced.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.a.1 **[C]**	Field Tactical Vehicle Electrification Kit (TVEK) to 12% of the Army's JLTV fleet	ASA(ALT)	HQDA G-8 (FD)	OPR- Program Executive Office for Combat Support & Combat Service Support (PEO CS&CSS) OCR- AFC	FY27
2.a.2 **[C]**	Field TVEK to 7% of the Army's FMTV fleet	ASA(ALT)	HQDA G-8 (FD)	OPR- PEO CS&CSS OCR- AFC	FY27
2.a.3 **[C]**	Field TVEK to 5% of the Army's HTV fleet	ASA(ALT)	HQDA G-8 (FD)	OPR- PEO CS&CSS OCR- AFC	FY27

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ACS-IP 2027 Objective 2.b. [C] Purpose-built hybrid-drive components developed.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.b.1 **[I]**	Develop hybrid-drive components for tactical wheeled and combat vehicles to include Common Tactical Trucks (CTT)	ASA(ALT)	HQDA G-8	OPR- AFC (U.S. Army Combat Capabilities Development Command [DEVCOM]) OCRs- HQDA G-8, PEO CS&CSS, Program Executive Office Ground Combat Systems (PEO GCS)	FY27
2.b.2 **[C]**	Develop high energy density vehicle energy storage and generation to Technology Readiness Level (TRL) 5	ASA(ALT)	HQDA G-8	OPR- AFC (DEVCOM) OCR- PEO CS&CSS	FY27
2.b.3 **[I]**	Test hybrid-drive in select tactical wheeled vehicles	ASA(ALT)	HQDA G-8	OPR- AFC (DEVCOM) OCRs- PEO CS&CSS, U.S. Army Test and Evaluation Command (ATEC)	FY27
2.b.4 **[I]**	Develop a roadmap for electrification of existing Army platforms (tactical wheeled vehicles, ground combat vehicles, aviation, watercraft, and support equipment) including operational priorities and expected return on investment	ASA(ALT)	HQDA G-8	OPR- AFC OCRs- ASA(ALT), ASA(IE&E), HQDA G-4, HQDA G-3/5/7	FY23

ACS-IP 2027 Objective 2.c. [I] Tactical charging capability design and development started.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.c.1 **[C]**	Conduct Operational Energy Analysis for charging solutions (wired and wireless)	ASA(ALT)	HQDA G-8	AFC (DEVCOM & Futures and Concepts Center [FCC])	FY24
2.c.2 **[I]**	Demonstrate a TRL 7 prototype Army Universal Tactical Power Architecture capability	ASA(ALT)	HQDA G-8	OPR- AFC (DEVCOM, FCC, & Sustainment Capabilities Development Integration Directorate) OCRs- USACE (ERDC), U.S. Army Pacific, PEO CS&CSS	FY25
2.c.3 **[D]**	Prototype the Battlefield Rapid Recharge Capability (stand-alone charger)	ASA(ALT)	HQDA G-8	OPR- AFC (DEVCOM) OCRs- PEO CS&CSS, USACE (ERDC)	FY26
ACS-IP 2027 Objective 2.d. [D] Predictive logistics capabilities that drive more precise and faster decisions demonstrated and fielding commenced.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.d.1 **[D]**	Demonstrate vehicle health monitoring sensors and data collectors for tactical wheeled vehicles and aviation (Enabled Brigade/Project Convergence)	ASA(ALT)	HQDA G-4	OPR- AMC OCRs- AFC, PEO CS&CSS, PEO Aviation, PEO GCS	FY23

2.d.2 **[D]**	Field initial increment of Predictive Logistics information technology / information systems to 1-2 brigades	ASA(ALT)	HQDA G-4	OPR- AMC OCRs- AFC, PEO CS&CSS, PEO Aviation, PEO Command Control Communi-cations - Tactical, PEO Enterprise Information Systems, PEO GCS	FY27
ACS-IP 2027 Objective 2.e. [C] Policies established that standardize contingency basing; contingency base master planning tools updated.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.e.1 **[C]**	Establish policy to acquire and implement battery storage solutions as part of contingency base microgrids	ASA(IE&E)	HQDA G-4	OPR- ASA(IE&E) OCRs - HQDA G-4, PEO CS&CSS	FY23
2.e.2 **[C]**	Establish a policy setting standards for using the most energy-efficient systems available for contingency basing, including renewable generation and battery storage where possible	ASA(IE&E)	HQDA G-4	OPR- ASA(IE&E) OCRs- HQDA G-4, PEO CS&CSS	FY23
2.e.3 **[C]**	Update Contingency Basing Planning Tools (Joint Construction Management System 5.0, Master Planning, Site Selection tools) to add renewable power generation systems, microgrids, and other highly efficient technologies	ASA(IE&E)	USACE	USACE (ERDC)	FY24

ACS-IP 2027 Objective 2.f. [I] Operational energy and contingency base water use reduced by 20% and 5%, respectively.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.f.1 **[I]**	Reduce operational energy use on contingency bases by 20% to 40% from an FY24 baseline	ASA(IE&E)	HQDA G-4	OPRs- ASCCs OCRs- ASA(ALT), AMC, HQDA G-4, HQDA G-9, USACE, base camp commanders	FY27
2.f.2 **[I]**	Reduce water use on contingency bases by 5% to 10% from an FY24 baseline	ASA(IE&E)	HQDA G-4	OPRs- ASCCs OCRs- ASA(ALT), AMC, HQDA G-4, HQDA G-9, USACE, base camp commanders	FY27
2.f.3 **[I]**	Reduce operational energy use from platforms and equipment (that are not part of a contingency base) by 10% from a FY24 baseline	ASA(IE&E)	HQDA G-4	OPR- AFC OCRs- ASA(ALT), AMC, HQDA G-4	
2.f.4 **[D]**	Prototype technology to produce water at the point of need and reduce tactical water distribution demands	ASA(ALT)	HQDA G-4	OPR- AFC OCR- USACE (ERDC)	FY27
2.f.5 **[D]**	Develop technologies for energy efficient platforms and equipment to reduce overall operational energy demand	ASA(ALT)	HQDA G-4	AFC	FY27

Table continues next page.

ACS-IP 2027 Objective 2.g. [I] Advanced technologies developed to enable future carbon-free contingency basing.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.g.1 **[I]**	Conduct market research on efficient, durable, and transportable renewable energy, waste-to-energy, and waste heat harvesting system options	ASA(ALT)	HQDA G-4	OPR- PEO CS&CSS OCRs- AFC (DEVCOM & FCC), USACE (ERDC)	FY23
2.g.2 **[I]**	Develop renewable energy, waste-to-energy, and waste heat harvesting systems for tactical environments	ASA(ALT)	HQDA G-4	OPR- PEO CS&CSS OCRs- AFC (DEVCOM & FCC), USACE (ERDC)	FY27
2.g.3 **[I]**	Conduct research into carbon capture and alternative fuel production	ASA(ALT)	HQDA G-4	OPR- AFC (DEVCOM) OCR- USACE (ERDC)	FY27
ACS-IP 2027 Objective 2.h. [C] Army Buy Clean policy adopted.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.h.1 **[C]**	Develop Army policy to implement the federal Buy Clean policy for procurement of construction materials with lower embodied carbon emissions from manufacturing, transportation, installation, maintenance, and disposal sub-processes	ASA(IE&E)	HQDA G-9	OPR- ASA(ALT) OCRs- ASA(IE&E), HQDA G-4, HQDA G-9, USACE, Office of the General Counsel	Q2FY24
ACS-IP 2027 Objective 2.i. [I] Revised energy key performance parameter (KPP) implemented					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.i.1 **[D]**	Develop and modify system requirements to identify primary and secondary energy sources	ASA(ALT)	HQDA G-4	AFC (FCC)	FY23

2.i.2 **[D]**	Update Integrated Product Support elements to align with revised energy KPP	ASA(ALT)	HQDA G-4	AFC (FCC)	FY23
2.i.3 **[I]**	Review and update selected policy, doctrine, and other guidance to expand the Army's considerations of energy and power beyond petroleum-based fuels and carbon-intensive electricity generation, to include solar, wind, geothermal and nuclear	ASA(ALT)	HQDA G-4	OPR-ASA(IE&E) OCRs- PEO CS&CSS, AFC (DEVCOM & FCC), USACE (ERDC), AMC	Q2FY24
2.i.4 **[D]**	Develop a tool for Capability Developers which standardizes Energy Supportability Analysis (ESA) inputs and outputs	ASA(ALT)	G-4	AFC (FCC)	FY25
ACS-IP 2027 Objective 2.j. [I] Framework to quantify and report Scope 3 GHG emissions from Army procurements established.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.j.1 **[I]**	Publish a policy that: 1) Requires appropriate Army officials / activities to track GHG emissions resulting from Army procurement 2) Encourages vendors, suppliers, and contractors to pursue net-zero GHG emissions in any products and services supplied to the Army	ASA(ALT)	HQDA G-4	ASA(ALT)	FY23
2.j.2 **[D]**	Demonstrate a system that: 1) Records, via a common standard and metric, the GHG emissions reported as results of individual Army procurements 2) Aggregates all Army procurement GHG emissions over given periods of time	ASA(ALT)	HQDA G-4	AFC	FY27

ACS-IP 2027 Objective 2.k. [C] Army supply chain Tier 1 sources and contracts analyzed for climate change risks and vulnerabilities.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.k.1 **[I]**	Identify all the Army's Tier 1 sources and contracts	ASA(ALT)	HQDA G-4	AMC (ACC)	FY23
2.k.2 **[D]**	Conduct a strategic war-game or simulation to "stress test" exemplar Army supply chains. *Note*: This event is envisioned as the first in a continual series of such events, taking place roughly every other year.	ASA(ALT)	HQDA G-4	OPR- AMC OCRs- HQDA G-4, HQDA G-8, Center for Army Analysis	FY25
2.k.3 **[C]**	Describe and assess the key climate change risks and vulnerabilities to Army supply chain Tier 1 sources and contracts	ASA(ALT)	HQDA G-4	AMC	FY26
ACS-IP 2027 Objective 2.l. [I] Plans, policies, and contracts developed to ensure Army supply chain resilience.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
2.l.1 **[I]**	Establish a policy promoting Army supply chain resilience	ASA(ALT)	HQDA G-4	ASA(ALT)	FY23
2.l.2 **[D]**	Develop recommended standard contract language to ensure Army supply chain resilience	ASA(ALT)	HQDA G-4	OPR- HQDA G-4 OCR- AMC	FY24
2.l.3 **[I]**	Produce a strategic plan to systematically modernize Army supply chains, using the standard contract language as appropriate, in order to increase Army supply chain resilience	ASA(ALT)	HQDA G-4	OPR- HQDA G-4 OCR- AMC	FY25

Table A-3.

b. Metrics.

Objective	Metric(s)
2.a	• Number of mature electrification technologies installed, by tactical vehicle fleet, by FY

2.b	• Type of hybrid drive components developed, by platform, by weight class, by FY • Amount of energy density increase in TRL 5 vehicle energy storage.
2.c	• Status of Operational Energy Analysis for wired and wireless charging solutions by FY • Status of Network Architecture prototype demonstrations by FY • Status of tactical electric vehicle battlefield recharger prototypes by FY
2.d	• Number and type of predictive logistics technologies developed by FY • Number and type of predictive logistics technologies fielded by fleet, by echelon, by FY
2.e	• Status of policy on battery storage solutions for contingency base microgrids • Status of policy for using the most energy-efficient systems available for contingency basing • Number of contingency basing planning tools updated to add highly efficient technologies
2.f	• Percent reduction of operational energy use, by contingency base, by FY • Percent reduction of operational water use, by contingency base, by FY • Percent reduction of operational energy use, by type or class of non-contingency base platform / equipment, by FY
2.g	• Status of market research on energy, waste-to-energy, and waste heat harvesting system options • Number and type of renewable energy, waste-to-energy, and waste heat harvesting systems developed by FY • Status of research into carbon capture by FY • Status of research into alternative fuel production by FY
2.h	• Status of Army policy implementing “Buy Clean”
2.i	• Number of system requirements modified to identify primary and secondary energy sources by FY • Status of updates to Integrated Product Support elements • Number and types of policy, doctrine, and other guidance updated to expand considerations of energy and power by FY • Number and type of Capability Developers’ analytical tools updated to standardize ESA inputs and outputs
2.j	• Status of policy on GHG emissions tracking and pursuit of net-zero GHG emissions when supplying the Army • Status of system demonstration for recording and aggregating GHG emissions from Army procurements by FY
2.k	• Status of analysis of Army Tier 1 sources and contracts • Status of Tier 1 Army supply chain wargames / simulations, by event, by FY • Status of assessment of risks and vulnerabilities to Tier 1 sources and contracts
2.l	• Status of policy to promote Army supply chain resilience • Status of standard contract language ensuring Army supply chain resilience • Status of strategic plan to modernize Army supply chains

Table A-4.

III. LOE 3.

a. Objectives, Tasks, and Prioritization.

LOE 3. Training.					
Strategic Outcome. Train and educate the Army to operate in a climate-altered world					
ACS-IP 2027 Objective 3.a. [I] Biennial climate change lessons and best practices published.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.a.1 **[I]**	**Lessons learned published.** Collect and publish climate change-related lessons learned every two years. Conditions: Two sets of lessons per every two years, one set's max. classification is Controlled Unclassified Information (CUI); the second set's max. classification SECRET//NOFORN. Submit articles, observations, and after-action reviews to the Center for Army Lessons Learned (CALL). Standards: Publish climate lessons learned on CALL website	ASA(M&RA)	HQDA G-3/5/7 (SS)	TRADOC	FY24 FY26
3.a.2 **[I]**	**Climate and weather-related best practices published.** Collect and publish climate and weather-related adaptation and mitigation best practices every two years. Conditions: max. classification is CUI. Submit individual, unit, and organization best practices to CALL. Standards: Publish best practices on CALL website	ASA(M&RA)	HQDA G-3/5/7	TRADOC	FY24 FY26

ACS-IP 2027 Objective 3.b. [I] Update Army programs of instruction (POI) for leader development and workforce training to incorporate climate literacy.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.b.1 **[I]**	**Update leader development.** Update Professional Military Education (PME) POIs for leader development to incorporate climate literacy. Conditions: Given the DoD definition of climate literacy and using the existing POI update processes for the Army Officer Education System, Noncommissioned Officer Professional Development System, and Warrant Officer Education System. Standards: 1) Basic Officer Leader Course, Captains Career Course, Basic Leader Course, Advanced Leader Course, Senior Leaders Course, Warrant Officer Basic Course, and Warrant Officer Intermediate Level Education POIs prepare leaders to adapt to and operate in climate change-altered environments 2) Intermediate Level Education, senior service college, Master Leaders Course, Sergeant Majors Course, and Warrant Officer Senior Service Education POIs prepare leaders to develop strategy and plans informed by climate change science.	ASA(M&RA)	HQDA G-3/5/7	OPR-TRADOC OCR- U.S. Army War College	End of FY27

3.b.2 **[I]**	**Update workforce training.** Update Civilian Education System (CES) POIs for workforce training to incorporate climate literacy. Conditions: Given the DoD definition of climate literacy and using the existing POI update processes for CES courses. Standards: 1) Foundation and Basic Courses prepare leaders to adapt to and operate in climate change-altered environment. 2) Intermediate, Advanced, and Continuing Education for Senior Leaders courses prepare leaders to proactively reduce the military risk that climate change imposes on the Army.	ASA(M&RA)	HQDA G-1	TRADOC	End of FY27
ACS-IP 2027 Objective 3.c. [I] Modification Table of Organizational Equipment (MTOE) and Table of Distribution and Allowances (TDA) positions requiring advanced climate change credentials at strategic headquarters are identified.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.c.1 **[C]**	**Study strategic headquarters requirements.** Conduct a study to determine the climate credentials needed at HQDA, and ACOM, DRU, and ASCC headquarters	ASA(M&RA)	HQDA G-3/5/7 (FM)	OPR- AFC OCRs- ACOMs, ASCCs, DRUs	FY23

Table continues next page.

3.c.2 **[D]**	**Update MTOEs/TDAs.** Modify force designs to account for Soldiers and Army Civilians with approved climate credentials. Quantity, type, and level to be informed by the study conducted under task 3.c.1. (Synchronize with TAA 2026)	ASA(M&RA)	HQDA G-3/5/7 (FM)	OPR-HQDA G-3/5/7 (FM) OCRs-ASA(IE&E), HQDA G-9, ACOMs, ASCCs, DRUs	FYs 23/24
ACS-IP 2027 Objective 3.d. [I] Policies for recruiting, credentialing, and tracking climate-related expertise are in effect.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.d.1 **[I]**	**Establish credentials policy.** Establish Army-wide policy for the vetting and approving advanced credentials on climate change topics	ASA(M&RA)	HQDA G-1	ASA(M&RA)	FY23
3.d.2 **[D]**	**Establish talent tracking policy.** Establish Army-wide policy for identifying and tracking Soldiers and Army Civilians who hold approved advanced credentials on climate change topics	ASA(M&RA)	HQDA G-1	ASA(M&RA)	FY23
3.d.3 **[D]**	**Track expertise.** Update talent management tracking systems in accordance with (IAW) policy established in task 3.d.2.	ASA(M&RA)	HQDA G-1	OPRs-HQDA G-1 (Director of Military Personnel Manage-ment), Civilian Human Resources Agency (CHRA)	FY25

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ACS-IP 2027 Objective 3.e. [I] Ensure that all Army operational and strategic exercises and simulations account for climate change hazards and opportunities.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.e.1 **[I]**	**Describe implications of climate change.** Produce a reference document describing military-specific hazards and opportunities associated with climate change to inform Army training scenarios, simulations, and exercises (with sections specific to global conditions and each Combatant Command Area of Responsibility)	ASA(IE&E)	HQDA G-9	OPR- AFC OCRs- U.S. Army War College, TRADOC	FY23
3.e.2 **[I]**	**Revise exercise objectives and conditions.** Using the reference document developed under task 3.f.1, develop revised exercise objectives and conditions for each strategic or operational-level exercise	ASA(M&RA)	HQDA G-3/5/7 (SS)	OPR- HQDA G-3/5/7 (SS) OCRs- ACOMs, ASCCs, DRUs	FY24
3.e.3 **[I]**	**Implement modified exercise design.** Incorporate climate change into strategic and operational-level wargame and exercise designs while ensuring those events are executed IAW national, DoD, and HQDA strategic guidance	ASA(M&RA)	HQDA G-3/5/7 (SS)	OPR- HQDA G-3/5/7 (SS) OCRs- ACOMs, ASCCs, DRUs	FY26

Table continues next page.

ACS-IP 2027 Objective 3.f. [D] Potential to reduce GHG emissions is a factor in determining the Army's mix of distributed learning (DL), virtual learning, and resident courses.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.f.1 **[D]**	**Require cost-benefit analysis.** Establish a policy requiring identification and reporting of the potential benefits of reduced GHG emissions and the potential costs of modified/unmet learning objectives when assessing a course for resident, DL, or virtual learning versus its current mode. Use of a standard model for estimating GHG emissions should be mandatory, once that model is available	ASA(M&RA)	HQDA G-3/5/7 (TR)	OPR-HQDA G-3/5/7 (TR) OCRs-TRADOC, U.S. Army War College	FY23
3.f.2 **[D]**	**Develop a training emissions model.** Develop a standard model for estimating the quantity of GHG emissions reduced (or created) by changing a course to resident, DL, or virtual learning versus its current mode. Include both scope 1 emissions (GHGs produced as a direct resulting of the training itself) and scope 2 emissions (GHGs that are caused indirectly by the training, such as the GHG emissions resulting from transporting students to/from training locations)	ASA(M&RA)	HQDA G-3/5/7 (TR)	OPR-TRADOC OCRs-AMC, ASCCs	FY25

Table continues next page.

3.f.3 **[D]**	**Assess courses to optimize training modes.** Beginning in FY26, systematically reevaluate each PME and CES course to determine its optimal mode (resident, DL, or virtual) informed by an emissions vs outcomes cost-benefit analysis	ASA(M&RA)	HQDA G-3/5/7 (TR)	OPR- TRADOC OCR- U.S. Army War College	FY27
ACS-IP 2027 Objective 3.g. [C] Playbook of ways to reduce direct GHG emissions resulting from Army individual and collective training developed.					
Task No./ Pri.	**Task Description.**	**Task Oversight (Secretariat)**	**Task Integrator (ARSTAF)**	**Task Executor(s)**	**Target FY to Complete**
3.g.1 **[C]**	**Lower-emissions individual training handbook.** Using the lessons learned and best practices published under objective 3.a, produce a digital handbook of potential unit level individual training modifications that would reduce direct Army GHG emissions	ASA(M&RA)	HQDA G-3/5/7 (TR)	TRADOC	FY26
3.g.2 **[C]**	**Lower-emissions collective training handbook.** Using the lessons learned and best practices published under objective 3.a, produce a digital handbook of potential unit level collective training modifications that would reduce direct Army GHG emissions	ASA(M&RA)	HQDA G-3/5/7 (TR)	OPR- TRADOC OCRs- U.S. Army Forces Command (FORSCOM), AMC, ARNG, OCAR, ASCCs	FY26

Table A-5.

b. Metrics.

Objective	Metric(s)
3.a	• Number of climate change-related lessons published by FY • Number of climate or weather-related best practices published by FY
3.b	• Number of PME POIs updated to incorporate climate literacy by FY • Number of CES POIs updated to incorporate climate literacy by FY

3.c	• Status strategic headquarters requirements study by FY • Number of strategic headquarters MTOEs/TDAs updated to include climate expertise by FY
3.d	• Advanced credentials policy established and released for execution • Talent/expertise tracking policy established and released for execution • Status of talent management systems updates by FY • Percentage of approved MTOE and TDA positions designed for personnel holding approved climate-related credentials which are filled by people holding an approved credential by FY
3.e	• Number of strategic or operational level exercises whose exercise objectives and conditions have been revised by FY • Number of strategic or operational level exercises whose modified exercise design has been implemented by FY
3.f	• GHG emissions cost-benefit analysis policy established and released for execution • (Starting 2026) Number of PME and CES courses assessed for optimum training mode by FY
3.g	• Status of lower-emissions training handbooks' publication by FY

Table A-6.

ANNEX B

RESOURCING ESTIMATES

In early 2021, the Army began tracking programmed resources by their alignment to climate change adaptation and mitigation. Since then, the Army has continuously improved its ability to track and report climate-related OAI that also support other Army programs. The Army programmed considerable funding in the last two President's Budgets for Army programs that also support Army climate mitigation and adaptation (approximately $500 million to $800 million per FY). While the Army's appropriations and most recent budget request programmed significant resources to support numerous ACS-IP tasks, the Army will also seek innovative sources of funds to meet every ACS-IP objective in the target FYs specified in this plan.

The chart in ACS-IP Figure 1 (see Section X, above) provides a summation of every programmed Army resource flagged as "climate-change related" during two recent PPBE cycles. Some of these programs overlap with ACS-IP objectives and tasks, while others do not. The data provided below is the subset of the Army's "climate-change related" programs which apply directly to ACS implementation. Therefore, the totals reflected here in Annex B will, by definition, differ from those in Figure 1.

Tables in this annex consolidate Army-wide resourcing estimates by objective for each ACS-IP LOE. The second column of each table gives the total programmed funding for actions affecting each ACS-IP objective through the end of FY27. The third column of each table consolidates the Army's estimated other costs to achieve each ACS-IP objective on time. These estimates were developed in consultation with a dozen ACOMs, ASCCs, and DRUs. Should both the programmed funds and estimated other costs be appropriated in full, the total estimated cost of achieving each ACS-IP objective on time is shown in the fourth column of each table. Amounts in all tables are reported in millions of dollars and were rounded up to the nearest hundred thousand.

This annex does not take the place of official Army positions developed through existing PPBE processes. Rather, this annex presents consolidated estimates of ACS-IP resource requirements to aid holistic and resource-informed discussions.

I. LOE 1 Resourcing.

Objective	Programmed, FY23-27 ($M)	Estimated Other Costs ($M)	Total ($M)
1.a	$750.4	$1,515.0	$2,265.4
1.b	$316.6	$98.9	$415.6
1.c	$0	$31.0	$31.0
1.d	$0	$165.4	$165.4
1.e	$117.0	$610.7	$727.7
1.f	$0	$63.4	$63.4
1.g	$156.7	$562.2	$718.9
1.h	$0	$332.3	$332.3
1.i	$0	$38.6	$38.6
1.j	$174.5	$247.6	$422.1
1.k	$0	$51.7	$51.7
Total of LOE 1	**$1,515.3**	**$3,716.8**	**$5,232.1**

Table B-1.

II. LOE 2 Resourcing.

Objective	Programmed, FY23-27 ($M)	Estimated Other Costs ($M)	Total ($M)
2.a	$434.2	$9.0	$443.2
2.b	$292.6	$232.3	$524.9
2.c	$0	$24.5	$24.5
2.d	$10.3	$71.3	$81.6
2.e	$0	$3.0	$3.0
2.f	$257.5	$143.8	$401.3
2.g	$64.1	$59.6	$123.7
2.h	$0	$22.5	$22.5
2.i	$0	$8.0	$8.0
2.j	$0	$0	$0
2.k	$0	$0	$0
2.l	$0	$0	$0
Total of LOE 2	**$1,058.7**	**$573.9**	**$1,632.7**

Table B-2.

III. LOE 3 Resourcing.

LOE 3 was designed to maximize the use of internal program balancing and adjustment to complete specified tasks and achieve 2027 objectives. Because the associated OAI existed prior to the ACS and are broader than the ACS, their programmed funding has not been captured below.

During LOE 3 development, however, FORSCOM noted internal shortfalls of the expertise and capacity needed to complete task 3.g.2. HQDA G-8 recommends two contractor man-year equivalents (CME) for two FYs to serve as FORSCOM's OCR action officers for task 3.g.2. The associated costs are reflected below.

Objective	Programmed, FY23-27 ($M)	Estimated Other Costs ($M)	Total ($M)
3.a	$0	$0	$0
3.b	$0	$0	$0
3.c	$0	$0	$0
3.d	$0	$0	$0
3.e	$0	$0	$0
3.f	$0	$0	$0
3.g	$0	$1.0	$1.0
Total of LOE 3	**$0**	**$1.0**	**$1.0**

Table B-3.

ANNEX C

GLOSSARY

I. Abbreviations.

ACOM - Army Command

ACS - U.S. Army Climate Strategy

ACS-IP - Army Climate Strategy Implementation Plan

ACUB - Army Compatible Use Buffer program

AD - Army Directive

AFC - U.S. Army Futures Command

AMC - U.S. Army Materiel Command

AR - Army Regulation

ARNG - Army National Guard

ARSTAF - The Army Staff

ASA(ALT) - Assistant Secretary of the Army for Acquisition, Logistics and Technology

ASA(IE&E) - Assistant Secretary of the Army (Installations, Energy, and Environment)

ASA(M&RA) - Assistant Secretary of the Army (Manpower and Reserve Affairs)

ASCC - Army Service Component Command

ASL - Army Senior Leader

ATEC - U.S. Army Test and Evaluation Command

BAS - Building automation systems

CALL - Center for Army Lessons Learned

CES - Civilian Education System

CHRA - Civilian Human Resources Agency

CJCSM - Chairman of the Joint Chiefs of Staff Manual

CoC - Council of Colonels

CUI - Controlled Unclassified Information

CTT - Common Tactical Truck

DASA(E&S) - Deputy Assistant Secretary of the Army for Energy and Sustainability

DASA(ESOH) - Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health)

DASA(IHP) - Deputy Assistant Secretary of the Army (Installations, Housing & Partnerships)

DCS - Deputy Chief of Staff

DEVCOM - U.S. Army Combat Capabilities Development Command

DL - Distributed Learning

DoD - U.S. Department of Defense

DoDD - Department of Defense Directive

DRU - Direct Reporting Unit

EO - Executive Order

ERDC - U.S. Army Engineer Research and Development Center

ESA - Energy Supportability Analysis

EVCF - Electric Vehicle Charging Facility

FCC - Futures and Concepts Center

FMTV - Family of Medium Tactical Vehicles

FORSCOM - U.S. Army Forces Command

FY - Fiscal Year

GOSC - General Officer Steering Committee

HQDA - Headquarters, Department of the Army

HTV - Heavy Tactical Vehicle

JLTV - Joint Light Tactical Vehicle

KPP - Key Performance Parameter

LHC - Land Holding Command

LOE - Line of Effort

MTOE - Modification Table of Organizational Equipment

MTV - Medium Tactical Vehicle

OAI - Operations, activities, and initiatives

OCAR - Office of the Chief of Army Reserve

OCR - Office of coordinating responsibility

ODCS, G-9 - Office of the Deputy Chief of Staff, G-9

OEI - U.S. Army Office of Energy Initiatives

OPR - Office of primary responsibility

PEO CS&CSS - Program Executive Office Combat Support and Combat Service Support

PEO GCS - Program Executive Office Ground Combat Systems

PME - Professional Military Education

POI - Program of Instruction

PPBE - Planning, Programming, Budgeting, and Execution

REPI - Readiness and Environmental Protection Integration Program

SecArmy - Secretary of the Army

TAA - Total Army Analysis

TDA - Table of Distribution and Allowances

TRADOC - U.S. Army Training and Doctrine Command

TRL - Technology Readiness Level

TVEK - Tactical Vehicle Electrification Kit

UFC - Unified Facilities Criteria

USACE - U.S. Army Corps of Engineers

ZEV - Zero Emission Vehicle

II. Terms.

Adaptation. Adjustment in natural or human systems in anticipation of or response to a changing environment in a way that effectively uses beneficial opportunities or reduces negative efforts. (DoD Directive [DoDD] 4715. 21)

Army Senior Commanders. Designated by Army senior leadership to exercise command of Army installations. The command authority over the installation derives from the SecArmy's Title 10 authority over installations and is a direct delegation of command authority for the installation to the Senior Commander. The delegated authority includes all authorities inherent in command. The Senior Commander is normally, but not always, the senior General Officer at the installation. The Senior Commander uses the garrison command as the primary organization to provide services and resources to customers in support of accomplishing the installation command mission. (AR 600-20)

Army Senior Leaders. In this plan, the term "Army Senior Leaders" and its acronym "ASLs" refer exclusively to five individuals (as a group): SecArmy, the Chief of Staff of the Army, the Undersecretary of the Army, the Vice Chief of Staff of the Army, and the Sergeant Major of the Army.

Building Automation System. The system consisting of the Utility Monitoring and Control System Front-End and connected building control systems which provides for control of a building's electrical and mechanical systems as well as a user interface and supervisory capability. (Unified Facilities Criteria [UFC] 3-470-01)

Carbon free electricity. Electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current and thermal), geothermal, hydroelectric, nuclear, renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon dioxide emissions that meets U.S. Environmental Protection Agency (EPA) requirements. (EO 14057, Section 603d)

Climate change. Variations in average weather conditions that persist over multiple decades or longer that encompass increases and decreases in temperature, shifts in precipitation, and changing risks of certain types of severe weather events. (DoDD 4715. 21)

Critical mission. A mission of such high importance that its incapacitation or destruction would severely degrade the ability of the Army to support task-critical assets, or to execute the mission-essential tasks or mission-essential functions it supports in all operating environments. Senior commanders - in coordination with ACOMs, ASCCs, DRUs, mission owners, Army and non-Army tenant organizations, and garrison staff - identify critical missions on the installations over which they exercise command authority. (AD 2020-03)

Extreme weather events. Occurrences of unusually severe weather or climate conditions that can cause devastating impacts on communities and agricultural and natural ecosystems. (U.S. Department of Agriculture)

Greenhouse gases. Gases that trap heat in the Earth's atmosphere. They include carbon dioxide, methane, nitrous oxide, and chlorinated and fluorinated gases, and can be natural or anthropogenic. (U.S. Environmental Protection Agency)

Climate change hazard. Any security, environmental, demographic, political, technical, or social condition with potential to cause harm to the Army - *and whose probability or severity is likely to markedly increase under climate change-altered conditions.* (New definition; italicized clause added. Based on definition of "hazard" in Chairman of the Joint Chiefs of Staff Manual [CJCSM] 3105.01A, October 2021).

Hybrid vehicle. A road vehicle powered by an internal combustion engine in combination with one or more electric motors that uses energy stored in on-board batteries. The Army considers hybrids a potential bridging solution between legacy vehicle fleets powered entirely by internal combustion engines and future fleets powered entirely by zero-emission powertrains. (ACS)

Installation. The real property of a base, camp, post, station, yard, center, or other activity under the jurisdiction of SecArmy, including any leased facility, or in the case of an activity in a foreign country, under the operational control of SecArmy, without regard to the duration of operational control. Army installations may consist of one or more real property sites. The term includes federally owned or federally supported (state-owned but operated and maintained with federal funds) ARNG sites and facilities designated as depots, arsenals, ammunition plants, hospitals, terminals, and other special mission activities. It does not include any state-owned/state-supported (owned, operated, and maintained with state funds) ARNG installation or facility. Nor does it include any facility used primarily for Civil Works, rivers and harbors projects, or flood control projects. (ACS)

Land degradation. Long-term changes in land and soil (especially as a consequence of human activity), which result in soil loss, reduced soil fertility, coastal erosion, land subsidence, a reduced ability of the land to support native plants and animals, and reduced agricultural yields. Desertification is one type of land degradation. (DoD Installation Exposure to Climate Change at Home and Abroad, April 2021)

Land Holding Command. The accountable organization, as reflected in the Headquarters Installation Information System, that represents the designated entity responsible for exercising real property accountability of assigned locations. Collectively, these designated real property accountable organizations are considered Land Holding Commands.[3] (AD 2020-11)

Microgrids. Local electrical systems with the controls to manage multiple generation sources and loads. They can also disconnect from the power grid to operate independently during outages of the regular grid. A microgrid may reduce energy costs by providing grid services to the regular utility provider, such as demand response and frequency regulation. (ACS and Army Installation Energy and Water Strategic Plan)

Military risk. There are two categories of military risk: Risk-to-Mission and Risk-to-Force. Risk-to-Mission is the probability and severity-driven chance of causing harm to current or future military objectives. Risk-to-Force is the probability and severity-driven chance causing harm to the provision and sustainment of sufficient military resources. (adapted from CJCSM 3105.01A and Army Techniques Publication 5-19)

Mitigation. As it relates to climate change: Measures to reduce the amount and speed of future climate change by reducing emissions of heat-trapping gases or removing carbon dioxide from the atmosphere. (DoD Climate Risk Analysis, October 2021)

Mobilization Force Generation Installations. Army installations including federally activated State-operated installations designated to provide continuous Regular Component/RC power projection, combat preparation, post-mobilization training, sustainment capabilities, and pre-mobilization training support. (AR 525-93)

Net-zero emissions. A condition achieved when anthropogenic emissions of GHG to the atmosphere are balanced by anthropogenic removals of those same gases over a specified period (Special Report: Global Warming of 1.5 ºC, 2018). In the ACS and this plan, the “specified period” is a rolling 12 months generalized as, but not necessarily synchronized with, a given calendar year.

Non-tactical vehicle. A motor vehicle or trailer of commercial design acquired and assigned on the basis of authorization documents and used for providing administrative, direct mission, or operational transportation support of military functions. These roles

[3] At the time of publication, the eight LHCs were: AMC; U.S. Army Installation Management Command, a major subordinate command of AMC; USACE, excluding the Civil Works Portfolio; U.S. Army Central, Arlington National Cemetery, U.S. Army Europe and Africa, ARNG, and the U.S. Army Reserve.

include common support of installations and personnel; dedicated support to a specific unit or training activity; and conducting combat, tactical, and training operations. (AR 58-1)

Office of Coordinating Responsibility. The executor(s) providing essential inputs to enable task completion. When OCRs are specified in a plan or order, their input is a vital component of the execution process. OCR responsibility can be further delegated within the coordinating command or office to the lowest level needed to adequately inform the associated task.

Office of Primary Responsibility. The executor ultimately responsible for task completion. Control of the task can be delegated down to the lowest level needed to complete the task, but the OPR remains accountable to oversight officials and senior leaders for the end result.

Operational Energy. The energy required for training, moving, and sustaining military forces and weapons platforms for military operations. It includes energy used by power systems, generators, logistics assets, and weapons platforms employed by military forces during training and in the field. It does not include either the energy consumed by facilities on permanent DoD installations (except installations supporting military operations), or the fuel consumed by non-tactical vehicles. (DoDD 5134.15)

Power Projection Platforms. An installation capable of deploying a brigade-sized force or larger upon notification to meet Combatant Command operations plan requirements within 10 days or less. (AR 525-93)

Real Property. Lands and improvements to land, buildings, and structures, including improvements and additions, and utilities. It includes equipment affixed and built into the facility as an integral part of the facility (such as heating systems), but not movable equipment (such as plant equipment). In many instances, this term is synonymous with “real estate”. (AR 405-45)

Resilience. The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions. (DoDD 4715. 21)

Risk. Probability and severity-driven chance of loss, caused by threats or other hazards. (Army Techniques Publication 5-19)

Sustainability. The property of being environmentally **sustainable**; the degree to which a process or enterprise is able to be maintained or continued while avoiding the long-term depletion of natural resources. (Oxford English Dictionary)

ANNEX D

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