

AIR FORCE OPERATIONAL ENERGY



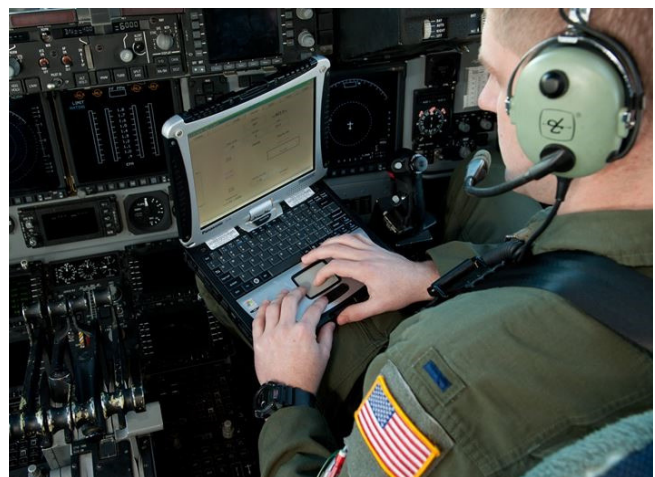
STRATEGIC GOALS
& OBJECTIVES





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Introduction

May 2019



Mr. Roberto Guerrero
Deputy Assistant Secretary
of the Air Force for
Operational Energy

Energy reliability and resiliency are vital to the Air Force mission...to fly, fight, and win. As the largest consumer of energy in the Department of Defense, it is vital that the Air Force use aviation fuel wisely. Our priority is to provide the resources, information, and data necessary to make smart decisions about operational energy that increase our combat capability across the enterprise.

Since 2015, our office has led efforts to cultivate our workforce and bring on subject matter experts to lead our operational energy optimization initiatives. With their expertise, we are better able to access and analyze large amounts of data, identify information gaps, conduct extensive research, and develop key partnerships. By collecting aviation data and analyzing how we train and conduct operations, we can identify ways to address energy logistics shortfalls, as well as improve planning and execution of the mission.

This strategy serves two purposes: (1) to align our Air Force Operational Energy goals with the 2018 National Defense Strategy and the 2018 Air Force Priorities, and (2) to lay out our plan for tracking and assessing our objectives and initiatives. It aims to create an energy optimized Air Force that maximizes combat capability for the war fighter, through progress on the goals and objectives laid out in this document, adjusting where necessary to accommodate changing priorities in our dynamic environment. Beginning in 2019, we will publish an annual report, highlighting our achievements and areas for growth.

A handwritten signature in black ink, appearing to be 'RG'.

Roberto Guerrero
Deputy Assistant Secretary of the Air Force for Operational Energy



Our Mission

Air Force Operational Energy breaks barriers by connecting Airmen with technology, data, and innovative thinking to develop and champion energy-informed solutions for the Air Force.

Our Vision

Create an energy optimized Air Force that maximizes combat capability for the war fighter.





Goals & Objectives

Our Operational Energy goals and objectives align with the 2018 National Defense Strategy's three lines of effort and the 2018 Air Force Priorities. By linking each objective back to an Air Force priority and a National Defense Strategy line of effort, we maintain purpose and focus in our initiatives.



2018 National Defense Strategy

Rebuild Military Readiness--Strengthen Alliances
Reform Business Practices

2018 USAF Priorities

Restore Readiness--Cost Effectively Modernize--Drive Innovation
Develop Exceptional Leaders--Strengthen Alliances

USAF Operational Energy Goals

- Identify & Deliver Optimal Operations Planning and Execution Solutions for Existing Gaps
- Provide Innovative Energy Solutions for New and Legacy Aircraft and Systems
- Furnish Energy-Efficient Weapons System Sustainment Analysis
- Support the production of Energy-Informed War Plans
- Educate the Force, Build the Culture for Operational Energy



Goal 1

Identify and deliver optimal operations planning and execution solutions for existing gaps

NDS Line of Effort: Rebuild Military Readiness

USAF Priority: Drive Innovation, Restore Readiness

To optimize mission planning and execution, we first analyze Air Force flying operations and processes. By understanding how the Air Force consumes operational energy, we are able to detect gaps in efficiency and identify possible solutions that increase our combat capability.

Collecting and analyzing fuel use data is critical to optimizing Air Force operations. We work with major commands to improve data collection and analysis, which facilitates energy informed decision making.

Additionally, we study policies and procedures and their impact on operational energy consumption, and advocate for smarter practices that increase readiness.

For instance, we are providing funding to add an auto-plan feature to a deployed tanker scheduling tool called Jigsaw. Used at Al Udeid Airbase Qatar, Jigsaw has already increased efficiency by 3.6 percent, saving two tanker missions per day. This upgrade will further improve scheduling efficiency, allowing for more fight with less fuel.



Air Force Operational Energy partnered with Defense Innovation Unit (DIU) to help develop Jigsaw, which was deployed in April 2017.

Objective 1.1: Improve data collection and oversee metrics refinement

Objective 1.2: Develop modern tools to improve operational planning

Objective 1.3: Optimize mission execution



Goal 2

Provide innovative energy solutions for new and legacy aircraft and systems

NDS Line of Effort: Rebuild Military Readiness, Reform Business Practices
USAF Priority: Cost-effectively Modernize, Drive Innovation

The Air Force has made significant progress to better incorporate smart operational energy solutions into its requirements and acquisition processes. Our office plays an active role in the Capability Development process, participating in both the Capability Development Working Group and Capability Development Council.

We leverage Congressional Add Alternative Energy funds and the Office of the Secretary of Defense's Operational Energy Capability Improvement Fund to examine technologies that may be suitable for transition to Air Force weapons systems and improve our combat capability.

By collaborating with organizations like the Air Force Research Laboratory, industry partners, and academia, we are able to identify which emerging technologies are best aligned to help optimize our fuel use. For example, we are working with Air Mobility Command to add aft body drag reduction devices at a very low cost to our large mobility aircraft, which will reduce fuel consumption by 1-3 percent and extend range.



Six aft body drag reduction devices, or microvanes, are bonded to each side of the C-17 Globemaster III fuselage.

Objective 2.1: Identify operational energy issues in Air Force requirements documents and processes

Objective 2.2: Oversee operational energy funding streams

Objective 2.3: Advocate for energy-relevant technologies



Goal 3

Furnish energy-efficient weapons system sustainment analysis

NDS Line of Effort: Rebuild Military Readiness, Reform Business Practices
USAF Priority: Drive Innovation

We aim to increase Air Force operational readiness through improved sustainment of our legacy aircraft. Well-performing aircraft with fewer maintenance issues are not only safer, but burn fuel more efficiently.

We regularly engage with commercial airlines and industry partners to learn about developing technologies and best practices in aircraft sustainment that could translate to Air Force weapons systems and sustainment processes.

A promising discovery is the advancement of compressor blade coatings, inspection/optimization through laser and infrared scanning methods. Adopting industry best practices has shown the potential to improve engine efficiency and extend engine life, as well as reduce the cost of compressor blades through increased reuse.



Mr. Roberto Guerrero (left) visits industry partners to learn best practices in compressor blade inspection, refurbishment, and optimization.

Objective 3.1: Identify innovative commercial applications that improve Air Force aircraft sustainment processes

Objective 3.2: Determine readiness benefits from improved maintenance processes



Goal 4

Support the production of energy-informed war plans

NDS Line of Effort: Rebuild Military Readiness, Strengthen Alliances

USAF Priority: Restore Readiness, Strengthen Alliances

We provide the Air Force wargaming communities with a more realistic view of the risks and challenges related to operational energy and fuel logistics. We promote energy-informed leadership decisions in wargaming - and ultimately in basing strategy, operational planning, and investment priorities. Including realistic operational energy scenarios in simulated planning environments for joint and multi-domain combat operations directly aligns with the broader Air Force capability development efforts.

Our office participates in Air Force and Joint wargames, such as Global Engagement 2018 and the Long Duration Logistics Wargame. We provide energy and fuel logistics expertise to ensure accurate execution and accounting of operational energy. Doing so allows us to identify fuel logistics challenges and propose potential solutions.



Air Force Operational Energy participates in wargaming to inject a more realistic view of the risks and challenges related to fuel logistics.

Objective 4.1: Examine operational energy logistics gap analyses on major operational plans

Objective 4.2: Design and implement logistics modeling and simulation across the Air Force Title X wargames



Goal 5

Educate the Force and build the culture for operational energy

NDS Line of Effort: Strengthen Alliances

USAF Priority: Develop Exceptional Leaders, Strengthen Alliances

Including operational energy in education and training curricula is integral to maximizing combat capability by encouraging behavior change in operations, maintenance, and planning. Our main goal is to communicate to Airmen that optimizing operational energy use provides more training opportunities, lowers sustainment costs, and ultimately improves readiness. This includes courseware at Air University and the United States Air Force Academy.

Strategic communications plays an important role in educating Airmen and stakeholders on the criticality of operational energy to the Air Force mission. We continue to develop and expand our communications strategy and messaging through awareness campaigns, content development, digital media, and leadership speaking events.



Commander's calls, Energy Action Month events, and public speaking engagements all help to build support for an energy aware culture.

Objective 5.1: Incorporate operational energy content into education and training opportunities throughout the Air Force

Objective 5.2: Increase operational energy awareness and understanding through strategic communications



Tracking and Assessment

In order to accomplish these strategic goals, our team will develop initiatives for each objective, set milestones for each initiative, and review progress as needed.

At the end of each fiscal year, we will publish an annual report outlining the progress in meeting these objectives by documenting the initiatives, achievements and lessons learned.





More than just fuel

The **smart use of operational energy:**



Increases **combat capability**



Lowers maintenance **costs**



Increases **aircraft lifespan**



Enables more **training**

...increasing operational agility to
reinforce mission success.



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