



NAVAL AIR SYSTEMS COMMAND
Energy Strategy

July 2012



Foreword

Energy is a strategic resource that is critical to the success of the Navy and Marine Corps. Its availability on the battlefield and price volatility in the marketplace present potential vulnerabilities to both the Warfighter and our national security. As such, energy is a NAVAIR priority that demands the application of our very best technical, business, and leadership expertise in the name of improving and sustaining the capabilities needed by our men and women in uniform.

This document formalizes NAVAIR's commitment to managing our consumption and reducing it through technical solutions, modifying behaviors that are energy intensive, and finding and implementing alternative energy strategies both ashore and afloat. It describes the strategic pillars of NAVAIR's Energy Strategy—Acquisition Policy, Mission Capabilities, and Facilities and Infrastructure—and the key focus areas and strategic actions under each that we will undertake collectively as a command. It also describes the governance and organization of the NAVAIR Energy Team (NET) responsible for managing the implementation of this important strategy. The level of our success will depend significantly on the strengths of our Competency Aligned Organization (CAO), which allows us to work together across the Command in the spirit of cooperation and accountability.

With our vast experience in spearheading ground-breaking initiatives, NAVAIR is tailor-made to support this initiative. From our CAO Concept of Operations, to the Naval Aviation Enterprise, to Navy-ERP, we've proven time and again that we know how to change course, keep our knots up, and get things done for the greater good.

I look forward to working with you on this important endeavor. Good on Ya!



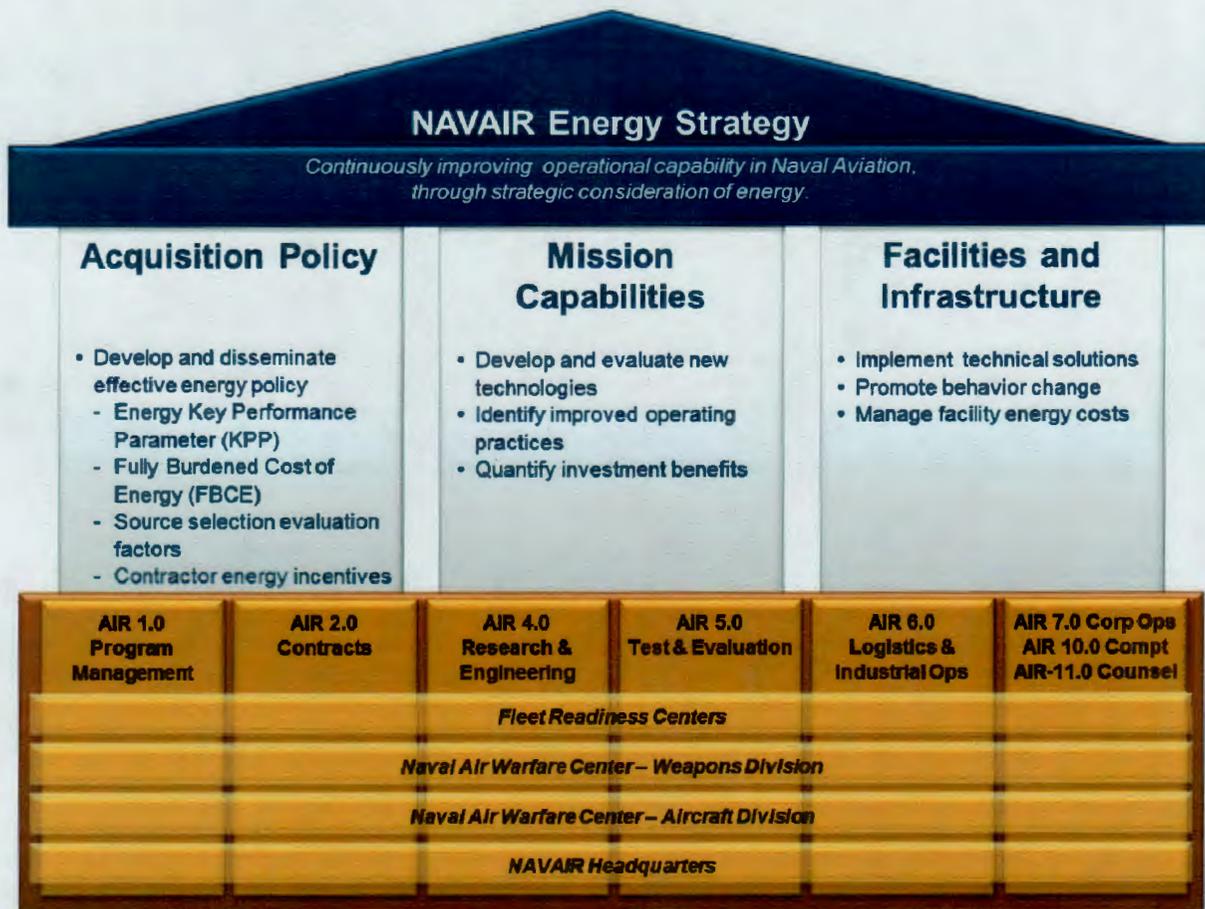
DAVID ARCHITZEL
Vice Admiral, U.S. Navy

NAVAIR Energy Strategy

Executive Summary

NAVAIR recognizes that energy is a strategic resource. NAVAIR’s energy strategy leverages our technical competencies and business units to support the Navy’s energy goals.

Our energy strategy is built upon three strategic pillars—Acquisition Policy, Mission Capabilities, and Facilities and Infrastructure—that align our competencies with the Navy’s energy goals and provide a framework for strategic actions that enhance the capability of Naval Aviation systems.



NAVAIR’s energy strategy aligns with NAVAIR’s mission and supports the Navy’s overall energy goals.

NAVAIR’s energy programs are aligned and coordinated by the NAVAIR Energy Team (NET). The NET is comprised of three groups aligned with the Strategic Pillars that recommend policy and guidance on energy issues related to Naval Aviation, coordinate with external organizations, and transform NAVAIR energy consumption practices at the individual, command, and all functional levels.

Vision

“Continuously improving operational capability in Naval Aviation, through strategic consideration of energy.”

Background

The Secretary of the Navy (SECNAV) established five goals that drive the Navy towards energy security and independence. The Chief of Naval Operations (CNO) added specific targets for energy reduction ashore and afloat.

Secretary of the Navy Goals	Chief of Naval Operations Targets
Energy Efficient Acquisition: Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings	Increase Alternatives Afloat: By 2020, half of the Navy's total energy consumption afloat will come from alternative sources
Sail the “Great Green Fleet”: DoN will demonstrate a Green Strike Group in local operations by 2012 and sail it by 2016	Reliable Power for Critical Infrastructure: By 2020, all of the Navy's critical infrastructure will have reliable backup power systems and redundant power systems where viable
Reduce Non-Tactical Petroleum Use: By 2015, DoN will reduce petroleum use in the commercial vehicle fleet by 50%	Increase Efficiency Afloat: By 2020, the Navy will increase efficiency and reduce overall fuel consumption afloat by 15%
Increase Alternative Energy Ashore: By 2020, DoN will produce at least 50% of shore based energy requirements from alternative sources; 50% of DoN installations will be net-zero	Increase Efficiency Ashore: By 2020, the Navy will increase efficiency and reduce overall energy consumption ashore by 50%
Increase Alternative Energy DoN-wide: By 2020, 50% of total DoN energy consumption will come from alternative sources	

NAVAIR's energy strategy supports these goals while aligning with NAVAIR's mission to provide full life-cycle support for Naval Aviation aircraft, weapons, and systems operated by Sailors and Marines, from research and development through acquisition and operation. Aviation accounts for nearly 40% of all energy used by the Navy, and energy touches each stage of the aviation system life-cycle, from developing efficient aircraft and weapons systems to operating in a fuel-efficient manner. The NAVAIR energy strategy sets the course for energy to be considered in every technical competency and business unit, aligning NAVAIR's mission areas with the overarching energy goals of the Navy.

Strategic Pillars

NAVAIR'S energy strategy is built upon three strategic pillars that align NAVAIR's core mission areas to support the Navy's energy goals. The three pillars are:

- Acquisition Policy
- Mission Capabilities, and
- Facilities and Infrastructure

The pillars support the Navy energy goals as shown below:



Acquisition Policy

Energy impacts aviation systems acquisitions in three key ways: calculating fully-burdened cost of energy (FBCE) in the Analysis of Alternatives (AoA) process; as a Key Performance Parameter (KPP) during the requirements and source selection process; and in contractor energy usage. The Acquisition Policy pillar will guide actions that combine Warfighter requirements with existing capabilities to ensure that energy measures enhance capability.

Mission Capabilities

The Mission Capabilities pillar is primarily focused on the evaluation of energy-related technologies and practices across two areas. First, it is focused on the development and evaluation of energy-related science and technology (S&T) and research, development, test, and evaluation (RDT&E) investments to support the development of future capabilities. Second, it assists the Fleet's energy efficiency and conservation efforts by providing technical assessments of proposed technology and operating policy changes based on current capabilities.

Facilities and Infrastructure

The Facilities and Infrastructure pillar is focused on promoting energy-conserving behavior and driving effective energy efficiency investments in NAVAIR's facilities and infrastructure. This pillar also emphasizes effective coordination with other Navy entities to maximize impact and support well-established facility energy goals.

Small Business

There are small business opportunities across every strategic pillar. In accordance with the Memorandum of Understanding dated 13 October 2010 between the U.S. Small Business Administration (SBA) and the Department of the Navy, NAVAIR will provide opportunities for small businesses on energy initiatives when feasible.

Strategic Actions

Within each Strategic Pillar, NAVAIR has identified key focus areas and strategic actions that form the basis of the NAVAIR energy strategy.

Acquisition Policy

Primary Focus Areas	Strategic Actions
<ul style="list-style-type: none"> • Develop and disseminate an Energy Efficient Acquisition Policy • Implement a Fully Burdened Cost of Energy model throughout the acquisition process • Increase capability through improved energy performance of aircraft and weapon systems • Incentivize the reduction of contractor energy footprints 	<ul style="list-style-type: none"> • Develop and maintain tools and methodologies for calculating FBCE in aviation AoAs • Develop and implement mandatory Energy Requirements such as energy KPPs, source selection evaluation factors, and evaluating contractor energy footprints • Develop incentives to reduce contractor energy footprints • Provide policy and guidance to PMAs

Develop and disseminate an Energy Efficient Acquisition Policy. NAVAIR shall meet DoN energy goals with respect to acquisitions and put in place the necessary policies and programs for incorporation of energy considerations in DoN acquisitions.

Implement Fully Burdened Cost of Energy. Energy consumption constitutes a major component in estimating energy efficiency for aviation systems. Program Managers (PMs) are required to calculate the fully-burdened cost of energy (FBCE). To do this, NAVAIR has developed a method for calculating FBCE for DoN aviation systems. This methodology is to be used for analysis to develop the Analysis of Alternatives phase to inform system trade-off decisions and differentiate between competing systems.

Increase capability through energy performance. Energy is a strategic resource for the Navy. Improving the energy performance of naval aircraft and weapon systems increases warfighting capability. PMs require a method to measure the additional operational capability from new technology investments and balance it against other performance parameters in trade studies and during AoAs for new systems. Developing ways to measure the energy performance of new systems provides a means for PMs to balance enhanced warfighting capabilities with other performance parameters while meeting warfighting requirements. Energy KPPs will be selectively required by sponsors of new aviation systems to quantify energy performance.

Reduce contractor energy footprints. SECNAV has directed that contractor energy performance be considered in bid evaluations for new program acquisitions. Incentivizing improved contractor performance effectively reduces the energy footprint for Navy acquisitions and encourages energy-efficient innovations.

Mission Capabilities

Primary Focus Areas	Strategic Actions
<ul style="list-style-type: none"> • Develop new technologies that increase energy performance of aviation platforms and weapon systems • Qualify alternative energy sources • Identify improved operating practices for consideration by the Fleet • Quantify benefits from investments in new energy-efficient technologies and develop a supportable investment strategy 	<ul style="list-style-type: none"> • Develop a roadmap for developing new technologies, and improving existing technologies that can be deployed to improve energy performance • Develop / mature capabilities needed to assess flying practices (tools, methodologies, and people) • Develop methods for capability assessments of technologies that improve energy performance (quantify the benefits to the Warfighter) • Develop and apply protocols to qualify alternative energy sources • Develop methods and tools to quantify return on investment for energy, including dollars and benefits to the Warfighter • Disseminate tools, methods and technologies to the PMs to support integration of new energy technologies into systems acquisitions

Develop and evaluate new technologies and improve existing technologies. Developing new technologies to meet evolving Warfighter requirements is central to NAVAIR's mission. Increasing the energy performance of aviation platforms and weapon systems through investments in new technologies will increase operational capabilities going forward.

Qualify alternative energy source. NAVAIR is responsible for ensuring alternative energy sources meet performance and operational compatibility. NAVAIR will apply its technical knowledge and expertise to develop and apply testing protocols to approve alternative sources for specifications.

Identify improved operating practices. NAVAIR is responsible for identifying and assessing the feasibility of operating practices that can reduce fuel consumption, while maintaining operational capability. Providing insights about the energy impact of these changes supports the Fleet's efforts to reduce energy consumption. NAVAIR will apply its technical knowledge and expertise to discover and recommend innovative energy-saving practices that might otherwise not be considered.

Quantify investment benefits. The Navy must be able to quantify benefits of its technology investments across multiple dimensions. The full value of these investments should be realized not only in cost consequences, but also in impact on operational capabilities, risk exposure, and energy security. Developing multi-dimensional views of energy benefits and creating a defensible aviation energy investment roadmap for the Navy is an important role for NAVAIR.

Facilities and Infrastructure

Primary Focus Areas	Strategic Actions
<ul style="list-style-type: none"> • Implement technical solutions to reduce energy consumption by NAVAIR's facilities and infrastructure • Promote behavior change and increased awareness to reduce consumption ashore • Manage the energy costs of NAVAIR facilities 	<ul style="list-style-type: none"> • Develop metrics for NAVAIR Echelon III and IV Commands • Transform infrastructure energy consumption practices by directly linking consumption to behavior, awareness, and accountability • Build a project portfolio of energy-related direct investments and prioritize them based on high return on investment (ROI) • Develop policies to include energy performance in building-wide improvement and new design decisions • Benchmark NAVAIR energy usage against industry and evolving DOD standards; develop metrics for managing energy usage

Implement technical solutions. Technical solutions (investments) are an important tool to reduce facility energy intensity. NAVAIR will coordinate with other Navy entities to ensure that investments in existing NAVAIR facilities contribute appropriately to Navy and enterprise targets. NAVAIR will also need to consider energy impacts in developing and sustaining new laboratories and facilities to ensure that required capabilities are available, and that energy efficiency is considered up-front and managed deliberately when investing in infrastructure.

Promote behavior change. Changing individual behaviors will contribute significantly to effective energy management and complement the effectiveness of technical solutions. NAVAIR will take active steps to identify infrastructure energy-intensive behaviors, engage and educate energy users on efficient behavior, and increase energy awareness throughout the entire organization.

Manage facility energy costs. In an atmosphere of increasingly constrained budgets and rising energy prices, NAVAIR needs to manage facility energy consumption and costs to contribute to Navy and NAVAIR cost reduction efforts. NAVAIR will take steps to identify and implement best practices for facility energy management in order to ensure that facility energy costs are kept as low as practical.

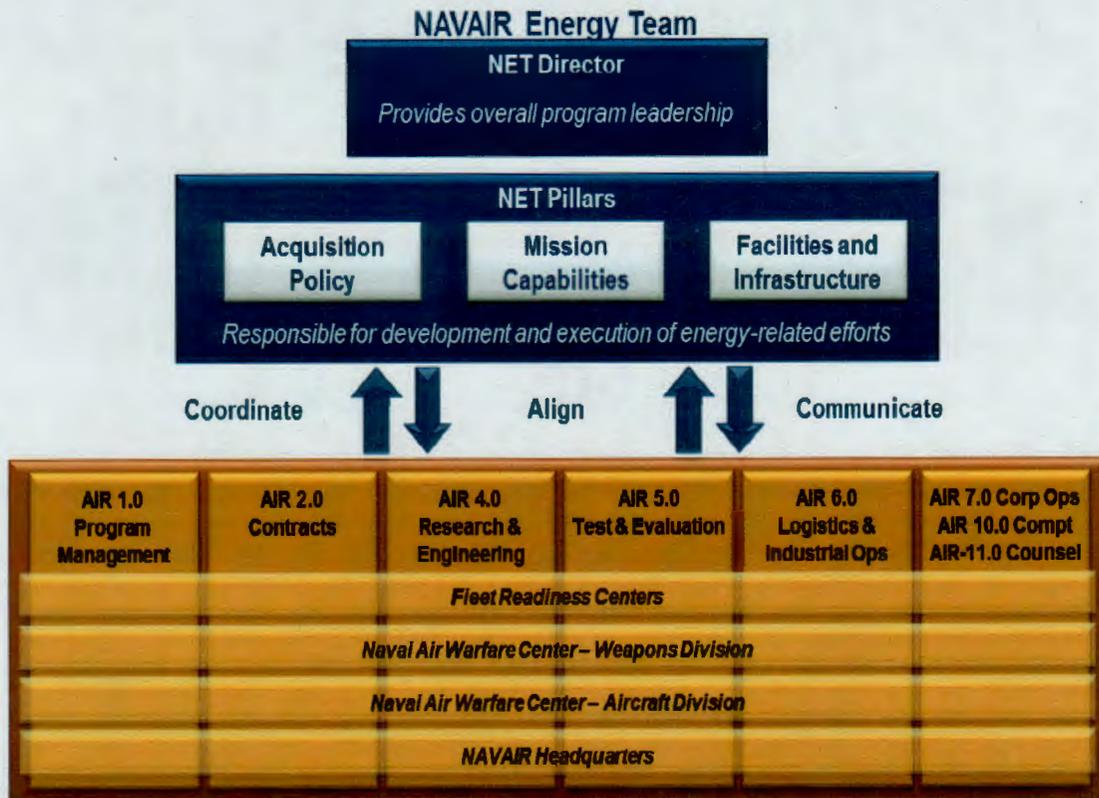
Governance and Organization

The NAVAIR Energy Team (NET) is responsible for the implementation of the NAVAIR Energy Strategy, including overall program direction, goals, and implementation management.

The NET is organized into three Strategic Pillars which are responsible for:

- Developing and executing energy-related policies and guidance within their portfolios;
- Maintaining the NET charter;
- Communicating and coordinating across the NAVAIR Competencies (Echelon III organizations) to identify issues and develop solutions;

- Representing NAVAIR at Navy, government, and industry forums;
- Coordinating and providing advocacy for NAVAIR energy issues with SECNAV, CNO, OPNAV, ASN (RDA), and OSD energy teams.



Recognition

The NAVAIR Commander's National Awards recognize technical, business, and leadership excellence in support of NAVAIR's three strategic priorities: Current Readiness, Future Capabilities, and People. Beginning in 2013, there will be a new award category recognizing team achievements in conserving energy as a strategic resource through technical solutions and modified behaviors, and /or developing alternative energy strategies ashore or afloat. All employees of the Naval Air Systems Command are eligible for this award, including civilian, military, and contractor support personnel assigned to Headquarters, NAWCAD, NAWCWD, the Fleet Readiness Centers, and all other field activities. Nominations for this award are due every March 5th to the NAVAIR / NAWC Awards Office per NAVAIRINST 12451.1 (Change Transmittal 2) dated 3 March 2006 (Awards and Recognition Program).