

A presentation from the 2009 Topical Symposium:

***Energy Security: A Global Challenge***

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**INSS**



INSTITUTE FOR NATIONAL  
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# ***Headquarters U.S. Air Force***

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## **U.S. Air Force Energy Program**



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# ***The United States Air Force Exists to DOMINATE Air, Space, and Cyberspace for America***

***The mission of the  
United States Air Force is  
to fly, fight and win...  
in air, space, and cyberspace***



***Global Vigilance, Global Reach and Global Power***



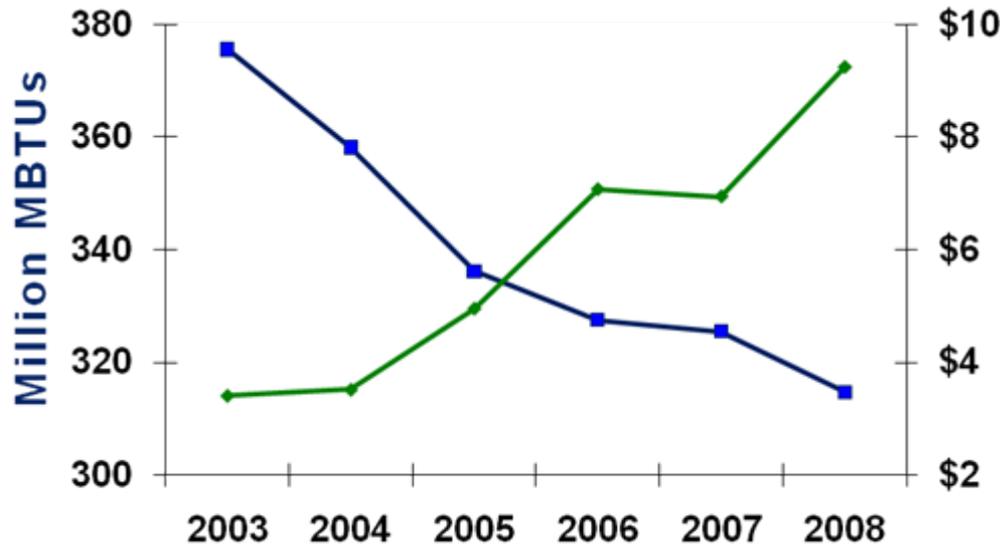


# Air Force 2008 Energy Use

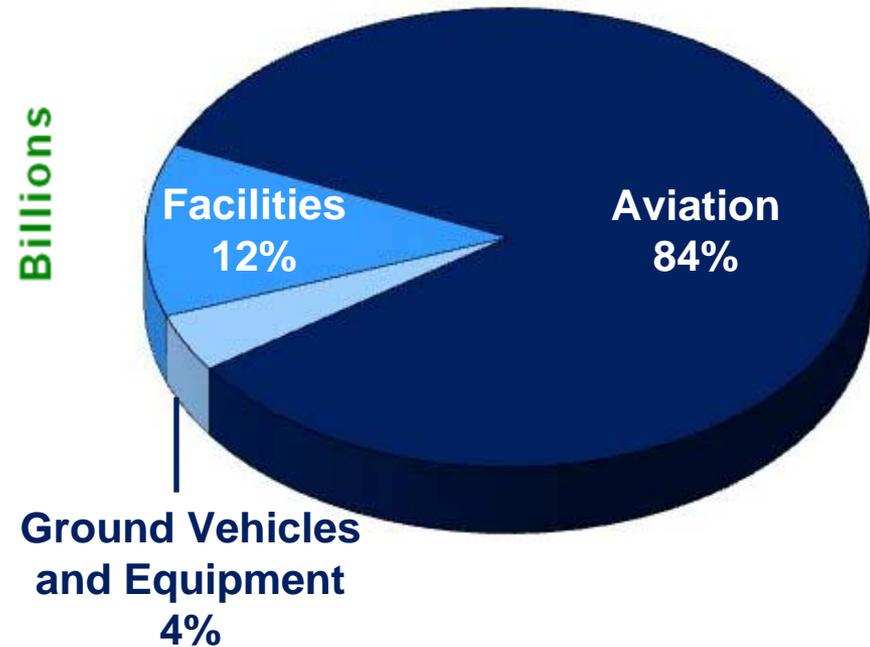
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## Over \$9 billion spent for energy in 2008

Energy Cost and Consumption Trends



Energy Cost Breakdown



***Energy Consumption is Decreasing  
While Costs are Increasing***



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# ***Energy is a Priority***



***We can't rest until we harness the renewable energy that can create millions of new jobs and new industries. ...That's how we can grow our economy, enhance our security, and protect our planet at the same time.***

*- President Obama, 29 Apr 2009*

***The Air Force energy strategy furthers an energy future that is secure, efficient, and environmentally sound.***

*- Michael Donley, Secretary of the Air Force, Jan 2009*



***We must continue to identify innovative ways to conserve energy and take actions to build upon our success. Let's be passionate energy advocates, set the example, and remind those around us that our individual actions can make a significant difference in creating a more energy-efficient Air Force.***

*- General Norton Schwartz, USAF Chief of Staff, Jan 2009*



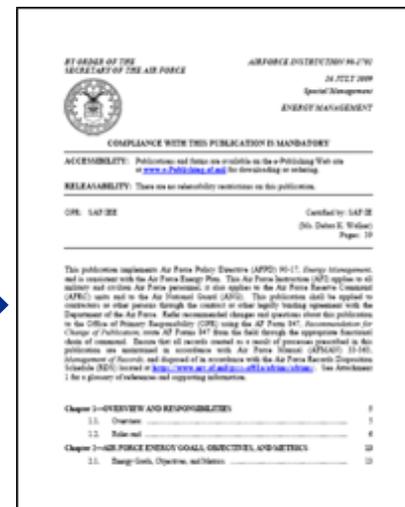


# Air Force Energy Policy

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AFPD 90-17



AFI 90-1701

**Formally Established the AF Energy Program:  
Strategy, Goals, Objectives and Metrics**



# Air Force Energy Plan

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## 3-Part Strategy

*Reduce Demand*

*Increase Supply*

*Change the Culture*



## Vision

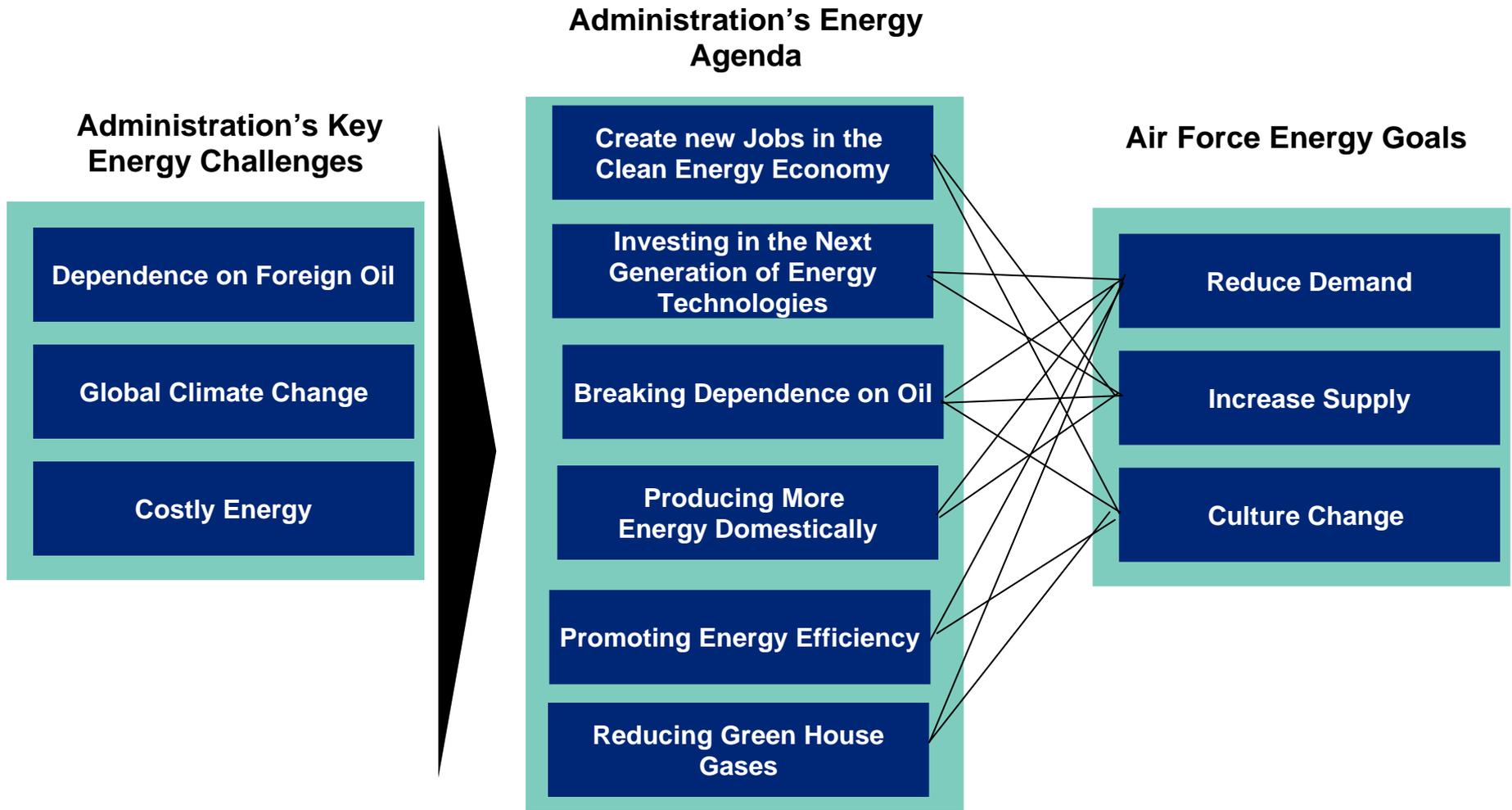
*Make Energy A Consideration In All We Do*

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# Energy Strategy Supports the Administration's Energy Agenda

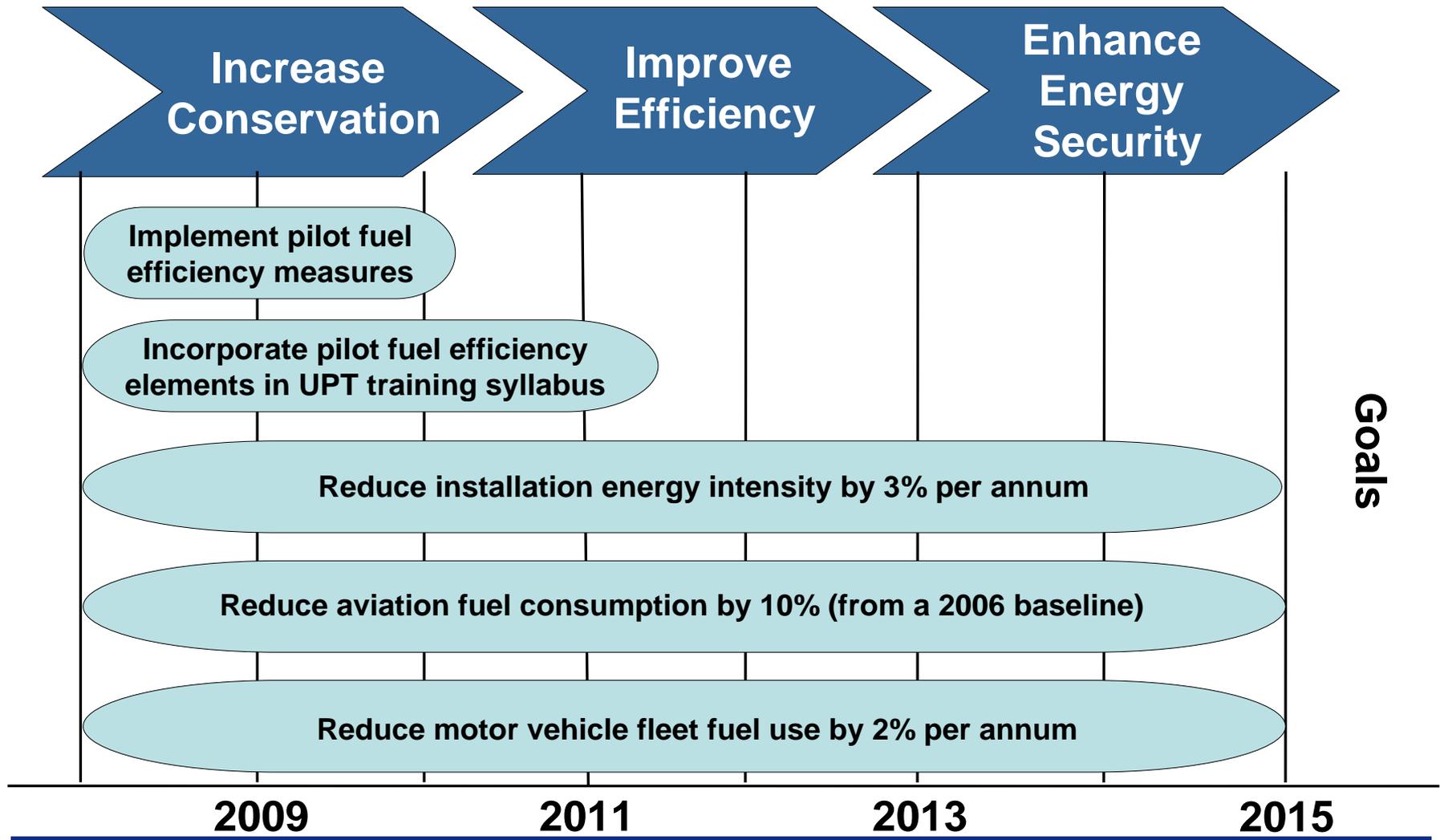


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# Air Force Energy Program: “Reduce Demand” Goals

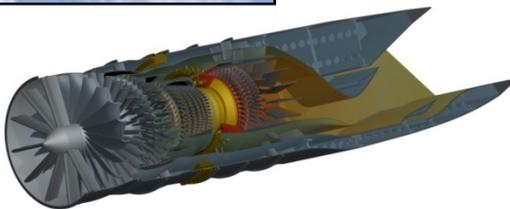


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# ***Reduce Demand: Focus Area Initiatives***



## **Aviation**

- **Reducing aircraft weight**
- **Optimizing flight routes**
- **Evaluating training fuel loads**

## **Infrastructure**

- **Decreasing energy use**
- **Purchasing energy efficient supplies and low-speed vehicles**
- **Reducing vehicle fossil fuel use**

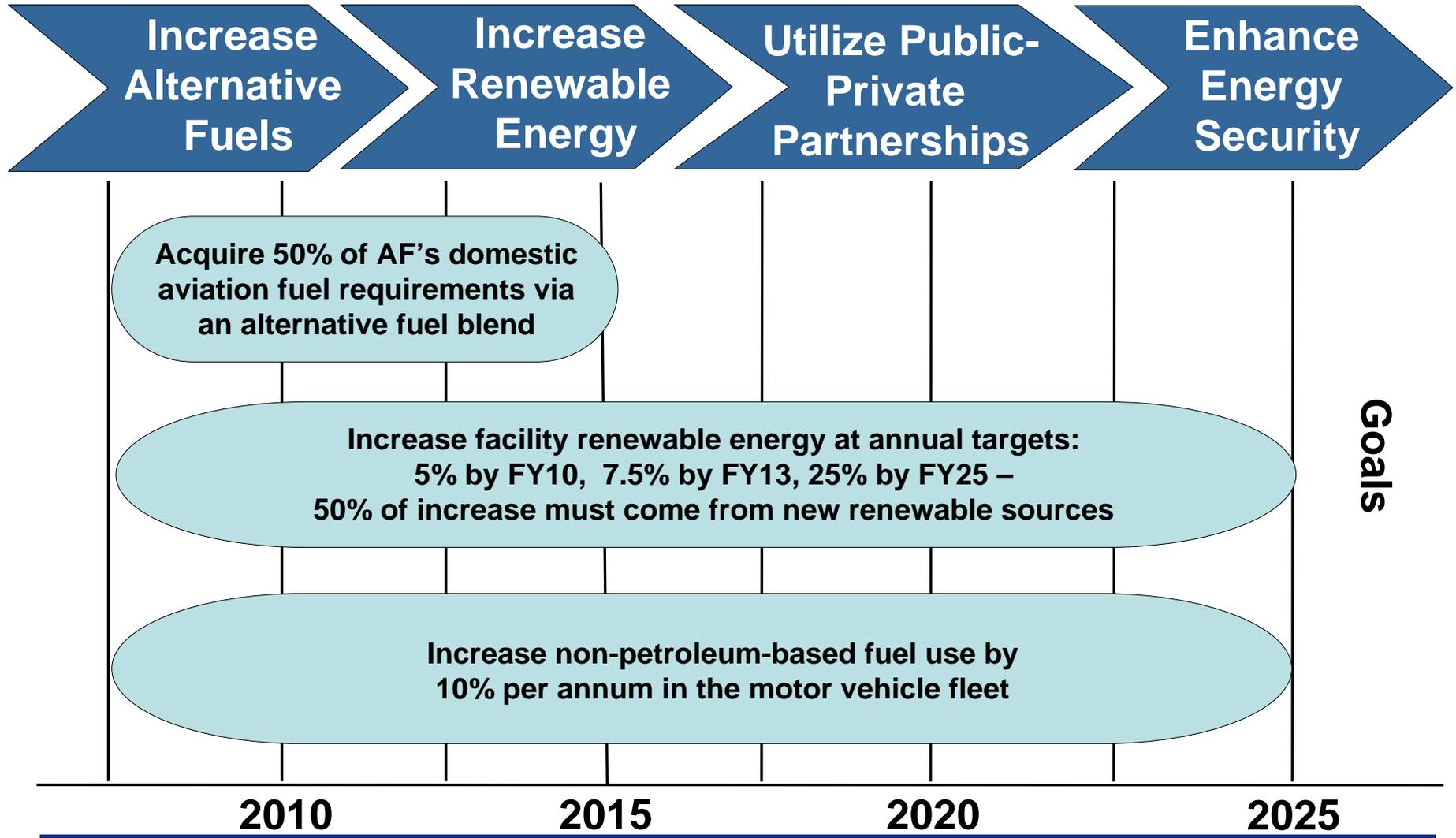
## **Acquisition & Technology**

- **Designing more efficient and adaptive engines**
- **Pursuing more energy efficient aircraft**



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# Air Force Energy Program: “Increase Supply” Goals





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# Increase Supply: Focus Area Initiatives



## Infrastructure

- Largest Federal green power purchaser and 8<sup>th</sup> largest in US
- Exploring commercial-scale energy projects
- Using ethanol and biodiesel flex-fuel vehicles
- Testing deployable alternative fuel stations

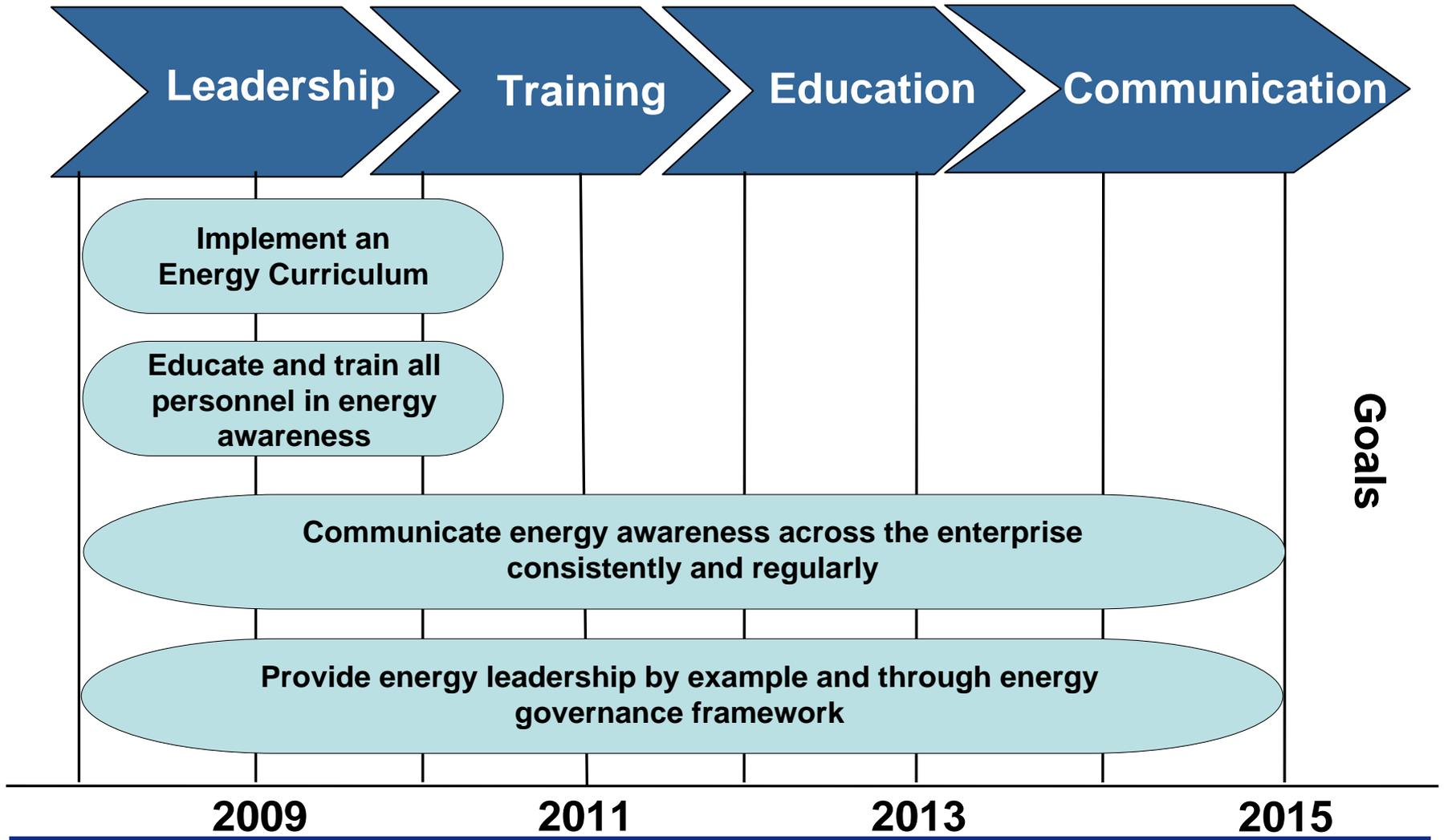
## Acquisition & Technology

- Testing and certifying alternative aviation fuels
- Design energy conversion systems to be fuel-flexible



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# Air Force Energy Program: “Change the Culture” Goals



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# Change the Culture: Focus Area Initiatives

- Make Energy A Consideration In All We Do
- Lead by example, build a movement
- Train & Educate
  - Basic Training, Air University, USAFA, Technical and Leadership Schools
- Communicate
  - Measure & publish progress constantly
  - Celebrate success vigorously
- Collaborate with Allies, sister services, agencies, on energy best practices



***Lead, Educate, Train, Communicate***

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# Air Force Energy Initiatives are Many and Varied



★ Solar    
 ★ Geothermal    
 ★ Biomass & Wind    
 ★ Other Initiatives

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# Air Force Energy: Successes and Challenges

	Aviation Operations	Infrastructure	Acquisitions & Technology
Successes	<ul style="list-style-type: none"><li>□ Aircraft Design</li><li>□ Weight Reduction</li><li>□ Simulator Utilization</li><li>□ Direct Routing</li><li>□ Air Refueling Optimization</li></ul>	<ul style="list-style-type: none"><li>□ Facility Energy Conservation Programs</li><li>□ Metering Plans</li><li>□ Asset Management</li><li>□ Sustainable Building Design</li></ul>	<ul style="list-style-type: none"><li>□ Efficient/Adaptive Engine Procurement</li><li>□ Alternative Fuels Certification</li><li>□ Advanced Design Systems</li><li>□ Aircraft Technology</li><li>□ Fully-burdened Cost of Fuel Assessment</li></ul>
Challenges	<ul style="list-style-type: none"><li>□ Fly more efficiently</li><li>□ Energy Demand Reduction While Maintaining Core Competencies</li><li>□ Culture Change</li></ul>	<ul style="list-style-type: none"><li>□ Expand Renewable Energy</li><li>□ Optimize Assets</li><li>□ Manage Costs</li><li>□ Improve Current &amp; Future Infrastructure</li><li>□ Reduce Energy Intensity</li><li>□ Grid Vulnerability</li><li>□ Alternate Fuel Vehicles</li></ul>	<ul style="list-style-type: none"><li>□ Aircraft technology modernization</li><li>□ Energy Independence and Renewable Energy Procurement</li><li>□ Coordination with Commercial Alt. Fuel Efforts</li><li>□ Lifecycle Costs</li><li>□ Culture Change</li></ul>

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<http://www.safie.hq.af.mil/>

