


Headquarters U.S. Air Force
Integrity - Service - Excellence

**Air Force
Facility Energy Program**



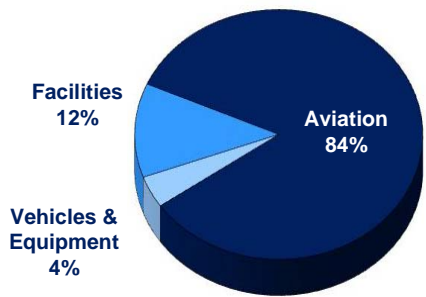
Col Jon Ostertag
R.A. LEED-AP
30 Mar 11

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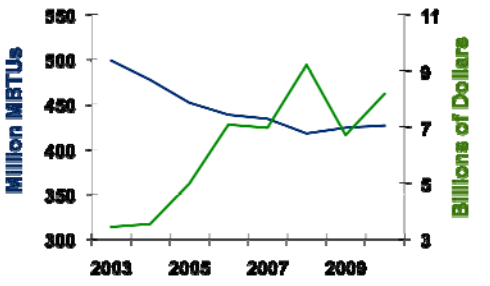
**How much did the Air Force
spend on energy in FY2010?**

Cost Breakdown



Category	Percentage
Aviation	84%
Facilities	12%
Vehicles & Equipment	4%

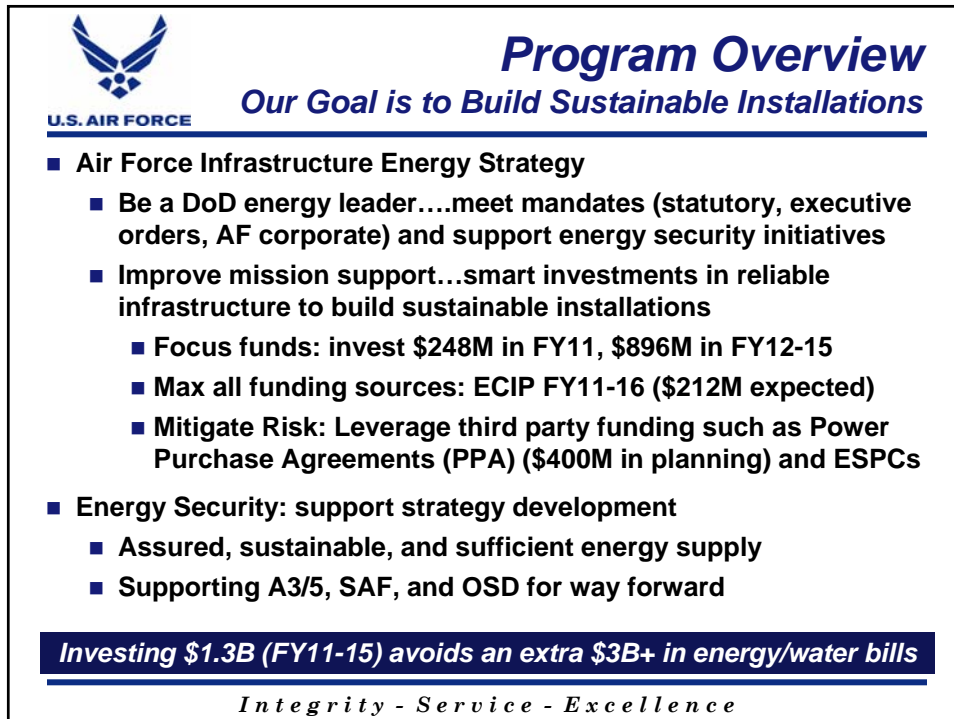
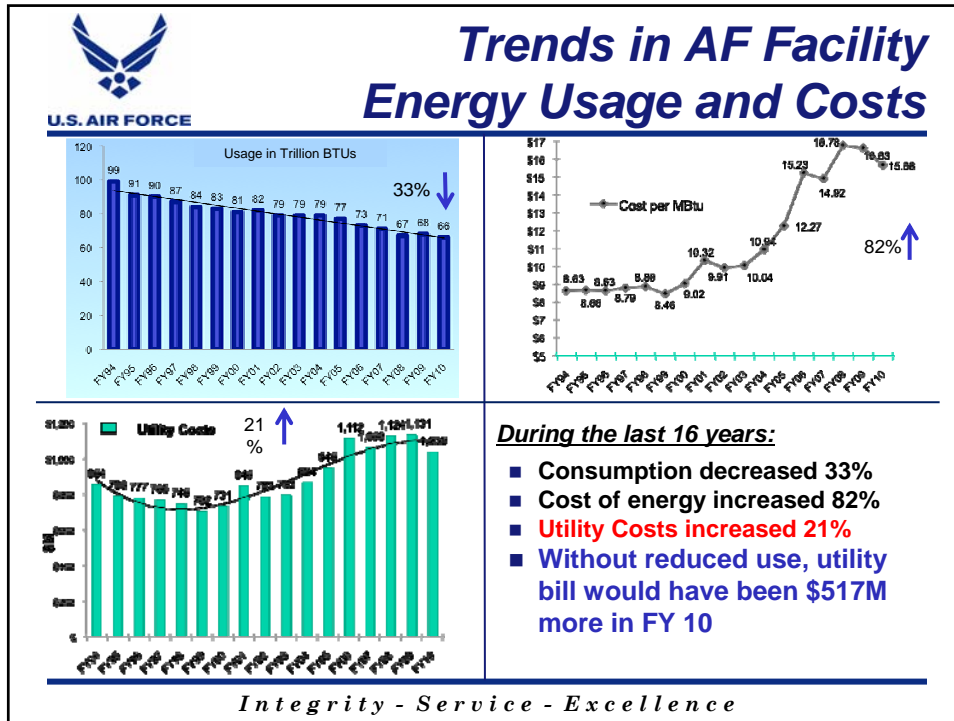
Cost and Consumption Trends

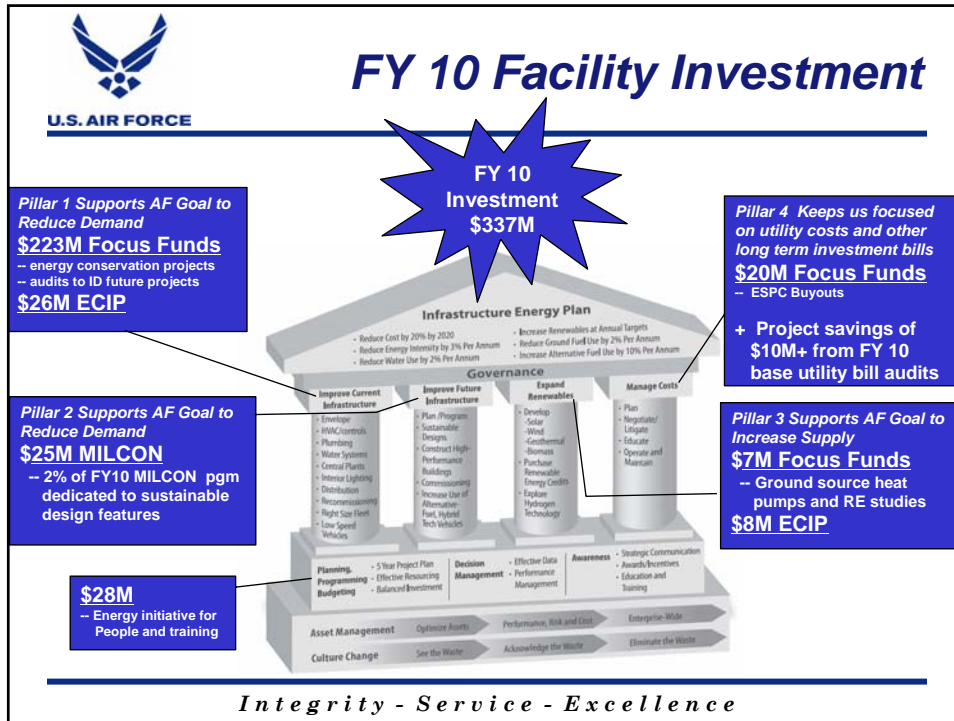


Year	Million MBTUs (Left Axis)	Billions of Dollars (Right Axis)
2003	500	3.2
2004	460	3.5
2005	440	5.5
2006	430	7.5
2007	420	7.5
2008	420	9.5
2009	430	7.5

The Air Force spent over \$8 billion for energy in FY2010

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Goals and Mandates


Goal Title	Driver	Baseline (FY)	Annual Target	Final Goal	Goal (FY)	Future Target	Final Goal (FY)
Reduce Energy Intensity	EISA 07	2003	3%	30%	2015		
Reduce Energy Intensity	EO 13514	2015	1.5%	37.5%	2020		
Reduce Greenhouse Gases	EO 13514	2008	3%	35.1%	2015	1.5%	2020
Renewable Energy Use	EPAAct 05	2005	5%	7.5%	2013	7.5%	2025
Renewable Energy Use	10 USC 2911	2013	1.5%	25%	2025		2025
On-Base Renewable Energy	AF	2008	--	1%	2012	3%	2015
Reduce Water Use	EO 13423	2007	2%	16%	2015		2015
Reduce Industrial Water Use	EO 13514	2007	2%	26%	2020		2020
Audit Covered Facilities	EISA 07	2009	25%	100%	2012		Indef
Meter Facilities (elec)	EPAAct 05	2008	--	100%	2012		2012
Meter Facilities (gas/steam)	EISA 07	2008	--	100%	2016		2016

EISA 07 = Energy Independence and Security Act of 2007 EO = Executive Order
 EPAAct 05 = Energy Policy Act of 2005 10 USC 2911 = Title 10, US Code - Sect 2911

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FY10 Goals and Mandates




- Performance against key Mandates in FY 2010
 - Water intensity reduced 11.3% (goal 10%) *Executive Order 13423*
 - Renewable energy 6.4% of total electric consumption (goal 5%) *EPAAct 2005*
 - Energy intensity reduced 14.8% (goal 15%) *EISA 2007*
 - Electric Meters Installed 87.1% (goal 100% by 2012) *EPAAct 2005*
 - Federal Building Energy Efficiency Standards *EPAAct 2005*
 - 100% (458/458) of the new building designs started since 2007 meet or exceed requirement to be 30% more energy efficient than relevant code

Air Force efforts to be energy leaders and evolve and expand the facility energy program led to many successes in FY 2010. We remained on a flight path to meet our energy mandates and goals.

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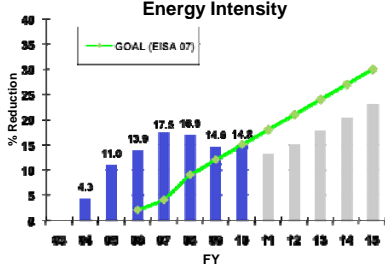


Will the AF meet its future installation energy goals?



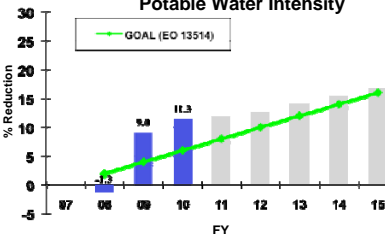
- We are concerned about meeting the energy intensity mandate beyond FY12
- We've already picked most of the "low hanging fruit"
- Budgets are getting tighter for projects and maintenance
- Investments require 2 yrs from award to start realizing savings
- 20/20 by 2020: Program to consolidate & demo facilities to reduce sustainment costs
 - May penalize the energy intensity metric
- Incomplete advanced metering infrastructure
- Colder winter & warmer summer weather
- Budgets impacts of implementing net-zero, energy security, smart installations, microgrids, etc.

Energy Intensity




FY	% Reduction
06	4.3
07	11.0
08	13.9
09	17.5
10	16.9
11	14.8
12	14.8
13	18.0
14	21.0
15	24.0

Potable Water Intensity



FY	% Reduction
07	1.2
08	9.8
09	11.3
10	12.0
11	13.0
12	14.0
13	15.0
14	16.0
15	17.0

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Challenges

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- Meeting mandates and goals in a fiscally constrained environment
 - Mandated BTU reduction does not equate to mandated Savings to Investment Ratio (SIR)
 - Required to invest in water use reduction ; not cost effective
 - R.E. not cost effective compared to traditional sources
- Other challenges
 - Do not want to be energy producers: not a core competency
 - By American
 - PPA vs EUL
 - Energy Security
 - Integrating emerging technologies
 - Federal Acquisition Regulations

Aviation fuel reduction is not mandated

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Summary

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- Comprehensive facility energy strategy guides smart investments
 - Focused on mission, meeting goals, and being a DoD leader
 - Seek the best “return on investment” with every dollar spent
 - Example: FY10 focus funds program had saving to investment ratio = 3.14
 - We intend to leverage 3rd party financing to the maximum extent
 - Continue to lead the way in green power purchases
- Build sustainable installations

Make Energy A Consideration In All We Do

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