

Headquarters U.S. Air Force

Integrity - Service - Excellence

Aeronautics and Space Engineering Board

November 8, 2012



**Dr. Kevin Geiss
Deputy Assistant Secretary
Energy**

U.S. AIR FORCE



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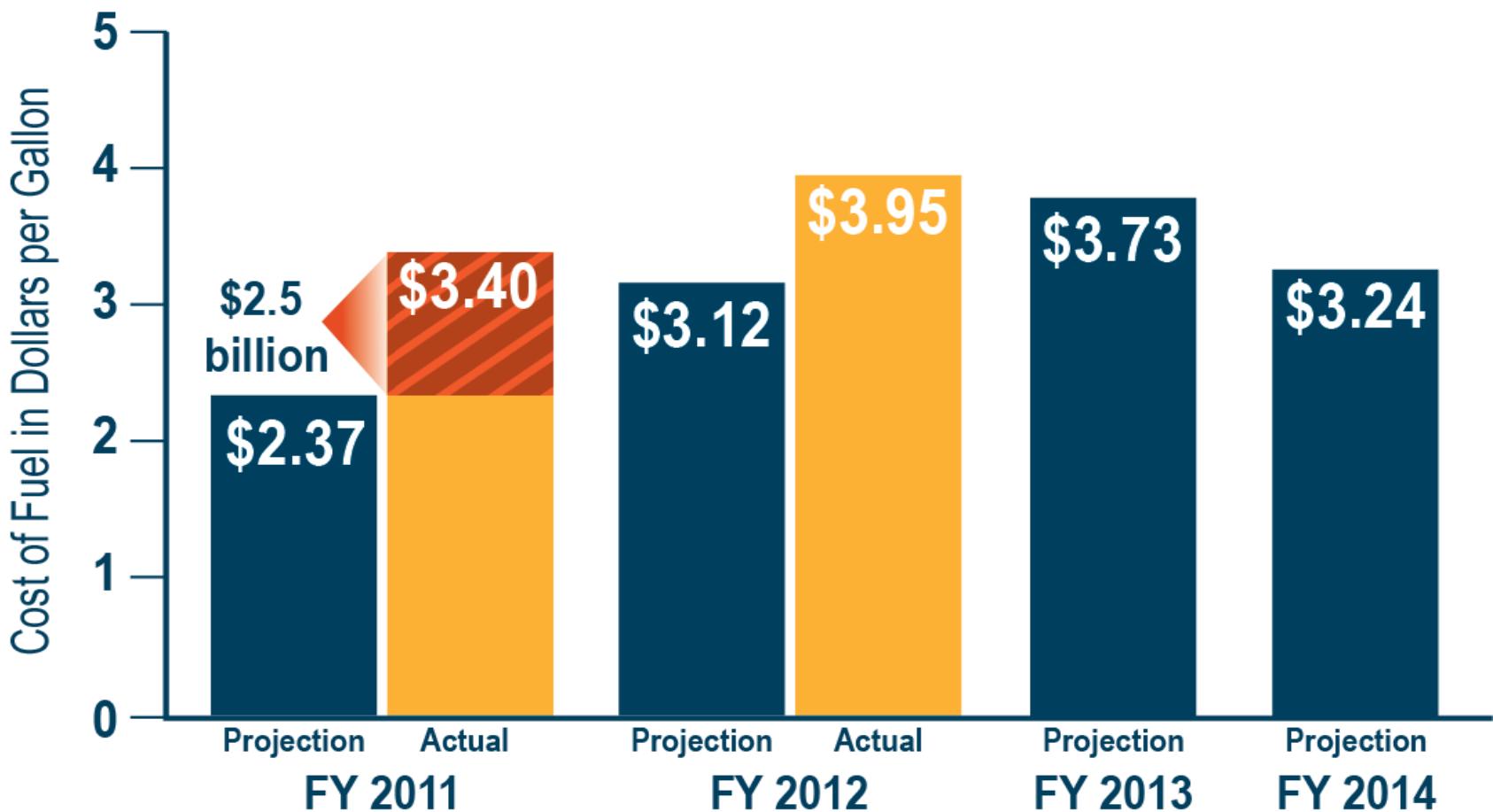
Why We Fly





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Fuel Price Volatility

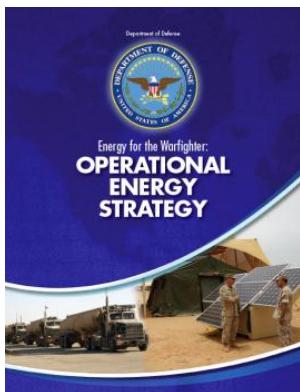


Budgets lock two years in advance



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Operational Energy Strategy and the Air Force Energy Plan



OSD OPERATIONAL ENERGY STRATEGY

MORE FIGHT,
LESS FUEL

1

REDUCE DEMAND

MORE OPTIONS,
LESS RISK

2

INCREASE SUPPLY

MORE CAPABILITY,
LESS COST

3

CULTURE CHANGE:
Increases energy awareness

AIR FORCE ENERGY PILLARS

Ensure that the armed forces have the energy resources they require to meet 21st century challenges



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Reduce Demand – Aviation Operations

GOAL

Reduce Aviation Fuel Consumption 10% by 2015

PROGRESS:

- Fuel consumption reduced 4%
- \$165M saved
- Cost to move 1 ton of cargo 1 mile by air down 21%



NEXT STEPS:

- Expand AMC initiatives
- Optimize crew ratios





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Increase Supply – Aviation Operations

GOAL

**Acquire 50% of domestic aviation fuel requirements
via alternative fuel blend by 2016**

PROGRESS:

- Testing multiple alternative fuels
- 1.3M gals of alternative fuels purchased

NEXT STEPS:

- Testing third ATJ fuel pathway
- 400M gals of alternative fuel by 2016





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Fuel Flexibility

U.S. AIR FORCE C-17A
AF SERIAL NO. 07-7170
SERVICE THIS AIRCRAFT
WITH GRADE JP-4, 5, 8, 8+100,
JET A, A-1, B OR NATO FUEL GRADE
F-34, F-35, F-37, F-40, F-44



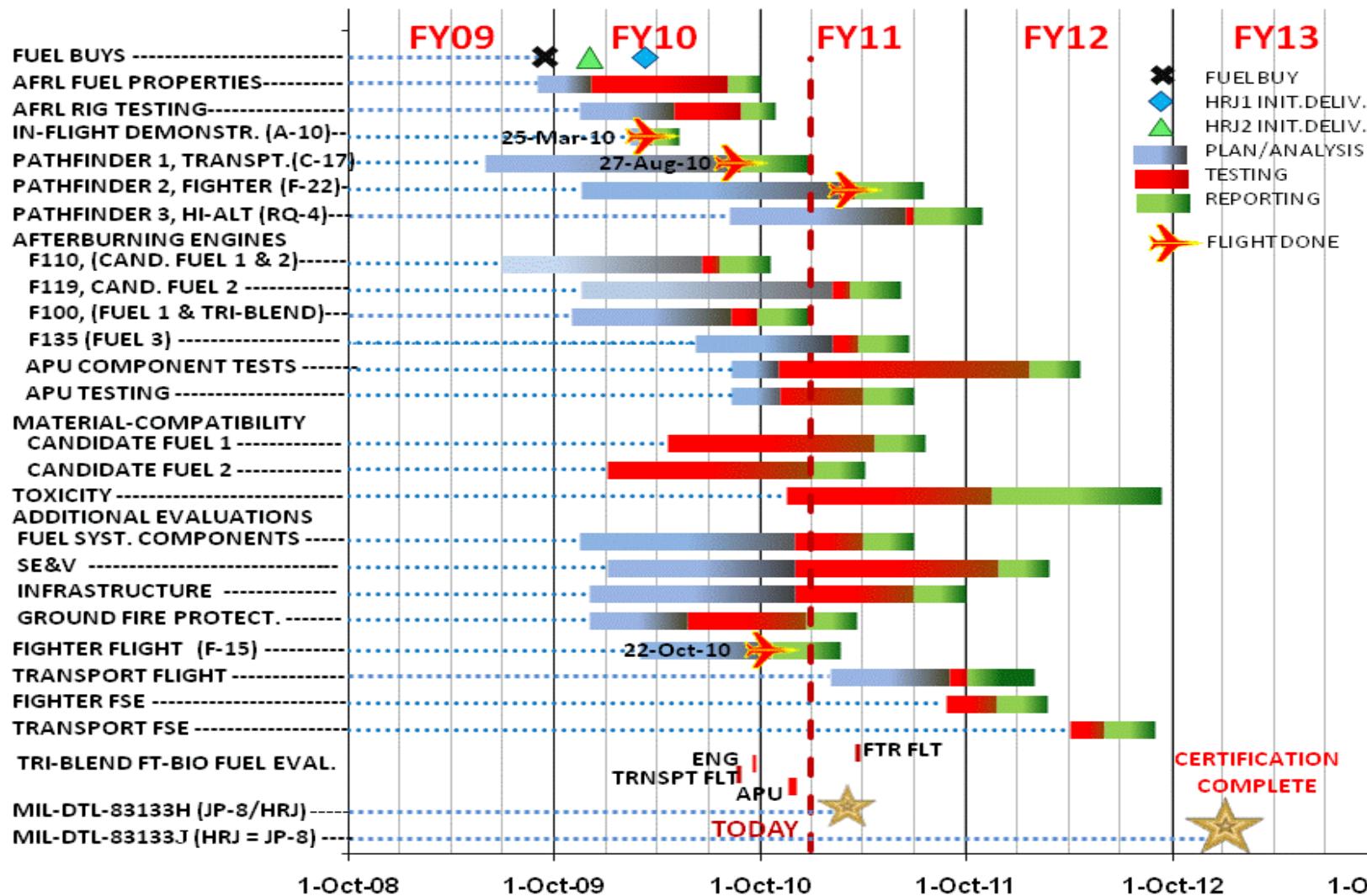
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Alternative Fuel Testing

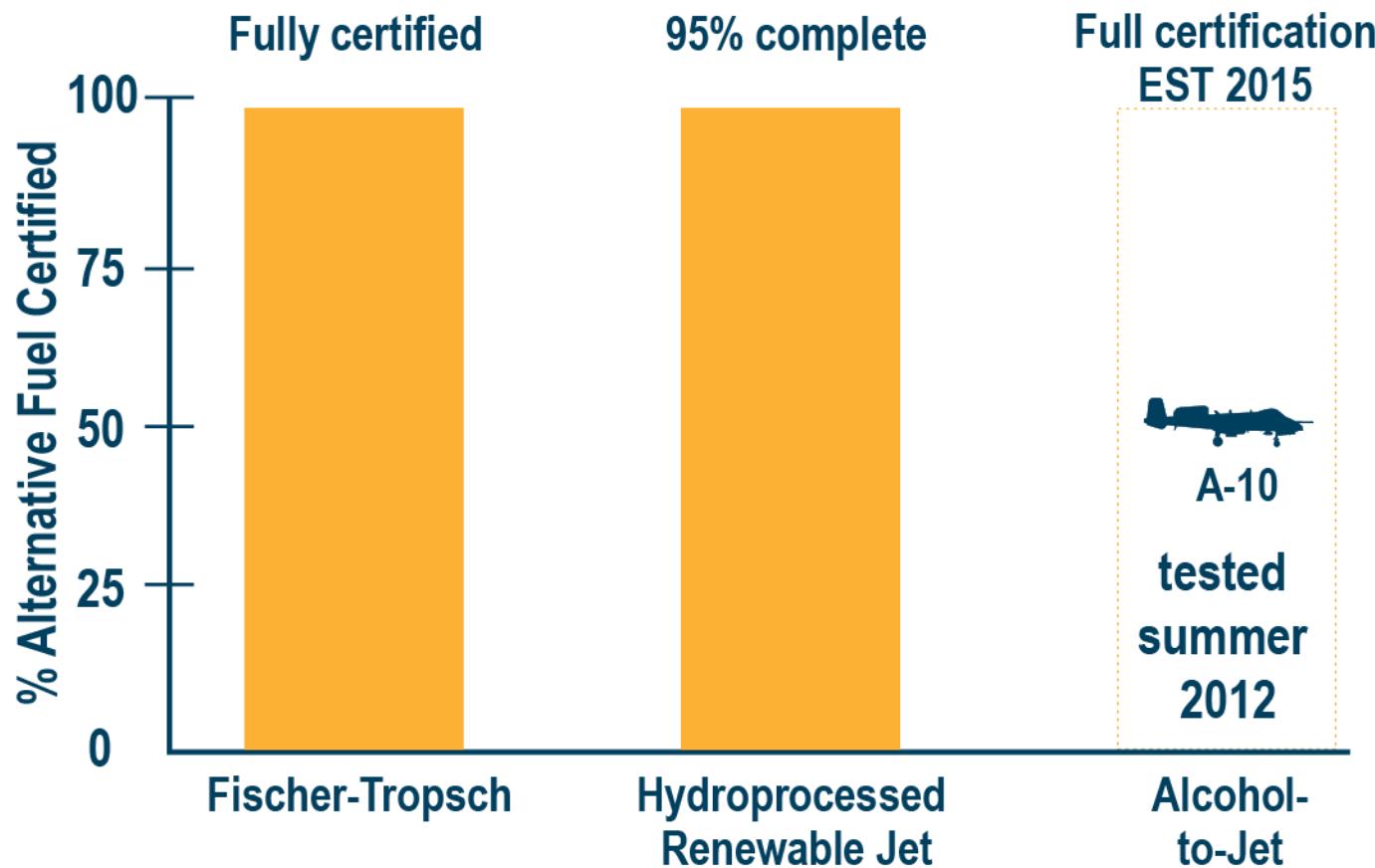
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Increase Supply Success Story – Alternative Fuels in Flight



Air Force will be a ready consumer by 2016



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Alternative Fuel Pricing

Producer	Type	Amount (gals)	Total Cost (millions)	Price (per gal)
Syntroleum Corp	FT	100,000	\$2.000	\$20.00
Shell Malaysia	FT	281,000	\$0.958	\$3.41
SASOL	FT	395,000	\$1.541	\$3.90
Sustainable Oil	HRJ	100,000	\$6.680	\$66.80
Honeywell UOP	HRJ	100,000	\$6.400	\$64.00
Sustainable Oil	HRJ	100,000	\$3.490	\$34.90
Honeywell UOP	HRJ	100,000	\$3.240	\$32.40
Sustainable/Dynamic Fuels	HRJ	35,000	\$2.056	\$58.74
Gevo	ATJ	11,000	\$0.649	\$59.00



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MQ-9 Reaper Field Test Evaluation

PROGRESS:

- MQ-9 Reapers: 11
- Total Sorties performed: 152
- Total fuel used to date: 40,000 gallons



NEXT STEPS:

- Project completion date: November 2012
- After Action Report 2013





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Engine Longevity Testing



JP-8

Alt Fuel



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Partnership – Aviation

Commercial Aviation Alternative Fuels Initiative (CAAFI)

GOAL

**Industry and government collaborate to
promote alternative fuels**

PROGRESS:

- Developed fuel certification process
- Durability testing of Alternative fuels
- United, Lufthansa and Alaska Airlines using alternative fuels





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Conclusion

“Persistence and commitment will be needed to provide the energy options and flexibility our civilians and military leaders need. By improving the way DoD uses energy, we can create a more agile, lethal, adaptable, and effective force.”

—Secretary Michael Donley
United States Air Force
7 August, 2012

