

## **Biomass Research and Development TAC Meeting- USDA/DON Initiative**

September 29, 2010  
Denver, CO.

## USDA – DON Partnership



- **Partnership to coordinate on biofuels and renewable energy**
- **Memorandum of understanding established agreement to:**
  - Leverage expertise
  - Cooperate on strategy and plans
  - Collaborate on renewable energy projects
  - Support evaluation/implementation venues
- **Hawaii was selected as the first region to advance partnership**
- Hawaii Industry Forum in April 2010
- USDA Ag Conference in September 2010
- Current initiatives underway
  - DoD, DLA Energy, HECO coordination



# *Department of Navy's Biofuel Initiatives*

**Prepared for:**

**Biomass R&D Board Technical Advisory Committee**

**September 29, 2010**







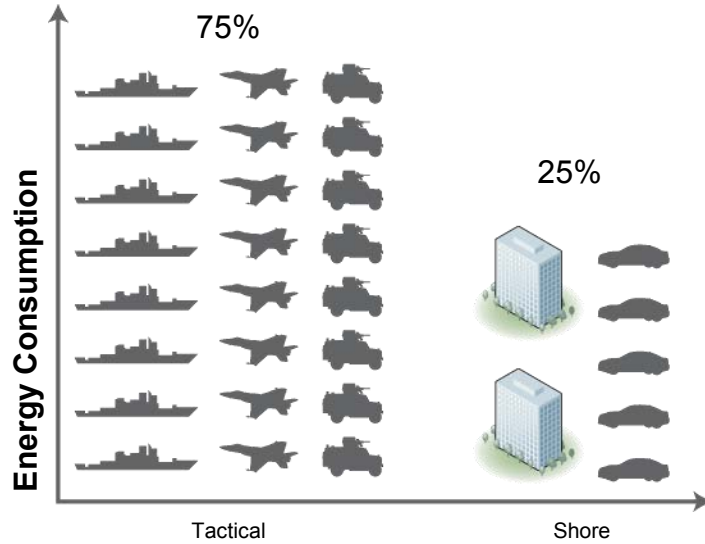




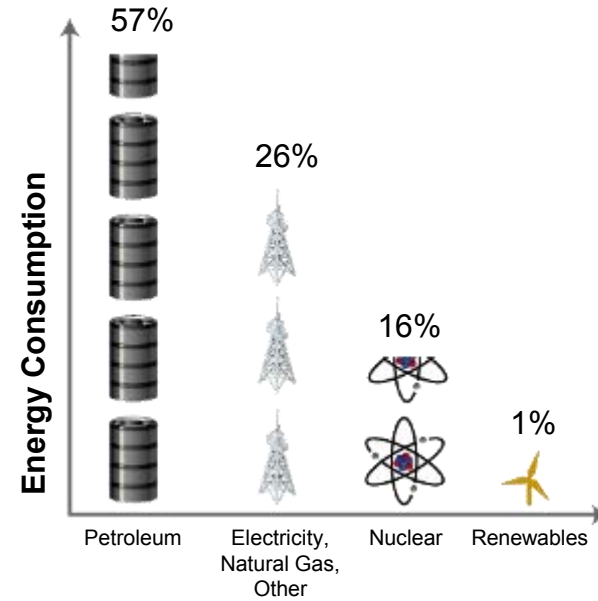
# Naval Energy Profile



### Overall Energy Consumption



### Overall Energy Sources

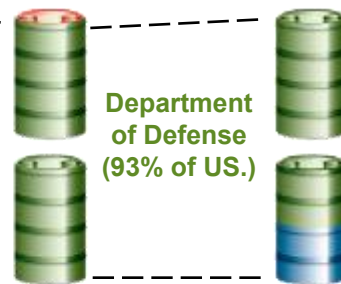


### U.S. Petroleum Consumption



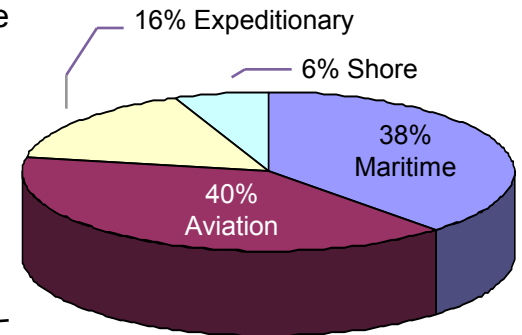
U.S. Government  
(2% of U.S.)

### Navy Petroleum Consumption in Perspective



Department of Defense  
(93% of US.)

DON  
(34% of DoD)





# SECNAV Energy Goals

***At the Naval Energy Forum, the Honorable Ray Mabus announced five Energy Goals:***

## **Energy Efficient Acquisition**

**Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings**

## **Sail the “Great Green Fleet”**

**DON will demonstrate a Green Strike Group in local operations by 2012 and sail it by 2016**

## **Reduce Non-Tactical Petroleum Use**

**By 2015, DON will reduce petroleum use in the commercial fleet by 50%**

## **Increase Alternative Energy Ashore**

**By 2020, at least 50% of shore-based energy requirements will come from alternative sources; 50% of DON installations will be net-zero**

## **Increase Alternative Energy Use DON-Wide**

**By 2020, 50% of total DON energy consumption will come from alternative sources**

***The Navy Is Moving Forward On These Aggressive Targets***



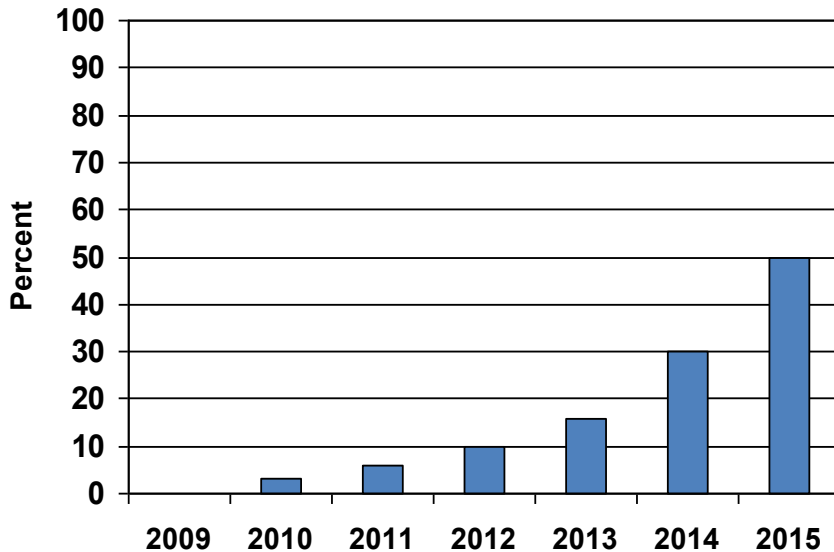


# Petroleum Reduction in Non-Tactical Vehicles

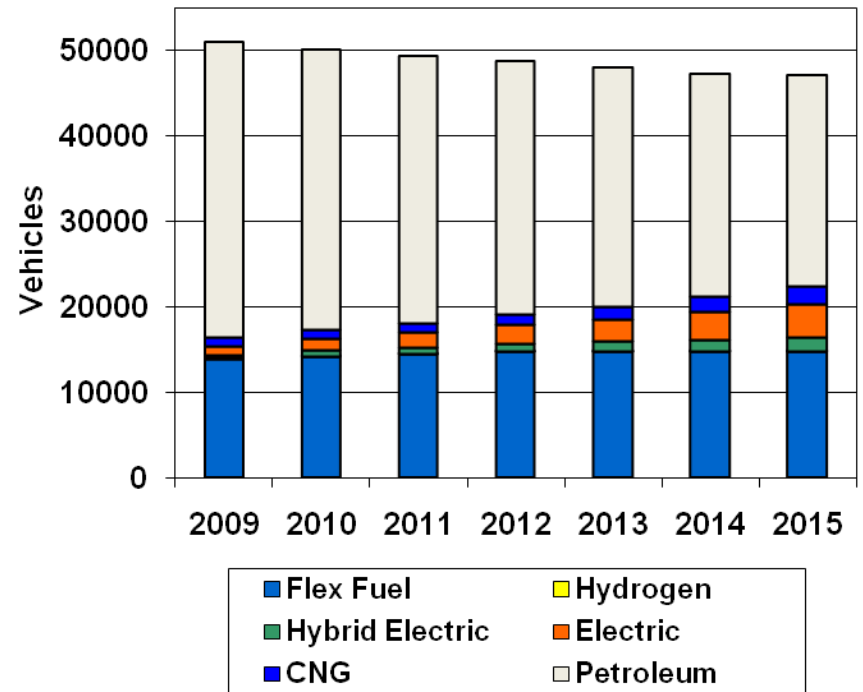


**DON will reduce petroleum use in the commercial fleet by 50% by 2015, through the increased use of flex fuel, hybrid electric, and neighborhood electric vehicles**

### Percentage of Petroleum Reduction



### Naval Fleet Composition by Type



## Baseline based on FY2009

- Marine Corps: 6.8MM gallons
- Navy: 9.3MM gallons



# Green Hornet – Earth Day 2010



- *Green Hornet flies supersonic at Naval Air Station Patuxent River*
- *Final approval and certification of camelina-based biofuel completed for F/A-18 Hornet in summer 2010*

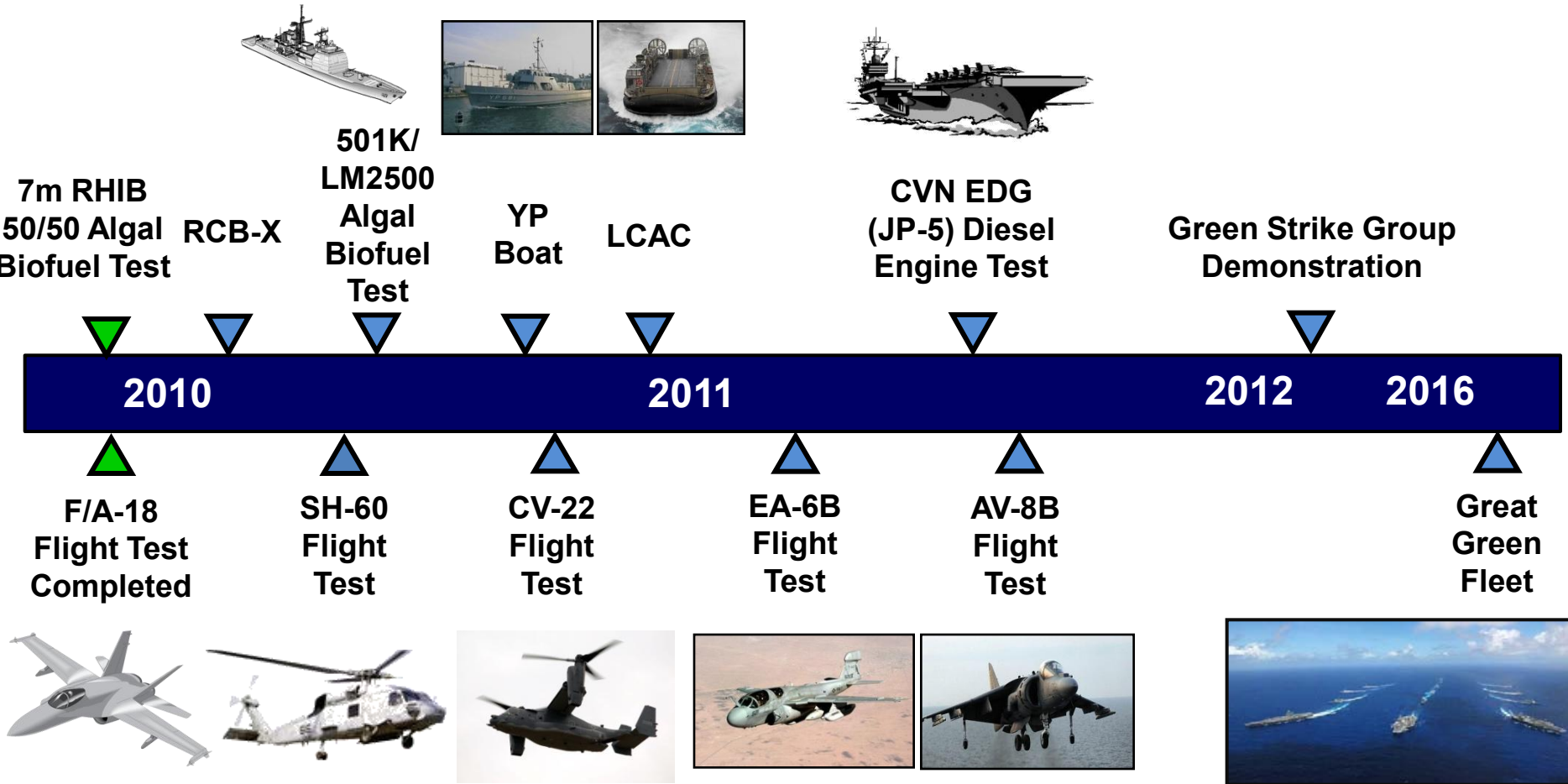




# Great Green Fleet Certification



## Ship Progress

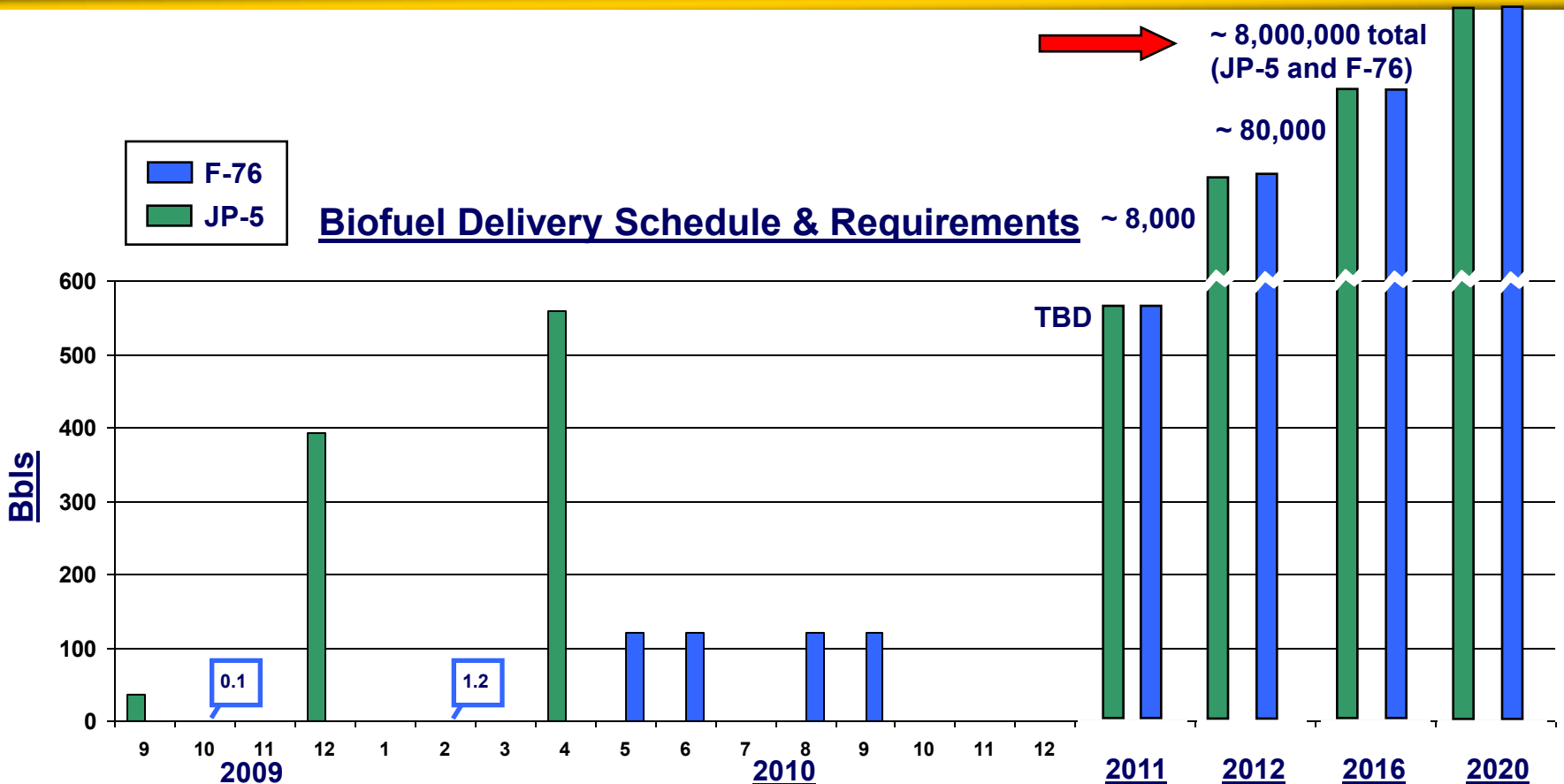


## Aviation Progress



# Great Green Fleet Biofuel Needs

**Biofuel Delivery Schedule & Requirements**



	2009	2010	2011	2012	2016	2020
<b>JP-5</b>	FFP Testing	F414 Engine Test F414 APU Test F-18 Flight Test	T-56 T-700 TBD	1st Green Fleet Demo	2nd Green Fleet Demo	50% Alt Fuel
<b>F-76</b>	Spec Testing	FFP testing	GT Component Test	Diesel / GT Engine Testing		





# Hawaii Biofuel Demand



## DoD Hawaii Biofuel Requirements

### Tactical Renewable Fuel Requirements \*

Type	Fuel (M Gallons)
JP-5	3.6
F-76	21.1
JP-8	39.3
<b>Total</b>	<b>64.0</b>

This is quantity of biofuel and petroleum – acquired as a 50:50 blend

### Power Generation Biofuel Requirements \*\*

Location	Size (MW)	Fuel (M Gallons)
Schofield/Wheeler Base	20	0.8
MCB Kaneohe Bay	30	1.2
Pearl Harbor	50	2.0
<b>Total</b>		<b>4.0</b>

\* As detailed in the GIFTPAC RFI in June 2010

\*\* Information from NAVFAC Pacific ; assumption is generation used as peaking plants

## HECO Biofuel Requirements

### Power Generation Biofuel Requirements

Type	Fuel (M Gallons)
Biofuel (80:20 split)	272.0 *
Crude Biofuel	137.9
Biodiesel	77.6
<b>Total (Crude + Biodiesel)</b>	<b>215.5 (76:24) **</b>

\* Maximum biofuel amount that can be consumed by HECO to meet 80:20 rule, based on DoD requirements

\*\* Needs according to HECO Biofuels RFP in April 2010

## Total DoD – HECO Biofuel Requirements

Category	Fuel (M Gallons)
DoD Tactical	64.0
DoD Power Generation	4.0
HECO Power Generation	215.5
<b>Total</b>	<b>283.5</b>



# Creating a Demand for Biofuels



Airline industry and the Department of Defense collectively consume 1.5 million barrels of jet fuel per day

Defense Logistics Agency – Energy and the Air Transport Association of America signed an Alternative Fuels Pact on March 19, 2010

- Shared goals of spurring the development and deployment of commercially viable and alternative aviation fuels
- Collaboration reinforces commitment to commercialization of jet fuel
- Developing key fuels for alternative energy effort



AIR TRANSPORT ASSOCIATION



# *100% Renewable Energy Platform*



*Thank you!*



# Questions?



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